

Issue 532

TB 43-PS-532

PS

March
1997

THE PREVENTIVE MAINTENANCE MONTHLY



I HOPE
MY SAMPLE
SHOWS THERE'S
NOTHING
WRONG!

AOAP
Laboratory

NEXT!

DON'T WORRY.
THEY CAN CURE
ANYTHING IF THEY
CATCH IT IN
TIME.

Approved for Public Release;
Distribution is Unlimited

Taking Timely Samples
... See Page 27

PS Can Help You

Do you ever get to the hair-pulling stage?

Maybe you need an NSN and you've searched all the parts manuals and called all over post, but nobody can help. Who do you ask now?

Or maybe after years of busting your knuckles removing broken driveshafts you figure out a quick, easy way to do the job. Who do you tell so other mechanics can save themselves some aggravation?

PS, that's who.

The PS staff has years of experience answering questions on supply and maintenance problems. If they don't know the answers, they usually know who does.

If you have an idea to share with others, PS can swiftly get it to the equipment experts who will decide if it is worthy. If it is, PS can then make sure all repairmen hear about it.

There are four ways to send your questions and suggestions to PS:

Letter:

**MSG Half-Mast
The Preventive Maintenance Monthly
LOGSA, Bldg 5307
Redstone Arsenal, AL 35898-7466**

E-mail:

psmag@logsa.army.mil

Fax: (205) 955-0961, DSN 645-0961

Phone: (205) 955-0892, DSN 645-0892

Whatever the method, always include your mailing address and phone number. That way PS can make sure you get your answer even if the other systems are fouled up.

YOU CAN
COUNT ON US WHEN
YOU NEED HELP!





THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-532. 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.

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You are invited to send PS your ideas for improving maintenance procedures, questions on maintenance and supply problems, and questions or comments on material published in PS. Just write to:

MSG Half-Mast
The Preventive Maintenance Monthly
LOGSA, Bldg. 5307
Redstone Arsenal, AL 35898-7466

Or E-mail to:

psmag@logsa.army.mil

By Order of the Secretary of the Army:

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03059

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

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

EVERYTHING'S

AUTOMATIC...NOT!!

The palletized loading system of truck, trailer and flatrack is a technological wonder. As the driver, you can do many things right from the cab.

But you better not try maintaining your PLS from the cab. It just won't work.

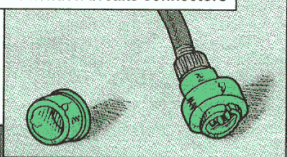
Make sure all trailer electrical cables and air hoses are disconnected before driving off after a mission. By the same token, make sure all these connections are re-made before you take off on a mission.

Broken air hose and electrical connectors show an obvious lack of attention. Keep all hoses and connectors capped or hooked to their dummy couplings when not in use. That way you can't drive over them when loading or unloading.

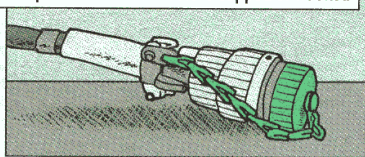


I'M A LEPRECHAUN AND MY NAME IS TIM DEE, USE PM GOLD TO KEEP THE PLS DAMAGE FREE.

Inattention breaks connectors



Keep hoses and connectors capped or hooked

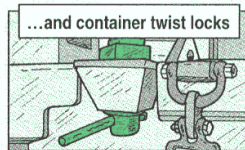
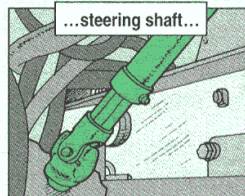
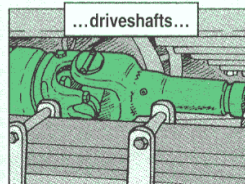
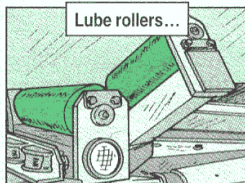


THAT PLS IS GREAT! YOU CAN DO JUST ABOUT ANYTHING FROM THE CAB!

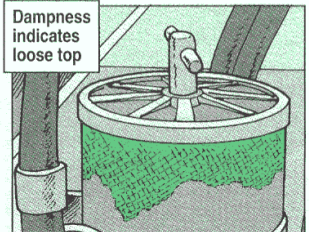
EXCEPT PM, OF COURSE.



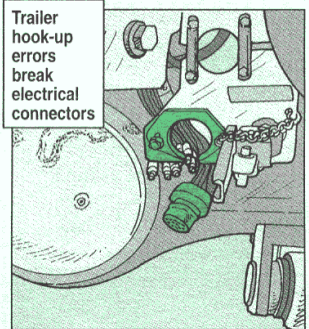
Keep a grease gun or oil can nearby for lubing. Rollers, driveshafts, door hinges, steering gearshafts and container twist locks are areas that must have lube or your vehicle, trailer or flatrack will pay.



Keep an eye on the top of the truck's fuel-water separator filter housing. Seepage means the lid is not on tight enough. That'll let air into the fuel system, causing rough running or worse.



Be extra careful lining up your truck and the trailer drawbar when hooking up to the PLS trailer. Consider using a ground guide, if one's available, to prevent damage to the truck frame or axle, or a broken coupler and electrical connector.



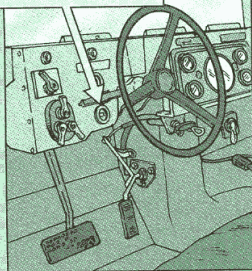
An Hour Meter for AOAP

If your mission requires extended idling times for your HMMWV, you may want to install an hour meter to schedule AOAP sampling.

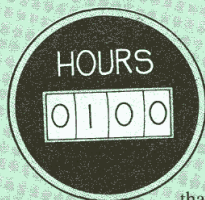
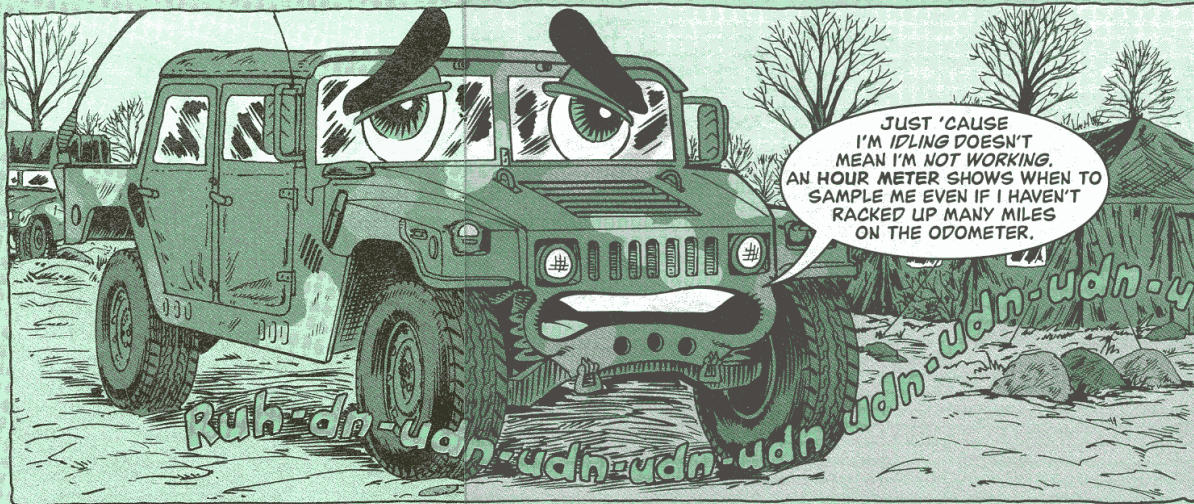
It's tough to run up miles (3,000 between engine oil samples and 6,000 between transmission oil samples) when your mission is monitoring communications-electronics or intelligence-gathering equipment or performing law enforcement.

If your commander OKs it, you can add an hour meter to the dashboard just to the right of the light switch and under the air restriction indicator.

Add hour meter here



Because there's not much room on the dash, the hour meter should be no more than 2 1/4 inches in diameter. It also must be water-tight for deep water fording.



Hour meter should be no more than 2 1/4 inches in diameter

Two hour meters that fill the bill are NSN 6645-01-224-8973, which comes with a flange mount for about \$173, and NSN 6645-00-255-1370, which comes without a flange mount for about \$112. Flange mount, NSN 6645-00-239-5743, costs less than \$7. Use screws, NSN 5305-00-993-9268, to make the attachment. Use wire 29A on the master switch for your power source.

Once the meter is installed, take your normal engine sample every 100 hours or 3,000 miles, whichever comes first. Take the transmission sample every 300 hours or 6,000 miles, whichever comes first.

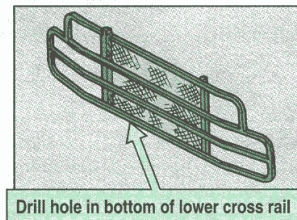
M915A2/M916A1 Tractor Trucks ...

Brush Guard Drain

Mechanics, the brush guards on M915A2s and M916A1s are hollow and fill with water. When the temperature drops, the water freezes and splits the tubing.

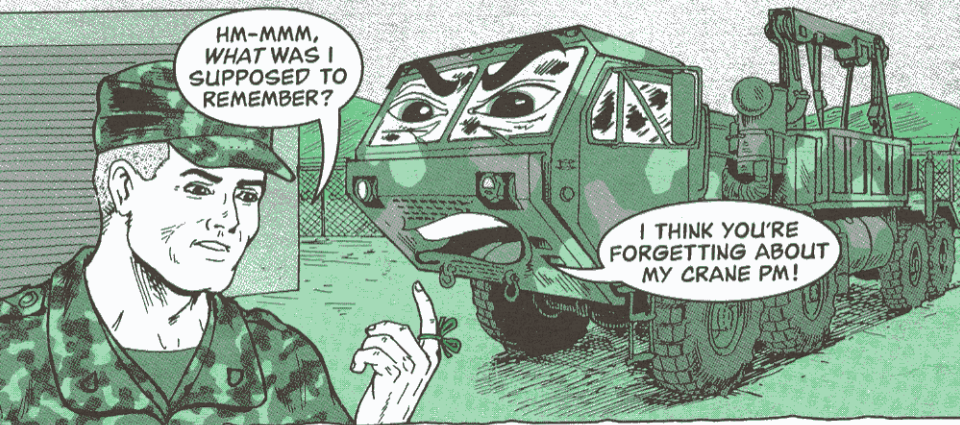
Drain that pain by drilling a 1/4-in hole in the bottom of the guard's cross rail.

Use green CARC paint, NSN 8010-01-229-7546, for touch-up.



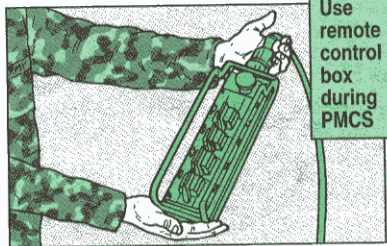
Drill hole in bottom of lower cross rail

Boom Basics



Operators, it's important not to forget anything, including safety, while doing PMCS on your M984 HEMTT wrecker with a HIAB crane.

✔ Always use the remote control box during boom PM. You simply can't follow the boom through its movements while you're at the stationary controls. Plus, you can't be sure everyone's safely out of the way of the boom.

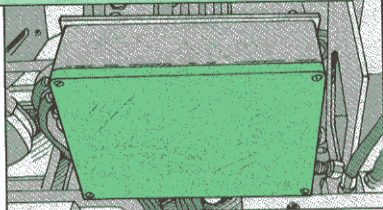


✔ Remove all dirt, mud and sand from the polished surface of the outrigger cylinder rams. Gunk on the rams will tear up wiper seals and ruin outriggers.

Wipe off rams with a clean rag like it says on Page 2-75 of TM 9-2320-354-10.

✔ At least semiannually, remove the cover on the remote control junction box and check the seal for damage. Replace a bad seal with NSN 5330-01-268-0915 and lube it with GAA, NSN 9150-01-197-7693.

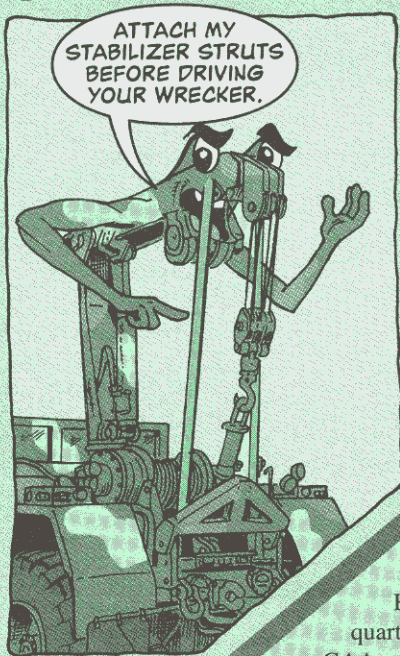
Check gasket under junction box cover



Look for two 1/4-in drain holes on the bottom of the junction box. If there aren't any, your mechanic can drill them. That'll prevent moisture buildup from condensation.

Strut Your Stuff

Operators, the boom stabilizer struts on your M984 HEMTT wrecker with the HIAB crane aren't there for decoration. Make sure they're locked in place after you've used the boom or your HEMTT could suffer big-time damage.



Without struts for support, the boom bounces around. Before long, stress rips the lay-down cylinders loose from their welds. The boom comes crashing down.

So, no matter how short your trip is, always attach the boom stabilizer struts before moving out.

Turn the Tables on Turntable

The turntable bearing on your HEMTT crane is supposed to be lubed quarterly or every 250 operating hours with GAA, according to LO 9-2320-279-12.

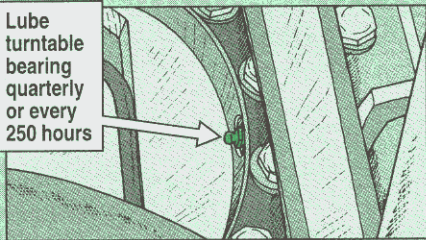
But, it gets missed because you can't see the grease fitting unless the mast is raised.

If you don't lube it, the bearing goes dry and burns up. A new bearing will cost your unit more than \$1,100.

So raise the mast, find the fitting, and make sure you lube the bearing right. Here's how:

1. Pump in GAA until you see new grease coming out of the relief valve.
2. Rotate the crane 90° and repeat step 1. Continue rotating and lubing until the turntable has been lubed four times.

Lube turntable bearing quarterly or every 250 hours

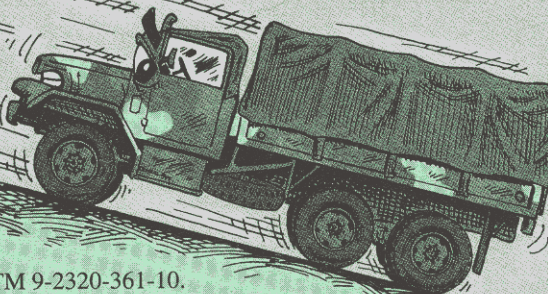


PARKING BRAKE UPDATE

CHECK MY
PARKING BRAKE,
I SAID...

CHOCK
MY WHEELS,
I SAID...

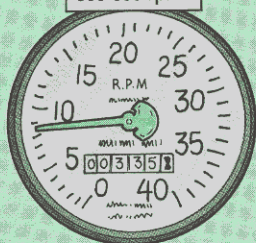
BUT NOOOOO!



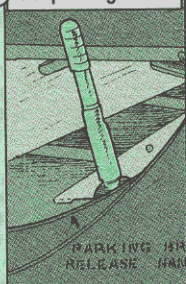
Deucey drivers, be aware of a change to the parking brake PMCS, Item 17c, Page 2-48, in TM 9-2320-361-10.

To make sure the parking brake can hold your truck, test it like so:

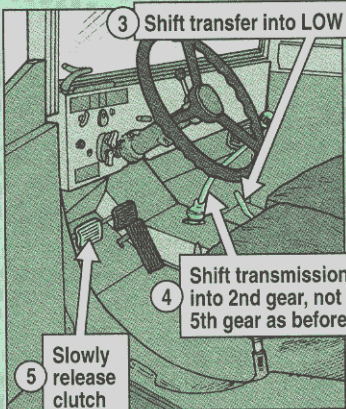
1 Idle engine at 800-850 rpm



2 Set parking brake



3 Shift transfer into LOW



4 Shift transmission into 2nd gear, not 5th gear as before

5 Slowly release clutch

If the engine stalls before the truck moves, the parking brake is adjusted correctly.

If the truck moves, increase braking action by turning the knob on top of the brake handle clockwise.

Keep checking and adjusting until the brake holds when the clutch is slowly released.

If you adjust the brake as much as possible and the truck still moves as you release the clutch, your truck is NMC until the parking brake is repaired.

How to Park

Park your truck on flat, level ground whenever possible. If you can't, park with the engine facing uphill and consider using chocks as an extra safety factor.

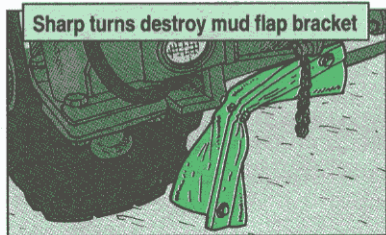
If you must park with the engine facing downhill, be aware that the parking brake will not hold more than 14,640 pounds on a 40 percent grade. Chocks are suggested here, too.

Flap Over Mud Flap

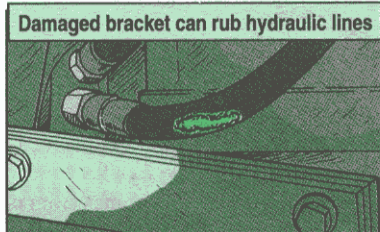


Drivers, before hauling an M989A1 HEMAT trailer, remove your HEMTT's mud flaps and brackets.

On sharp turns, the trailer's front wheels hit the HEMTT's mud flap brackets and turn them into twisted metal junk.



A ruined bracket will sometimes damage an outrigger arm's hydraulic lines. That puts the outriggers—and your HEMTT—out of commission.



Prevent the whole flap by removing the HEMTT's mud flaps and brackets before moving out.

Oh, My Aching Clutch!



A slipping clutch is like a backache. You notice the problem when it's time to get up and go. Problem is, the slipping clutch doesn't go away—it just gets worse. If you don't report it, the clutch will burn out.

A burned-out clutch might just be the tip of the iceberg, too. Support may find the clutch disk, engine flywheel and clutch pressure plate all ruined—cracked and warped by the heat that comes from clutch slippage.

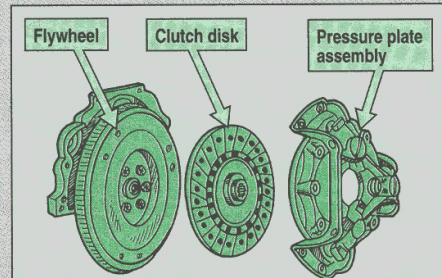
A slipping clutch will give you some warning that it's going bad:

- 1 If you let up on the clutch pedal and press the accelerator to move out, you don't get clutch engagement like you're supposed to.
- 2 There's a chattering and shuddering when your clutch does start to engage.

If you're getting either of these, your truck's clutch disk or clutch needs adjustment—or both do.

Sure, you may finally move out and think everything is OK. That's because heat from the clutch disk rubbing on the flywheel causes the parts to expand and improves clutch-to-flywheel contact.

But all of this causes more damage. Next time out, the slippage will just be worse.



Slipping clutch damages disk, pressure plate and flywheel

Now that you know the signs of clutch slippage, here's how to make sure:

With the engine running and the parking brake on, shift into the highest forward gear. Let up on the clutch pedal slow and steady. Don't let the clutch pedal pop up or you may cause damage to the clutch, transmission, prop shafts or differential.

The clutch should engage well before the pedal reaches the bottom of the free travel specified for your truck. If your clutch works OK, put the pedal back down quick. Letting the clutch disk slip on the flywheel will burn up the disk facing.

If your clutch does not take hold when it's supposed to, you've got clutch trouble. Report it.

TO KEEP FROM BEING CAUGHT, I MUST SLIP AWAY, BUT A SLIPPERY CLUTCH WILL RUIN YOUR DAY!



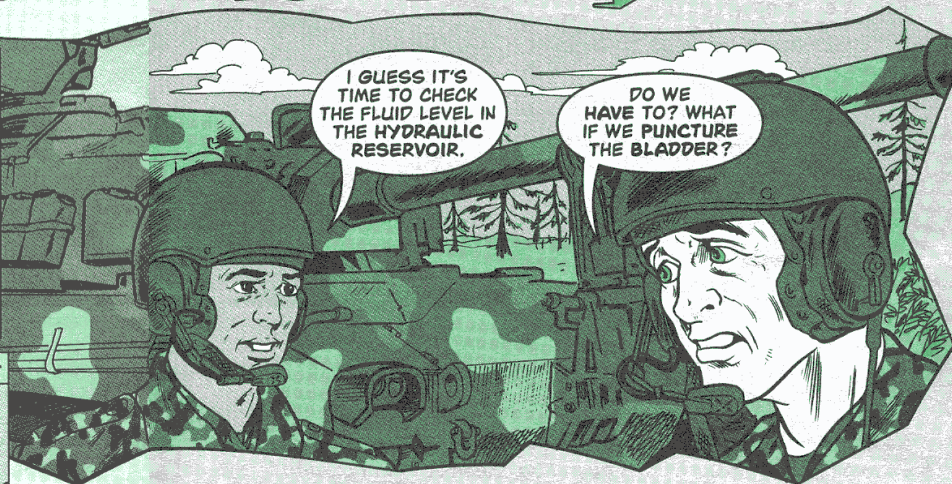
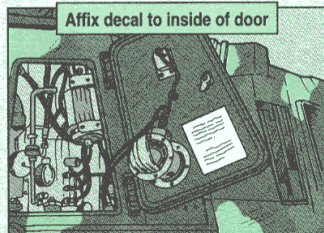
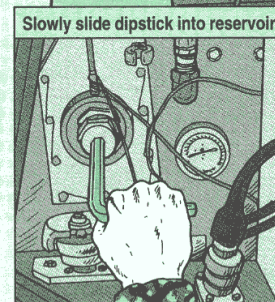
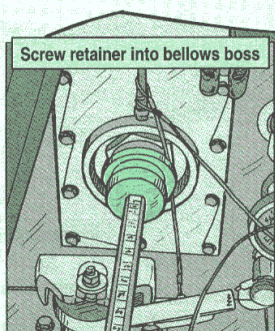
Reservoir Readings

Crewmen, the Paladin's hydraulic powerpack reservoir no longer has FULL and ADD windows. Instead, you now use the temperature gauge and dipstick attached to the reservoir. That makes getting an accurate reading a little tricky.

Follow these instructions on how to accurately measure the hydraulic level **BEFORE** every operation:

1. Take a look at the sight tube that runs from the bellows boss to the top of the reservoir. If there is hydraulic fluid in it, the bladder has been punctured. Call your mechanic.
2. Unscrew the dust cap from the bellows boss.
3. Screw the dipstick retainer completely into the bellows boss.
4. Push the dipstick into the reservoir while holding open the bleed valve. Keep pushing until all the air bleeds out. Go slowly or you could puncture the bladder.
5. Read the temperature on the dipstick where it meets the locking collar. Compare this with the reservoir's temperature gauge. If the difference is less than $\pm 10^{\circ}\text{F}$, the fluid level is OK. A difference of more than $\pm 10^{\circ}\text{F}$ means you need to adjust the fluid level.
6. Remove and stow the dipstick and replace the dust cap.

A decal detailing how to check the hydraulic fluid level is available with NSN 7690-01-431-7948. Attach the decal to the inside of the door covering the hydraulic reservoir.



Resetting Beats Replacing

Dear Editor,

After firing several rounds, we sometimes get a message on the Paladin's central processing unit (CPU) that says the hydraulic filters are clogged.

But before our mechanic goes to the trouble of replacing the filters, we check out the hydraulic filter reset buttons.

Vibration will sometimes make the reset buttons pop out. So, we open the hydraulic filter panel, push in the reset buttons and reset the CPU.

If the fault doesn't show up again, the problem's solved. Otherwise, we call in our mechanic.

SPC John Peterson
C Btry, 1/41st FA
Ft Stewart, GA



DON'T BE SHORT WITH ALTERNATOR

I CAN'T BELIEVE IT!
BOTH OF YOUR
ALTERNATOR OIL LINES
ARE BURNED UP!

IT'S NOT
MY FAULT. THERE'S NO
NEED TO BE SHORT
WITH ME!

Dear Half-Mast,

We've been having some serious shorting problems with the 650-amp alternator on our Paladin.

The two steel-braided pressure hoses that provide oil to and from the alternator are routed close to the alternator's positive and negative terminals. During operation, the hoses shift around. Whenever a hose touches the positive terminal, it creates a short that burns up the hose.

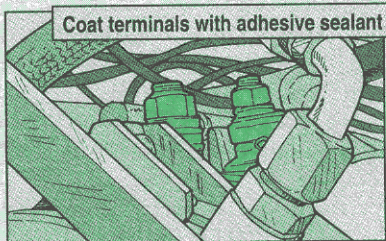
What can we do to stop this?

SFC G.L.

Dear Sergeant G.L.,

There are two steps to protecting pressure hoses:

1. Keep the hoses away from the alternator terminals with wire ties, NSN 5975-00-984-6582.
2. Coat the alternator's positive and negative terminals with adhesive sealant, NSN 8040-00-118-2695. That'll also prevent accidental shorting with a wrench or other tool when you're working near the alternator.



Half-Mast

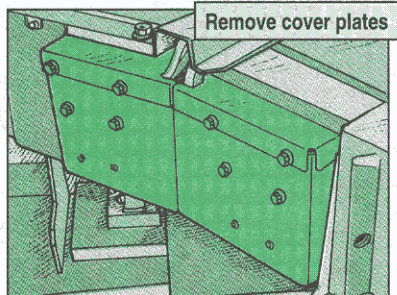
Avoid Segment Board Shutdown

Dirt, sand, oil, and condensation have a habit of collecting on your Paladin's slip ring, crewmen. As the turret is traversed, that crud builds up on the segment board and shorts it out.

Things go downhill from there. A shorted segment board shuts down your comms and the vehicle motion sensor. You'll also get navigation faults in the automatic fire control system.

Keep your Paladin up and running by cleaning the segment board once a week. Here's how:

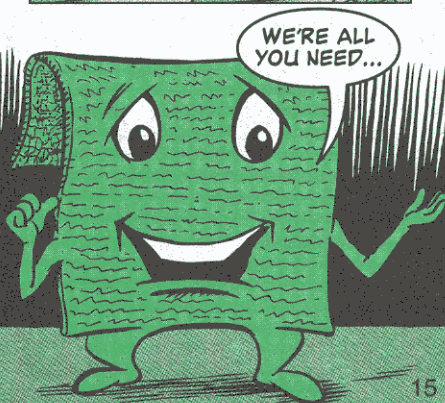
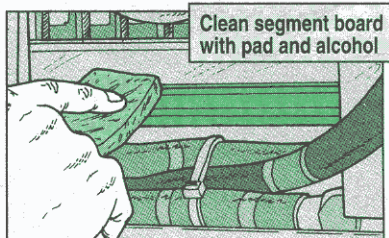
1. Remove the cover plates over the segment board.



2. Soak a nylon scrub pad, NSN 7920-01-201-7032, with denatured alcohol and clean the exposed portion of the board.

3. Wipe the scrubbed area of the board again with a clean cloth.

4. Manually traverse the turret enough to expose the next portion of the segment board and clean again. **Using power to traverse the turret will give anyone cleaning the segment board a 650-amp shock.**



What to Know

Good crewmen always perform PMCS by the book whenever and wherever it's needed. But even the TMs don't cover everything.

Here are some of the things the TMs miss:

Angle drive breather cap. The location of the angle drive's breather cap makes it easy to brush up against. Couple that with constant vibration and pretty soon the cap comes up missing.

A missing cap lets water inside the angle drive where it dilutes the oil. Then the oil won't lubricate and the angle drive locks up.

Check the breather cap **AFTER** every operation. If it's loose, use a pair of pliers to crimp it back in place.

Cold start pump. The fittings on the cold start pump crack from wear and vibration. Fuel leaks from the fittings to the rocker arm covers and then onto the exhaust—a real fire hazard.



Crimp loose breather caps

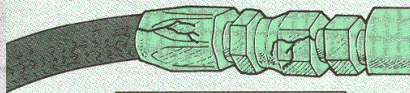


THAT TAKES CARE OF ALL MY PMCS.

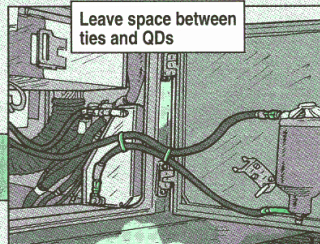
NOT SO FAST! I'VE GOT A FEW OTHER THINGS FOR YOU TO CHECK.

Before You Go

Eyeball the fittings **BEFORE** every operation for cracks. Feel for moisture and then smell your fingers for any trace of fuel. Immediately report any possible leak.



Check for cracks or moisture



Leave space between ties and QDs

Fuel hoses. Fuel hoses are often tied in place with wire ties to prevent too much movement. That's great if you do it right.

Fuel lines should be secured tightly enough to prevent rubbing, but no more. Any tighter, and you can crimp the fuel line. That slows or shuts down fuel flow to the engine.

When tying two or more fuel lines together, watch your spacing. A wire tie that's too close to the quick-disconnects (QD) puts sideward pressure on the fittings. The extra pressure will make the QDs leak and pop loose.

Leave a little slack in the fuel lines or place the wire tie far enough away from the QDs to keep the pressure off.

M2/M3-Series Bradley, MLRS...

Nix That Mix!

Diesel fuel and engine oil in the crankcases of your Bradley and MLRS vehicles don't mix, drivers.

But that's what happens when you leave the fuel control lever at any position other than fully OFF when you're not operating. Fuel may continue to trickle through the fuel lines into the engine cylinders, then past the piston rings and into the oil.

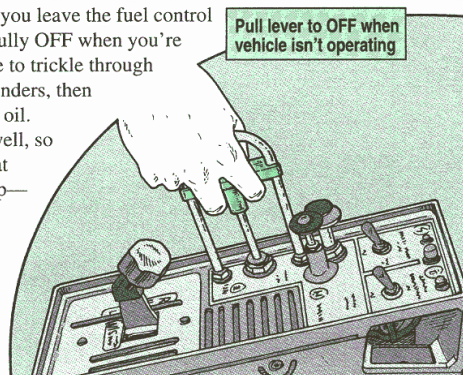
Thinned-out oil doesn't lube well, so parts wear out quicker. When that happens, your engine can lock up—bad news.

So leave the fuel control lever fully OFF unless you're running the engine.

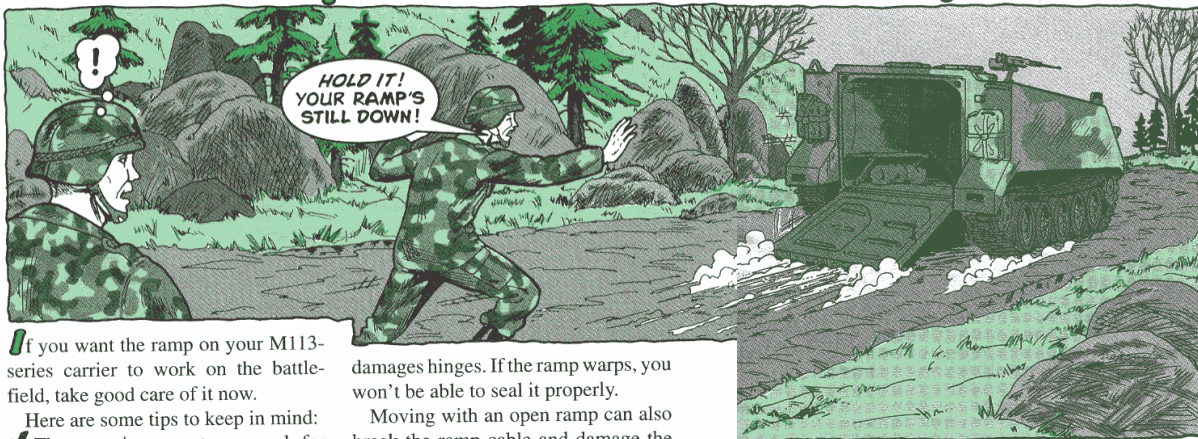
PS 532



Pull lever to OFF when vehicle isn't operating



Respect Your Ramp

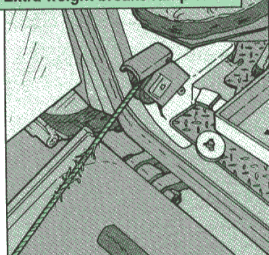


If you want the ramp on your M113-series carrier to work on the battlefield, take good care of it now.

Here are some tips to keep in mind:
 ✓ The ramp is not a storage rack for tent poles, barbed wire and camouflage nets.

The ramp is heavy enough as it is. Any extra weight can break the ramp cable or damage the hydraulic pump.

Extra weight breaks ramp cable



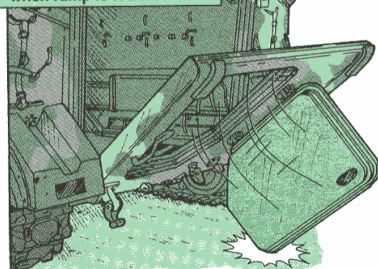
✓ Never move the carrier while the ramp is down or not fully locked. That breaks locks and

damages hinges. If the ramp warps, you won't be able to seal it properly.

Moving with an open ramp can also break the ramp cable and damage the pump. Make sure the ramp is up and locked **before** you move out.

✓ Lock the ramp door, too. An unlocked door will fly open suddenly when the ramp is lowered. That breaks the door's hinges and can ruin the ramp's hydraulics.

Unlocked door will fly open when ramp is lowered.

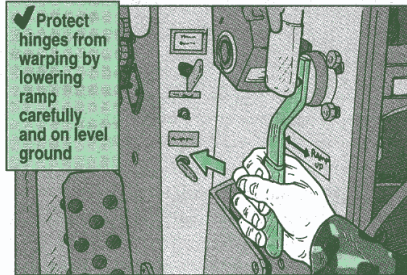


✓ Never race the engine to raise the ramp faster. The ramp will raise in about 15 seconds at 1,500 rpm . It comes up a little quicker at higher rpm , but you risk damaging the system.

Hold to 1,500 rpm while raising ramp



✓ Protect hinges from warping by lowering ramp carefully and on level ground



Purge Expensive Problems

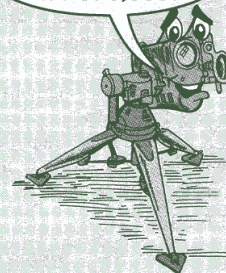
The purging your ground/vehicular laser locator designators (G/VLLD) need every 180 days at support is critical, as in life and death.

If support doesn't purge and charge the G/VLLD's nitrogen supply, the nitrogen pressure can sink low enough to damage the laser rod.

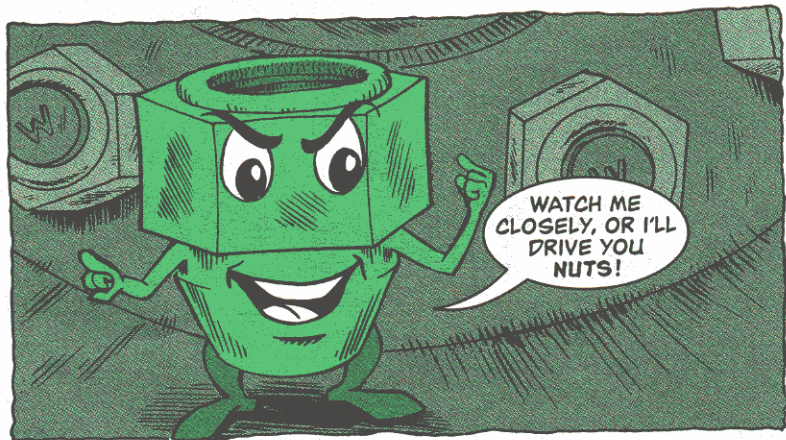
How much does it cost to repair the laser rod? Oh, let's say in the neighborhood of \$70,000, the price of a brand new transceiver.

Keep track of when your G/VLLDs are purged and charged. Make sure they go to support every 180 days. The easiest and best way to keep track is to write the next purging date on a piece of tape and stick it on the G/VLLD.

THE PRICE OF MISSING MY PURGING? TRY \$70,000!



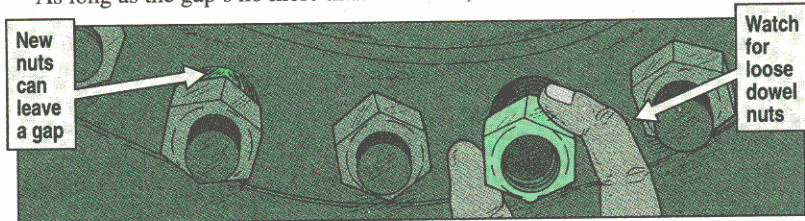
Look for Looseness



Operators, if you see a slight gap between the nuts and the final drive hub on your M88A1 recovery vehicle, M728 CEV, AVLB, or M110A2 SP howitzer, **don't** blame your mechanic. But **do** check the nuts for looseness.

Those gaps are a fact of life now that each vehicle uses the new, one-piece dowel nut, NSN 5310-01-123-6782, instead of the old nut and wedge. Even when properly torqued, there will sometimes be a small gap between the new nut's bearing surface and the hub.

As long as the gap's no more than .040 inch, the nut should be OK.



Any wider, though, and you'll get just enough movement of the hub to slowly work the nut loose.

A loose or missing nut puts more strain on its neighbors, creating a domino effect. Eventually, the other nuts will loosen or fail and you'll lose the entire hub.

Check the dowel nuts before every operation. If you notice any of the gaps widening, or if any of the nuts are loose enough to move with your hands, report 'em to your mechanic. He'll torque the loose nuts to 450-470 lb-ft.

GET THE CRUD OFF

Road dirt, mud, and sand have a nasty habit of drying into a rock-hard mass on your M119A1 towed howitzer. Once it dries, there's only one way to get that crud off—high pressure water or steam.

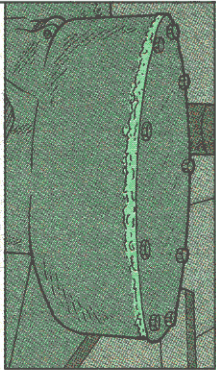
**WAIT A MINUTE!
I THOUGHT HIGH PRESSURE WATER
AND STEAM WERE ON THE PERMANENT
DO NOT USE LIST.**



Normally, that's true. But, for the M119A1, it's OK as long as you cover the elevation mechanism first.

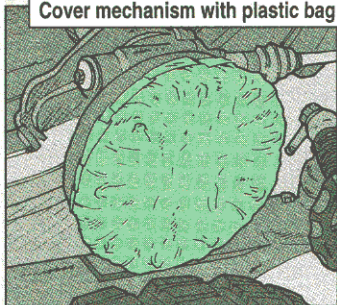
High pressure water and steam squeeze past the cork gasket on the elevation mechanism. Rust forms inside and pretty soon the howitzer can't be elevated.

High pressure water and steam seep past gasket

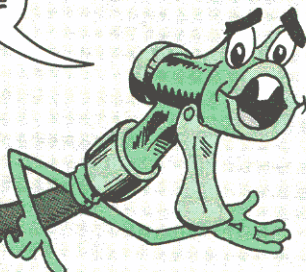


Protect the mechanism by covering it with a plastic bag and sealing it with duct tape.

Cover mechanism with plastic bag

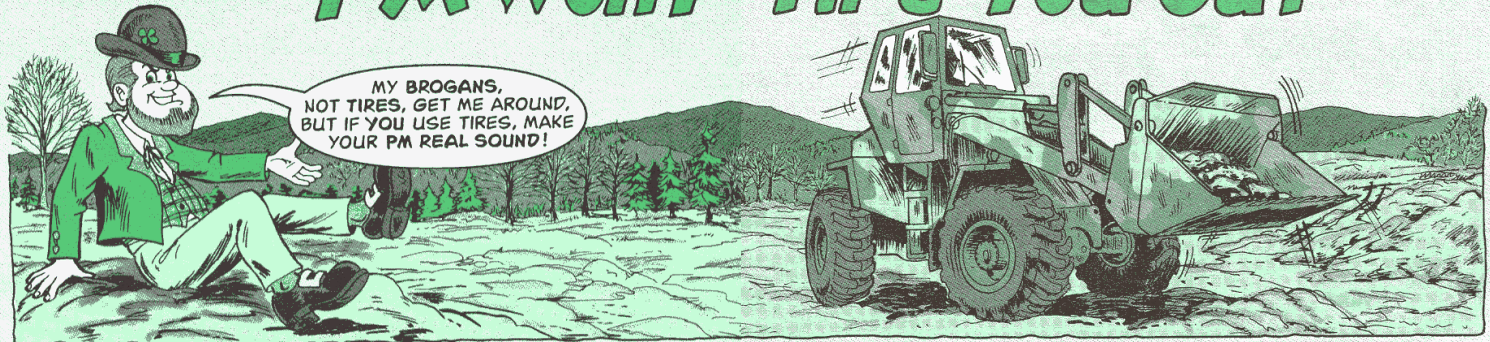


**WHEN
YOU'RE FINISHED
CLEANING, FOLLOW
THESE STEPS TO
ENSURE YOUR
HOWITZER STAYS
CLEAN AND FREE
OF CORROSION.**



- ✓ Remove the plastic bag and check for water leaks in the elevating mechanism. Report any leaks to your mechanic.
- ✓ Dry off all non-painted areas and give them a light coat of WTR to prevent rust.
- ✓ Open the breechblock and check for water in the receiver and gun tube. If you spot any moisture, wipe it dry and lightly coat the area with oil.

PM Won't Tire You Out



The MW24C scoop loader is a mighty workhorse for moving dirt. To keep your workhorse happy, take care of its shoes—er, tires.

Here are some tips to save your loader's tires, and provide safe handling of the equipment. As always, read TM 5-3805-262-10 for the complete lowdown on loader operation.

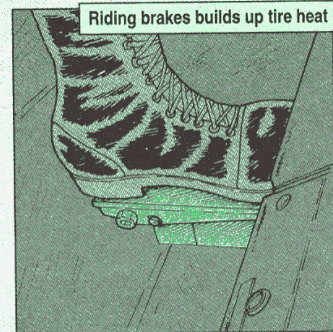
The TM says you can drive the vehicle between job sites. True...but only if the job site is less than five miles away. Try to stay off hard surfaces like concrete or asphalt. If the job site is more than five miles away, put the loader on a trailer and haul it.

The large tires on scoop loaders—and other wheeled construction equipment—are made for off-road use. When driven on a hard surface the tires will wear out sooner, especially if they are underinflated.

So, if you **have** to drive the loader on a hard surface road, make sure tire pressure is right before you start.

Most tire troubles come from poor equipment operation, so keep these tips in mind when you get behind the wheel:

- ❶ Drop your speed before you leave the road. That puts less stress and strain on tires.
- ❷ Never ride the brakes. It causes heat buildup in the tires.

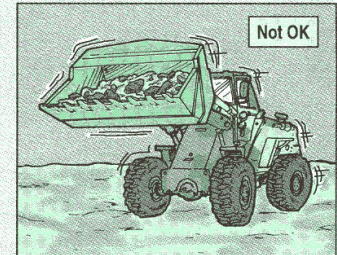
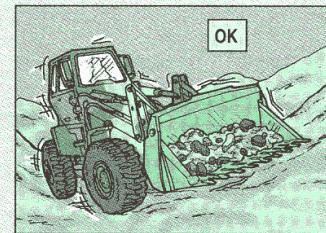


- ❸ Make no sharp turns. They cause the outside tires to travel farther and wear faster than those on the inside.

Safety First

Run your loader low and balanced, especially over hilly ground. If you're hauling a bucket of dirt, keep it low—about two feet off the ground—until you're ready to drop the load.

A full bucket carried overhead blocks your vision. With a clear view, you'll see chuck holes, other equipment, and people.



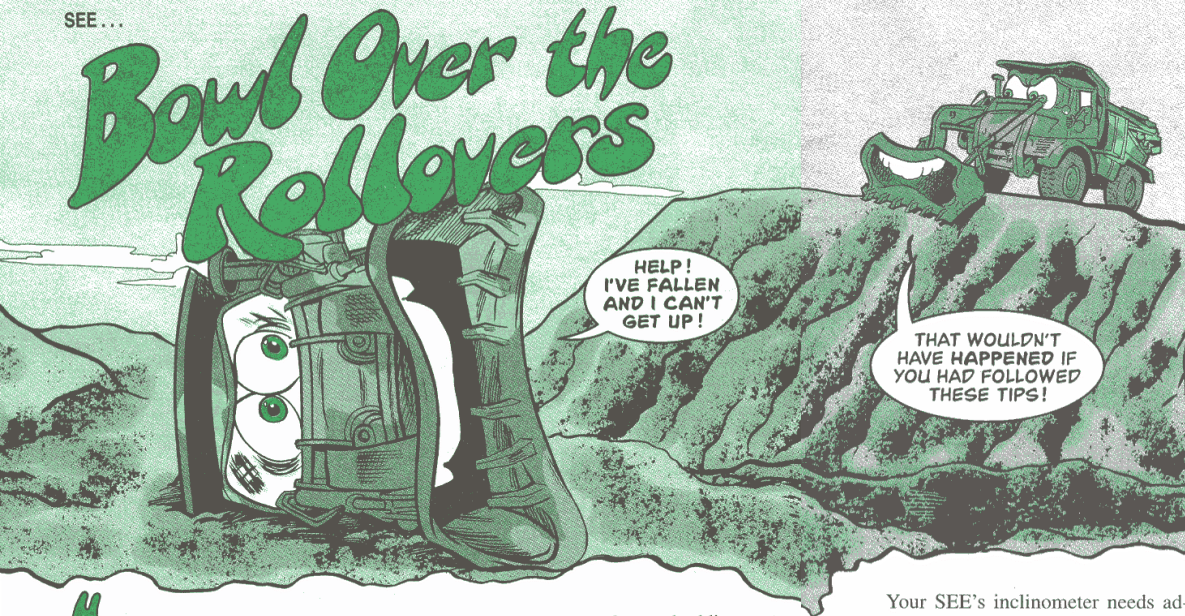
MW24C Defroster Switch

NSN 5930-01-177-9532 gets the console switch for the MW24C scoop loader's defroster fan. The switch is missing from Fig 124 of TM 5-3805-262-24P.

SEE Side Mirror

NSN 2540-01-417-5833 gets the SEE's side view mirror. The NSN shown for Item 10 in Fig 219 of TM 5-2420-224-24P is wrong.

Bowl Over the Rollovers



Having trouble keeping your SEE's shiny side up? Some of your buddies have. A rash of rollovers has the headshed worried. So heed these simple rules to keep the rubber on the road:

- ✓ First thing is to get familiar with TM 5-2420-224-10. Then:
- ✓ Steady as she goes when driving the SEE up or down a slope. Never approach a slope at an angle, with one side of the vehicle higher than the other. Go straight up and straight down.
- ✓ Always use four-wheel drive when moving cross-country. On really steep hills, engage the differential locks. This pressurizes the axles and wheel hubs, which keeps dirt out of the hub drive housing. Dirt can damage hub seals.
- ✓ If you're hauling a bucket of dirt, keep it low until you're ready to dump. A full bucket of dirt carried high makes the SEE top heavy. Gullies, bumps and tricky slopes can rock the SEE from side to side. Low and balanced keeps you upright.
- ✓ When you're driving across hilly or rough terrain, keep the speed at five mph or less. Racing over this kind of ground creates an unstable—and dangerous—ride.
- ✓ Keep an eye on your SEE's inclinometer as you traverse the slopes. When the indicator approaches 17°, it's time to find another direction.



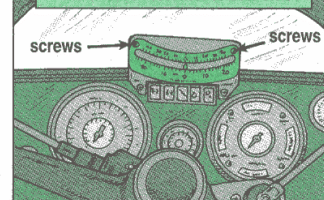
HELP!
I'VE FALLEN
AND I CAN'T
GET UP!

THAT WOULDN'T
HAVE HAPPENED IF
YOU HAD FOLLOWED
THESE TIPS!

Your SEE's inclinometer needs adjustment if it doesn't point to 0° when the SEE is on level ground.

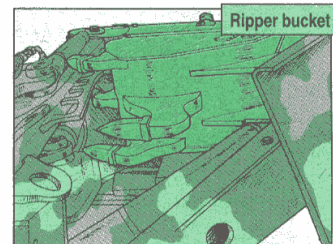
Before adjusting, be sure the vehicle is parked on a level surface, then make adjustments like this:

1. Loosen screws
2. Adjust indicator until it reads 0°
3. Tighten screws
4. Make sure indicator is still on 0°

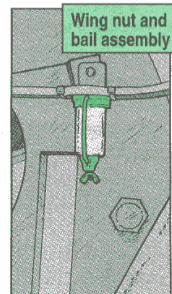


Other Tidbits

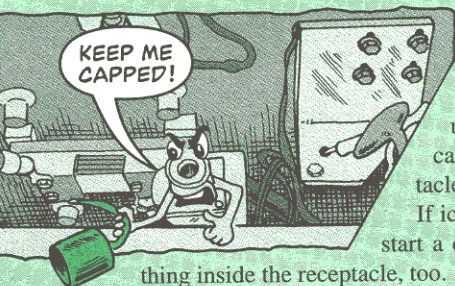
- ✓ Use the front bucket only for loose dirt. Never use the SEE to excavate banked or compacted soil. You'll blow the hydraulic hoses or ruin the bucket if you try to dig with the SEE's front bucket. Save that work for the M9 ACE or a bulldozer.
- ✓ There's a stronger backhoe bucket available for your SEE that's good for digging in frozen, stony or clay soils. This 16-in ripper bucket comes with NSN 3830-01-361-8209. It's being added to the SEE's additional authorization list.



- ✓ There's also good news about the SEE's engine. NSN 2910-01-236-7242 gets the wing nut and bail assembly for the pre-sediment bowl. Make a note until TM 5-2420-244-24P is updated.



KEEP DUST CAP ON



Operators, to keep your ACE's NATO slave receptacle from becoming a water bucket, keep it covered.

The receptacle is mounted straight up—that means it will hold water if the cap's missing. Water corrodes the receptacle's metal contacts.

If ice forms in the receptacle, you can't slave start a dead vehicle. The ice could break something inside the receptacle, too.

Do your ACE a favor. Make sure the dust cap is in place. If it's missing, have your mechanic replace the cap and cord assembly with NSN 5340-01-059-0114. Until the assembly comes in, tape over the receptacle.

Reader's Quiz

HERE ARE SOME QUESTIONS ABOUT THE EQUIPMENT FEATURED IN THIS ISSUE. SEE IF YOU KNOW THE ANSWERS.

WHEELED VEHICLES—If your HMMWV gets idled extensively, what's the best way to schedule AOAP sampling? (See Page 4)

COMBAT VEHICLES—When is it OK to use high-pressure water and steam to clean the M119A1 towed howitzer? (See Page 21)

COMBAT ENGINEERING—What can small emplacement excavator (SEE) operators do to prevent rollovers? (See Pages 24-25)

SMALL ARMS—Does CLP protect rifles, pistols, mortars and other small arms even after it dries? (See Page 38)

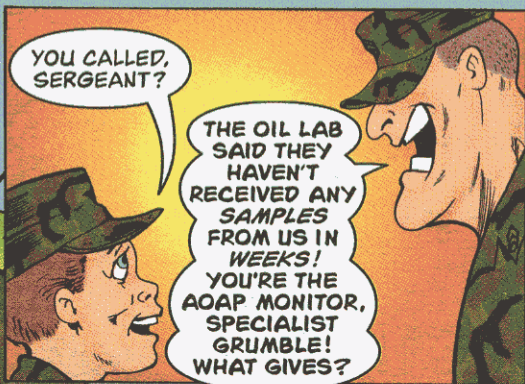
COMMO—What happens to your SINCGARS radio if the holdup battery (HUB) goes dead? (See Page 42)

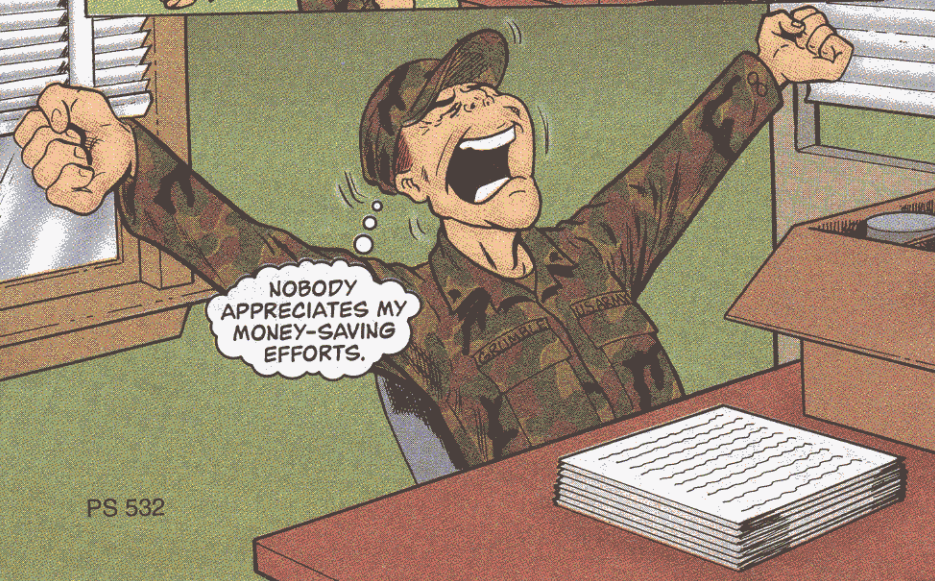
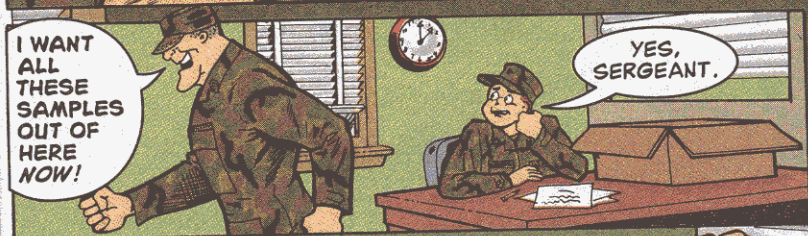
AVIATION—What new helmet system is replacing the SPH-4 and -4B for Army aviators? (See Pages 48-49)

LOGISTICS MANAGEMENT—How can a unit get credit for equipment that fails the first time it is used? (See Pages 52-53)

SOLDIER SUPPORT—How can you reduce the safety hazards of storing petroleum, oil, lubricants, paints and other flammables? (See Pages 56-57)

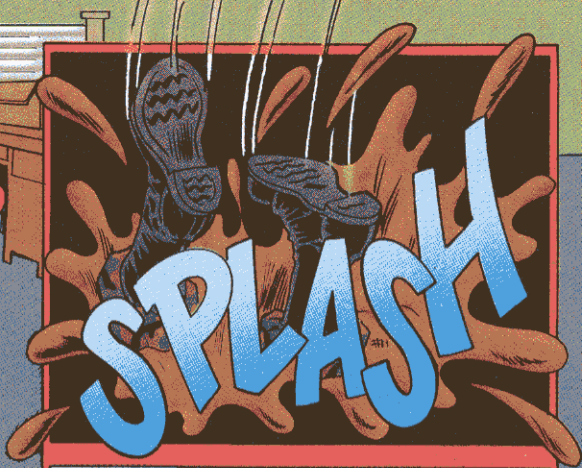
AOAP Sampling Saves Dollars





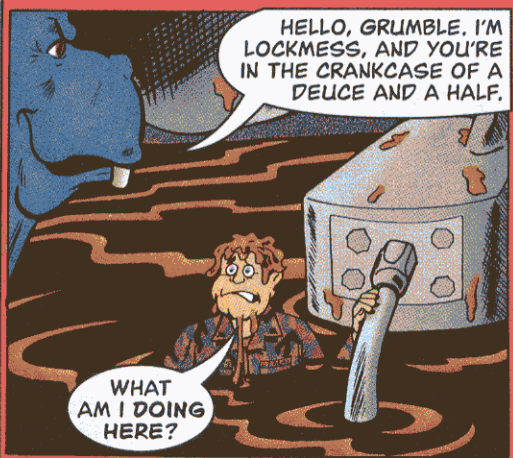
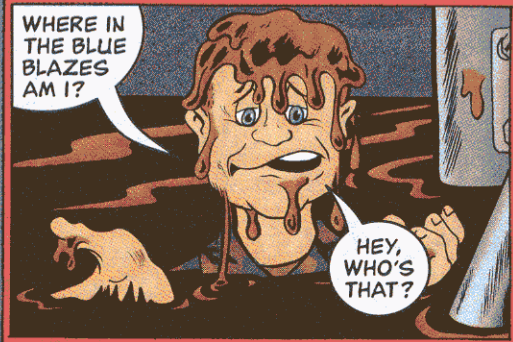


WUMP



WHERE IN THE BLUE BLAZES AM I?

HEY, WHO'S THAT?



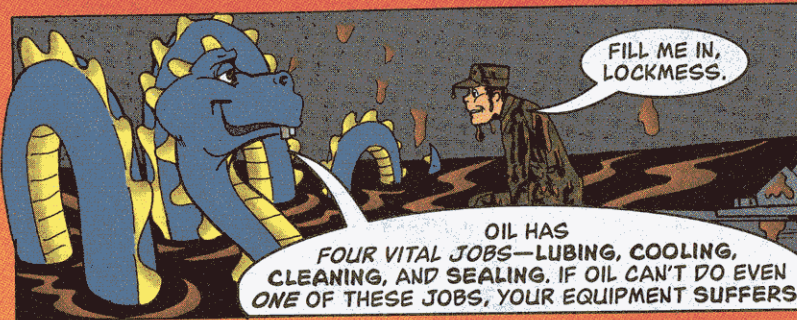
HELLO, GRIMBLE. I'M LOCKMESS, AND YOU'RE IN THE CRANKCASE OF A DEUCE AND A HALF.

WHAT AM I DOING HERE?



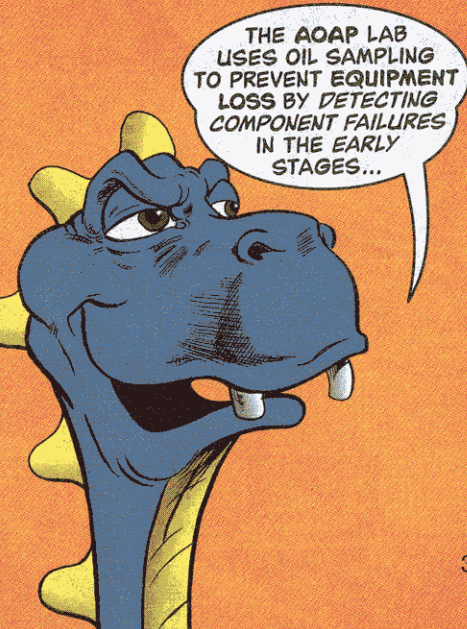
CLIMB UP ON THE OIL PUMP AND I'LL TELL YOU. BE CAREFUL! IT'S SLIPPERY!

YUCK!



FILL ME IN, LOCKMESS.

OIL HAS FOUR VITAL JOBS—LUBING, COOLING, CLEANING, AND SEALING. IF OIL CAN'T DO EVEN ONE OF THESE JOBS, YOUR EQUIPMENT SUFFERS.

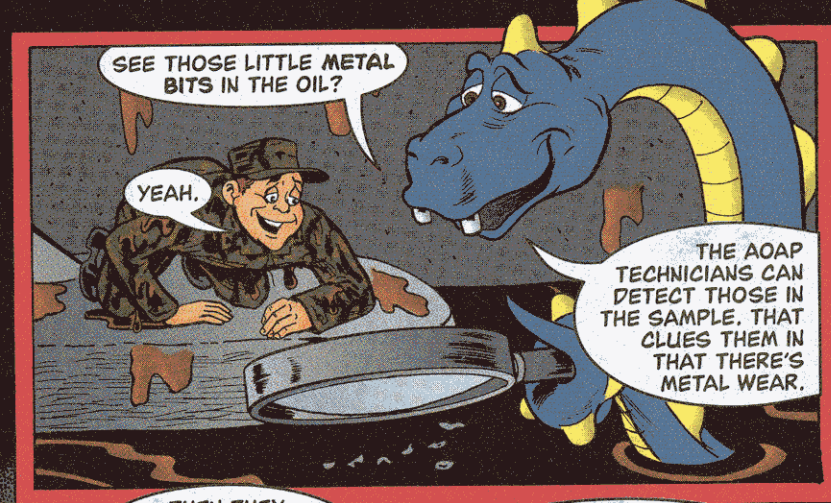


THE AOAP LAB USES OIL SAMPLING TO PREVENT EQUIPMENT LOSS BY DETECTING COMPONENT FAILURES IN THE EARLY STAGES...



...WHILE THERE'S STILL TIME TO DO SOMETHING ABOUT IT!

HOW CAN SAMPLING DO THAT?



SEE THOSE LITTLE METAL BITS IN THE OIL?

YEAH.

THE AOAP TECHNICIANS CAN DETECT THOSE IN THE SAMPLE. THAT CLUES THEM IN THAT THERE'S METAL WEAR.

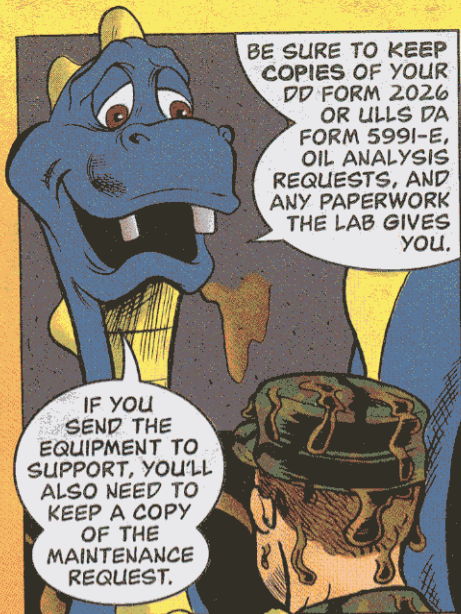
THEN THEY CALL AND GIVE YOU RECOMMENDATIONS FOR CORRECTING THE PROBLEM.

THE LAB ALSO SENDS A WRITTEN REPORT FOR YOU TO INVESTIGATE AND REPORT THE CAUSE OF THE PROBLEM. AFTER THE EQUIPMENT IS REPAIRED ACCORDING TO THE LAB'S RECOMMENDATIONS, YOU SEND THE COMPLETED DA FORM 3254-R BACK TO THE LAB. THIS LETS THEM KNOW WHAT REPAIRS YOU MADE ON THE EQUIPMENT.



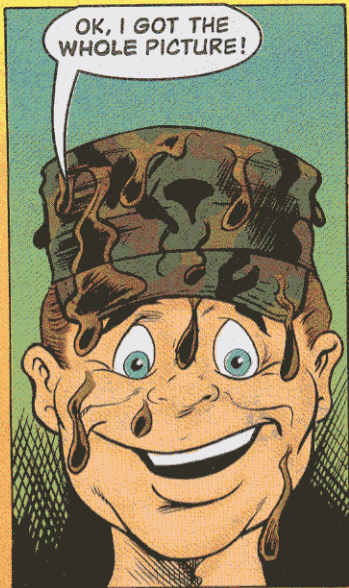
HOW DO I KNOW WHEN TO SAMPLE AGAIN?

ROUTINE SAMPLES ARE SENT TO THE LAB AT SET INTERVALS. SPECIAL SAMPLES ARE SENT UNDER UNUSUAL CIRCUMSTANCES.



BE SURE TO KEEP COPIES OF YOUR DD FORM 2026 OR ULLS DA FORM 5991-E, OIL ANALYSIS REQUESTS, AND ANY PAPERWORK THE LAB GIVES YOU.

IF YOU SEND THE EQUIPMENT TO SUPPORT, YOU'LL ALSO NEED TO KEEP A COPY OF THE MAINTENANCE REQUEST.

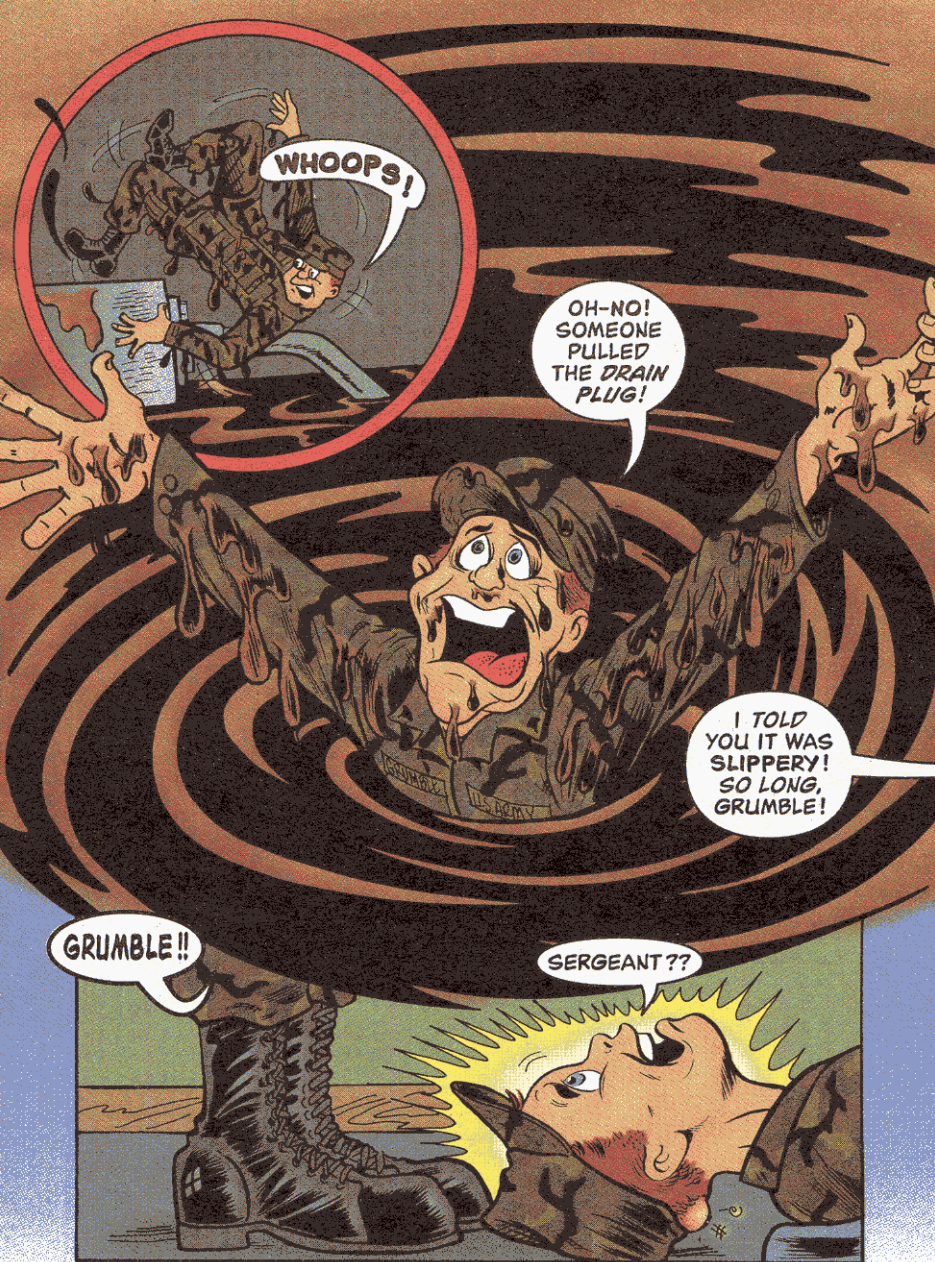


OK, I GOT THE WHOLE PICTURE!



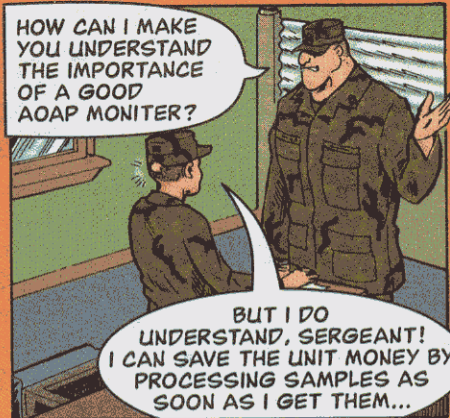
FROM NOW ON I'LL MAKE SURE ALL OUR SAMPLES ARE TAKEN ON SCHEDULE, PROCESSED, AND SENT TO THE LAB ASAP!

THAT WAY, BY SAVING COMPONENTS SUCH AS ENGINES AND TRANSMISSIONS, YOU CAN SAVE THOUSANDS OF DOLLARS!





MY HEAD SURE HURTS.
BUT I GOT THE MESSAGE.



HOW CAN I MAKE
YOU UNDERSTAND
THE IMPORTANCE
OF A GOOD
AOAP MONITOR?

BUT I DO
UNDERSTAND, SERGEANT!
I CAN SAVE THE UNIT MONEY BY
PROCESSING SAMPLES AS
SOON AS I GET THEM...

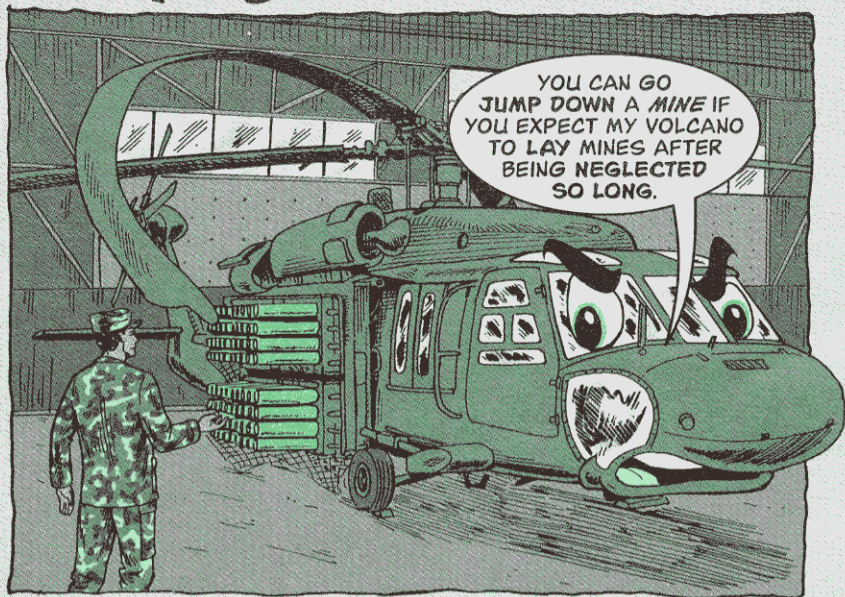


...AND GETTING THEM
TO THE LAB ASAP!

WELL, IT LOOKS
LIKE ALL MY HARD
WORK IS PAYING OFF!
I THINK I'M FINALLY
GETTING THROUGH TO
YOU, GRUMBLE!

SURE, LOCKMESS...
ER, SERGEANT LOCKE.

Keeping Volcanoes Active



The M139 mine dispenser (Volcano) cannot sit and sit in storage and then be expected to spew mines.

Both the Volcano's dispenser control unit (DCU) and launcher racks have electrolytic capacitors. If these capacitors aren't charged at least once a year, they lose their charge and develop a permanent short.

Shorted capacitors will damage DCU electronics when the DCU is turned on and prevent the launcher racks from correctly timing the mines to explode. That's serious. If you don't know when mines can blow, they are as dangerous to you as to the enemy.

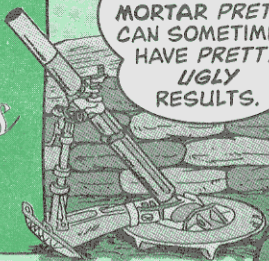
Keep track of when your Volcanoes are fired up. Put a piece of tape on each Volcano's storage case. Write on the tape the date the Volcano was used. If a year goes by and the Volcano hasn't been used, send it to support. They can do the preconditioning procedure in Para 3-29 in Change 1 to TM 9-1095-208-23-1&P to keep the capacitors in shape.

TWELVE MONTHS IS THE MOST THE VOLCANO CAN SIT WITHOUT BEING USED OR PRECONDITIONED.



*Pretty
Isn't
Always
Pretty*

MAKING
YOUR M30
MORTAR PRETTY
CAN SOMETIMES
HAVE PRETTY
UGLY
RESULTS.



Washing

Washing the M30 may make it shine, but it's a shine that leads to ruin. The standard and rotator assemblies and the baseplate are not sealed. When you use high-pressure water to clean the mortar, or leave it mounted when you take your vehicle through the wash rack, water gets inside.

Soon corrosion is eating away at the M30...and you don't know it until it's too late. The only fix is replacement. So, keep water away from the mortar.

Painting

Same goes for paint. If the baseplate is painted, paint seals the screws that hold it together. When it comes time for support to take apart the baseplate, the screws won't budge. They have to strip the screws to remove them.

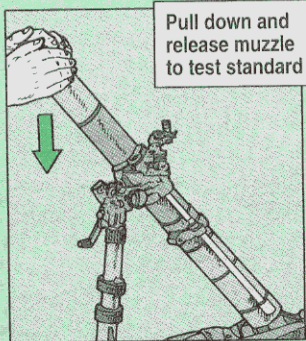
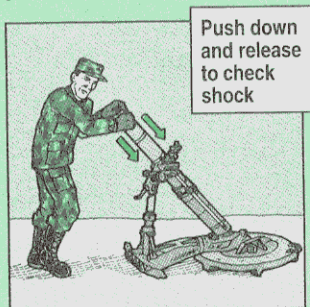
Pretty Good PM

But there are a few things you **can** do for your M30.

Once the M30's assembled, push down the tube and eyeball the area under the collar for grease and dirt. Clean it off. They cause the M30 to bind and it has trouble recoiling.

Raise the tube to the max. Push the muzzle down and release it. If the tube doesn't spring back smoothly, the shock absorber is binding. Tell your armorer.

Next, pull down on the muzzle and release it. If the tube doesn't snap back in place, the standard assembly won't handle recoil. Report it.

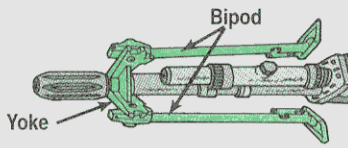


ALL KICKING ASIDE

Gunners, never kick your M60 to unfold a bipod leg or unstick a bolt. You'll only make a sticky situation worse.

Rough stuff is a no-go for the bipod and its yoke. Never kick or put your weight on the bipod to move it. If the legs bind, clean and lube them. If that doesn't get the bipod moving, tell your armorer.

Clean—don't kick—a sticking bipod



Bolt Bust-up

Kicking to unstick a stuck bolt just leads to a broken bolt or a broken or damaged receiver.

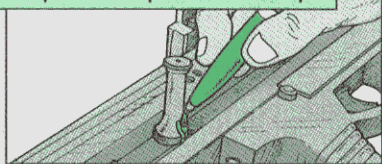
Kicking the cocking handle breaks the operating rod, bends the cocking handle, or distorts the cocking handle slot. It can even damage or break the side of the receiver.

Leaning the gun forward on its flash suppressor to get a better hold on the cocking handle is no better. It bows the bipod, breaks the bipod yoke, loosens the flash suppressor, damages the BFA (if it's in use) and plugs up the flash suppressor.

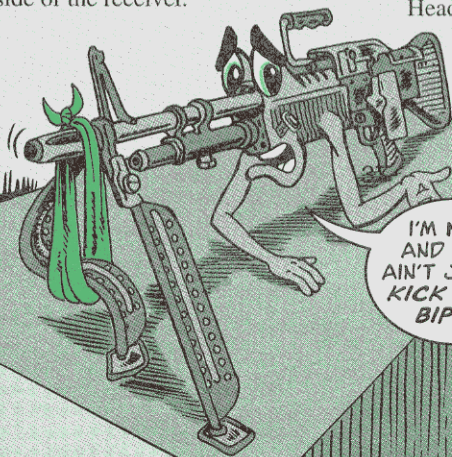
Use a Little Lube

Use a little lube and patience to unstick the bolt. If the charging handle pin is not centered, the spring could be stuck. Use a pen and some oil to gently move the pin to center.

Use pen and drop of oil to loosen pin



There are other reasons a bolt might stick, though. The bolt locking lugs might be stuck in the barrel socket, or the operating rod could be broken. Head off those problems by eyeballing the barrel socket, bolt locking lugs, and operating rod for burrs, cracks and chips before you go to the field. Tell your armorer if you find any.



I'M NMC,
AND THAT
AIN'T JUST A
KICK IN THE
BIPOD!

The Shield

Dear Half-Mast,

We are wondering how best to protect our weapons with CLP. Should we give them a light or heavy coat? If CLP dries out while the weapon is stored, is the weapon still safe from corrosion?

SFC W.D.



HERE ARE THE FACTS ABOUT CLP.

TO KEEP MY SHILLELAGH CORROSION-FREE, I GIVE IT A LIGHT COAT OF CLP.

Dear Sergeant W.D.,

The first place to look for CLP answers is the -10 TM for the weapon. In the maintenance section, the -10 tells if CLP is OK and if the parts need a light or heavy coat. A light coat is barely visible. A heavy coat can be moved around with your finger.

CLP will dry, but it leaves a finish that wards off corrosion. The general rule is that if a weapon has been properly cleaned and lubed, it can be stored safely for up to 90 days. Of course, if you spot signs of corrosion, shorten the clean-and-lube interval. High humidity often means the weapon will need more CLP protection during storage. Remember, for CLP to clean, lube, and preserve, you must shake it to mix its ingredients.

Half-Mast

Help for Armorers

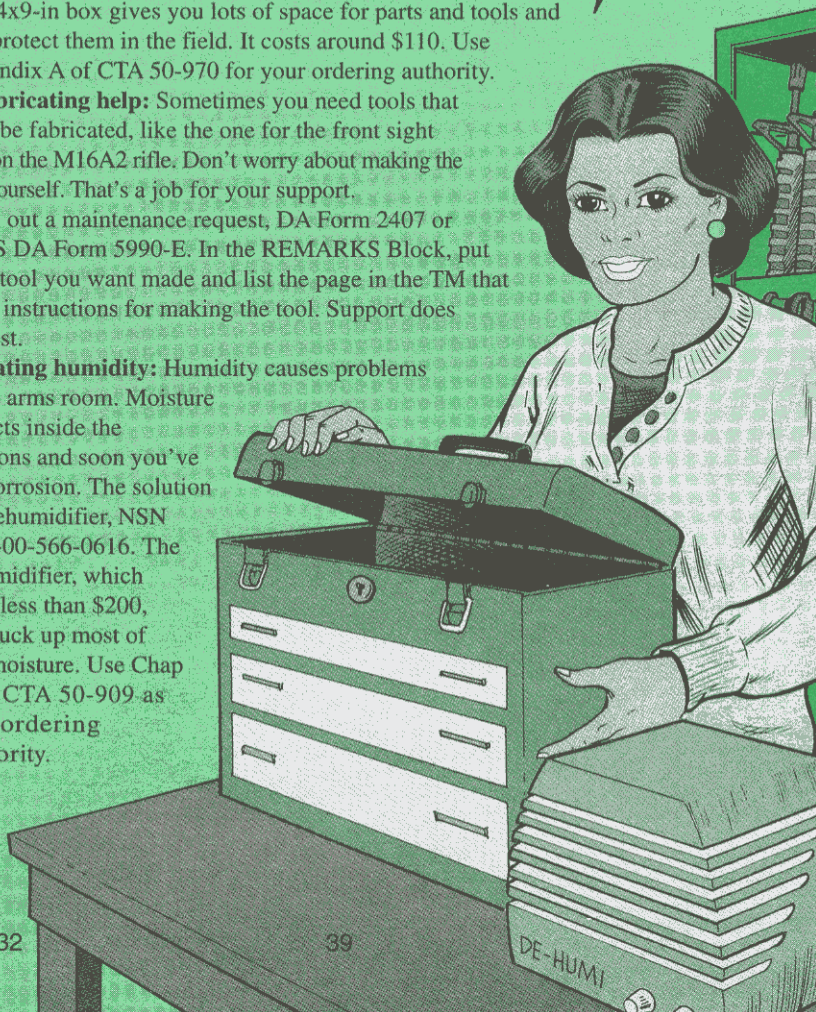
HERE ARE SOME TIPS AND A FEW NSNs THAT CAN MAKE LIFE IN THE ARMS ROOM EASIER FOR ARMORERS.

A better toolbox: If you find the little plastic parts box that comes with the small arms tool kit is too small, order toolbox, NSN 5140-00-494-2015. This metal, three-drawer, 20x14x9-in box gives you lots of space for parts and tools and will protect them in the field. It costs around \$110. Use Appendix A of CTA 50-970 for your ordering authority.

Fabricating help: Sometimes you need tools that must be fabricated, like the one for the front sight post on the M16A2 rifle. Don't worry about making the tool yourself. That's a job for your support.

Fill out a maintenance request, DA Form 2407 or ULLS DA Form 5990-E. In the REMARKS Block, put what tool you want made and list the page in the TM that gives instructions for making the tool. Support does the rest.

Beating humidity: Humidity causes problems in the arms room. Moisture collects inside the weapons and soon you've got corrosion. The solution is a dehumidifier, NSN 4440-00-566-0616. The dehumidifier, which costs less than \$200, will suck up most of that moisture. Use Chap 63 of CTA 50-909 as your ordering authority.



GIVE YOUR ALL FOR THE ANTENNA



SIGNALS FROM YOUR AN/TSC-85B AND -93B SATELLITE COMMUNICATIONS TERMINALS WON'T GET OFF THE GROUND IF ITS AS-3036 ANTENNA ISN'T WORKING. HERE ARE A FEW TIPS TO KEEP YOU ON THE AIRWAVES.

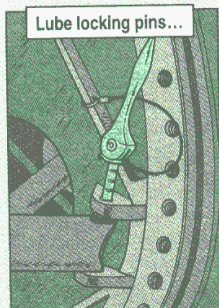
Lube Lessons

Locking pins help hold the antenna together—but only if you treat 'em right. Never hammer a stubborn pin into place. It'll jam in the hole. Or the pin handle or lanyard will break.

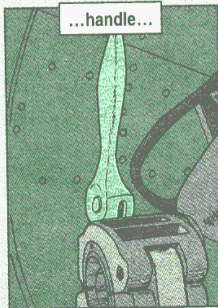
If the pin doesn't go in easily, lube it with antiseize compound, NSN 8030-00-251-3980.

The handle for the locking mechanism on the antenna's center section can rust and bind. Clean it with a wire brush or steel wool. Then give it a shot of lube so it moves freely.

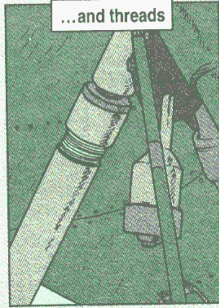
While you're at it, lube the threads on the antenna legs. That'll keep them from seizing.



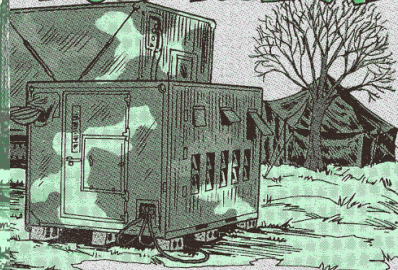
Lube locking pins...



...handle...



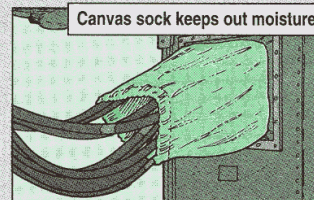
...and threads



Covered by Canvas

Water on the antenna entrance panel can create all sorts of headaches—from leaks to shorts to high reflected power.

Keep moisture out with a canvas sock and draw string fitted to the entrance panel. Ask DS to sew one together for you.



Canvas sock keeps out moisture

A Little about Lanyards

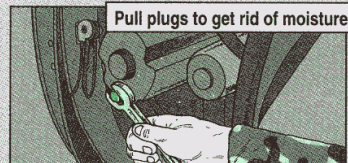
Lanyards prevent locking pins from getting lost. And since the pins are of different sizes, the lanyards also keep you from using the wrong-sized pins. Make sure the lanyards are in good shape. If they're broken or worn, replace them with NSN 4030-00-452-2568.

Details on Draining

Sitting outside day after day, the antenna takes a beating from the elements. Water works its way into the servomotors, causing damage over time.

A damaged motor can't turn the antenna dish. You'll have to manually adjust the dish.

Pull the drain plugs on both servomotors to get rid of moisture. Drain during weekly PMCS and after any rain.



Pull plugs to get rid of moisture

Order the canvas by the yard. NSN 8305-00-171-1203 brings OD green, mildew-resistant/water-repellent canvas 33 inches wide. NSN 8305-00-926-9989 gets the same kind of canvas in a 46-in width.

Appendix A of CTA 50-970 is your ordering authority.

MY SIXTH SENSE TELLS ME WHEN ALL IS NOT RIGHT, IF YOU DEPEND ON ANTENNAS, MAKE YOUR PM REAL TIGHT!



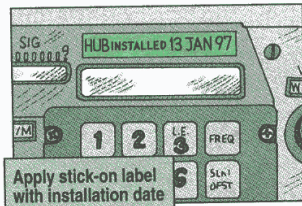
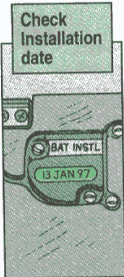
The HUB of the Matter

If the holdup battery (HUB) for your SINGGARS receiver-transmitter dies, lots of information your radio needs dies with it.

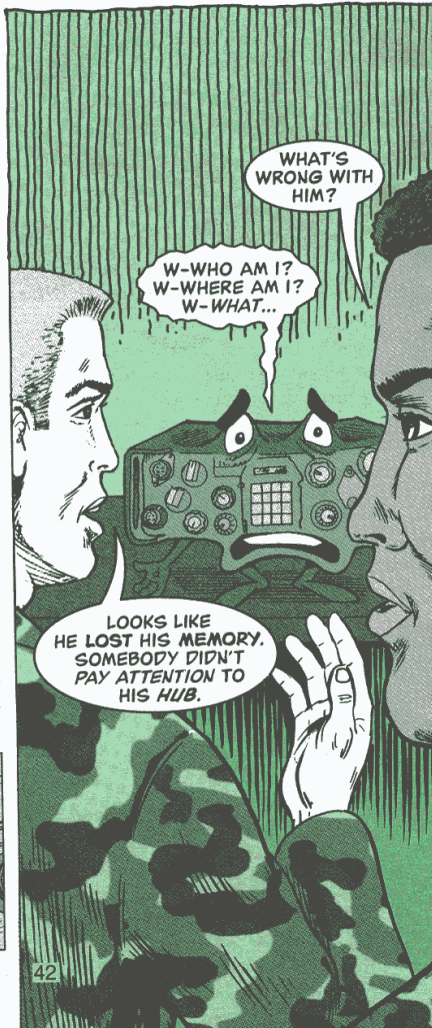
You lose stuff in the radio's memory like single channel frequencies, hopset data, transmission security (TRANSEC) variable, time of day (TOD) and NET ID. That much lost information keeps you out of the communications business for some time.

Memory problems won't be a problem if you remember to replace the HUB every six months. So right now, look at the installation date on the battery cover, which is on the bottom of the RT-1439. If the battery's close to six months old, replace it.

If the RT-1439s are mounted in a vehicle, save yourself the trouble next time of unhooking antennas and cables to check the battery date.



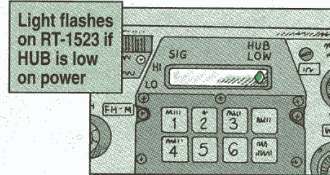
PS 532



42

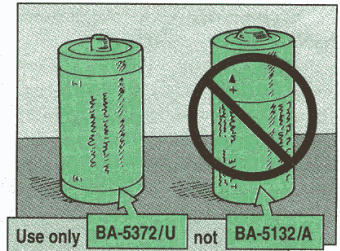
Trim a filing label to 2 inches x 1/2 inch, write the battery installation date on the label, and stick it above the RT keyboard display. You can tell at a glance when the HUB needs to be changed again.

ICOM radio sets like the RT-1523 and the C-11561 remote control unit will not have the HUB installation date on the battery cover. Instead, they have a HUB LOW flashing light that warns you when the HUB's going out. So you will need to keep backup HUBs handy in the field.



When you do replace the HUB in an ICOM set, write the date on a trimmed filing label and stick it on the front of the RT. That way you'll know when the battery needs to be replaced again.

There's only one HUB that should be used: the BA-5372/U, NSN 6135-01-214-6441. Some communicators try to use the look-alike BA-5132/A. It won't work. It's the wrong polarity and voltage.



Commo ...

Safe Cleaning Stuff

TB 43-0135, Environmentally Safe Substances for Use with Communications-Electronics Equipment, is an absolute must when cleaning your commo gear.

Here's a sample of what you'll find between its covers:

- A list of chemicals and cleaning solvents no longer approved for use because they harm the atmosphere.
- A list of environmentally safe solvents available in the supply system.
- Descriptions and characteristics of approved solvents.
- Guidelines for cleaning commo gear.
- Cleaning solvent and protective equipment WARNING statements.

If you didn't get TB 43-0135 during its initial distribution, ask your pubs clerk to order it. To get future revisions and changes, make sure the TB is added to DA Form 12-34, Block 4551. On DA Form 12-99-R (Apr 96), use IDN 344551.

PS 532

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MAR 97

A Battery of Good Ideas

Without battery power, your AN/PRC-77 portable manpack radio is just 20 pounds of dead weight. That's why you should make battery and battery box PM part of your regular maintenance routine.

Follow these tips to stay in power:

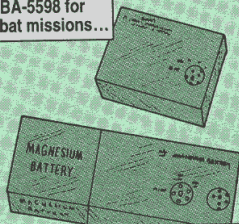
Choose Proper Battery

First order of business is to decide which battery to put in your radio—the BA-5598 lithium, NSN 6135-01-034-2239, or the BA-4386 magnesium, NSN 6135-00-926-8322.

For most training exercises and everyday use, the BA-4386 is inexpensive and works well. But on a combat mission, use the BA-5598. Even though it costs more, it has some advantages over the magnesium battery:

- ✓ It's smaller and lighter.
- ✓ It can be stored outside in hot weather longer without losing power.
- ✓ It's the battery of choice for arctic/cold weather operations, delivering better performance in below-freezing temperatures.

Use BA-5598 for combat missions...



...and BA-4386 for training

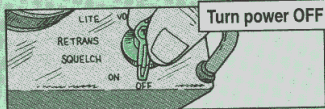


A Good Fit

Quick and sloppy is the wrong way to install a battery. You'll damage the battery or the radio's connector pins.

Whether you use a BA-5598 or a BA-4386, put the battery in the right way:

1. Turn off the radio's power switch.

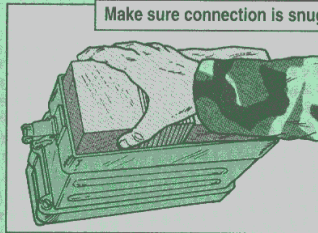


Turn power OFF

2. Stand the receiver-transmitter on its front panel guards.

3. Lower the battery into place, mating the battery's receptacle with the RT's connector. Seat it firmly.

Make sure connection is snug



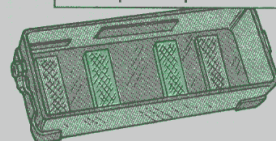
4. Replace the battery box on the RT and tighten its clamps.

The lithium battery is half the size of the magnesium, so you can install two of them in the battery box. That way you'll have a spare when one dies.

About the Box

Some battery boxes have two extra rubber pads, NSN 9320-00-930-0724, in the center of the box. They help keep batteries snug. If your battery box needs center pads, ask unit maintenance.

Center pads keep batteries snug

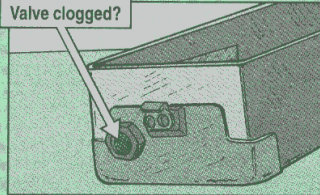


nance to get them and put them in. NSN 8040-00-664-4318 brings adhesive to glue down the pads.

The battery box has a pressure relief valve to vent hydrogen gas from the BA-4386. Without it, gas can build up in the RT and cause a small blast. If the valve is clogged, ask unit maintenance to take a look.

They can replace it with NSN 4820-00-296-9677.

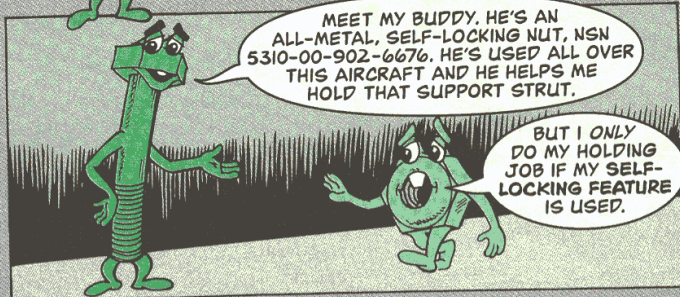
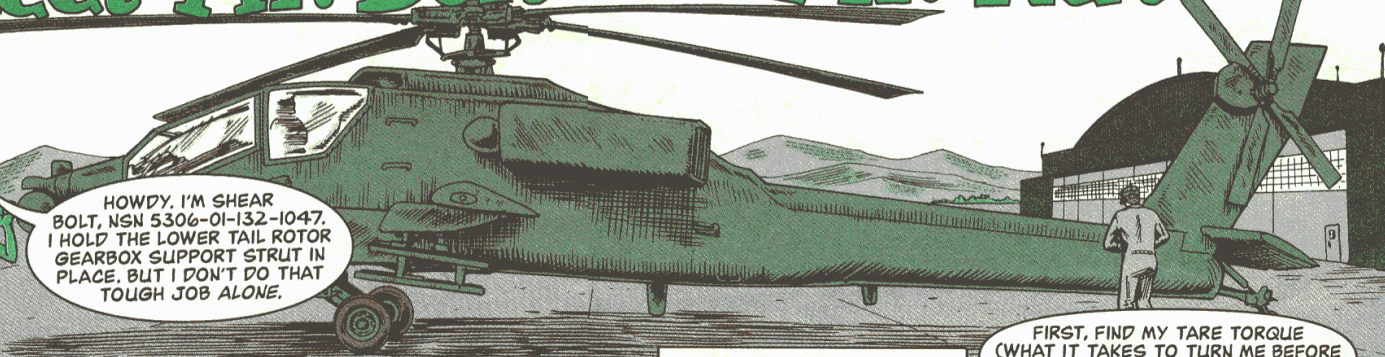
Valve clogged?



Meet Mr. Bolt and Mr. Nut



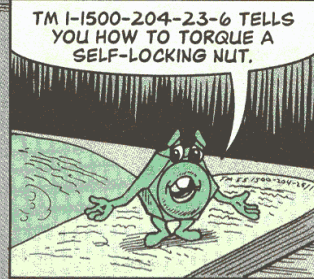
HOWDY, I'M SHEAR BOLT, NSN 5306-01-132-1047. I HOLD THE LOWER TAIL ROTOR GEARBOX SUPPORT STRUT IN PLACE. BUT I DON'T DO THAT TOUGH JOB ALONE.



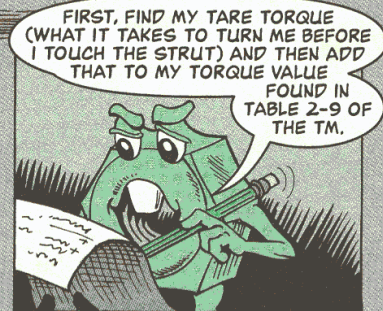
MEET MY BUDDY. HE'S AN ALL-METAL, SELF-LOCKING NUT, NSN 5310-00-902-6676. HE'S USED ALL OVER THIS AIRCRAFT AND HE HELPS ME HOLD THAT SUPPORT STRUT.



BUT I ONLY DO MY HOLDING JOB IF MY SELF-LOCKING FEATURE IS USED.

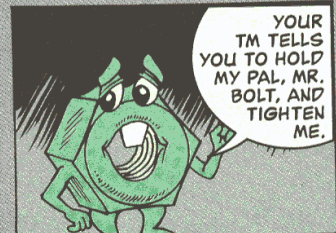


TM I-1500-204-23-6 TELLS YOU HOW TO TORQUE A SELF-LOCKING NUT.

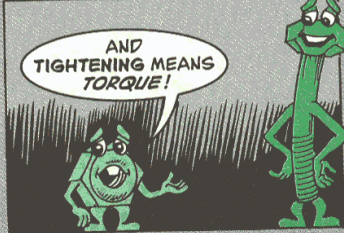


FIRST, FIND MY TARE TORQUE (WHAT IT TAKES TO TURN ME BEFORE I TOUCH THE STRUT) AND THEN ADD THAT TO MY TORQUE VALUE

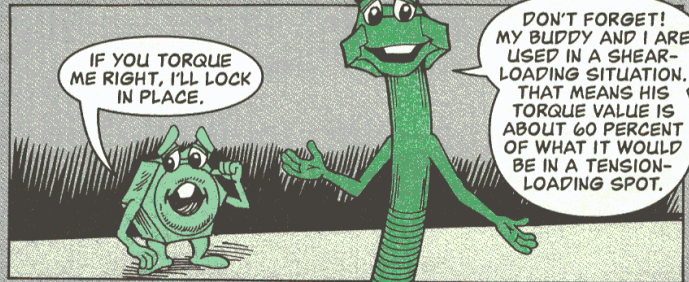
FOUND IN TABLE 2-9 OF THE TM.



YOUR TM TELLS YOU TO HOLD MY PAL, MR. BOLT, AND TIGHTEN ME.



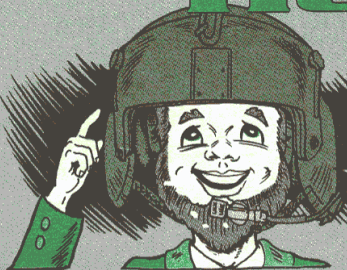
AND TIGHTENING MEANS TORQUE!



IF YOU TORQUE ME RIGHT, I'LL LOCK IN PLACE.

DON'T FORGET! MY BUDDY AND I ARE USED IN A SHEAR-LOADING SITUATION. THAT MEANS HIS TORQUE VALUE IS ABOUT 60 PERCENT OF WHAT IT WOULD BE IN A TENSION-LOADING SPOT.

Helmet Help



MY DERBY IS FINE SINCE I DON'T LEAVE THE GROUND, BUT IF FLYING I WAS, IN THIS HELMET I'D BE FOUND!

If the HGU-56/P aircrew integrated helmet system (AIHS) hasn't already reached your ALSE shop, it soon will. This new helmet system replaces the SPH-4 and -4B and, with future developments, will eventually replace the Apache's IHAADS.

Here are some tips that will help you maintain and fit the new helmet:

Maintenance

The blown-air connector assembly on the right rear of the helmet shell is designed for the future addition of a blown-air head cooling system and visor defogging system.

In the meantime, the connector is covered by a hinged dust cover. This cover is held in place by a thin hook and pile patch. If the patch is left open, dust gets in the helmet and can irritate the eyes and nose of the helmet wearer. Also, an open patch is easily torn off. Until the blown air system is in

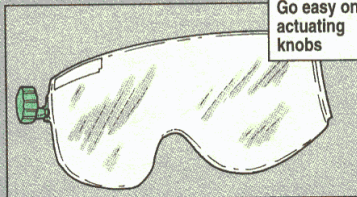
place, keep the cover closed. There is no reason for it to be open.

Keep blown-air connector cover closed

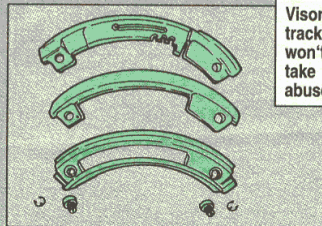


The left- and right-hand actuating knobs on the visors will not take abuse. To move the knobs, brace your thumb against the visor track and pull down with a forefinger. If you try to force it, the visor will come out of the track.

Go easy on actuating knobs

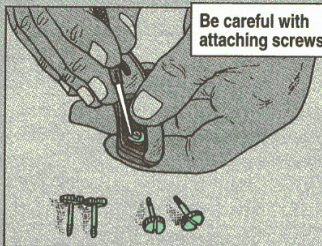


The visor track won't stand abuse, either. Make sure wearers get the word when you give them their helmets. Sand and dust can jam the visor in its tracks, but blowing the tracks out with shop air will clear the jam.



Visor tracks won't take abuse

When you work on the tracks, be careful with the attaching thumbscrews. You can easily strip the nut plate.

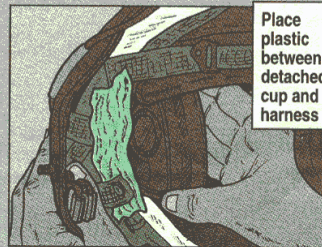


Be careful with attaching screws

Fitting

Some early users of the new helmet have found it difficult to position the ear cups so they are aligned properly. CW3 Sean Crothers, 159th Combat Aviation Group at Ft Bragg, recommends these steps to position the cups more quickly and precisely.

First, place a sandwich-size plastic bag between each of the detached ear cups and the harness. This will keep the hook and pile from fastening.



Place plastic between detached cup and harness

Next, hold the ear cups and plastic bags in place and fit the helmet on your head. This takes a little effort.

Make sure the TPL/helmet fits properly. Now move the ear cups until they fit your ears.

Finally, hold the earcups in place and slowly slide the plastic out. The hook and pile will adhere and hold the cups in the right position for your ears.

Like the SPH-4 and -4B, spreading the helmet excessively to put it on will weaken it and lead to cracks.

Here's how to put on the helmet:

1. Hook your thumbs over the ear cups and spread the helmet just slightly.
2. Place the front edge of the helmet firmly against the forehead.
3. Rotate the helmet rearward and down onto your head.
4. Press the helmet down firmly with both hands.
5. Adjust the nape and chin straps.

A Great Extraction

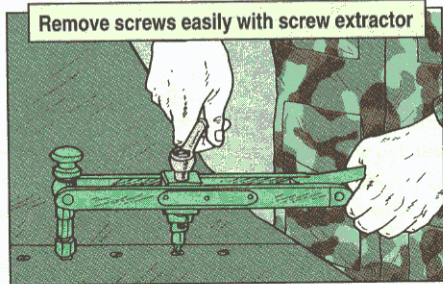


Every mechanic who has busted his knuckles and lost his temper trying to remove blade tip caps, raise your scarred hands.

Let's face it, some screws grab on and never want to let go—like those holding blade tip caps. Before a cap comes off you'll probably strip threads, destroy heads, and scratch and gouge both the cap and the blade.

Say goodbye to those problems forever by ordering a screw extractor. NSN 5120-01-398-2869 brings an extractor that removes screws from No. 8-32 through 1/4 inch. NSN 5120-01-398-2868 brings one that removes screws 1/4 through 3/8 inch.

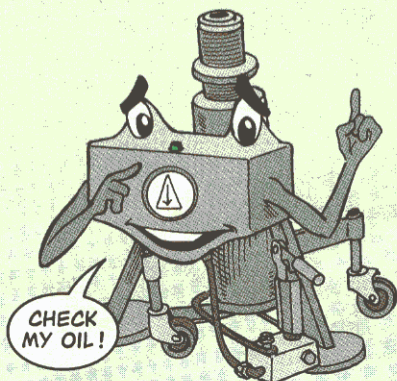
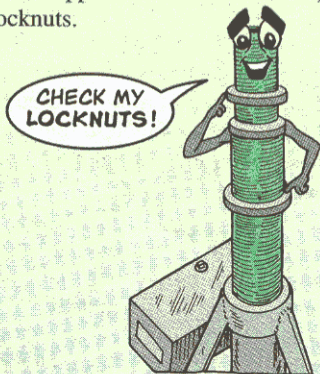
The extractor works on all aircraft panels as well as tip caps. Mechanics who use the extractor swear by it. They say it lets them finish hour-long jobs in minutes. You'll need your commander's authorization to order an extractor.



UPLIFTING MAINTENANCE

Before you use any aircraft jack, give it your personal maintenance once-over. Here are some things to check: Eye-ball the hydraulic pump cylinder and ram, support structure and base, and locknuts.

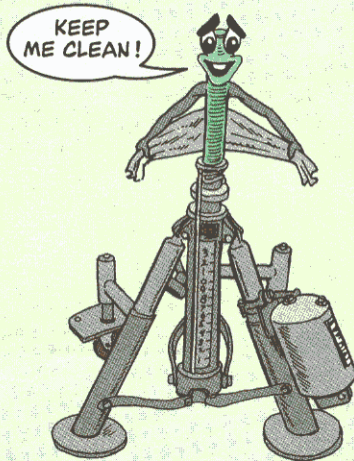
Is the oil level right? Check it and refill it if necessary.



Any leaks? Any cracks? Any loose connections? Any missing or damaged hardware? Bad hoses?

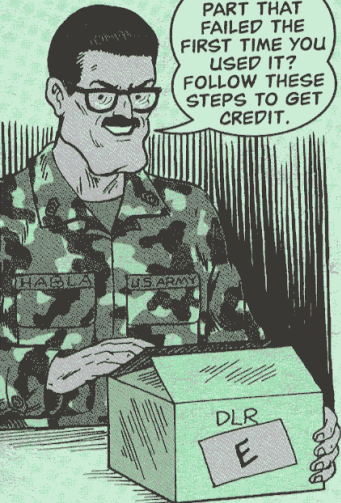
Is the jack clean? It should be. Dirt is an abrasive that grinds into parts and gives corrosion a place to start.

Don't forget the base. That's often neglected. If your base has casters, they should move freely and have good tread.



Getting Full Credit

GOT A PART THAT FAILED THE FIRST TIME YOU USED IT? FOLLOW THESE STEPS TO GET CREDIT.



Some folks still don't understand how to get 100 percent credit on a failed item even though the Stock Funded Depot Level Repairables (SFDLR) program has been around for years. So, let's run through the whole process again.

First you have to make sure that your item IS an initial failure. But how do you do that? Just answer these questions about your failed item: Did the item fail the very first time you used or tested it? Did you cause the failure through an accident, misuse, improper installation, improper operation, unauthorized repair, or alteration?

If you answered YES to the first question and NO to the second question, then you have an initial failure. Here's how to handle it:

Keep your mitts off the item. Do not try to fix it. You won't get credit if you tinker with it!

Call your local Logistics Assistance Office (LAO) and tell them you have an initial failure item. A Logistics Assistance Representative (LAR) will work with you to solve the problem.

ACT	FSC	NIIN	ADDL	NOMENCLATURE				SOS	AAC	PS	UNIT-PRICE
5895	00-800-0682			CONSOLE, SITUATION D				B16	J		5,542.00
FC	UI	UM	MEAS-QTY	ETC	SCMC	EC	ARC	INVCAT	LIH	LCC	RICB
	EA			96	C	3	G21TP			R	B
ARC	SRC	SCIC	CIIC	TCC	SLC	DML	ADP	PWI	HRC	RC	D
X		0	U	7	0	B	0	A	D		
ARI	ARIL RICS			ARI EFF DT							
O-PHRASE-C CODE STATEMENT				O-RELATED ITEM INFO-----C NSM/MCN OGU JTC UI UM M-QTY Q/ASY							

The LAR will look up the NSN of your failed item on the AMDF to make sure it's a Depot Level Repairable (DLR). A DLR will have a maintenance repair code (MRC) of D or L, or both an MRC of O, F or H and an automatic return item code of E, C, R, or S.

for Failures

Meanwhile, check out Chap 11 of DA Pam 738-750 or Chap 3 of 738-751 to determine if the failure is a Category I or II item.

For Category II items, fill out an SF 368, Product Quality Deficiency Report (PQDR). Make sure you explain completely in Block 22 what happened. Also, write the words INITIAL FAILURE CLAIM in that block.

HELLO, LOGISTICS ASSISTANCE OFFICE? I'VE GOT AN INITIAL FAILURE.



PRODUCT QUALITY DEFICIENCY REPORT				<input type="checkbox"/> CATEGORY I <input type="checkbox"/> CATEGORY II	
1a. FROM (Originator)			2a. TO (Screening Point)		
1b. NAME, TELEPHONE NO. AND SIGNATURE		1c. DATE	2b. NAME, TELEPHONE NO. AND SIGNATURE		2c. DATE
3. REPORT CONTROL NO.	4. DATE DEFICIENCY DISCOVERED	5. NATIONAL STOCK NUMBER (NSN)		6. NOMENCLATURE	
7a. MANUFACTURER/CITY/STATE		7b. MFRS. CODE	7c. SHIPPER/CITY/STATE		8. MFRS. PART NO.
9. SERIAL LOT/BATCH NO.	10a. CONTRACT NO.	10b. PURCHASE ORDER NO.	10c. REQUISITION NO.	10d. GBL NO.	
11. ITEM <input type="checkbox"/> NEW <input type="checkbox"/> REPAIRED/OVERHAULED	12. DATE RECD., MFRD., REPAIRED, OR OVERHAULED		13. OPERATING TIME AT FAILURE	14. GOVERNMENT FURNISHED MATERIAL <input type="checkbox"/> YES <input type="checkbox"/> NO	
15. QUANTITY		a. RECEIVED	b. INSPECTED	c. DEFICIENT	d. IN STOCK
16. DEFICIENT ITEM WORKS ON/WITH	a. END ITEM (Aircraft, motor, etc.)	(1) TYPE/MODEL/SERIES			(2) SERIAL NO.
b. NEXT HIGHER ASSEMBLY	(1) NATIONAL STOCK NO. (NSN)	(2) NOMENCLATURE	(3) PART NO.	(4) SERIAL NO.	
17. UNIT COST	18. ESTIMATED REPAIR COST	19a. ITEM UNDER WARRANTY <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UN-KNOWN	19b. EXPIRATION DATE		
5 \$	\$				
20. WORK UNIT CODE/ETC (Navy and Air Force Only)					
21. ACTION/DISPOSITION <input type="checkbox"/> HOLDING EXHIBIT FOR _____ DAYS <input type="checkbox"/> RELEASED FOR INVESTIGATION <input type="checkbox"/> RETURNED TO STOCK <input type="checkbox"/> DISPOSED OF <input type="checkbox"/> REPAIRED <input type="checkbox"/> OTHER (E-explain in Item 22)					
22. DETAILS (Describe, to best ability, what is wrong, how and why, circumstances prior to difficulty, description of difficulty, cause, action taken, including disposition, recommendations. Attach copies of supporting documents. Continue on reverse sheet if necessary.) INITIAL FAILURE CLAIM: WE PLUGGED IT IN AND IT WOULDN'T WORK.					

Report Category I items immediately by phone and message. Complete an SF 368 just like you would for a Category II failure, except check the CAT 1 block and write the date time group of your message in Block 22.

If the LAR agrees that it's an initial failure, he will write "Initial Failure—Yes" in Block 22 and sign and date the PQDR in the same block. If the item doesn't meet the criteria for an initial failure, follow the normal PQDR process, per DA Pam 738-750 or 738-751.

WRITE THE REQUISITION NUMBER IN BLOCK 10C OF THE PQDR.



PRODUCT QUALITY DEFICIENCY REPORT		<input type="checkbox"/> CATEGORY I <input type="checkbox"/> CATEGORY II	
1a. FROM (Originator)		2a. TO (Screening Point)	
1b. NAME, TELEPHONE NO. AND SIGNATURE		1c. DATE	
2b. NAME, TELEPHONE NO. AND SIGNATURE		1d. DATE	
3. REPORT CONTROL NO.	4. DATE DEFICIENCY DISCOVERED	5. NATIONAL STOCK NUMBER (NSN)	6. NOMENCLATURE
7a. MANUFACTURER/CITY/STATE	7b. MFRS. CODE	7c. SHIPPER/CITY/STATE	8. MFRS. PART NO.
9. SERIAL/LOT/BATCH NO.	10a. CONTRACT NO.	10b. PURCHASE ORDER NO.	10c. REQUISITION NO.
11. ITEM <input type="checkbox"/> NEW <input type="checkbox"/> REPAIRED/ OVERHAULED	12. DATE RECD., MFRD., RE- PAIRED, OR OVERHAULED	13. OPERATING TIME AT FAILURE	14. GOVERNMENT FURNISHED MATERIAL <input type="checkbox"/> YES <input type="checkbox"/> NO
15. QUANTITY	a. RECEIVED	b. INSPECTED	c. DEFICIENT
16. DEFICIENT ITEM WORKS ON WITH	(1) TYPE/MODEL/SERIES	(2) SERIAL NO.	(3) SERIAL NO.
a. END ITEM (Aircraft, motor, etc)	(1) NATIONAL STOCK NO. (NSN)	(2) NOMENCLATURE	(3) PART NO.
b. NEXT HIGHER ASSEMBLY	(4) SERIAL NO.	(4) SERIAL NO.	(4) SERIAL NO.
17. UNIT COST \$	18. ESTIMATED REPAIR COST \$	19a. ITEM UNDER WARRANTY <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UN- KNOWN	19b. EXPIRATION DATE
20. WORK UNIT CODE/REV (Navy and Air Force Only)			
21. ACTION/DISPOSITION <input type="checkbox"/> HOLDING EXHIBIT FOR _____ DAYS <input type="checkbox"/> RELEASED FOR INVESTIGATION <input type="checkbox"/> RETURNED TO STOCK <input type="checkbox"/> DISPOSED OF <input type="checkbox"/> REPAIRED <input type="checkbox"/> OTHER (Specify in Item 22)			
22. DETAILS (Describe, to best ability, what is wrong, how and why, circumstances prior to difficulty, description of difficulty, cause, action taken, including disposition, recommendations. Attach copies of supporting documents. Continue on separate sheet if necessary)			

INITIAL FAILURE CLAIM: WE PLUGGED IT IN AND IT WOULDN'T WORK.

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Fill out a DD Form 1348-1 or DA Form 2765-1 turn-in document. Write the document number in Block 22 of the PQDR. That way the AMC proponent can match the turn-in document with the PQDR initial failure document. This assures 100% credit from AMC for the failed item.

After the LAR has verified the PDQR is an initial failure, mail the PDQR to the appropriate AMC equipment manager in Figs 11-6 through 11-12 of DA Pam 738-750 or Para 3-6 of DA Pam 738-751.

AMC Equipment Managers		
AMC proponent	Address	Phones
ATCOM	ATTN: AMSAT-I-IMDO St Louis, MO 63120-1798	DSN 693-1995 Comm (314) 263-1995 Fax 693-1836
CECOM	ATTN: AMSEL-LC-LEO-D-CS Ft Monmouth, NJ 07703-5000	DSN 992-3808 Comm (201) 532-3808 Fax 992-1413
CECOM CSLA	ATTN: SELCL-EP Ft Huachuca, AZ 85613-7090	DSN 879-6469 Comm (520) 538-6469 Fax 879-6143
MICOM	ATTN: AMSMI-MMC-RE-C Redstone Arsenal, AL 35898-5230	DSN 746-7589 Comm (205) 876-7589 Fax 746-8973
TACOM (Automotive)	ATTN: AMSTA-TR-E/MPA Warren, MI 48397-5000	DSN 786-5422 Comm (810) 574-5422 Fax 786-6637
ARDEC	ATTN: AMSTA-AR/QAW-A(R) Rock Island, IL 61299-7630	DSN 793-6764 Comm (309) 782-6764 Fax 793-6653



HOLD THE FAILED ITEM UNTIL DISPOSITION INSTRUCTIONS ARE RECEIVED FROM THE AMC EQUIPMENT MANAGER.

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PS END

HOT TIPS FOR

Safety is a big concern when storing flammables such as fuels, solvents and solvent-based paints.

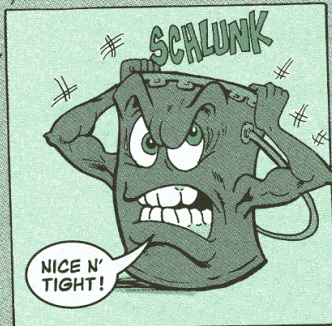
CTA 50-909 authorizes storage cabinets if you store flammables. There are all shapes, sizes and colors of storage cabinets listed in FEDLOG.

Here are three that might fit your needs:

Cabinet description	NSN 7125-01-
Yellow with bright red "Flammable-Keep Fire Away" decal across both doors, 43 inches wide x 44 inches high x 18 inches deep	084-6954
Yellow, 43 inches wide x 65 inches high x 18 inches deep	084-6955
Red, 36 inches wide x 55 inches high x 50 inches deep	091-8956

HERE ARE SOME SAFETY TIPS ON HANDLING AND STORING FLAMMABLES.

Tighten all lids on the containers.

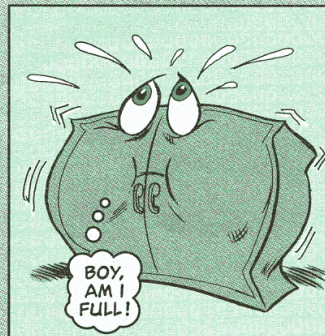


Remove any leaking containers immediately. Be sure to clean up all spills by following your unit's HAZMAT SOP

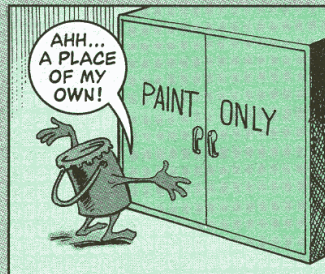
Make sure containers are grounded when you're pouring from one container to another.

STORING FLAMMABLES

Never exceed the maximum storage capacity of a cabinet. A cabinet's capacity is determined by safety, not by the number of containers it will hold.

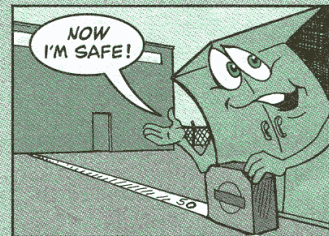


Give solvent-based paint its own storage cabinet. Never store it in the same cabinet as fuels and solvents.



Locate indoor cabinets away from areas where spark-producing tools or equipment are used. Also keep them away from areas where heat, fumes and gases build.

Put outdoor cabinets at least 50 feet from combustible structures. Place and enforce "No Smoking" signs. Keep the area around the cabinet free of weeds and debris.



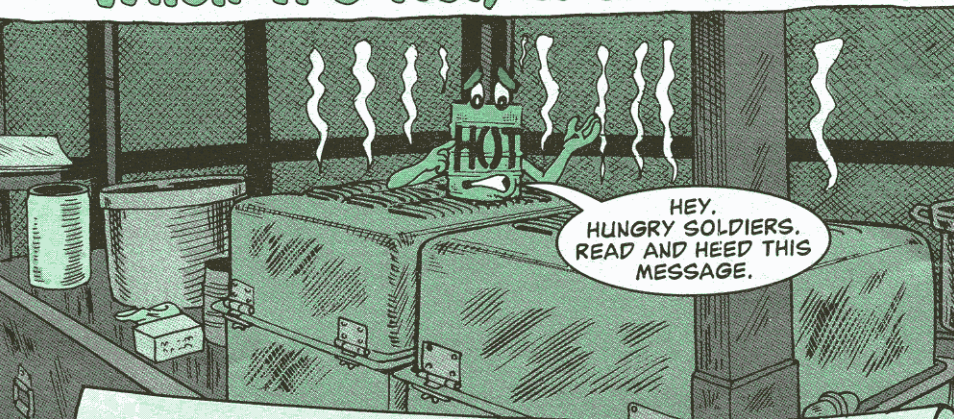
Check out the information in the National Fire Code 30, Flammable and Combustible Liquids, and AR 420-90, Fire Protection. If you do not have these pubs on hand, call your safety office. They should have copies and be able to tell you about local regulations.

MY FINE PS JOURNEY HAS NOW ENDED YOU SEE, DO PM ALL MONTH AND GOOD LUCK BE WITH THEE.



M59 Field Range . . .

When It's Hot, It's **HOT!!!**



Dear Editor,

When we use the mobile kitchen trailer during field feeding, we have two M59 field ranges fired up.

These ranges get very hot and soldiers can get a serious burn if they touch them as they go through the food line. To alert everyone of the danger, we painted an empty coffee can bright red and stenciled "HOT" on it. Then we place the can on top of the range in plain sight.

HHC, STB
13th COSCOM
Ft Hood, TX

FROM THE DESK OF THE *Editor* 

That's one hot suggestion!

Kitchen Equipment . . .

Field Feeding FM

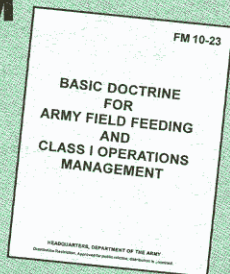
Need a sample SOP for field kitchen maintenance or an inspection checklist? How about safety and training procedures?

If so, check out FM 10-23, Basic Doctrine for Army Field Feeding and Class I Operations Management (Apr 96). If you can't find a copy, get your pubs person to order it. Make sure they also add it to DA Form 12-11-E's block number 0868 so you get future changes. On DA Form 12-99-R (Apr 96), use IDN 110868.

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BE SAFE, CHANGE UNDERWEAR



Combat vehicle crewmen, what you've got on **under** your NOMEX coveralls can be critical in a tank fire.

NOMEX coveralls are designed to resist temperatures up to 700°F. But they won't protect you at all if your cold-weather underwear has any nylon or polyester in it.

Heat transfer through the NOMEX suit melts those synthetics. A fire that you might otherwise survive becomes deadly.

Check your underwear labels. If your underwear contains any synthetics, or if you're unsure, turn 'em in. Then protect yourself by ordering 100% cotton cold-weather underwear. The natural cotton fibers won't melt. They also help keep heat away from your body in a tank fire.

Use these NSNs to order:

Drawers	
NSN 8415-00-782-	Size
3226	Small
3227	Medium
3228	Large
3229	X-Large

Undershirt	
NSN 8415-00-270-	Size
2012	Small
2013	Medium
2014	Large
2015	X-Large

Be sure to put 2B in columns 65-66 of your supply request. That'll prevent substitution of underwear made with synthetic fibers.

HANDS-FREE LIGHTING



Ever been in a spot where you needed three hands? Two to hold a map, tools or a TM and another hand to shine a light?

Since you can't grow another hand, a headband flashlight holder or a flexible extension worklight might be just the ticket.

NSN 4240-01-387-5819 brings a headband that holds AA and AAA flashlights only. Headband, NSN 4240-01-387-5592, has an adjustable strap to hold flashlights up to C size. NSN 4240-01-399-1383 brings a strap that fits around CVC and Kevlar helmets.

Need AA flashlights? NSN 6230-01-259-4495 brings a white-beam-only light. NSN 6230-01-353-4468 brings a light that can shine white or red.

Finally, if you need a flexible extension worklight that you can adjust to shine light exactly where you need it, you can get a flexible flashlight with PN FLX18 CAGE 0ZQT5. It costs about \$17 each or \$170 for 12.

You can use App A of CTA 50-970 as your authority to order these items.



ULLS Bulletin Board

Our ULLS bulletin board story on Page 60 of PS 530 had two errors. The ULLS bulletin board, DSN 687-1132 or (804) 734-1132, takes a modem setting of no parity, eight data bits and one stop bit. The National Guard logistics bulletin board, which also has the ULLS bulletin, is (800) 558-8881.

Ammo Danger Area

The maximum range for .50-cal training ammo (M858 ball and M860 tracer) is 700 meters. Page 36 in PS 530 was wrong when it said the maximum range is farther than that.

RS-28 Roller Wheel

If you have to replace a wheel on your RS-28 roller, better order two. The only wheel in stock is the new 20-incher. Since the old wheel was only 16 inches wide, you'll have to replace both. Request new wheels on a DD Form 1348-6 from RIC S9C with part number VRW-229 and CAGE code 88812.

Air Compressor Element

NSN 4330-00-420-7557 gets the oil filter element for the 750 CFM Sullair air compressor. The element is not called out in Fig 68 of TM 5-4310-451-24P.

Wire Rope Grease

If the wire cable on your vehicle's winch is not used much, or if conditions are wet and humid, or if the air is salty, give it extra protection with MIL-G-18458 wire rope grease. Get a 35-lb can with NSN 9150-00-530-6814.

SEE Brake Fluid Flush

Mechanics, keep the air pressure between 14.5 and 29 psi—like it says on Page 4-263 of TM 5-2420-224-20-2—when you flush brake fluid from the SEE. Any more pressure and you'll crack the reservoirs. A cracked reservoir means brake fluid leaks out. Enough fluid loss means no brakes!

Heater Control Fixes

There's help for you HMMWV owners who have operational and maintenance problems with the heater control valve and cable. Relocate the valve away from the heater core and lubricate the cable to keep it moving free. They'll work better, last longer and won't be so hard to replace. Pages G-5, G-6, G-11 and G-15 in TM 9-2320-280-10 have the lube instructions and Pages 10-150 and 10-151 in TM 9-2320-280-20-3 have the valve adjustment info.

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?

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