

**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

TB 43-PS-606, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.

ISSUE 606 MAY 2003

	COMBAT VEHICLES	2		AVIATION	35
Combat Vehicle Track Maintenance		2-3	AH-64D ECS Air Intake Vent Reminder		35
M1-Series Tank Transmission		4-5	AH-64A/D IHADSS Helmet Care		36-37
M2/M3-Series Bradley Turret Cleaning		6-7	AH-64A/D Drive Shaft Gearbox Lubing		38-39
M981 FISTV Targeting Head Lubing		8	CH-47D ERFs Tank Valves		40-41
M992A2 Ammo Carrier Hold-Open Latch		9			
M109 Howitzer, M992 Ammo Carrier Shroud		10			
M109-Series SP Howitzer Elevation Cylinder		11			
	WHEELED VEHICLES	12		NBC	42
FMTV Hand Throttle		12	M17-Series Decon Monthly Checkup		42-43
FMTV Cab Cleaning		13	M22 Automatic Chemical Agent Alarm		44
M1112 Water Trailer		14	IM-93 Radiac Dosimeter Clip and Cap Info		45
Corrosion Prevention		15	M41 PATS Cleaning Change		45
Tire Maintenance		16-19		COMBAT ENGINEERING	46
	MISSILES	20	M139 Volcano Mine Dispenser		46-47
Patriot Missile System Outriggers		20-21	250 CFM Compressor Maintenance		48-49
M1068 Command Post Carrier Harness		22-23	Small Emplacement Excavator PM		50-51
			MICLIC Trailer Tub Turnbuckles		52
	SMALL ARMS	24		SOLDIER SUPPORT	53
M249 Machine Gun PM		24-25	Collapsible Canteen Carrier		53
M68 Close Combat Optic Sight		26	HAZMAT Sock Absorbers		54-55
			Chemlight NSNs		56-57
			ALICE Field Pack Parts		58-59
			Tool Calibration		60
			Water Purification Unit Grounding		60
EDITORIAL CONTINUITY		1 27	CONNIE'S POST SCRIPTS		61

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

Or e-mail to:

psmag@logsa.redstone.army.mil

Internet address:

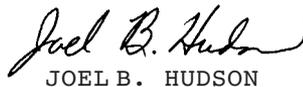
<http://www.logsa.army.mil/psmag/pshome.html>

By order of the Secretary of the Army:

ERIC K. SHINSEKI

General, United States Army Chief of Staff

Official:



JOEL B. HUDSON

Administrative Assistant to the Secretary of the Army
0308507

Issue 606

PS

May
2003

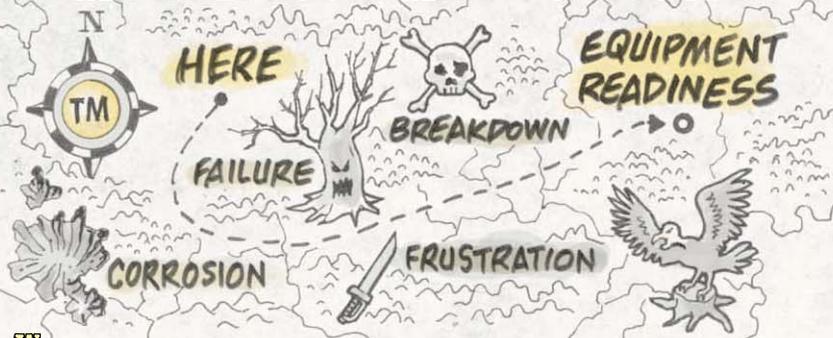
THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-606

Approved for
Public Release;
Distribution is
Unlimited



TMs ARE YOUR MAP TO SUCCESS



We all know what it's like to be lost without a map. You guess which is the right direction. You end up in places you didn't want to go. You find yourself going in circles as you try to figure out where you went wrong. What should have been a short trip to your destination becomes a long trip to frustration.

Units set themselves up for the same frustration when they don't keep an up-to-date library of TMs on their equipment. The TMs are the maps to your ultimate goal: equipment readiness.

TMs guide you through maintenance and troubleshooting and point you to the stock numbers for parts and supplies. Without TMs, you'll be lost and guessing.

There's no excuse for not getting TMs. If you're not sure how to order TMs, check out pages 57-59 in PS 591 (Feb 02). That gives you the complete ordering procedure.

If you're not sure what TMs you need, contact the Logistics Support Activity's Equipment Oriented Publication Data Base Program at DSN 897-6115/(256) 313-6115 or eopdb@logsa.redstone.army.mil. They can send you a complete list of the TMs your equipment requires.

If you find holes in your TMs—missing NSNs, confusing instructions—don't hesitate to fire off a DA Form 2028 to the command responsible for the TM. That tells the command what needs to be fixed. See the TM's title block for the mailing address.



THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-606, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.

ISSUE 606 MAY 2003

	COMBAT VEHICLES	2		AVIATION	35
Combat Vehicle Track Maintenance		2-3	AH-64D ECS Air Intake Vent Reminder		35
M1-Series Tank Transmission		4-5	AH-64A/D IHADSS Helmet Care		36-37
M2/M3-Series Bradley Turret Cleaning		6-7	AH-64A/D Drive Shaft Gearbox Lubing		38-39
M981 FISTV Targeting Head Lubing		8	CH-47D ERFs Tank Valves		40-41
M992A2 Ammo Carrier Hold-Open Latch		9			
M109 Howitzer, M992 Ammo Carrier Shroud		10		NBC	42
M109-Series SP Howitzer Elevation Cylinder		11	M17-Series Decon Monthly Checkup		42-43
			M22 Automatic Chemical Agent Alarm		44
	WHEELED VEHICLES	12	IM-93 Radiac Dosimeter Clip and Cap Info		45
FMTV Hand Throttle		12	M41 PATS Cleaning Change		45
FMTV Cab Cleaning		13			
M1112 Water Trailer		14		COMBAT ENGINEERING	46
Corrosion Prevention		15	M139 Volcano Mine Dispenser		46-47
Tire Maintenance		16-19	250 CFM Compressor Maintenance		48-49
			Small Emplacement Excavator PM		50-51
	MISSILES	20	MICLIC Trailer Tub Turnbuckles		52
Patriot Missile System Outriggers		20-21			
M1068 Command Post Carrier Harness		22-23		SOLDIER SUPPORT	53
			Collapsible Canteen Carrier		53
	SMALL ARMS	24	HAZMAT Sock Absorbers		54-55
M249 Machine Gun PM		24-25	Chemlight NSNs		56-57
M68 Close Combat Optic Sight		26	ALICE Field Pack Parts		58-59
			Tool Calibration		60
			Water Purification Unit Grounding		60

LESSONS LEARNED FROM OPERATION IRAQI FREEDOM

Check out some hot maintenance lessons learned straight from the front of Operation Iraqi Freedom. Go to the AKO homepage at <https://www.us.army.mil/>, sign in, select **Army Communities** in the left-hand column and click on **Logistics**. The hotlink is listed under Logistics Community Announcements.

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.

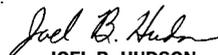
Just write to:

MSG Half-Mast
PS, the Preventive Maintenance Monthly
USAMC LOGSA (AMXLS-AM)
5307 Sparkman Circle
Redstone Arsenal, AL 35898-5000

Or e-mail to:

psmag@logsa.redstone.army.mil
Internet address:
<http://www.logsa.army.mil/psmag/pshome.html>

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


JOEL B. HUDSON

Administrative Assistant to the Secretary of the Army
0308507

PS, The Preventive Maintenance Monthly (ISSN 0475-2953) is published monthly by the Department of the Army, Redstone Arsenal, AL 35898-5000. Periodical postage is paid at the Huntsville, AL post office and at additional mailing offices.

Postmaster: Send address changes to PS, The Preventive Maintenance Monthly, USAMC LOGSA (AMXLS-AM), 5307 Sparkman Circle, Redstone Arsenal, AL 35898-5000.

STAY ON TRACK IN THE DESERT

WITHOUT PM MY TRACK JUST CAN'T TAKE ALL THIS ABUSE!



DESERT ENVIRONMENTS CAN BE LETHAL TO YOUR COMBAT VEHICLE TRACKS, CREWMEN. HEAT, SAND, AND ROCKS ALL COMBINE TO TAKE A HEAVY TOLL-UNLESS YOU'RE WILLING TO ANTE UP WITH PM!

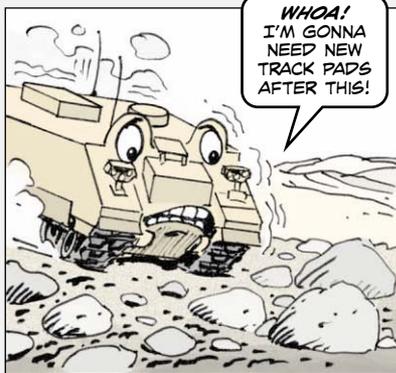
Heat

Air temperatures of up to 120°F are bad enough, but sand absorbs the heat and can get as hot as 165°F!

Those temperatures are extremely hard on rubber parts. Heat makes track shoes soft and weakens their resistance to sharp rocks and plant spines. High temperatures also increase rubber/metal separation on roadwheels.

Pay special attention to shoes and roadwheels during PMCS. Replace shoes that are severely damaged or worn down to the grouser.

Roadwheels with tread separation of 1 inch or wider (½ inch or wider for M113-series FOV, M992A2 ammo carrier and M109-series SP howitzers) around 75 percent of the wheel should be replaced. Also, replace M113-series FOV roadwheels that have chunking across ½ the width or more of the outer rubber surface.



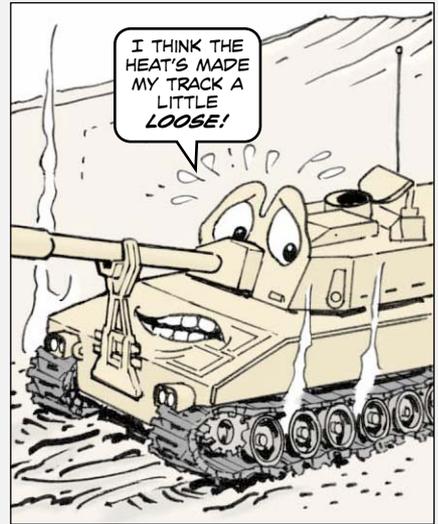
Track Tension

Since metal expands and contracts with the ups and downs of temperature, proper track tension is essential in the desert.

During the heat of the day, track parts expand and the track runs looser. That results in thrown track.

At night and early in the morning, it's much cooler. Track parts contract and the track runs tighter. The track can bind, causing bent road arms, damaged end connectors and more.

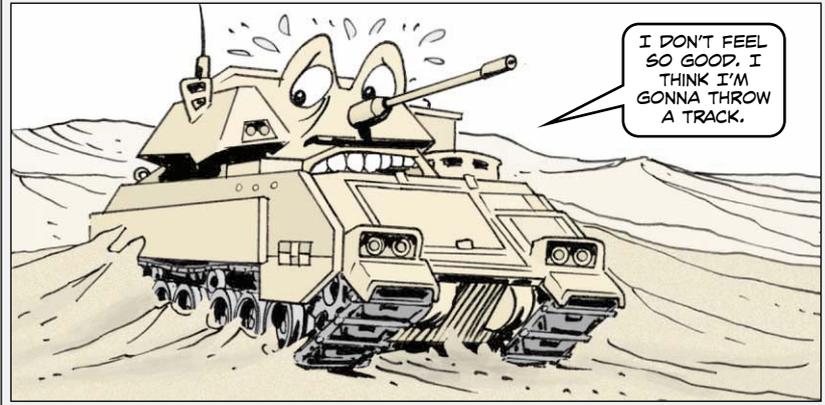
Check track tension often in the desert. Don't try to make it extra loose or tight to compensate for temperature changes. Your best bet is to adjust it according to the TM.



Driving

Drivers, be wary of a lack of steering response. That indicates sand is building up between the treads and sprockets or idler wheels. If you allow the buildup to continue, the sand will throw the track.

Try "shaking" the vehicle with the steering or backing up to remove sand buildup. Remove accumulated sand by hand at your next stop.



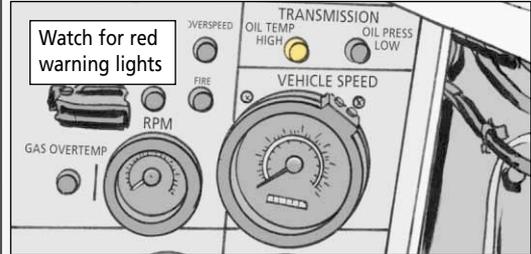
HELP TRANSMISSION BEAT THE HEAT



OH, GREAT! A CLOGGED OIL COOLER HAS OVERHEATED MY TRANSMISSION!

A SAND-CLOGGED OIL COOLER MEANS AN OVERHEATED TRANSMISSION FOR YOUR TANK.

You can tell when things get too hot by the warning light on the driver's control panel. Don't overlook it! If the transmission goes down, your mission is over.



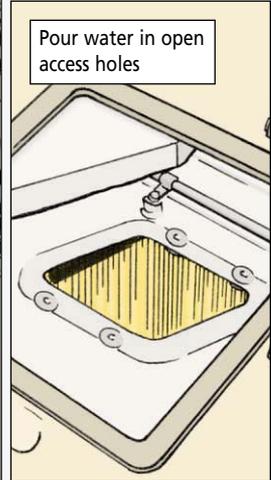
Even if the troubleshooting info in your -10-2 TMs doesn't turn up a solution, you shouldn't ignore the light and drive on. There's a problem somewhere, so call in your mechanic.



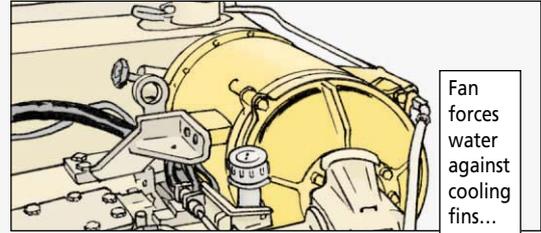
MECHANICS, THERE ARE TWO WAYS TO CLEAN THE TRANSMISSION OIL COOLERS.

The **first way** you can try on the spot. Open the right- and left-hand top grille doors and both rear grille doors. Also, open the access cover to the plenum. Clean out any debris or sand you see in the airway.

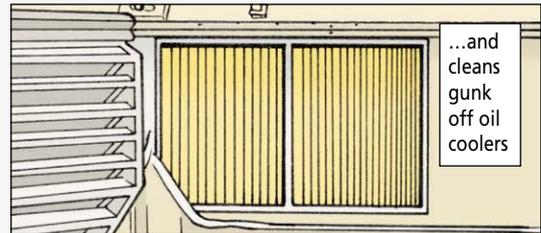
Then run the engine at tactical idle while pouring a couple of buckets of water into the access holes. The fans propel the water against the cooler fins hard enough to wash away most of the gunk that's causing the overheating.



Pour water in open access holes



Fan forces water against cooling fins...



...and cleans gunk off oil coolers

If oil has turned the sand into a sticky mess, you'll need to use the **second way**—a full-blown oil cooler washing. If that is not possible in the field, tow—don't drive—the tank to a location where the oil coolers can be properly cleaned.



ONCE YOU'VE CLEANED THE INSIDE...

...COULD YOU HANG UP ONE OF THOSE LITTLE TREE AIR FRESHENERS? THANKS!

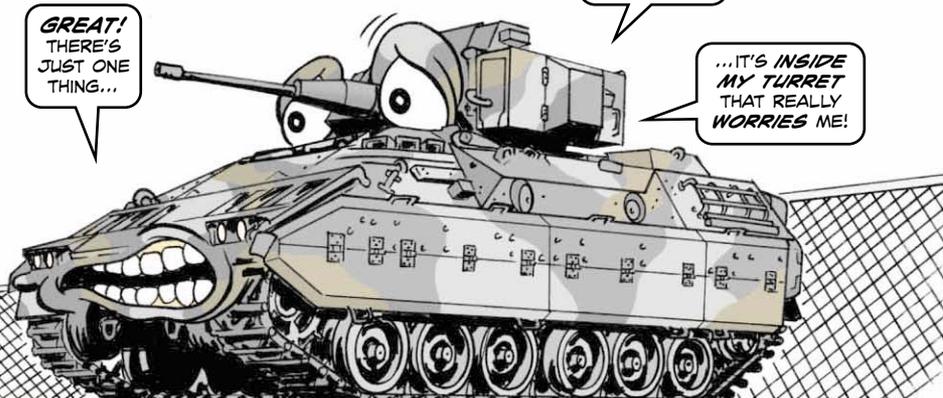


PS 606

Try These Tidy Turret Tidbits



GREAT! THERE'S JUST ONE THING...



THERE ARE **TWO TYPES** OF CLEANING METHODS FOR YOUR BRADLEY TURRET: THOSE THAT WORK AND THOSE THAT CAUSE DAMAGE.

SO HOW DO YOU TELL THE TWO TYPES APART? READ ON...

- Water, steam and compressed air are out. Remove dirt by loosening it with a stiff brush and by vacuuming it out with a vacuum such as NSN 7910-00-267-1205.
- If you know there is water and more dirt under the turret floor plates, leave it there and notify your mechanic. He'll remove the turret floor plates to get at the mess.

There's a good reason why your mechanic does this and not you. There are lots of electrical cables and connections in the turret floor. If you're unfamiliar with these connections, you can fry yourself or damage equipment.



- Use dry cleaning solvent on metal surfaces that are above floor level. Make sure you have plenty of ventilation and keep a fire extinguisher nearby.

- Use soap and warm water to remove oil and grease from canvas, rubber or plastic equipment. Rinse with clean rags dipped in water and dry thoroughly.



- Use isopropyl alcohol, NSN 6810-00-753-4993, or lens cleaning solution, NSN 7930-00-664-6910, to clean optical lenses. Wipe the lenses dry with lens paper, NSN 6640-00-285-4694.

- Avoid commercial cleaners, degreasers, scouring pads, sponges, pipe cleaners, and so forth. They may clean, but they also damage.

Avoid degreasers, scouring pads and other commercial items

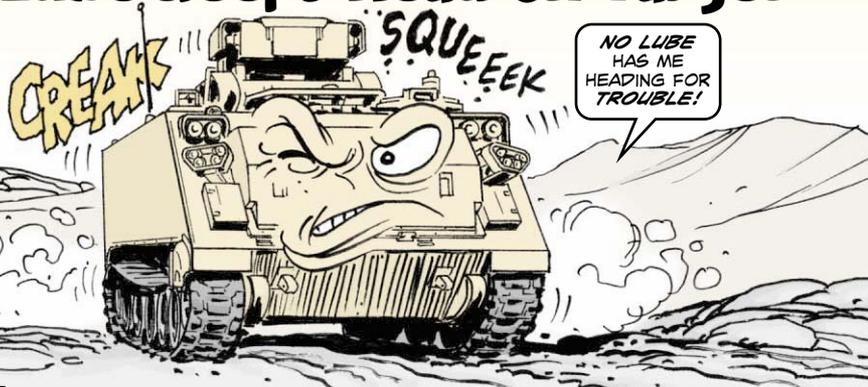


JUST DO WHAT YOU'RE SUPPOSED TO DO, THE WAY YOU'RE SUPPOSED TO DO IT.

YOUR BRADLEY WILL THANK YOU FOR IT.



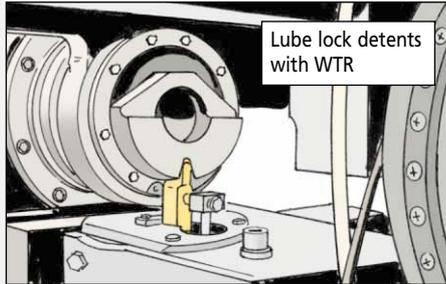
Lube Keeps Head on Target



The targeting head on your M981 FISTV won't be locating many targets if it does not get lube when and where it's needed. The hydraulic cylinder locks, elevation cylinder bearings and pivot shaft bearings are perfect examples.

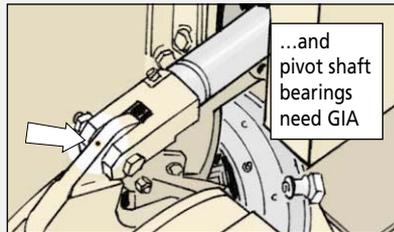
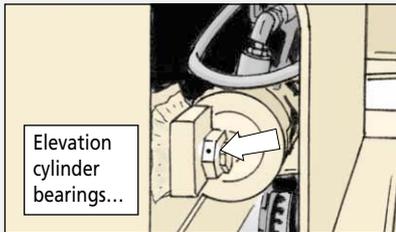
Without proper lube, the hydraulic cylinder locks suffer metal-on-metal wear. When the detents wear out, the targeting head can't be locked in place.

Lube the hydraulic cylinder locks with WTR every 25 turret hours, 250 miles or monthly, whichever comes first.

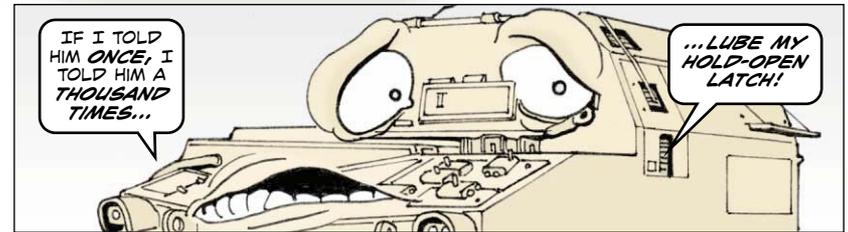


The elevation cylinder bearings and pivot shaft bearings control elevation of the head. No lube means no elevation. Plus, rust can cause the mounting bolts to elongate and snap.

Lube the elevation cylinder bearings and pivot shaft bearings with GIA every 25 turret hours, 250 miles or monthly, whichever comes first.

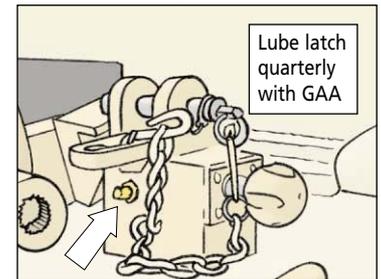


DON'T RELY ON LUCKY LATCH



Are you counting on luck to make sure the hold-open latch locks open the driver's hatch on your M992A2 ammo carrier? Eventually, luck will let you down.

Unless you lube the hold-open latch quarterly with GAA, the latch pin will rust in place. If the pin can't move, the hatch won't lock. That means the hatch could come crashing down on your head, drivers.

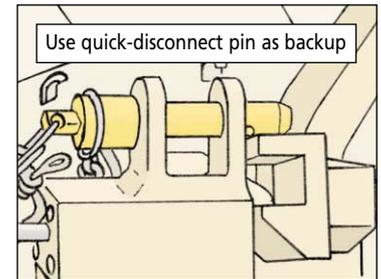


Check the hold-open latch weekly to make sure it locks. If the pin is hard to move or won't move at all, lube the latch until you see grease oozing out around the pin. Then, pull the latch knob in and out until the pin moves smoothly.

If the pin still won't move, report it. Your vehicle is NMC.

Even if the pin seems to be working perfectly, don't rely on it alone to hold open the driver's hatch.

For safety's sake, always slide the quick-release pin through the strike brackets on the hold-open latch. The quick-release pin acts as a backup in case the hold-open latch fails.



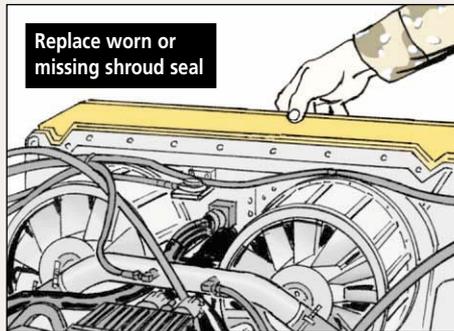


Got a hot-running engine in your M109-series howitzer or M992A2 ammo carrier? There's a good chance the radiator shroud seals are to blame.

Those seals form an air barrier between the radiator and fan tower. That barrier increases air flow through the radiator to keep the engine cool. If seals are missing, torn, squashed or mangled, air escapes around the sides of the radiator. Engine temperature goes up.

Have your mechanic check out the shroud seals next time the pack's out. If the seals are missing or damaged, he'll order new ones.

NSN 5330-00-102-9927 gets a seal for the right or left side. NSN 5330-01-314-1439 gets a top or bottom seal for the M109A6 and the M992A2. A top or bottom seal for the M109A2-A5 comes with NSN 5330-00-899-5220.

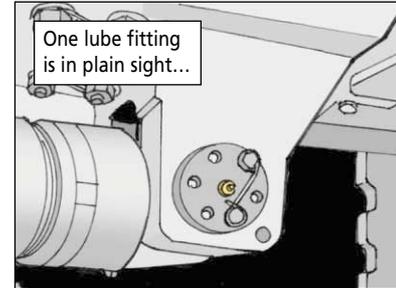


Both Fittings Need Lube



Many of you are doing only half the job when it comes to lubing the elevation cylinder on your M109-series howitzer.

The elevation cylinder has **two** lube points. One is in plain sight. The other is hidden. The one in plain sight usually gets grease. The hidden one is neglected.



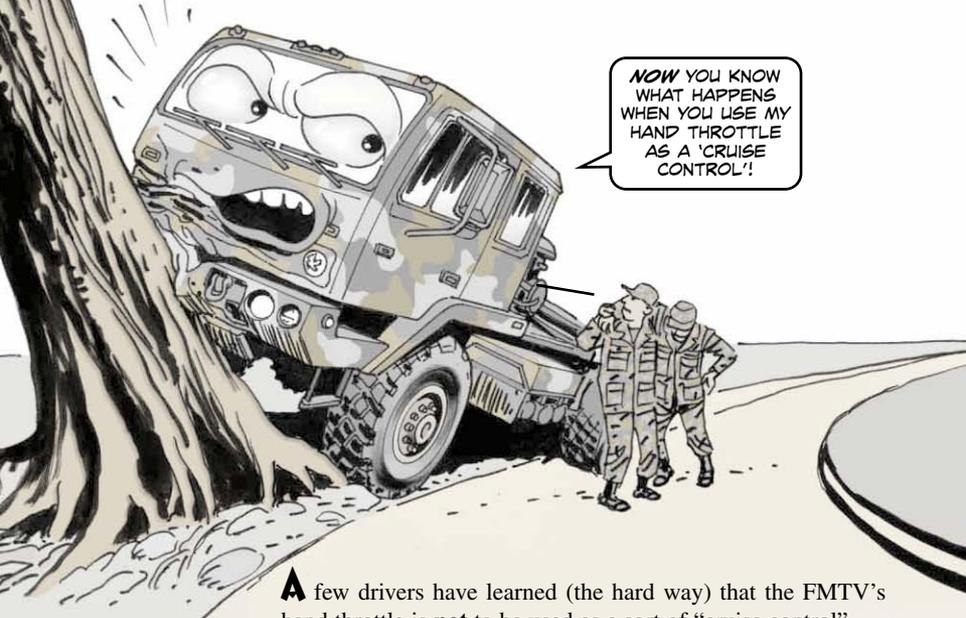
Forgetting either lube point makes for jerky, squeaky cylinder movement.

To reach the hidden fitting, the cannon has to be raised to maximum elevation.

So make a slick move and raise the cannon. Find the fittings on each end of the cylinder and hit them with a good dose of GAA. Then next month—and every month after that—remember to grease **both** lube points again.

If you do forget, and the cylinder starts squeaking and jerking, hit that hidden point with lube.

HANDS OFF HAND THROTTLE!



NOW YOU KNOW WHAT HAPPENS WHEN YOU USE MY HAND THROTTLE AS A 'CRUISE CONTROL'!

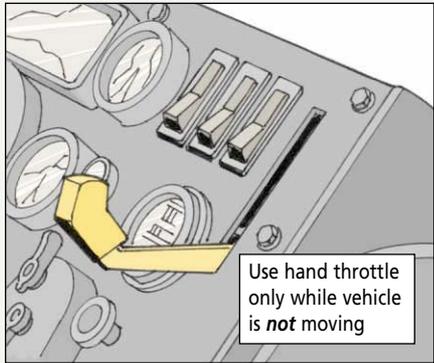
A few drivers have learned (the hard way) that the FMTV's hand throttle is **not** to be used as a sort of "cruise control".

Unlike the cruise control on your POV, the hand throttle doesn't cut off when you hit the brakes. If you need to stop in a hurry, you won't have time to mess with the hand throttle. The end result is loss of control that can lead to an accident!



SO DO YOURSELF- AND YOUR VEHICLE-A FAVOR.

USE THE HAND THROTTLE ONLY WHILE THE VEHICLE IS NOT MOVING-LIKE DURING COLD ENGINE STARTS AND WINCHING OPERATIONS.



Use hand throttle only while vehicle is **not** moving

CAB CLEANING REMINDER



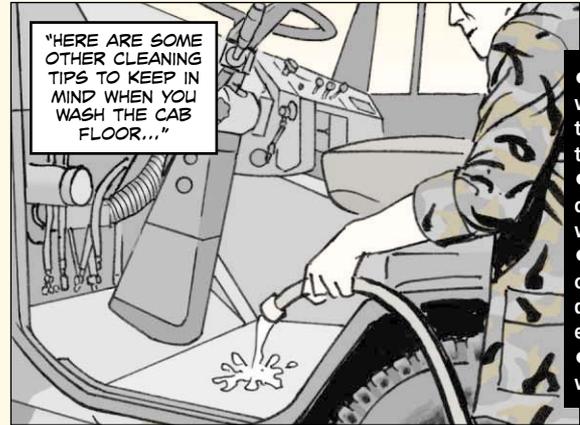
NO, I KNOW IT WASN'T YOU WHO LEFT ALL THAT THERE, BUT WE'RE NOT MOVIN' TILL YOU CLEAN IT UP!

IT'S GONNA TAKE MORE THAN AN ARMY OF ONE TO CLEAN OUT THIS MESS!

The FMTV's cab floor seems like a handy area to put rags, tools, soda cans and chains during the day's run.

Problem is, these items can get under the accelerator or brake pedals and keep them from working when you need 'em. That can lead to an accident.

So before you head out of the motor pool, get rid of anything on the cab floor that gets in the way of the controls.



- You can use low pressure water from a garden hose to clean mud and sand from the cab floor.
- Be sure to remove the cab's drain plugs to allow water to drain out.
- Never use water to clean on or under the vehicle's dashboard. That can cause electrical damage.
- Mop up excess water with rags.

THE TRICKLE-DOWN EFFECT

There's nothing better than a cool drink of water on a hot day. There's also nothing more frustrating than getting just a trickle of water from the faucet of your M1112 water trailer.

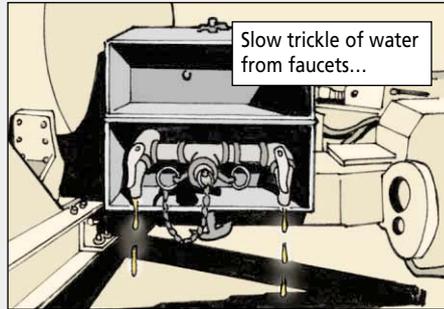
There's plenty of water in the trailer and the faucet is on full blast, so what's the problem?

Could be that you forgot to loosen the small nut on the manhole cover. If the nut's not loosened, air can't get into the tank and a vacuum forms. That slows the water down to a trickle.

I'M DYIN' OF THIRST HERE!

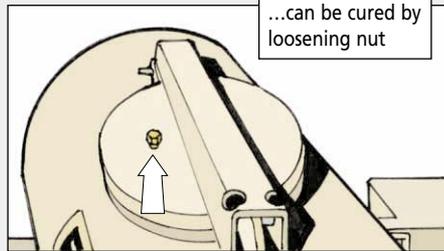
CAN'T I HAVE A LITTLE WATER?!

A LITTLE IS THE BEST YOU'LL GET UNLESS YOU LOOSEN THE NUT ON MY MANHOLE COVER!



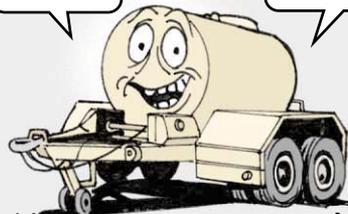
Slow trickle of water from faucets...

...can be cured by loosening nut

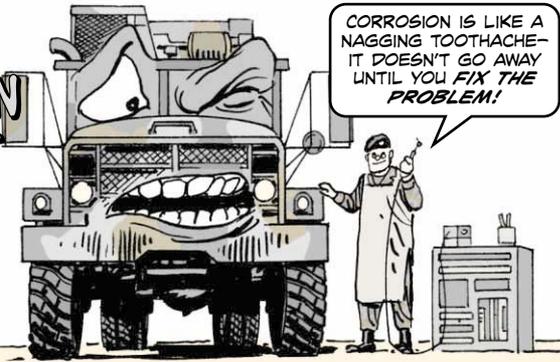


JUST REMEMBER TO LOOSEN THE NUT...

...AND YOU'LL SOON HAVE ALL THE WATER YOU CAN DRINK.



CORROSION AND RUST NEVER SLEEP!



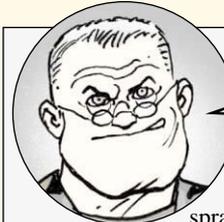
Army equipment is attacked by corrosion day-in and day-out. Rain, salt, wind and sand take their toll. The destruction can be enormous, and the cost staggering.

Your best weapon against corrosion is rust inhibitor. Just wipe or spray on the inhibitor every 8 months to the inside and underneath your vehicles. It slows the spread of new rust and cleans up old rust.

It won't harm painted surfaces, plastics, rubber, glass or wiring, but it will make them shine for a week or two. That ruins your camouflage, so keep it off the outside of your equipment.

The inhibitor works by eliminating moisture that holds salt, dirt and other pollutants that eat up metal. It also lubes moving parts and penetrates existing rust.

The inhibitor is petroleum-based and contains no silicones, solvents, or anything else classified as hazardous. Even though the inhibitor contains no hazardous material, the headshed recommends that you wear a respirator, goggles and gloves when applying it because of possible irritation to your respiratory tract or skin.



ORDER THE AMOUNT OF INHIBITOR YOU NEED...

Quantity	NSN 8030-01-414-
16-oz bottles (12)	7423
5-gal container	8947
55-gal drum	7430

NSN 8030-01-389-1413 brings a 55-gal drum of inhibitor, a spray applicator and an instruction video. You can get a free copy of the video by calling (800) 856-6798.

As a rule of thumb, it takes about 2 gallons to treat a HMMWV and up to 3 gallons for a 2½-ton or 5-ton truck.

NEVER TIRE OF TIRE PM

WHAT DID WE DO TO DESERVE THIS!?

WE WERE RETIRED BEFORE OUR TIME!

IF ONLY OUR DRIVERS HAD PRACTICED TIRELESS PM!

THAT'S WHERE THE RUBBER REALLY MEETS THE ROAD!

YOUR WHEELED VEHICLES ARE GOING **NOWHERE FAST** WHEN THEIR TIRES ARE FLAT.

THAT'S WHY IT'S UP TO YOU, DRIVERS, TO KEEP A TRAINED EYE OUT FOR THESE PROBLEMS...

Low Pressure

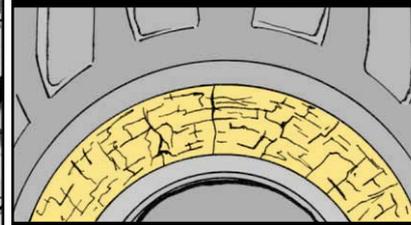
Make sure all tires, including the spare, have the right amount of air. If one looks low, put a gauge on it. Check your TM for the correct pressure. Add air as necessary before operation, while the tire is cold.

You'll get the right amount of air in the tire when it's cold. If the tire is warm or hot, the pressure in the tire will be higher because of the heat. You'll get a wrong reading.



Weather-checking

Ozone cracks weaken tires. If you find weather-checking that joins together to form a line or is 2/32 inch deep, report it.



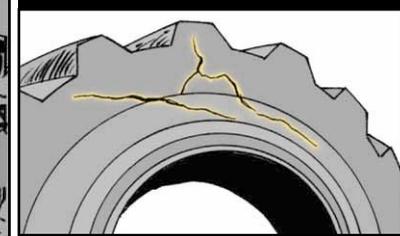
Flat-makers

Look for cuts, nails, metal or rocks dug into the rubber. Find any? Report it.



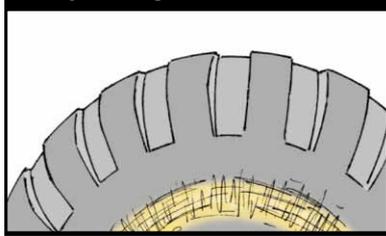
Cracks

Low tire pressure leads to sidewall cracks. Make sure the crack doesn't extend 2/32 inch or deeper or go to the cord or steel.



Abrasions

Tires rubbed raw are a sore sight for good eyes. Abrasions that go through the rubber to the cord or steel below mean you change the tire.



THIS WASN'T A **GOOD YEAR** FOR ANY OF US!

WHEEL YOU NEVER SHUT UP!?

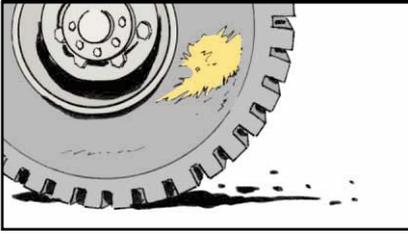
THOSE JOKES ARE FLAT!

THEY'RE ALL RE-TREADS!

OH, SPARE ME!

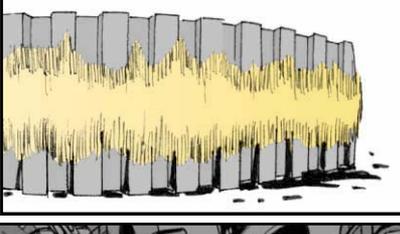
Wall Separations

Most bulges in the sidewall or tread make a tire unserviceable. All tires need a closer inspection. However, some bulges on radial sidewalls are not defects, but the result of how they are made. Let your mechanic make the decision.



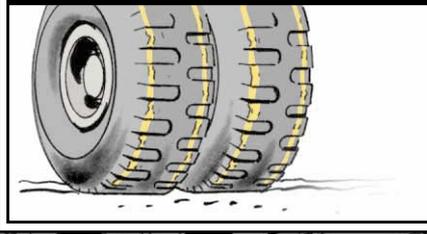
Overinflation

Look for tires that are worn in the middle. Overinflated tires don't flex enough. The middle of the tread takes all the weight, causing rapid wear. When an overinflated tire hits a large rock or a rut, the cords or steel belts inside snap and break, weakening the tire.



Underinflation

A sure sign of underinflation is a worn tread at each side of the tire. Underinflated tires flex more than properly inflated tires. The flexing causes heat, which ruins tires and may cause a blow out.



HERE'S THE LIST OF TIRES, BY NSN, THAT SHOULD **NOT** BE RETREADED...

- 2610-00-262-8653
- 2610-01-214-1344
- 2610-01-357-8333
- 2610-00-262-8677
- 2610-01-334-2694
- 2610-01-160-9934
- 2610-01-356-9098



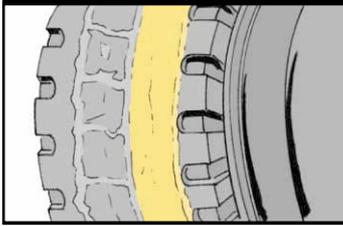
Balding Tires

When tire tread gets below a certain height, a tire needs to be replaced. Report any tire you believe to be worn out to your mechanic. He'll measure tread using the wear gauge from the No. 1 and No. 2 Common shop sets to make the final decision.



Wrong Caster/camber Adjustment

A sure sign of misadjustment is wear on one edge. Tires worn on the inside or outside edge have caster/camber problems. Either way, report it so your mechanic can make adjustments.



Retreads

Retread tires can be run on most trucks and trailers with the following exceptions:

- Two-ply tires, without breaker strip or belts.
- Buses (front wheels only).
- M520-series trucks and M747 semitrailers.
- M860A1 semitrailers, M893 HEMTT (when it is the prime mover of the M860A1), and the M985E1 HEMTT.
- M911, M916, M920, M915, and M915A1 tractor trucks (steering axles only).
- Any vehicle with a central tire inflation system (CTIS).

DON'T Leave Out Outriggers

OH, MY ACHING FEET!

NOBODY HAS BEEN GIVING MY OUTRIGGERS ANY ATTENTION.

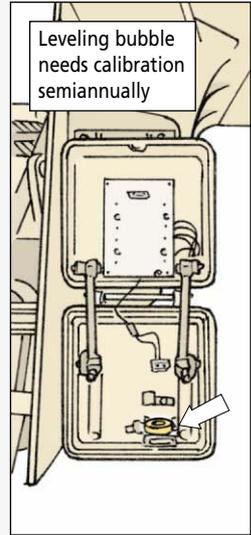
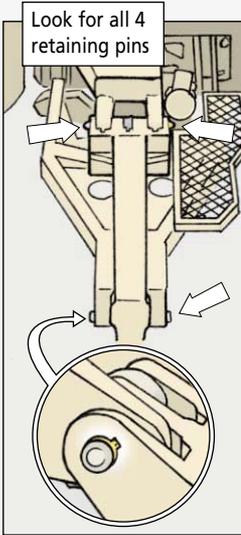
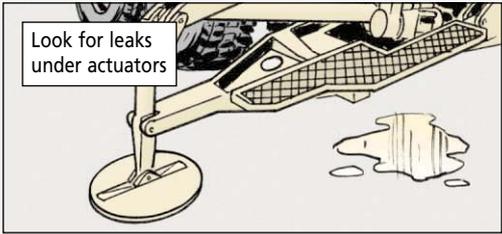
OUTRIGGERS ARE THE FEET FOR YOUR PATRIOT'S TRAILERS.

IF YOU LET THEM GET IN BAD SHAPE, YOUR PATRIOT CAN'T GET THE FOOTING IT NEEDS TO SET UP FOR FIRING.

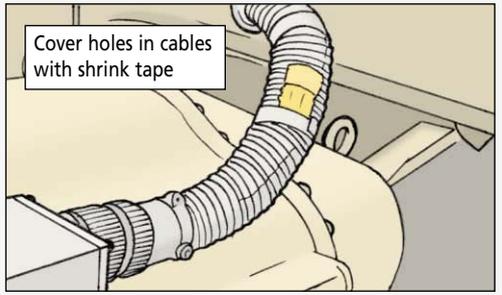
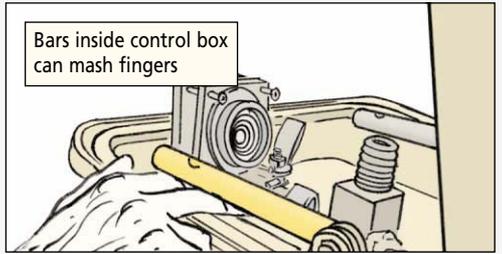
DON'T LEAVE OUT THIS OUT-RIGGER PM WHEN YOU DO YOUR PATRIOT PMCS...

I CAN'T STAND THIS!

- Look for leaks. If too much hydraulic fluid leaks out of the outriggers, they will be difficult to raise or lower. Check the ground for puddles, especially under the actuators. They're the prime suspect for leaks.
- Make sure the retaining pins for the outriggers' joint pins are installed and tight. There are 4 retaining pins for each leg: 2 on the top joint and 2 on the bottom joint. If the retaining pins disappear, the joint pins can work out.
- Get the outrigger control box's leveling bubble calibrated every 6 months. Many bubbles are never calibrated. Eventually, the bubble doesn't give true readings and the launcher can't be leveled correctly for firing. See Page 4-125 in TM 9-2330-357-14&P for leveling instructions.



- When you open and close the control box, keep your fingers on the outside of the box. If you stick your fingers inside the box, the bars can crush your fingers. The box will be much easier to open if you lube its hinges monthly with light oil.
- Remember to unhook the outriggers' safety chains before you lower outriggers. If you forget, the outriggers will be damaged.
- Remember to stow the launcher antenna before you raise the outriggers. Otherwise, the antenna will be snapped off.
- The cables for the outrigger actuator motor often develop holes in their covering, which lets water in the cables and can short them out. Check the cables monthly for holes. If you spot any, use shrink tape, NSN 5970-01-169-2783, to seal the holes.



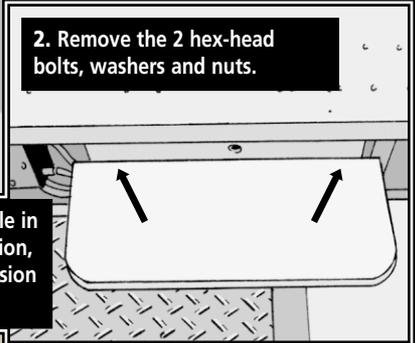
MOVE TABLE TO STOP HARNESS DAMAGE

THE M1068 COMMAND POST CARRIER'S WORKSTATION TABLE DAMAGES THE WIRING HARNESS ON THE TENT INTERFACE PANEL WHEN THE TABLE'S IN THE DOWN POSITION.

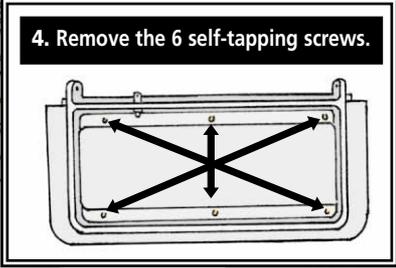
SO YOU NEED TO MOVE THAT TABLE. HERE'S HOW...



1. With the table in the down position, remove the tension spring.

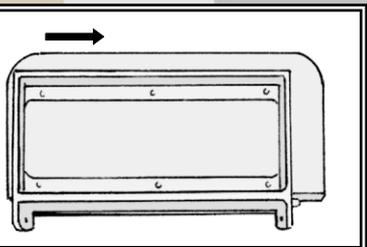


3. Remove the table from the workstation.

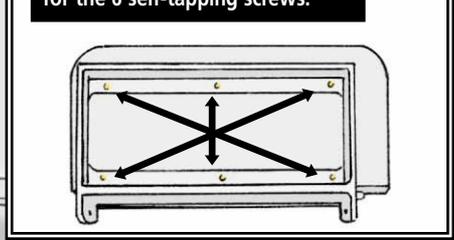


5. Move the table top 1 inch to the right on the mounting bracket.

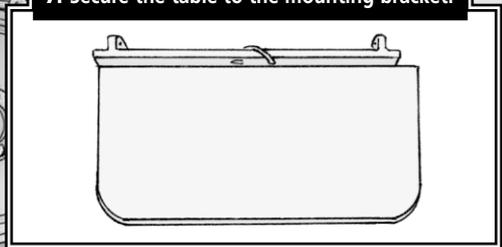
The table should be flush with the mounting bracket.



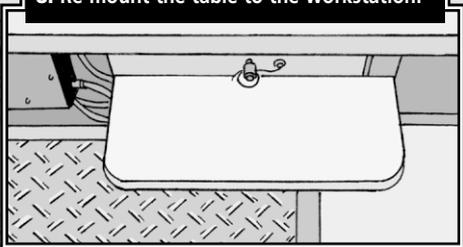
6. Mark and tap the new location for the 6 self-tapping screws.



7. Secure the table to the mounting bracket.



8. Re-mount the table to the workstation.



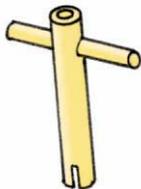
9. Install the 2 hex-head bolts, washers, nuts and tension spring.

TALKING TO YOU, ARMORERS



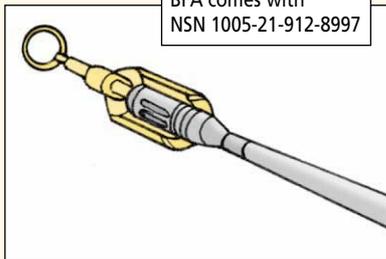
- You need the front sight adjustment tool, NSN 5120-01-141-3839. Without the tool, you'll have trouble adjusting the sight and could even damage it. The tool costs only a little more than \$6, so order an extra one. The tool often disappears.

Get front sight adjustment tool



- The NSN for the blank firing attachment has changed to NSN 1005-21-912-8997. If you order the NSN listed in TM 9-1005-201-10 (July 1991) the order will be kicked back.

BFA comes with NSN 1005-21-912-8997



- Check the safeties on your M249s by locking the bolt to the rear, pushing the safety to SAFE and pulling the trigger. The bolt should not move. Safeties wear out just like the other parts on the M249. If the safety doesn't work, the gun can fire accidentally and you're left explaining why to the next-of-kin.

Set safety to SAFE and pull trigger

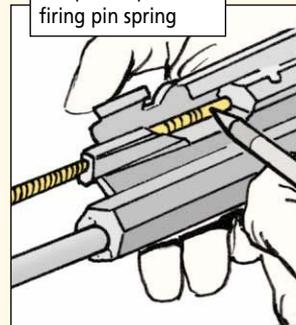


- If your unit is going to do much firing, make sure the spare barrels head-spaced for your M249s leave the arms room with the M249s. The barrel is supposed to be changed every 200 rounds during both sustained and rapid fire. If it's not, heat can warp the barrel. Make sure your unit knows those firing limits. Most spare barrels never make it out of the arms room.



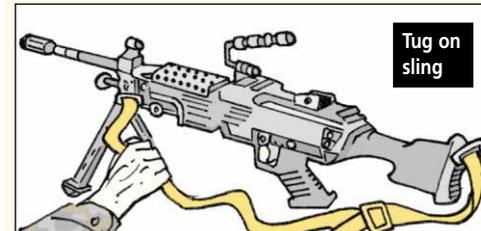
- Don't pull the firing pin spring off. That stretches the spring and ruins it. Use a small screwdriver or pen to push the spring off.

Use pen to push off firing pin spring



- Tug on the slings to make sure they hold. Sometimes the metal rings on the gun wear out and the sling comes loose. That can lead to a damaging fall.

Tug on sling



I HOPE YOU SAW WHAT I MEAN ABOUT YOUR SAW!

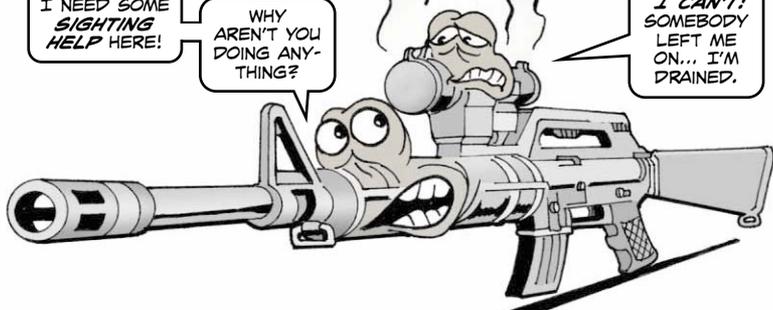


MARKED OFF FOR SURE

HEY, PALLY!
I NEED SOME
SIGHTING
HELP HERE!

WHY
AREN'T YOU
DOING ANY-
THING?

I CAN'T!
SOMEBODY
LEFT ME
ON... I'M
DRAINED.



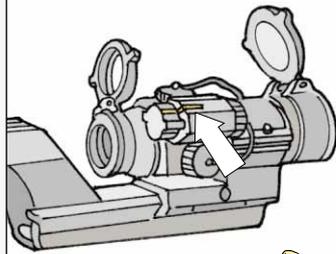
Dear Editor,

There really is no way to tell just by looking if your M68 close combat optic sight is turned off. There usually are no markings on the ON/OFF knob. As a result, the M68 can be left on without your realizing it. Then when you're ready to use the sight, its battery is dead.

A little nail polish fixes that problem. Turn the ON/OFF knob all the way counter-clockwise so that the M68 is turned off. Draw a line across the knob and onto the battery tube. Then you know that when the lines line up the M68 is turned off.

LT Mike Sparks
USAR
Columbus, GA

Paint line across ON/OFF
knob and battery tube

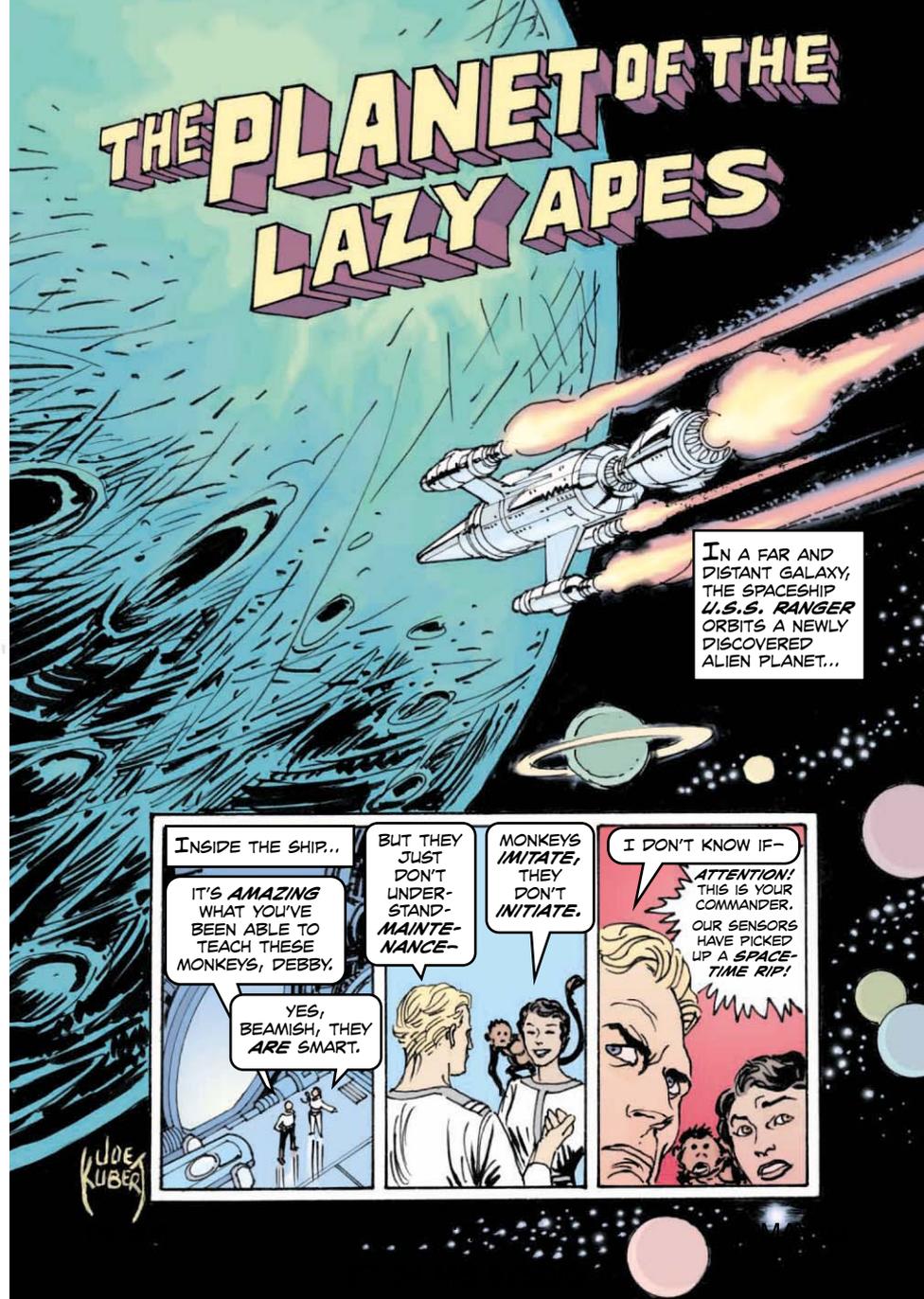


From the desk
of the *Editor*

Good idea. The sight comes with OFF markings on battery knob and tube, but the markings wear off. Your solution will take care of that.

M68 users should also remember that when the sight is left on too long the next time you use the sight the battery may at first appear to be OK. But then after a few minutes it goes stone dead. It's a good idea to turn on the sight for 30 minutes before leaving for a mission or training and then check that the sight is still working. Of course, it's also a good idea to take along a spare battery, NSN 6135-01-398-5922.

THE PLANET OF THE LAZY APES



IN A FAR AND
DISTANT GALAXY,
THE SPACESHIP
U.S.S. RANGER
ORBITS A NEWLY
DISCOVERED
ALIEN PLANET...

INSIDE THE SHIP...

IT'S **AMAZING**
WHAT YOU'VE
BEEN ABLE TO
TEACH THESE
MONKEYS, DEBBY.

BUT THEY
JUST DON'T
UNDER-
STAND-
MAINTENANCE-

MONKEYS
IMITATE,
THEY
DON'T
INITIATE.

I DON'T KNOW IF-

ATTENTION!
THIS IS YOUR
COMMANDER.
OUR SENSORS
HAVE PICKED
UP A **SPACE-**
TIME RIP!

YES,
BEAMISH, THEY
ARE SMART.

JOE
KUBER



MINUTES LATER
A SMALL PROBE
CRAFT LEAVES
THE U.S.S.
RANGER...

BEAMISH... GET
CLOSER TO THAT
PLANET'S SURFACE.
THAT'S WHERE THE
ENERGY IS
COMING FROM.

ROGER,
SIR...



UH,
OH.

I'M...
BEING
PULLED
DOWN!
I'VE
LOST
CONTROL!



WHUMP



M-MY
GYRO'S DIDN'T
RESPOND.

I'LL BET
SOME IDIOT
DIDN'T LUBRI-
CATE 'EM.

AS BEAMISH
CRAWLS FROM
HIS DISABLED
VESSEL...



APES!
...ON HORSE-
BACK!?



TH- THEY DON'T LOOK
FRIENDLY. I BETTER
MAKE TRACKS!

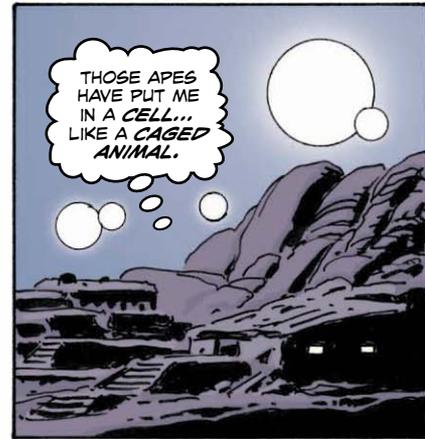


LOOKS LIKE THEY
DON'T DO GOOD PM
ON THEIR EQUIPMENT.

THEIR SADDLE
STRAPS ARE
BREAKING.



SOOPS< MY LACES
ARE UNTIED.
SHOULD'VE DONE SOME
PM ON MY BOOTS!



THOSE APES
HAVE PUT ME
IN A CELL...
LIKE A CAGED
ANIMAL.



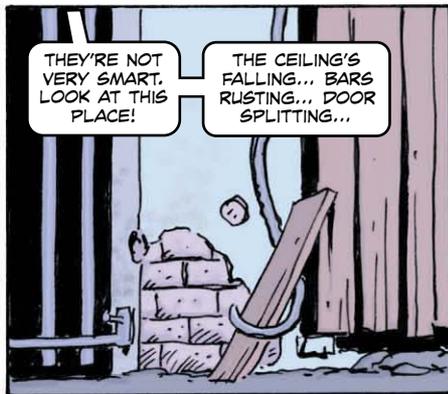
AND...
I'VE GOT
COMPANY!

LOOK...
THEY CAUGHT
A NEW ONE.



...YOU'VE GOT TO BE KIDDING! A PLANET RULED BY **APES**? THEY DON'T EVEN HAVE FIREARMS...

BUT THEY'RE **STRONG...** AND SWORDS AND SPEARS CAN DO PLENTY OF **DAMAGE.**



THEY'RE NOT VERY SMART. LOOK AT THIS PLACE!

THE CEILING'S FALLING... BARS RUSTING... DOOR SPLITTING...



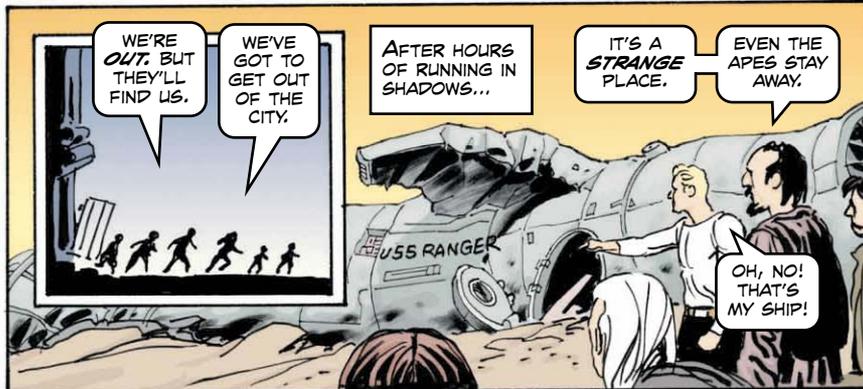
I'LL BET THE HINGES HAVE NEVER BEEN OILED...



...PRACTICALLY FALLING APART...



...OOPS!



WE'RE OUT. BUT THEY'LL FIND US.

WE'VE GOT TO GET OUT OF THE CITY.

AFTER HOURS OF RUNNING IN SHADOWS...

IT'S A STRANGE PLACE.

EVEN THE APES STAY AWAY.

OH, NO! THAT'S MY SHIP!



AT BEAMISH'S INSISTENCE, THE GROUP ENTERS THE SHIP...

WHAT HAPPENED!?



I WONDER HOW LONG IT'S BEEN HERE!?

OUR PEOPLE SAY... FOR-**EVER.**



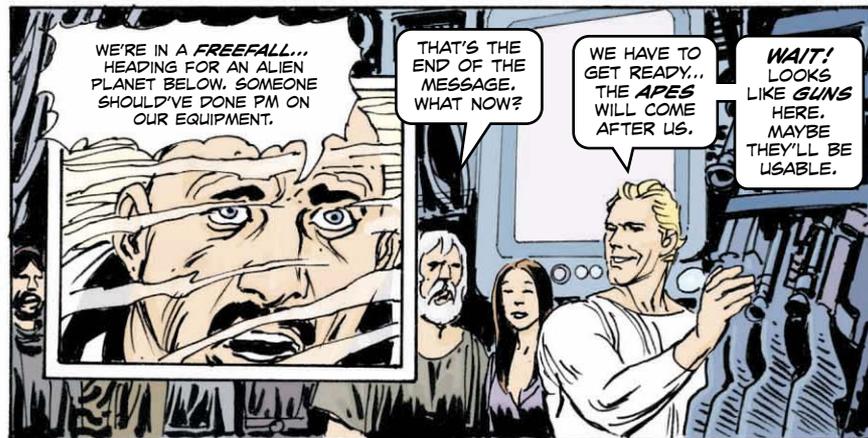
LOOK... A VIDEO CONSOLE!

MAYBE IT STILL WORKS?



HELLO... ANYONE WHO'S LISTENING... THIS IS COMMANDER ROWDEN OF THE U.S.S. RANGER. OUR FILTERS WERE CLOGGED AND OUR COMPUTERS FAILED.

EVIDENTLY, NO ONE CHANGED THEM.



WE'RE IN A **FREEFALL**... HEADING FOR AN ALIEN PLANET BELOW. SOMEONE SHOULD'VE DONE PM ON OUR EQUIPMENT.

THAT'S THE END OF THE MESSAGE. WHAT NOW?

WE HAVE TO GET READY... THE **APES** WILL COME AFTER US.

WAIT! LOOKS LIKE **GUNS** LIKE GUNS HERE. MAYBE THEY'LL BE USABLE.

THEY'RE RUSTY... BUT A LITTLE OIL AND SOME ELBOW GREASE CAN WORK WONDERS.

WILL THEY WORK?



WE'LL SOON FIND OUT-

HERE COME THE APES!

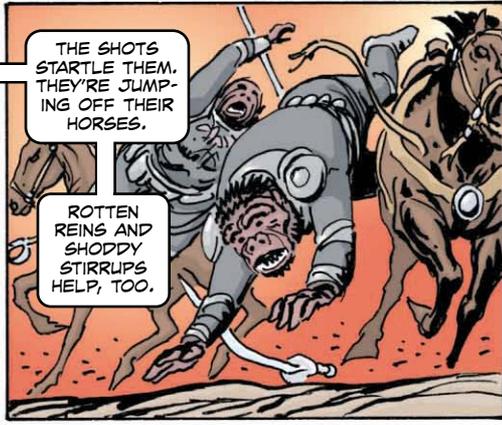


READY...
A/I/M...



...FIRE!
KEEP FIRING!

LOOKS LIKE THEY'VE NEVER SEEN A GUN BEFORE!



THE SHOTS STARTLE THEM. THEY'RE JUMPING OFF THEIR HORSES.

ROTTEN REINS AND SHODDY STIRRUPS HELP, TOO.

WE DID IT! THEY'RE RUNNING AWAY!

YOU'VE SAVED OUR LIVES, BEAMISH.



MAYBE THESE WEAPONS CAN HELP YOU TAKE BACK YOUR LIVES.

JUST REMEMBER TO KEEP THEM IN GOOD CONDITION.



SOME TIME LATER...

I'VE GOT THESE GYROS WORKING AGAIN, BEAMISH!



LIKE YOU SAID, A LITTLE OIL AND SOME ELBOW GREASE DID IT.



THANKS TO ALL OF YOU... MAYBE I CAN GET BACK HOME NOW.



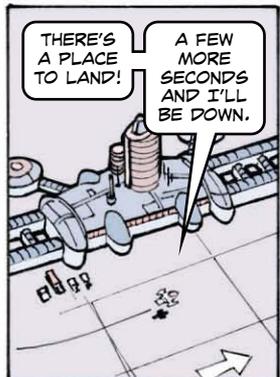
THERE HE GOES. HOPE HE MAKES IT.



MANY MILES LATER...

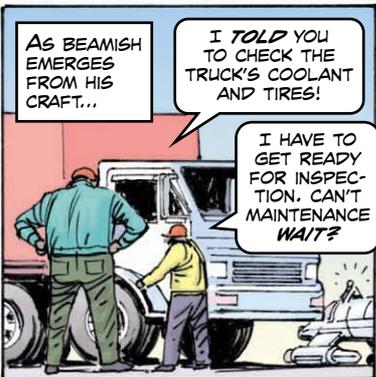
THAT'S EARTH DOWN THERE.

GEE... IT'LL BE GOOD TO GET BACK HOME.



THERE'S A PLACE TO LAND!

A FEW MORE SECONDS AND I'LL BE DOWN.



AS BEAMISH EMERGES FROM HIS CRAFT...

I TOLD YOU TO CHECK THE TRUCK'S COOLANT AND TIRES!

I HAVE TO GET READY FOR INSPECTION. CAN'T MAINTENANCE WAIT?



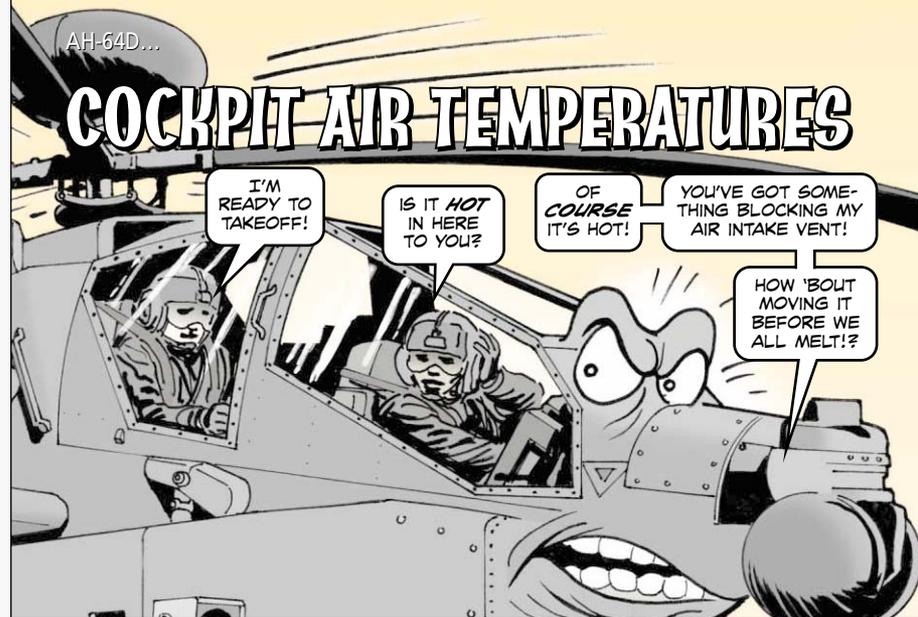
LOOKS LIKE NOTHING'S CHANGED SINCE I LEFT... EXCEPT...



THE WORLD'S BEEN TAKEN OVER BY APES!?!



ATTENTION TO MAINTENANCE WILL KEEP THIS OUT OF YOUR FUTURE!



AH-64D...

COCKPIT AIR TEMPERATURES

I'M READY TO TAKEOFF!

IS IT HOT IN HERE TO YOU?

OF COURSE IT'S HOT!

YOU'VE GOT SOMETHING BLOCKING MY AIR INTAKE VENT!

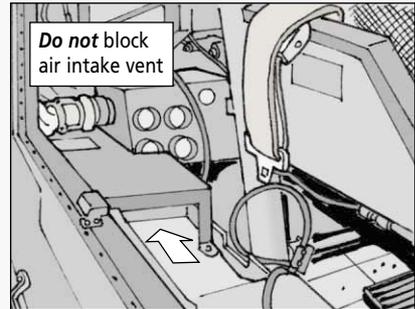
HOW 'BOUT MOVING IT BEFORE WE ALL MELT!?

If the environmental control system (ECS) air intake vent in your Longbow Apache's cockpit is blocked, pilots and gunners, you won't be able to stay cool or warm.

So if you don't want to swelter in the cockpit without air in the summer or freeze in the winter without heat, don't block the ECS air intake vent with your pubs bag.

A pubs bag blocking the intake vent leads to an overworked, burned-out fan motor. Reduced evaporator air flow can knock out the ECS. A broken ECS means no air to cool you down in the summer and no heat to keep you warm in the winter.

To maintain a comfortable cockpit, find another storage area for your pubs bag. Otherwise, you'll pop sweat in the heat or freeze in the cold.

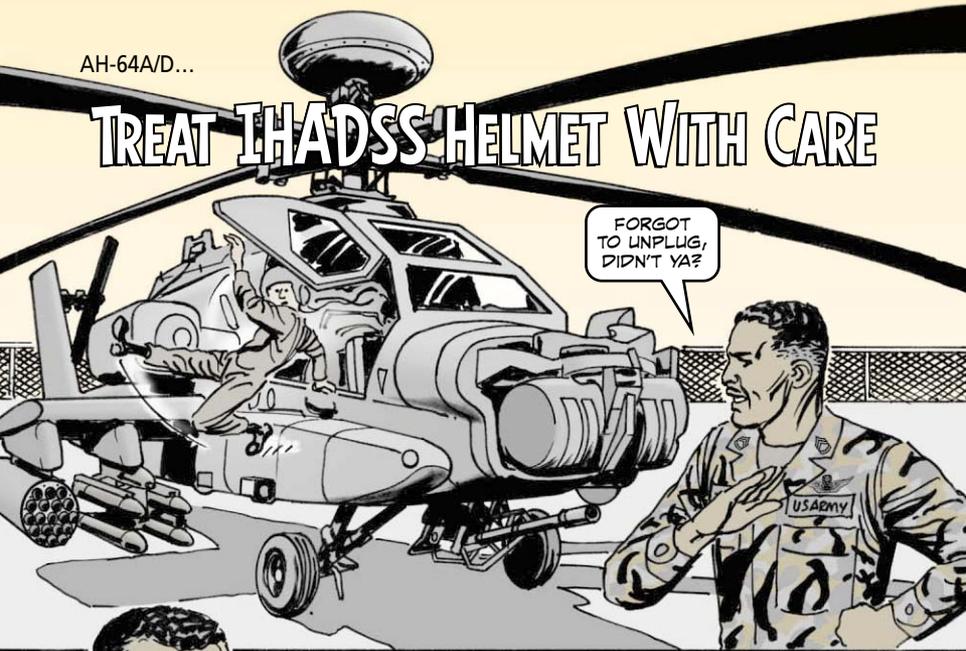


Do not block air intake vent



Pubs bag here will cause temperature problems

TREAT THE ADSS HELMET WITH CARE

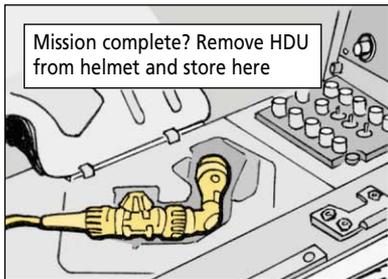


FORGOT TO UNPLUG, DIDN'T YA?

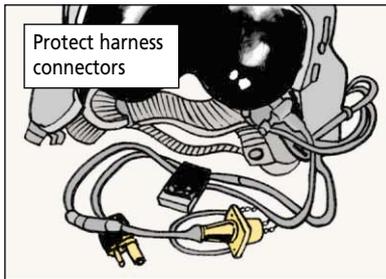


PILOTS AND GUNNERS, THE WIRING HARNESS ON YOUR APACHE'S INTEGRATED HELMET AND DISPLAY SIGHTING SYSTEM, CAN BE STRAINED IF YOU EXIT THE BIRD WITHOUT UNPLUGGING IT.

Don't get too hasty after a mission. Take your time, remove the helmet display unit (HDU) from the helmet and stow it, then unplug the wire harness before you exit. If you don't, you could break individual wires that are connected to sensors in the helmet. Then you won't be able to boresight the helmet to the aircraft and to the 30mm gun. You won't be communicating, either, with a damaged harness. A broken harness, NSN 5995-01-186-8601, costs about \$7,000.

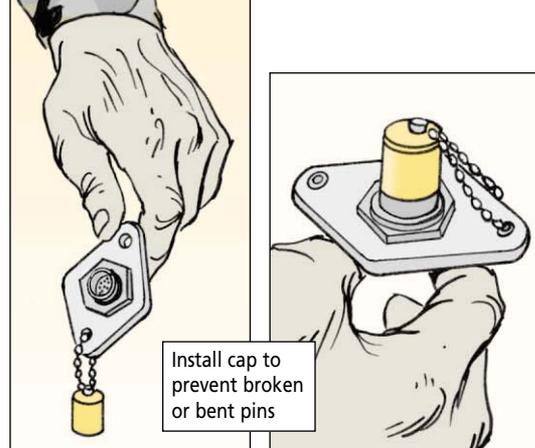


Mission complete? Remove HDU from helmet and store here



Protect harness connectors

While you're winding down and turning in your helmet to the ALSE shop, don't let the yellow dust cap that hangs on the harness connector dangle there uselessly. After you've disconnected the harness, cover the connector with the dust cap, NSN 1270-00-550-7342, to prevent broken or bent pins.



Install cap to prevent broken or bent pins

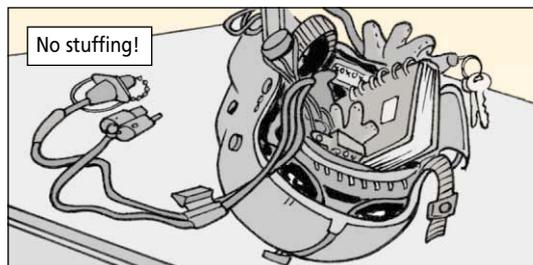
Helmet Care

Don't leave the helmet in a hot car or toss it into the cockpit or use the helmet as a stool at the end of the day, either.

Avoid the convenient habit of stuffing the inside of your helmet like a holiday turkey with gloves, maps, checklists and knee boards. Helmets are fitted for head size. Using it as a carry-all stretches it out of shape. That puts your noggin in harm's way and affects the way the HDU sits over your eye.



I'M NOT A CHAIR... AND WHILE YOU'RE NOT SITTING ON ME, LAY OFF THE DESSERTS, PALLY!

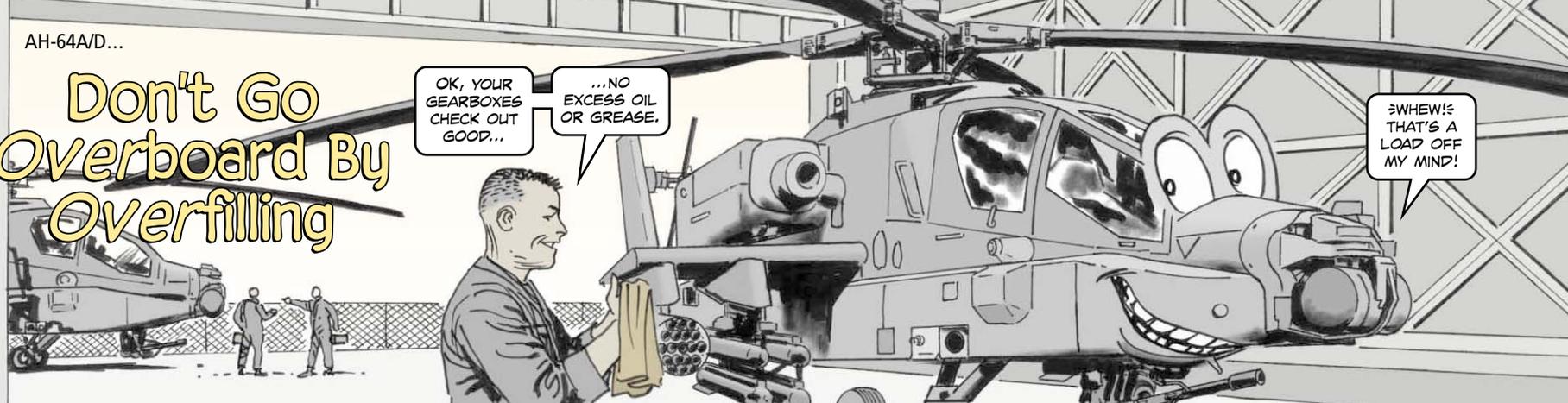


No stuffing!



TAKE CARE OF YOUR HELMET WITH THE GOOD WORDS IN TM 9-1270-223-23&P AND IT'LL TAKE CARE OF YOU WHEN YOU NEED IT MOST.

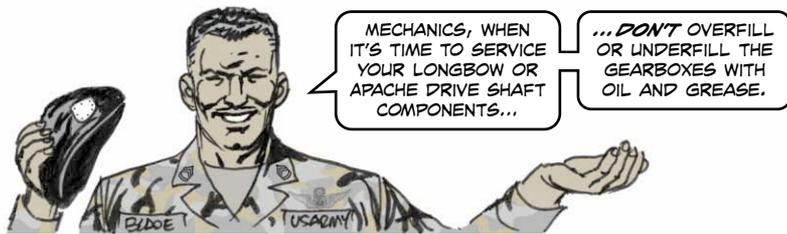
Don't Go Overboard By Overfilling



OK, YOUR GEARBOXES CHECK OUT GOOD...

...NO EXCESS OIL OR GREASE.

WHEW! THAT'S A LOAD OFF MY MIND!



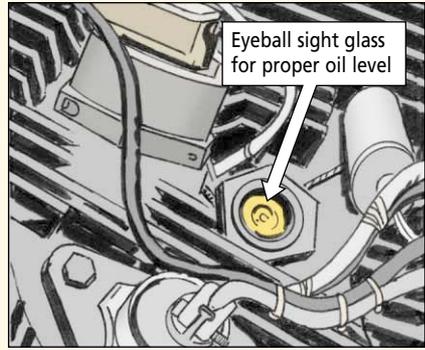
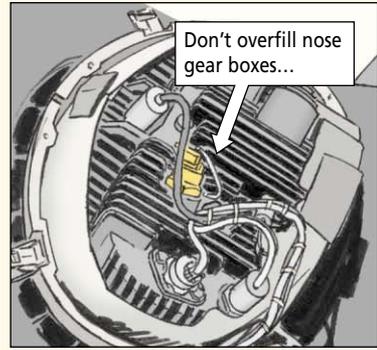
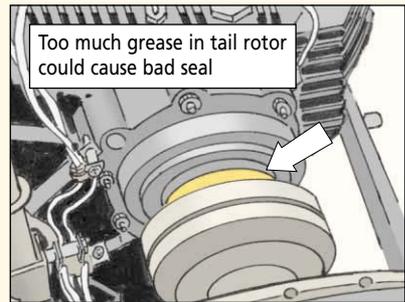
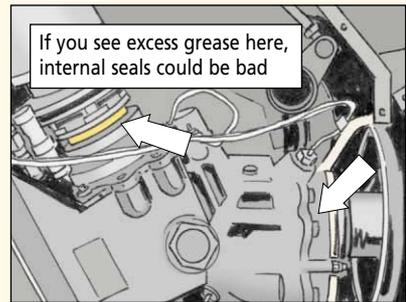
MECHANICS, WHEN IT'S TIME TO SERVICE YOUR LONGBOW OR APACHE DRIVE SHAFT COMPONENTS...

...DON'T OVERFILL OR UNDERFILL THE GEARBOXES WITH OIL AND GREASE.

Always follow the IETM and TM. After your aircraft has been shut down, allow hot oil and grease to cool and level off. Then add the right amount of oil or grease. If you add too much oil in the No. 1 or 2 nose gearbox, the excess oil will blow through the breathers and leave an oily mess to wipe up in the engine area. Remember, eyeball the nose gearbox sight glasses and add the right amount, like your IETM and TM say.

Too much grease in the intermediate or tail rotor gear boxes can blow out seals and deadline your bird. Then AVIM will have to replace bad seals.

To avoid overfilling the intermediate and tail rotor gear boxes, check the level with the service tool, PN 2807, described in your IETM or in Figure D-462 of TM 1-1520-238-23-9 for the A-model.

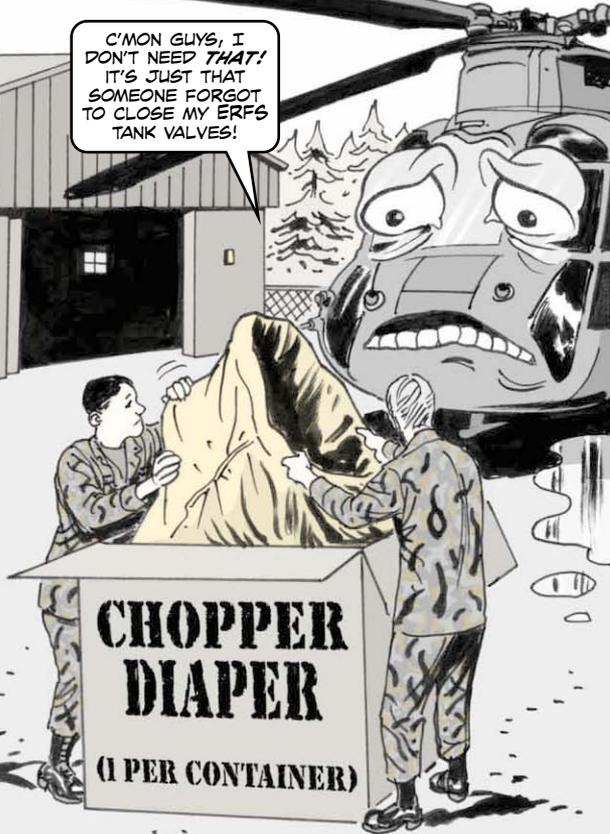


If you don't have the tool, make one. Don't use the finger method. Your finger is not a dipstick, and you won't get an accurate reading by putting your finger into the plug hole. All you will get from a finger measurement is a burned finger from hot grease.



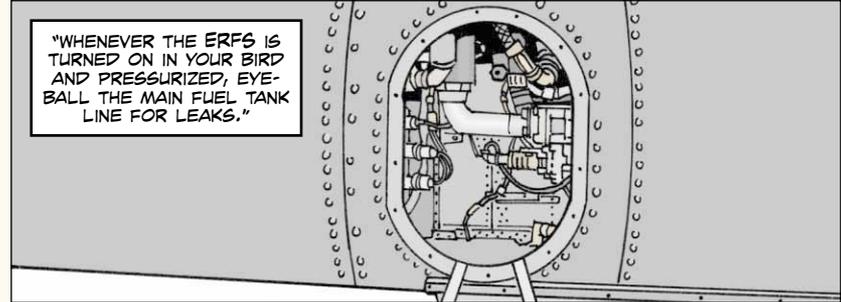
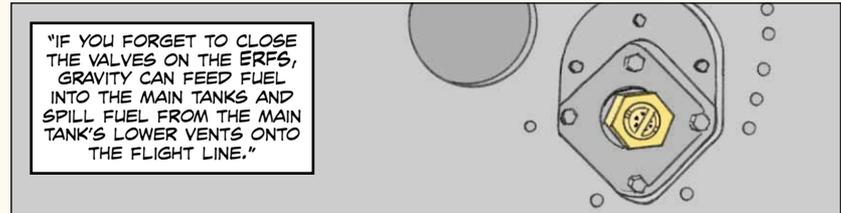
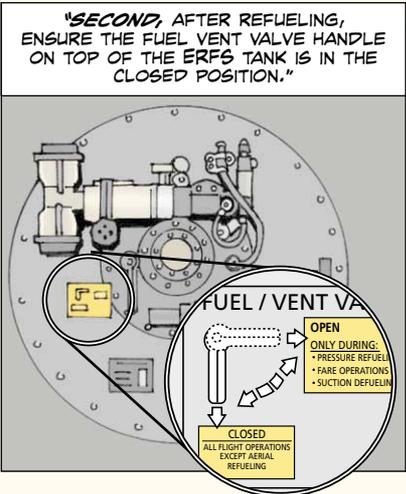
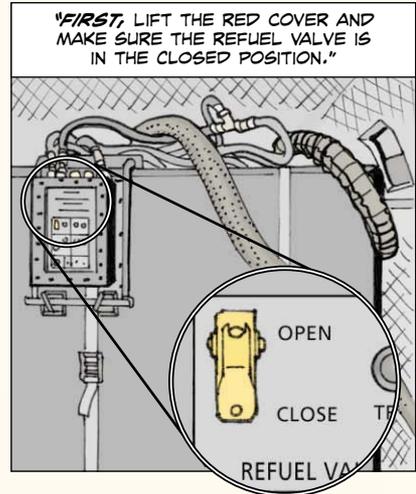
RETURN TO ERFS STREET

C'MON GUYS, I DON'T NEED THAT! IT'S JUST THAT SOMEONE FORGOT TO CLOSE MY ERFS TANK VALVES!



CHINOOK CREWS, YOUR BIRD'S MAIN FUEL TANKS, MAY OVERFLOW IF THE VALVES ON THE EXTENDED RANGE FUEL SYSTEM (ERFS) IS LEFT OPEN AFTER REFUELING IS COMPLETE.

WHEN YOU'RE DONE PRESSURE FUELING THE ERFS TANKS, SHUT OFF THE ERFS. THAT MEANS DOING **TWO THINGS.**



A FUEL SPILL IS A NIGHTMARE TO CLEAN UP.

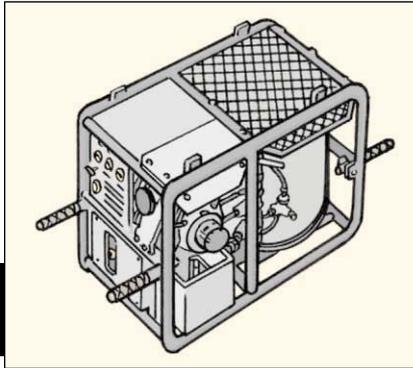


SO ALWAYS REMEMBER TO CLOSE THE VALVES AND FOLLOW THE GOOD WORDS IN TM 1-1560-312-10.

MONTHLY CHECKUP CHECKS OUT PROBLEMS

The problem for many M17 decons is that they sit ignored until they're needed. When problems are discovered, it's too late to solve them before you go to the field.

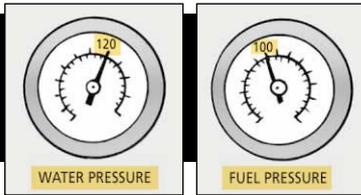
SBCCOM recommends this monthly checkup for all your M17s to catch and solve problems before it's mission time:



1. Inspect the pump/heater assembly for loose, missing, or damaged hardware. Flush the water pump.

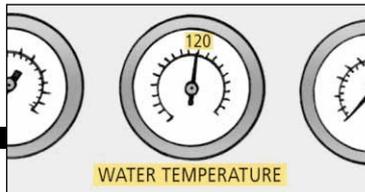
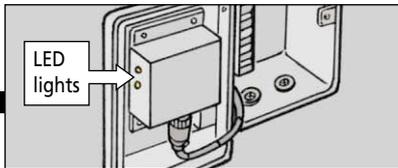
2. Set the function selector to OFF. Install one wand and stick the suction hose in water. Put the burner fuel strainer in a full fuel can and start the engine. Run the engine at medium speed for one minute or until water flows freely from the hose.

3. Reduce the engine speed to idle, install the other wand, and run the engine at maximum speed. Verify the water pressure is 120 psi (± 10) and the fuel pressure is 100 psi (±5). Check for fuel and water leaks.

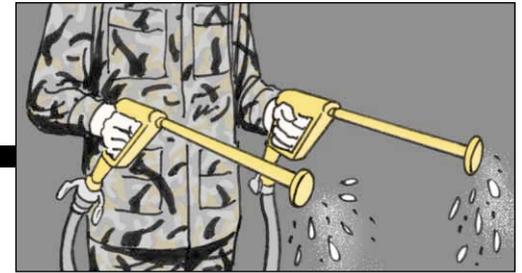


4. Set the function selector to WANDS.

- a. Verify one LED lights when one trigger is squeezed.
- b. Verify both LEDs light when both triggers are pulled.
- c. Verify the burner goes out when the water temperature reaches 120° C.
- d. Heat the water to 120° three times. Verify that the burner lights and shuts down each of the 3 times.

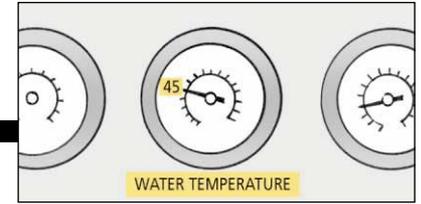


5. Set the function selector switch to OFF. Squeeze both wands to circulate cool water until the water temperature is below 40° C. Reduce the engine speed to idle and remove the wands.



6. Install the showers and run the engine at maximum speed. Set the function selector to SHOWERS.

- a. Verify the water pressure is 45 psi (± 5).
- b. Verify both LEDs light up
- c. Verify the burner goes out when the water temperature reaches 45° C.
- d. Heat the water to 45° three more times. Make sure the burner lights and shuts down each time.



7. Remove the showers and run the engine at maximum speed. Set the function selector switch to SHOWERS.

- a. Verify the burner will not ignite.
- b. Briefly hit the LOW PRESSURE OVERRIDE switch and verify the burner ignites.
- c. Set the function selector switch to OFF and reduce the engine speed to idle.

REPORT ANY PROBLEMS YOU FIND TO YOUR REPAIRMAN SO HE CAN GET RIGHT ON THEM.

DO THESE EIGHT STEPS EVERY MONTH AND YOUR M17 WILL BE READY FOR DUTY.

8. Remove the inlet and branch hoses, run the engine at maximum speed for no more than 30 seconds to purge the water. Stop the engine.



Keep ACADA Alarming with PM

AN M22 AUTOMATIC CHEMICAL AGENT ALARM (ACADA) THAT CAN'T ALERT YOU TO CHEMICAL THREATS IS AN ALARMING PROBLEM ON THE BATTLEFIELD.

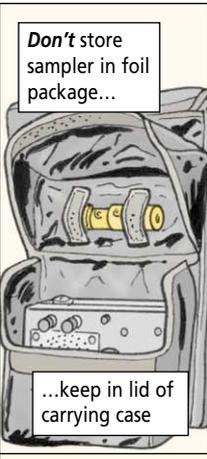
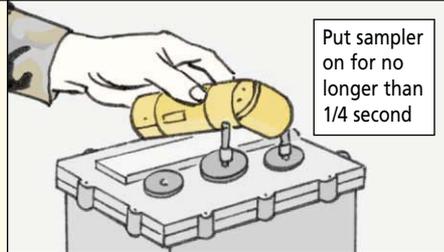
HERE ARE A FEW WAYS TO KEEP YOUR ACADA ALARMING...



- If your ACADA won't clear down when you're operating it inside, it may be because the air is not clean enough. Cologne, smoke and other vapors can make it hard for the ACADA to clear down. Often, just running the ACADA outside for a few minutes will be enough to clear it out.

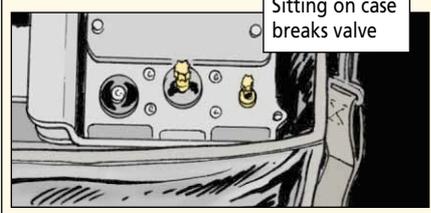


- When you do the confidence sample tests, put the G or H sample on the inlet for only 1/4 second. Take off the sample as soon as you put it on the inlet. The ACADA needs only a whiff of the sample, not a snort. If you leave the sample on longer, the ACADA will have trouble clearing down.



- Don't keep the confidence sample in the foil package it came in. That lets the G and H vapors mix and causes sampling problems. Just put the sample in the carrying case lid where it's supposed to go.

- Don't use the carrying case as a seat. Your weight can break the inlet and exhaust valves. A broken exhaust valve is a direct support fix. Find something else to sit on. A broken or missing plastic tip on an exhaust valve can now be replaced by the NBC NCO. See Page 4-37.0 in change 2 of TM 3-6665-321-12&P.



IM-93 Radiac Dosimeter...

Help Me Find Parts



Dear Half-Mast,
We're having to order new IM-93 dosimeters because the protective caps or pocket clips disappear. Surely there is some way to replace caps and clips besides ordering new IM-93s at around \$60 a pop.

SGT R.R.

Dear Sergeant R.R.,
There surely is. Order a new clip with NSN 5340-01-369-3311. You can make a new cap with tape or aluminum foil like it says on Page 3-8 in TM 11-6665-214-10.

Half-Mast

M41 PATS...

YOU DON'T NEED SWABS

NBC NCOs, you don't need swabs to clean the storage cap and alcohol cartridge for the M41 protection assessment test system.

The NSN for the swabs listed in TM 3-4240-349-12&P is no longer good and SBCCOM discovered replacement swabs are too expensive. So once you use up your supply of swabs, use the lint-free cloths that come with PATS for cleaning the cap and cartridge. They work just as well as the swabs.

This changes the procedure on Pages 0016 00-1 and -2 in the -12&P. Make a note.



LESSONS ON AIR PRESSURE

AIR PRESSURE IS ALL THAT MATTERS WHEN YOU START UP YOUR 250 CFM INGERSOLL-RAND AIR COMPRESSOR. WITHOUT AIR PRESSURE YOU CAN'T OPERATE POWER TOOLS.

HERE ARE SOME PM POINTERS THAT KEEP THE COMPRESSOR'S AIR PRESSURE UP TO SNUFF.



Bust the Rust

The compressor's air inlet unloader valve has a nasty habit of clogging up with rust. That means there's no air pressure build up.

You can bust the rust problem by doing this once a week:

While the compressor is warming up (and before you push the service air button), drain the unloader valve assembly. This gets rid of water build-up in the system and prevents rust.



Let water out by opening air inlet unloader valve

Rough Start Reminder

Cold weather plays havoc with the compressor, especially when the temperature drops below freezing.

So easy does it when you press the cold start button. If the compressor won't start after pushing the button a few times at 5-10 seconds each, stop and give the starter a rest.

The cold weather starter system has a fuel canister that automatically injects ether into the engine when you push the cold start button.

Chances are the ether canister is empty. Have your mechanic replace it.



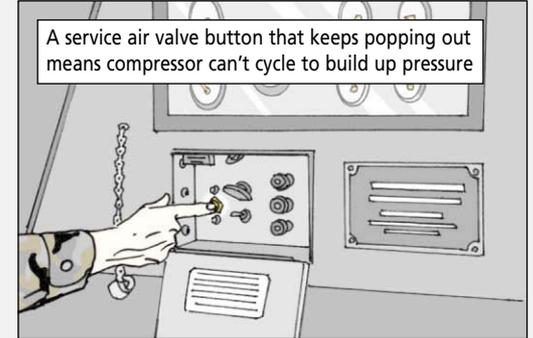
Hard starts in cold weather? Replace ether canister

Regulator Valve Relief

Some motor pools still have air compressors that don't have the improved air silencer, NSN 4330-01-192-8269, in the pressure regulator valve.

These valves clog easily. When that happens, the compressor can't build up air pressure.

One sure way to tell if the regulator valve is clogged is to look at the service air valve's push button. A service air valve button that keeps popping out means the compressor can't cycle to build up pressure.



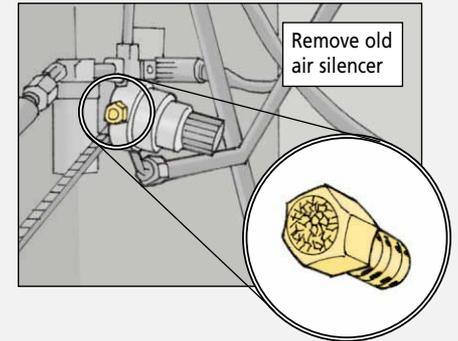
A service air valve button that keeps popping out means compressor can't cycle to build up pressure



THE VALVE WITH THE IMPROVED AIR SILENCER DOES A BETTER JOB. BUT IT'S A LITTLE TRICKY TO INSTALL THE SILENCER.

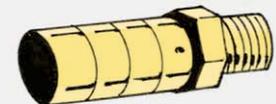
HERE'S WHAT TO DO...

1. Remove the old silencer with a 5/8-in tube wrench.
2. Loosen the tube fitting nut on the moisture filter using an 11/16-in tube wrench.
3. Turn the moisture filter by hand to about the 3 o'clock position. That gives you enough room to put in the improved air silencer.
4. Put two or three wraps of Teflon tape, NSN 8030-00-889-3534, on the threaded end of the silencer.
5. Screw in the silencer. Tighten it with a 3/4-in open-end wrench. Don't over-tighten or you'll crack the aluminum valve.
6. Turn the moisture filter assembly back to the 6 o'clock position. Retighten the tube fitting.



Remove old air silencer

Install improved air silencer, NSN 4330-01-192-8269



ESSENCE OF PM



SEASONED OPERATORS ARE THE ESSENCE OF PREVENTIVE MAINTENANCE. THEY PICK UP PM POINTERS THAT OTHERS HAVE FOUND OUT THE HARD WAY.

HERE ARE JUST A FEW OF 'EM.



Use Right Tire PSI

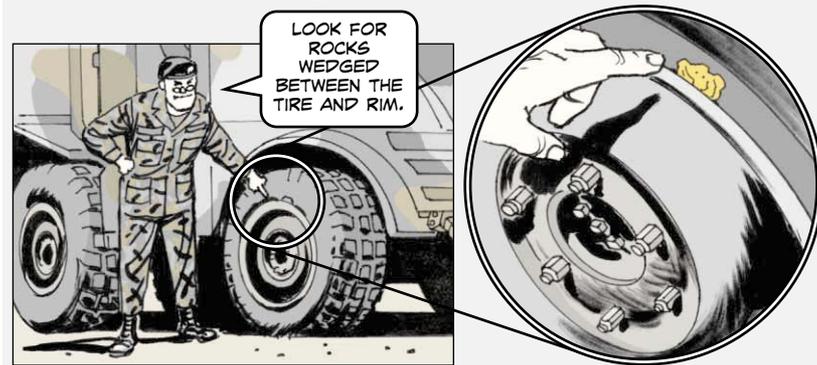
There are some excavators out there with the wrong tire pressure, 55 psi (highway) and 45 psi (off highway), marked on the fenders. The excavator needs just 40 psi per tire for both highway and off-road driving. More air than that leads to sidewall damage. So have your mechanic paint "40 PSI" on each fender as a reminder.



Sneaky Tire Leak

Working in the rough stuff plays havoc with tire pressure. Small rocks get stuck between the tire and wheel rim. If enough rocks get stuck, the tire can develop a leak.

So eyeball the wheel assembly for rocks wedged between the tire and rim. If you see small rocks stuck between the tire and the rim, let your mechanic know. Check that the tire is re-inflated to 40 psi.



Access Cover Exposed

The access cover for the excavator's rear hydraulic oil filter holds water. Water causes rust which deteriorates the cover.

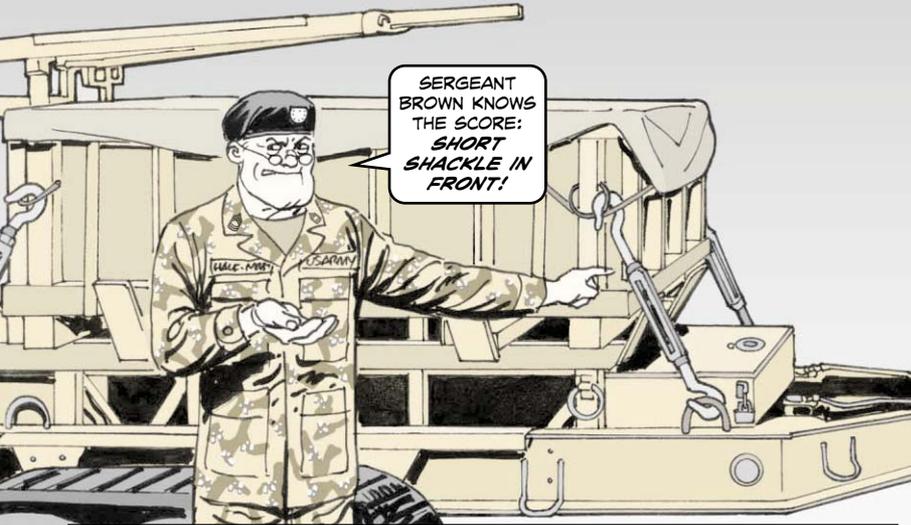
In some cases, the cover springs a leak—like a geyser—when the engine is working hard during backhoe operations. Those operations come to a screeching halt when the hydraulic system loses fluid.

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

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



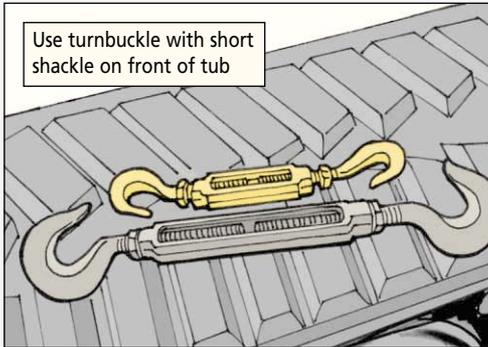
Put short ones in front



Dear Editor,

There are two turnbuckles that are used with the MICLIC trailer: one has long screws and short shackles and the other has short screws and long shackles.

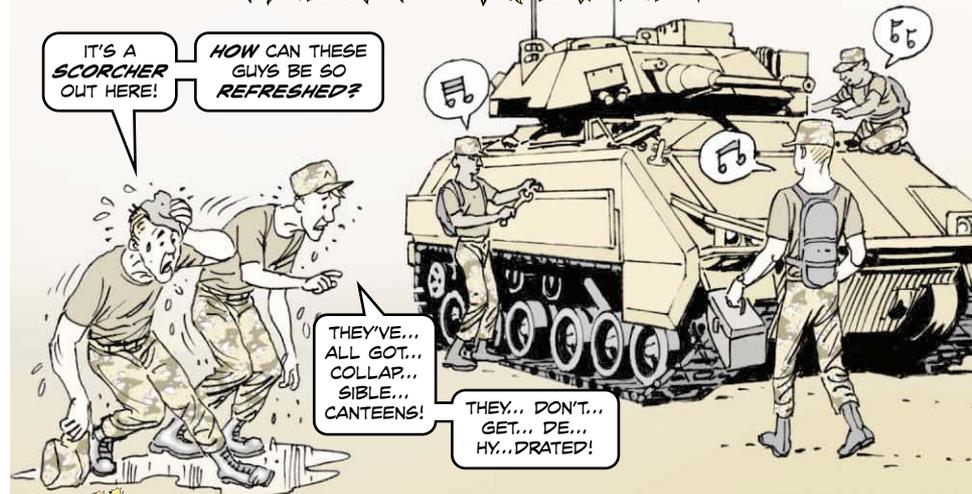
It does make a difference which turnbuckle you put where. If you put the longer shackles on the front of the tub, you'll have trouble tightening them because the tub gets in the way. Use the short shackles, NSN 5340-01-248-7962, on the front and there's no problem. The longer shackles, NSN 5340-01-249-0589, work fine on the rear of the trailer.



SSG Mason Brown
B Co, 40th Engr Bn
Baumholder, Germany



HEAT RELIEF



Working on a hot summer afternoon can drain your strength. Metal and concrete reflect the heat and make a hot day dangerously hotter. But you've got to be out in that heat if you're going to do PMCS and make repairs.

So protect yourself from dehydration or heat stroke by wearing a collapsible canteen carrier. A 2-qt collapsible canteen, NSN 8465-01-118-8173, with carrier, NSN 8465-00-927-7485, and optional sling, NSN 8465-00-269-0682, costs less than \$19 total and is authorized by CTA 50-900. A 100-ounce collapsible hydration system (MOLLE hydration bag with drink tube and carrier), NSN 8465-01-465-2154, is authorized by CTA 50-900, easily worn on your back and costs \$32.70. A 5-qt canteen without drink tube, NSN 8465-01-254-5759, costs \$16.55, is authorized by CTA 50-970, and can also be attached with tie cords and worn on your back. Get your commander's approval before ordering.



- Don't put soft drinks or drink mixes in the canteen. They leave a smell that's hard to get rid of. Put only water in the canteen.
- Keep the bladder part of the canteen away from intense heat that can melt it.
- The inside of the 2-qt carrier has a fabric that will help the canteen stay cooler in hot weather if you soak the fabric with water. In the winter, the fabric will help insulate the canteen if the fabric is kept dry.

HAZMAT...



Hazardous material is a concern in every motor pool. If you want to keep the environment clean by controlling POL spills, you may need the help of some thirsty sock absorbers.

There are a variety of sock absorbers in the supply system. Some are big picker-uppers for use on big spills, and there are small pads to use instead of drip pans. Since these pads don't have to be level, they're especially useful during field exercises.

THE BEST PART IS THAT THESE PICKER-UPPERS, BIG AND SMALL, PICK UP *ONLY* THE SPILL. THEY *DON'T* ABSORB WATER.

HERE'S WHAT'S AVAILABLE...

Item	NSN 4235-01-
Loose absorbent, 1 cubic-foot bag, (four bags per case, each bag absorbs up to 8 gallons)	423-1466
Loose absorbent, 2 cubic-foot bag, (three bags per case, each bag absorbs up to 16 gallons)	423-0711
Pad, 18x18x3-in, (30 pads per case, each pad absorbs up to 2 gallons of oil)	423-1463
Sock, 2-in x 10-ft, (20 socks per case, each sock absorbs up to 4 gallons of oil)	423-1467
Sock, 4-in x 8-ft, (10 socks per case, each sock absorbs up to 6 gallons)	423-1465
Boom, 10-ft x 10-in, (3 booms per case, each boom absorbs slightly more than 12 gallons)	423-2787



Item	NSN 4235-01-
Water resistant nylon tote bag spill response kit (four 18x18x3-in pads, two 2-in x 5-ft socks, one 3/4 cubic-foot bag of absorbent and two waste disposal bags. Absorbs up to 18 gallons.)	432-7909
Spill response kit (25-gal high-strength, stress-resistant and impact-resistant drum with seven 18x18x3-in pads, one 4-in x 8-ft sock, two 4-in x 4-ft socks, one 3/4 cubic-foot bag of absorbent, two protective Tyvek suits, two pair nitrile gloves, one pair safety goggles and three waste disposal bags. Absorbs up to 28 gallons.)	432-7912
Spill response kit (55-gal high-strength, stress-resistant and impact-resistant drum with fifteen 18x18x3-in pads, two 4-in x 4-ft socks, two 4-in x 8-ft socks, three 3/4 cubic-foot bags of absorbent, three protective Tyvek suits, three pair nitrile gloves, three pair safety goggles and five waste disposal bags. Absorbs up to 60 gallons.)	423-7214
Spill response kit (55-gal high-strength, stress-resistant and impact-resistant drum specially equipped for spills on or around water with ten 18x18x3-in pads, five 2-in x 10-ft socks, five 3/4 cubic-foot bags of absorbent, two protective Tyvek suits, two pair nitrile gloves, two pair safety goggles, one shovel, one 3 1/2-gal bucket, one 2-qt emulsifier and five waste disposal bags. Absorbs up to 60 gallons.)	423-7221

Dispose of absorbers correctly



For disposal of the absorbers, follow Army regulations and your installation's environmental policy. For the lowdown on these products, call (800) 872-5741, or take a look this website:

<http://www.arkent.com>

SHEDDING A LITTLE LIGHT



NSN 6260-	Type	Color	Duration	Qty
01-209-4434	1 1/2-in mini lightstick	Green	8 hours	50
01-209-4435	1 1/2-in mini lightstick	Yellow	4 hours	50
01-209-4436	1 1/2-in mini lightstick	Blue	8 hours	50
01-230-8600	1 1/2-in mini lightstick	Red	4 hours	50
01-247-0364	1 1/2-in mini lightstick	Infrared	3 hours	50
01-335-2871*	2-in mini lightstick	Green	4 hours	50
01-335-2869*	2-in mini lightstick	Yellow	4 hours	50
01-335-2870*	3-in mini lightstick	Yellow	4 hours	25

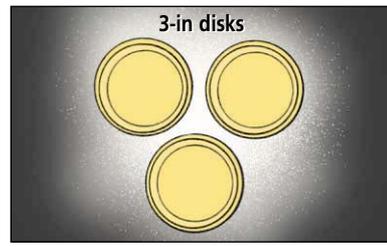
*Order on a DD Form 1348-6 and put "NSN not on AMDF" in the REMARKS block.



NSN 6260-	Type	Color	Duration	Qty
01-445-3937	10-in lightstick w/stand	Green	2 hours	6
01-445-3938	10-in lightstick w/o stand	Yellow	2 hours	6



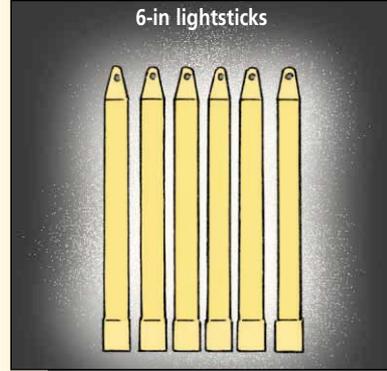
NSN 6260-	Type	Color	Duration	Qty
01-247-2937	Tripflare mechanism	Orange	5 minutes	1



NSN 6260-	Color	Duration	Qty
01-311-5086	Green	4 hours	10
01-334-4272	Red	4 hours	10
01-334-4270	Blue	4 hours	10
01-334-4271	Yellow	4 hours	10
01-334-4273	Orange	4 hours	10
01-311-5085	Infrared	3 hours	10
01-396-1705	Infrared	8 hours	10



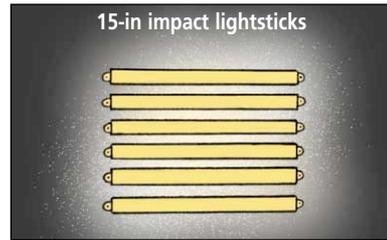
NSN 6260-	Color	Duration	Qty
00-106-7478	Green	6 hours	100
01-282-7630	Orange	6 hours	100
01-396-1710	Infrared	6 hours	100



NSN 6260-	Color	Duration	Qty
01-178-5560	Blue	8 hours	10
01-195-9753	Orange	12 hours	10
01-196-0136	Yellow	12 hours	10
01-178-5559	Red	12 hours	10
01-074-4229	Green	12 hours	10
01-218-5146	White	8 hours	10
01-195-9752	Infrared	3 hours	10
01-396-1704	Infrared	8 hours	10
01-074-4230	Yellow	30 minutes	10
01-247-0368	White	30 minutes	10
01-247-0363	Orange	5 minutes	10



NSN 6260-	Color	Duration	Qty
01-230-8598	Blue	4-6 hours	12
01-230-8597	Orange	4-6 hours	12
01-230-8596	Light Red	4-6 hours	12
01-247-0365	Infrared	3 hours	12



NSN 6260-	Color	Duration	Qty
01-247-0362	Green	12 hours	5
01-265-0612	Red	12 hours	5
01-265-0613	Yellow	12 hours	5
01-265-0614	White	8 hours	5
01-247-0367	Blue	8 hours	5
01-247-0366	Orange	3 hours	5
01-396-1708	Infrared	8 hours	5

ALICE...



Strapped for Strap NSNs?

NO NEED TO WALK LIKE THAT, SOLDIER.

ORDER YOURSELF NEW PARTS FOR YOUR ALICE WITH THESE NSNs.



IF THE STRAPS FOR YOUR ALICE LC-2 FIELD PACKS HAVE WORN OUT, THERE'S NO NEED TO ORDER A WHOLE NEW PACK.

ORDER JUST THE STRAPS INSTEAD. HERE ARE THE NSNs YOU NEED...

Pack frame with straps, NSN 8465-01-073-8326

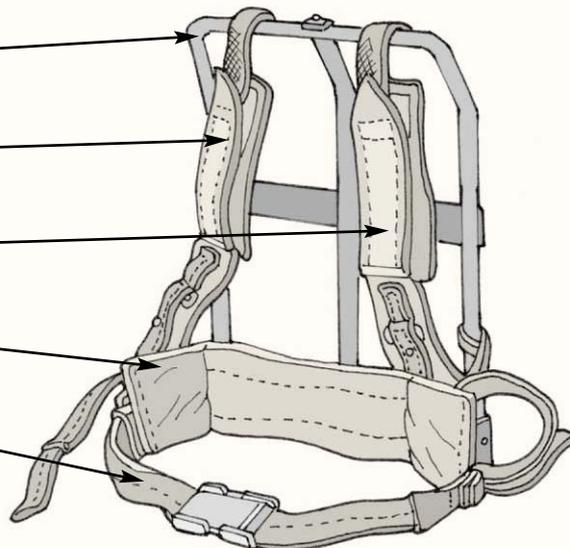
Right quick-release shoulder strap, NSN 8465-01-478-3009

Left quick-release shoulder strap, NSN 8465-01-478-3013

Waist strap with lower back pad, NSN 8465-01-075-8164

1 1/2-ft lower back strap with clamp, NSN 8465-01-151-2891

Suspenders, NSN 8465-00-001-6471



WHEN YOU NEED NSNs FOR CLOTHING OR INDIVIDUAL EQUIPMENT (CIE), CHECK OUT THIS WEBSITE:
<http://ct.dscpl.dla.mil/Ascot>

THE WARFIGHTER CLOTHING SUPPORT PAGE HAS MOST CIE NSNs.



All LC-2 parts can be used with LC-1 gear.

WHAT NEEDS CALIBRATING?

LOOK AT ALL THESE TOOLS!

NOW I HAVE TO FIGURE OUT WHICH ONES ARE GOING TO NEED CALIBRATING EVERY YEAR.

NO PROBLEM. JUST LOOK IN EM 0022.



Dear Half-Mast,
Is there any way to look at a sets, kits, and outfits (SKO) component list (CL) for a tool set and tell which tools in it need to be calibrated annually?

SFC J.F.

Dear Sergeant J.F.
SKO CLs are just beginning to identify TMDE that requires calibration. A better method would be to order EM 0022, TM 43-TMDE (IDN 344568), through normal publications channels. This CD contains all TMDE regulations and instructions for identifying and calibrating your equipment. *Half-Mast*

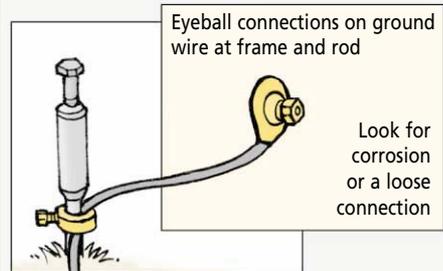
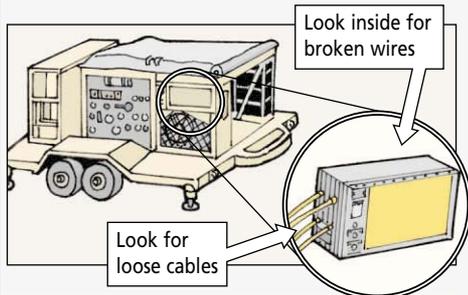
A JOLT FROM HEAD TO TOE!

A 600-GPH reverse osmosis water purification unit (ROWPU) that hasn't run in a while might shock you! That's because the unit's ground may be corroded, not connected or gone.

Any time your ROWPU has sat idle for a while, look for broken wires or loose connections inside and outside the junction box.

Eyeball the connections on the ground wire at the frame and the rod. Look for corrosion or a loose connection. Also make sure each pump has a ground.

If you find anything wrong with the ground, fix what you can and report what you can't before you or anyone else uses it.



PLGR ALERT

Users of AN/PSN-11, NSN 5825-01-374-6643, precision lightweight GPS receiver (PLGR), or AN/PSN-11(V)1, NSN 5825-01-395-3513, be aware of CECOM Ground Precautionary Message, GPM 2003-008. This message must be implemented by your unit. Check now to see if it has.

PACKAGING HELP TO DEPLOYING UNITS

On-site packaging assistance is available for deployable units. Assistance, available for all classes of supply, includes item protection, load planning, marking, preparing HAZMAT for transport, and more. Reduced deployment response times, equipment arriving in serviceable condition, and timely, accurate shipments are major assistance benefits. Response time can be within 48 hours. Direct requests to the LOGSA Emergency Operations Center, (256) 955-0883, (256) 313-6083, DSN 645-0883 or DSN 897-6083.

M113A2/A3 Hatch Locking Pin

Use NSN 5315-01-266-6508 to order a new locking pin for the hatches on your M113A2/A3 family of vehicles. The NSN listed in TM 9-2350-261-24P (Apr 98) (Item 26 in Fig 232, Item 10 in Fig 238, Item 27 in Fig 241, and Item 19 in Fig 250) and TM 9-2350-277-24P (Sep 97) (Item 32 in Fig 204, Item 26 in Fig 207, Item 27 in Fig 212, Item 3 in Fig 217, and Item 20 in Fig 253) is no longer available.

Ammo TB Now Available

The ammunition handling, transportation and storage articles found in PS 600 (Nov 02), PS 601 (Dec 02) and PS 602 (Jan 03) are now available as a complete set in TB 43-0250, *Ammunition Handling, Storage and Safety*. Order your copies now through the publications system using PIN 080612-000. You can also view and download the TB from the LOGSA website at <http://www.logsa.army.mil/etms/welcom1.htm>.

The TB has a distribution restriction code of C (available to US government agencies and their contractors only), so you'll need a logon ID to access it. Click on Request ETM Access and follow the instructions. Once you have access, just enter the TB number or PIN number in the appropriate blocks to search the database.

MODERNIZED TOOL INFO ONLINE

TACOM-Rock Island has put lots of info online on some of the newer modernized tools. If you're looking for general info, pictures, specifications, and warranty info on the general mechanics tool kit (GMKT), new aviation tool set-armament (NATS-A), TK-105 electronic repairman tool kit, or the small arms tool kit, go to <http://tri.army.mil/LC/Ct/ctt/ctts/modsko.htm>.

If you have questions about the tool kits, contact TACOM-RI's Dan Stark at (309) 782-0131/DSN 793-0131 or e-mail starkd@ria.army.mil

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

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

SHOOT!

THAT'S
MY
NOSE!

CRASH!

OUCH!!

HEY!
WATCH
YOUR
HANDS!

BANG

SPLASH

I SURE HOPE
THAT WAS A
WATER BUCKET
I JUST PUT MY
FOOT IN!

FORGET GENERATOR PM?