

Issue 662

**PS** ★

January  
2008

# THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-662

Approved for  
Public Release;  
Distribution is  
Unlimited



(JOE  
KUBER)

**READ THE ARTICLE  
ON ELECTROSTATIC  
DISCHARGE!**

**IT STARTS ON PAGE 40!**

**SEE PAGE 27 FOR  
THE 2007 PS INDEX!**

# A Letter from Home

12 January 08

Dear Little Brother,

It was great to get your letter. So, you've begun your first tour in Iraq. I'm sure it's pure culture shock. It was for me. At the risk of sounding like a know-it-all, I want to share a few lessons I learned from my time in that hot, dusty sandbox. Just some friendly advice from a big bro who's been there.

First and foremost, practice preventive maintenance—for you and your equipment.

PM for you comes down to a few basics: Drink plenty of water to replace what you sweat out. Rub insect repellent with DEET on your skin so the bugs don't eat you alive. Protect your skin with sun screen, your hearing with combat arms earplugs and your eyes with combat eyewear.

As for PM on your equipment, start with the hydration system, because you can't soldier long in the desert without water. Check for leaks. Disinfect the bladder so your water doesn't taste like a stagnant pond.

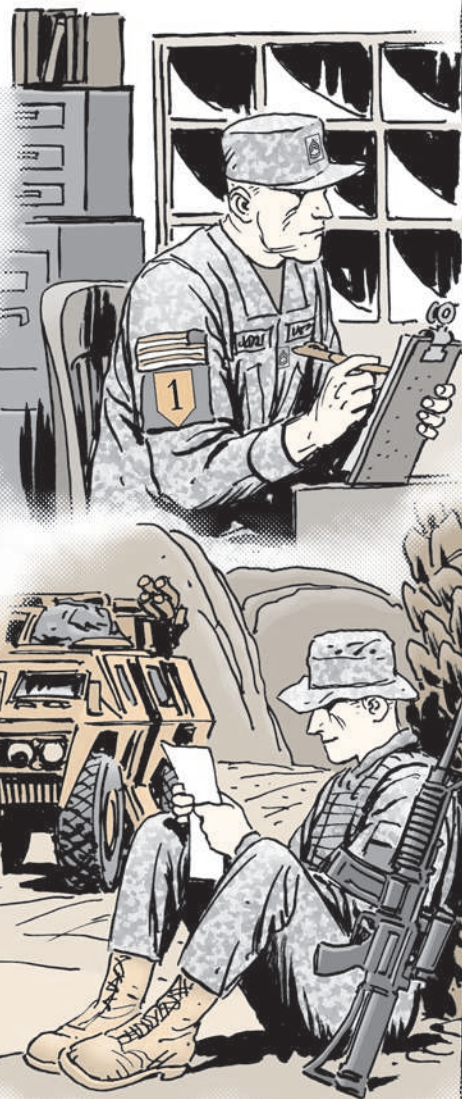
Then take a close look at the soft panels and hard inserts in your IBA. If they've taken hits by bullets or fragments, they can't protect you worth a darn. Replace them.

Make no mistake, little brother, sand can sabotage your gear pronto. To keep communicating, put dust caps on radio connectors. To keep shooting, clean your rifle and magazines twice as often—and keep their outsides wiped dry.

One last thing: your HMMWV. When the action heats up, you'll need to roll and roll fast. So check the radiator's coolant level once a day. And make sure to clean the air filter. Don't get stuck on the side of the road. A downed vehicle attracts enemy fire like flies to—well, you know.

Above all, stay frosty and come home safe. Best of luck.

Love,  
Your Big Bad Bro





# THE PREVENTIVE MAINTENANCE MONTHLY

ISSUE 662 JANUARY 2008

TB 43-PS-662, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.



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

Just write to:

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

Or e-mail to:

**logsa.psmag@conus.army.mil** or  
**half.mast@us.army.mil**

Internet address:

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

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*Joyce E. Morrow*  
**JOYCE E. MORROW**

Administrative Assistant to the Secretary of the Army

0730209

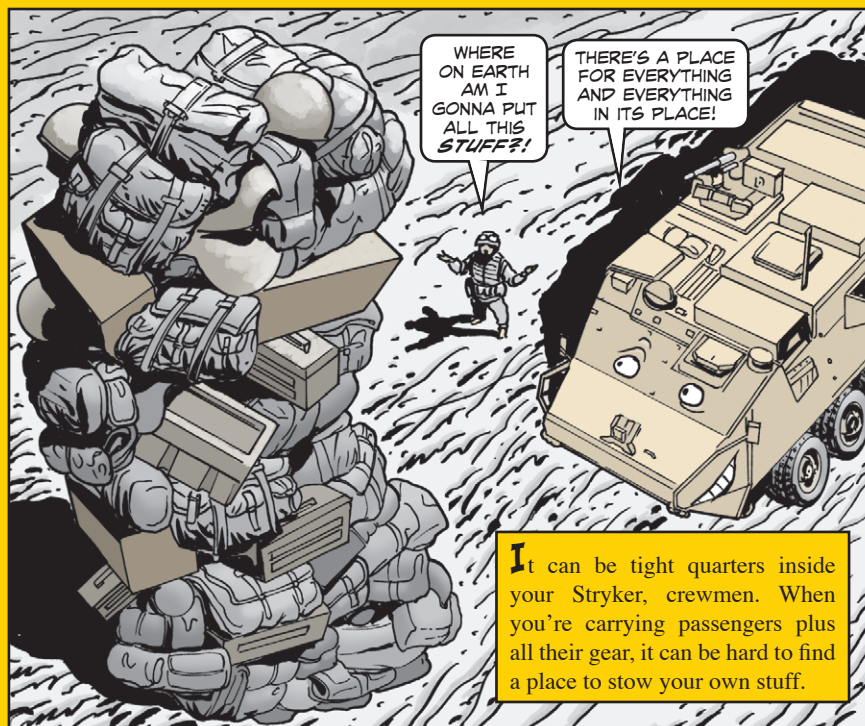
PS, The Preventive Maintenance Monthly (ISSN 0475-2953) is published monthly by the Department of the Army, Redstone Arsenal, AL 35898-5000. Periodical postage is paid at the Huntsville, AL post office and at additional mailing offices.

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



Stryker...

# A PLACE FOR EVERYTHING



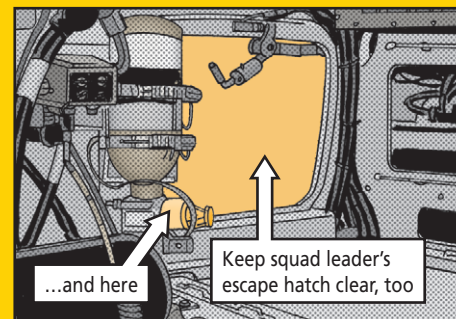
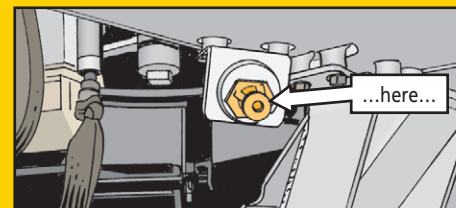
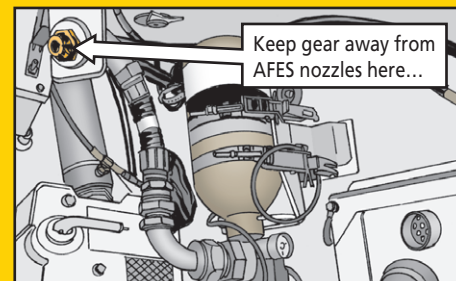
In fact, it's probably easier to list all the places you **can't** put your gear. A prime example is around the three automatic fire extinguisher system (AFES) nozzles in the passenger compartment.

Hanging helmets from the nozzles or stuffing backpacks and other gear around them will block Halon discharge. Not good if there's a fire!

Another no-stow zone is against the squad leader's escape hatch. It's a nice, wide open area that looks like a great place for getting stuff out of the way.

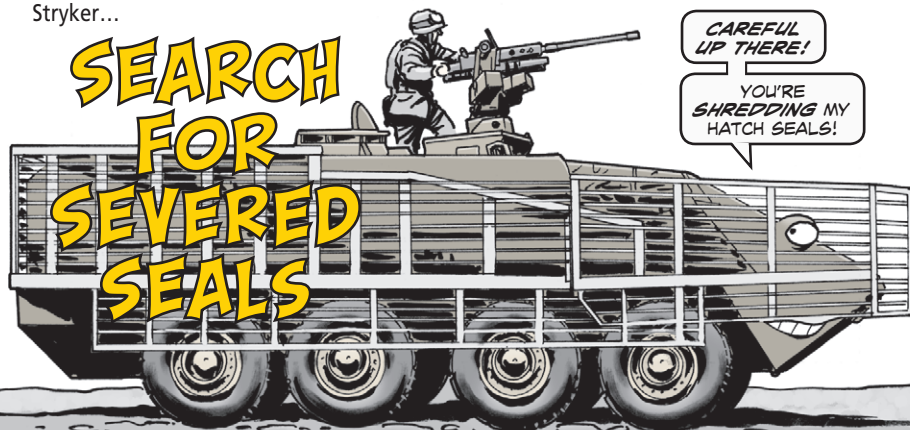
But the reason it's wide open is so the hatch can be used to leave the vehicle in an emergency. If you need to get out quick, the last thing you want to worry about is moving gear, cases of MREs, and other stuff that's in your way.

So where do you put all that stuff? Check out the *Stowage and Sign Guide* section of your -10 TM. It'll tell you exactly where each and every item can be safely stored.



Stryker...

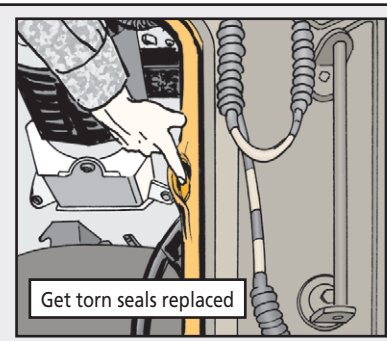
# SEARCH FOR SEVERED SEALS



**G**etting into and out of the hatches on your Stryker can be hard on hatch seals—especially if you're in a hurry.

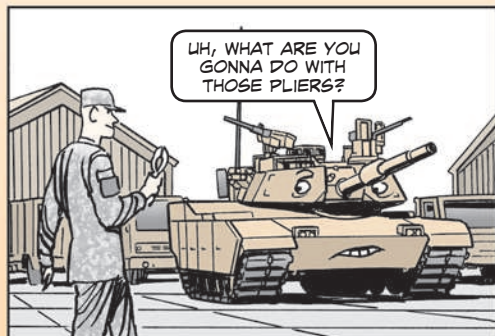
Boots grinding constantly against the edges of those seals will cut and tear them. Before you know it, the seals don't seal so well anymore. Moisture, dirt and sand get inside and damage sensitive components.

So check those seals on a regular basis. If you find any cuts or tears, tell your mechanic so he can get them replaced.





# STOW THAT PIN!

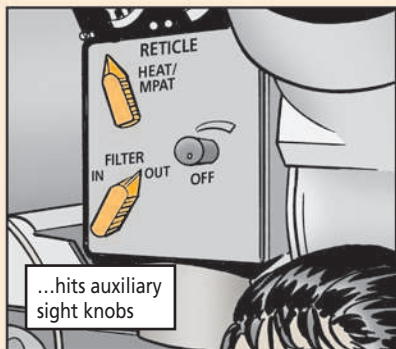
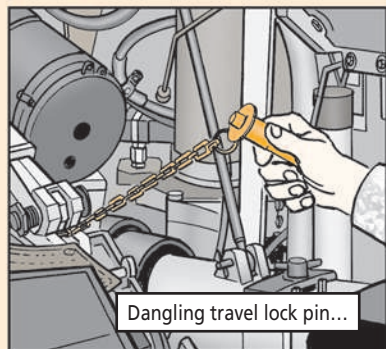


CREWMEN, IT'S A GOOD IDEA TO KEEP THE GUN MOUNT TRAVEL LOCK PIN ON A SHORT LEASH.

BUT THAT DOESN'T MEAN YOU NEED TO SHORTEN ITS CHAIN!

The pin is attached to a length of chain that keeps it from getting lost. The problem comes when you unlock the gun mount and let the pin dangle.

The chain lets a dangling pin hit the gunner's auxiliary sight knobs. It only takes a few hits by the heavy pin to crack or break the knobs.



THE FIX IS SIMPLE.

WHEN NOT IN TRAVEL LOCK, JUST FULLY INSERT THE PIN INTO THE MAIN GUN BRACKET. THAT KEEPS THE PIN OUT OF THE WAY UNTIL IT'S NEEDED AGAIN.

YOU'LL FIND THE PROCEDURES ON PAGE 2-381 OF TM 9-2350-264-10-1.

# Periscope Head Safety Wire Fix



Dear Editor,

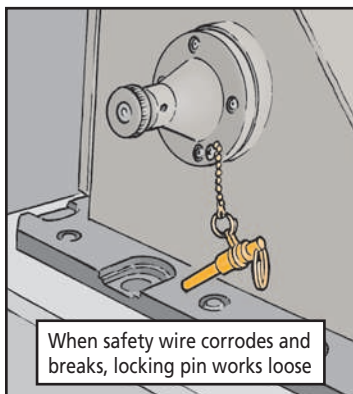
During my time in Iraq, I've noticed a problem with the safety wire that's being used to tie up the mirror control knob on the side of the Bradley's ISU periscope head.

This safety wire has a lead embossing seal and is the same stuff used for the fire suppression system and turret combat override. Unfortunately, it doesn't hold up to the weather conditions in Iraq. The wire corrodes and snaps, letting the locking pin vibrate out and hang from its tether.

Gunners usually place the pin back in the periscope head without realizing that the knob is spring-loaded. That locks the mirrors and keeps them from moving when the gun is elevated or depressed. That burns out the torquer motor that moves the mirror within the periscope head itself.

We've found the easiest fix for this problem is to have your TOW missile system repairers replace the lead embossed safety wire with NSN 9505-00-221-2650. This safety wire comes in a 1-lb spool, costs less and is much stronger than the old wire. It holds up against extreme weather conditions much better, too.

SGT Alan Bowser  
4/1 Cav Div  
Iraq



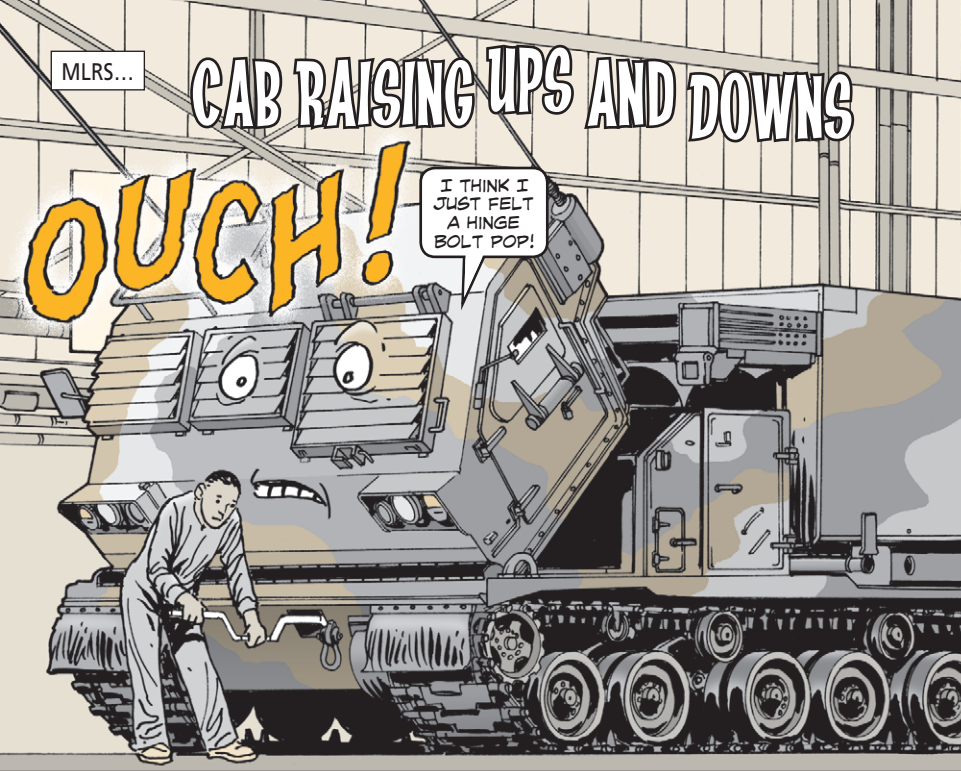
**Editor's note:** The mirror motors on those periscope heads are very expensive. So each one that doesn't have to be replaced is money well-saved. Good job, Sergeant!

MLRS...

# CAB RAISING UPS AND DOWNS

OUCH!

I THINK I JUST FELT A HINGE BOLT POP!



ANYONE KNOW THE NAME OF A GOOD CHIROPRACTOR?

RAISING AND LOWERING THE CAB ON YOUR MLRS IS ALMOST A DAILY CHORE.

BUT DON'T GET LULLED INTO THINKING THERE'S NOTHING TO IT.

KEEP THESE TIPS IN MIND BEFORE RAISING OR LOWERING THE CAB...

## Raising

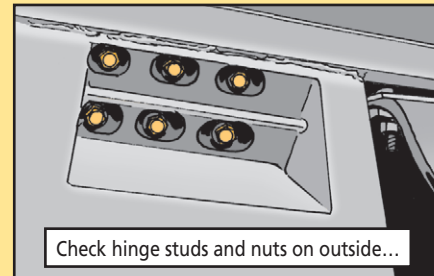
Before raising the cab, eyeball the cab hinge studs and nuts for cracks. If you find any, let your mechanic know. Don't raise the cab until cracked studs and nuts have been replaced. You don't want to be under that cab if the hinges fail!

Also, remove all equipment stowed on top of the cab before raising it. The elevating jack assembly can't take the extra strain, and falling equipment could kill or injure you or others.

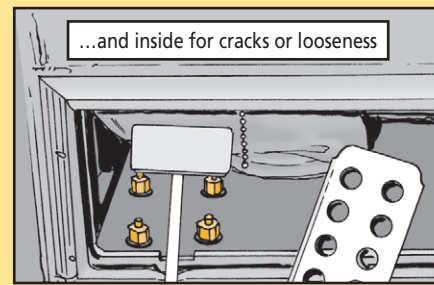
Slow and easy is the way to raise the cab. The faster you go, the more the cab rocks back and forth. That puts a lot of strain on the hinges.

Once the cab is up, check the hinge studs and nuts on the inside, too. Again, your mechanic should replace any damaged ones.

When the cab is raised is also the best time for your mechanic to replace any loose hinge nuts. That's when the torsion bar is under the least strain, so most of the torque will go on the nuts.



Check hinge studs and nuts on outside...



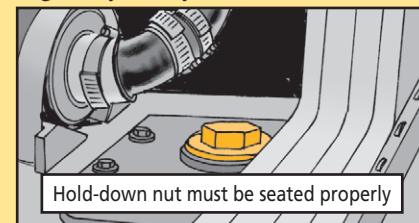
...and inside for cracks or looseness

## Lowering

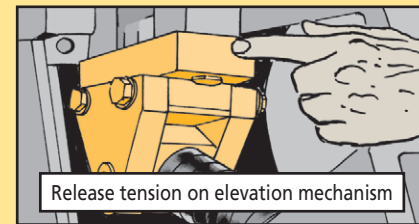
After lowering the cab, lock it down right or you may ruin the threads on the hold-down nuts or crack the frame.

If the nuts are not seated or tightened right, the cab sits cockeyed. The frame can crack as the cab flexes. The nuts can bind, too, so keep the threads clean. Never cross-thread 'em or the entire hold-down assembly has to be replaced. Use a little oil on the threads occasionally to make the job easier, too.

Release the tension on the elevation mechanism after the hold-down nuts are tightened. That way, there's no pressure on the mechanism while you're in operation. It'll save on busted parts.



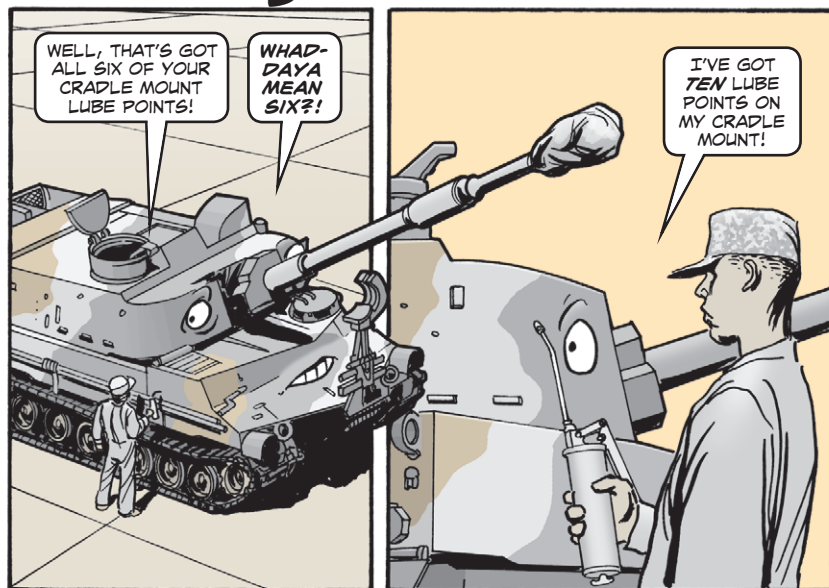
Hold-down nut must be seated properly



Release tension on elevation mechanism

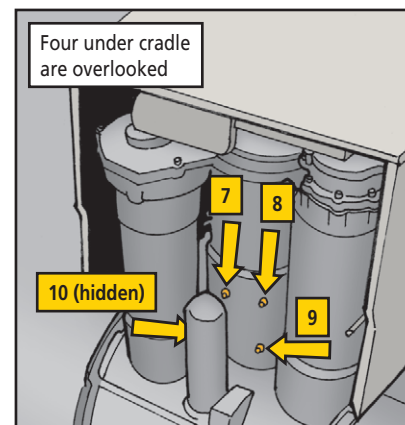
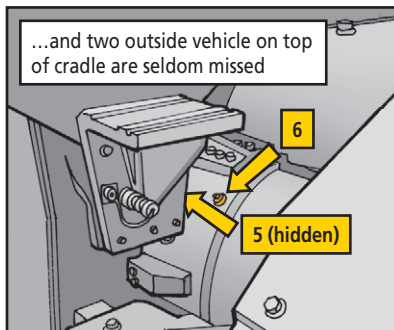
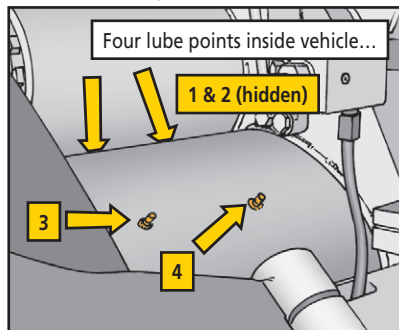


# Bearings Take a Beating Without Lube



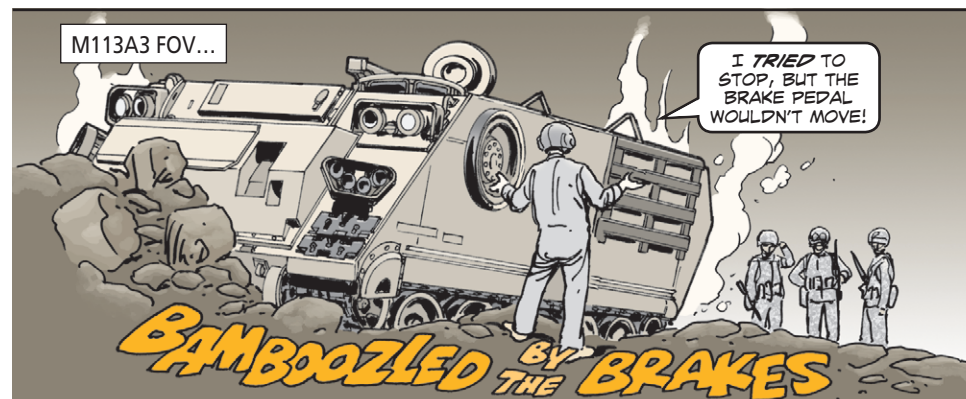
Crewmen, lube points that are hidden or hard to reach are often forgotten. Nowhere is this more evident than on the cradle mount bearings of your M109A6 Paladin.

There are 10 lube points on the cradle mount—four inside and six outside the vehicle. The four inside lube points and the two exterior lube points on top of the cradle mount usually get lubed regularly. The four on the bottom of the cradle mount are another story.



To get to those lube points, you must raise the gun tube. If you forget—or just don't go to the trouble of raising the gun—the cradle mount bearings will go dry. Whenever the cannon is fired, the tube is scored during recoil.

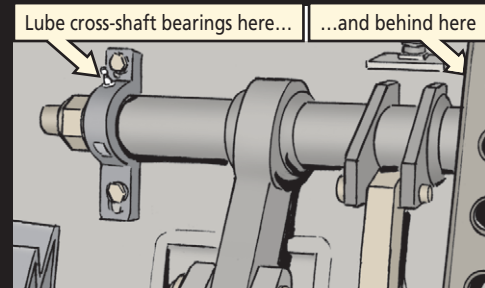
To protect the bearings, you'll need to lube **all 10** cradle mount lube points quarterly with molybdenum disulfide grease (GMD) or general purpose grease (GGP). GMD comes in a 14-oz cartridge, NSN 9150-00-935-4018, or 1 3/4-lb can, NSN 9150-00-754-2595. A 1 3/4-lb can of GGP comes with NSN 9150-00-985-7316.



When you push on your M113A3's foot brake and there's no give at all, a big question comes to mind: "How the heck do I stop?!"

That's what can happen if your mechanic doesn't lube the foot brake cross-shaft bearings regularly. A few squirts of GAA every 1,500 miles or semiannually will keep the foot brake moving like it should.

Just remember, mechanics, there are two lube points on the cross-shaft. Don't miss the one hidden behind the accelerator pedal. And make sure you clean the grease fittings before lubing to keep dirt out. Use cleaning compound, NSN 6850-01-277-0595. Order on a DD Form 1348-6 and put "NSN is not on "AMDF" in the REMARKS block.



# SURVIVING THE COLD

OH, MAN! I *KNEW* WE SHOULD'VE CHECKED THE BATTERIES BEFORE WE LEFT!

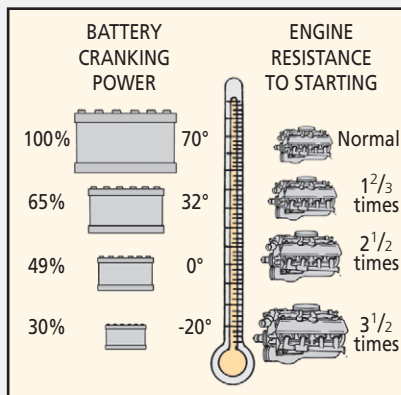
YEAH! AND BEING STRANDED OUT HERE WHEN THE HAWK IS OUT MAKES THINGS WORSE!

I'M FUH-FUH-FREEZING ALREADY!!



Gold weather is here and the hawk is out. But that doesn't mean you have to use only Hawker AGM batteries. Flooded lead-acid batteries can take you and your vehicles through the winter, too. You've gotta give them special care to survive the cold, though.

A fully charged lead-acid battery loses a third of its cranking power at 32°F. At 0°F, it has less than half its cranking power, and at -20°F it has only 30 percent. If that's what happens to a battery in good shape, guess what happens to one that's in bad shape?! So check your batteries now so they'll work when cold weather hits.



TAKE THESE STEPS TO DETERMINE IF YOUR BATTERIES CAN SURVIVE THE COLD.



## Read the TM

Have a copy of the battery pub, TM 9-6140-200-14, *Operator's, Unit, Direct Support and General Support Maintenance Manual for Lead-Acid Storage Batteries*, handy. Read it and refer to it.

All the guidance you need to test and keep your batteries fully charged is in Chapter 3 of TM 9-6140-200-14. Here are some points to keep in mind.

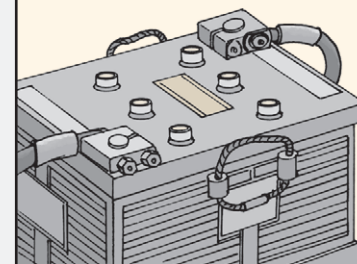
## Test the Battery Condition

Before testing the condition of a battery, check the level of electrolyte. Add distilled water, NSN 6810-00-682-6867, as needed. Then start the vehicle's engine and let it run on fast idle (1,000-1,200 rpm) for at least 20 minutes, or attach a charger for 20-30 minutes. Charging mixes the water and electrolyte.

Make sure you do this because if they don't mix, you'll end up only testing water! This mixing also helps keep plain water from freezing, preventing cracked battery cases.

It's best to test the electrolyte right after shutting off the engine. Use the antifreeze and battery tester, NSN 6630-00-105-1418.

If you add water, charge engine 20 minutes to mix electrolyte

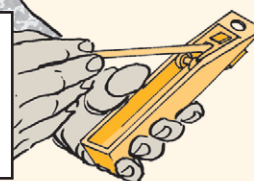


## Check Specific Gravity

Before putting a battery—old or new—on the job, mechanics, test its specific gravity. That tells you the battery's state of charge.

If the specific gravity is less than 1.100, or if the difference in specific gravity between cells is more than 0.025, don't use the battery! Turn it in.

Specific gravity less than 1.100? Don't use battery!





# Handle with Care!

**DRIVERS!**

EVEN THOUGH IT'S  
COLD OUTSIDE,  
**DON'T FORGET**  
ABOUT YOUR  
ENGINE'S COOLING  
SYSTEM...

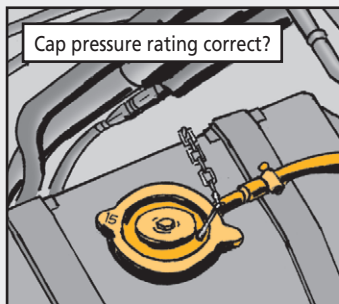
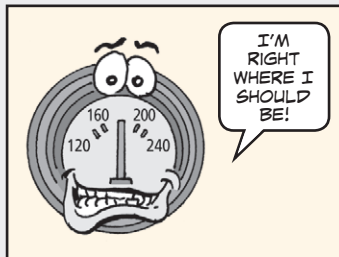
I NEED TO  
STAY **COOL**...  
EVEN IN THE  
**COLD!**

Regardless of the temperature, your vehicle's cooling system should be able to reach 160-180°F. If it doesn't, have the thermostat checked. It may need replacing.

A vehicle system that always runs at more than 200°F also needs attention. A broken thermostat, a clogged radiator, a bad radiator cap or filthy coolant may be the culprit. The engine's air flow may even be blocked.

To speed up heating in freezing weather, you can partially cover the air intake grilles with canvas when starting the vehicle. But remember to remove the cover after the engine reaches operating temperature.

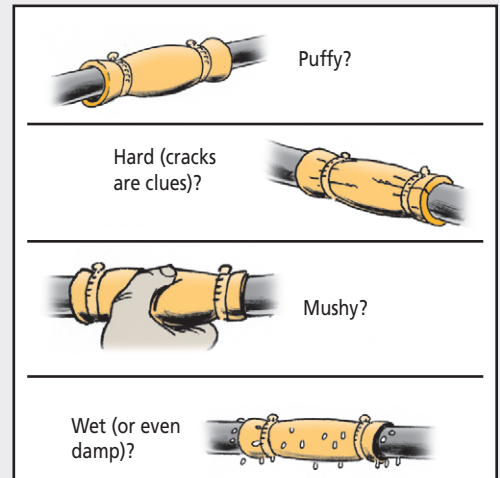
Look at the radiator cap. It should be the one your TM calls for. Just any cap won't do. The pressure rating of the cap is vital. Too low a rating lowers the boiling point of your coolant. Too high a rating builds up pressure that'll pop radiator seams or blow out hoses.



Hoses must withstand heat, pressure and vibration. They're rubber, so they rot, harden and crack with age. That's why you need *both eyes and hands* to detect bad hoses. Bad hoses are puffy, hard, mushy, or wet, so report them.

Check the radiator. Look for leaks on the top tank, and on the front and back of the core and bottom tank.

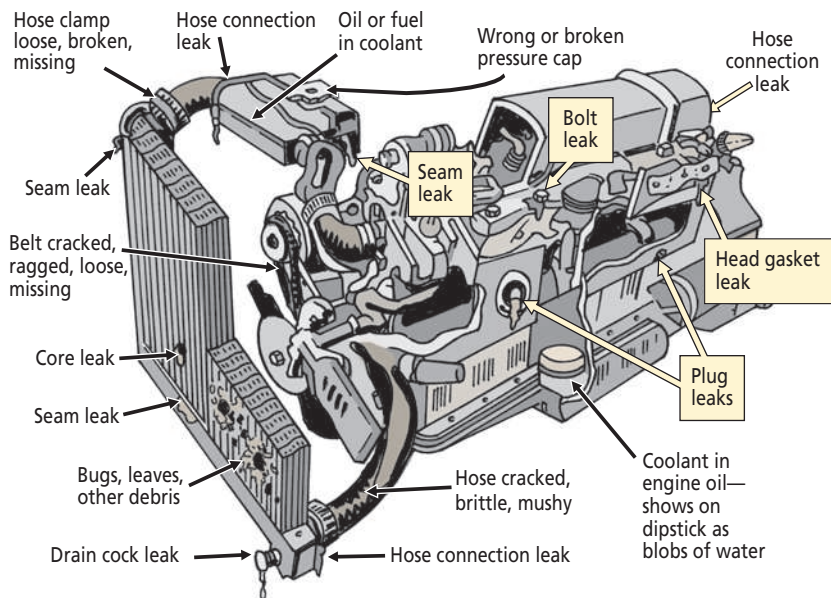
Leaks may not show up when your engine is cold, so look for rust and odd-colored dribbles where coolant has leaked and dried.





Later, when you've got the engine running at operating temperature and pressure, check those places again for wet spots. Use a flashlight during both inspections.

## Check for leaks or other cooling system problems

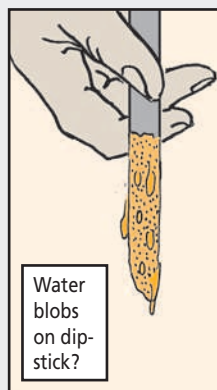


Finally, take the radiator cap off carefully. If the cooling system is hot, open the filler cap slowly until all pressure is gone. But be sure to use a rag or glove to protect your bare hand from a hot cap, or hot coolant.

The coolant should be a little over the top of the core. It should be almost clear—and colored by the antifreeze.

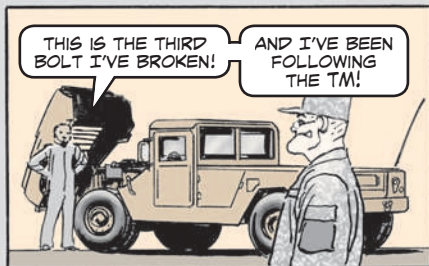
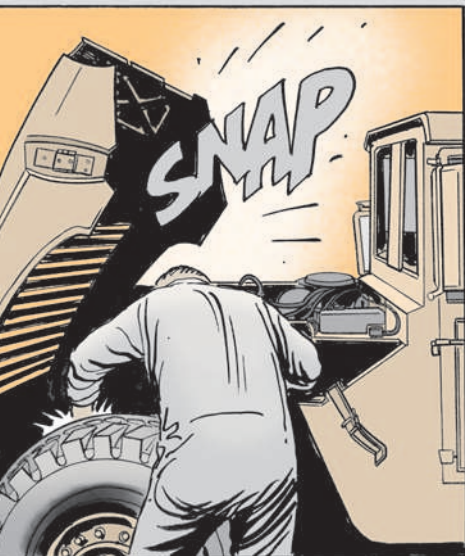
If your coolant is muddy-looking or has bits of gunk in it, your cooling system needs draining and flushing, and maybe even cleaning. Report it.

If you see a rainbow of oil slime on top of the coolant, you probably have a leak inside the engine. Exhaust gas or oil is getting into your cooling system. Pull the crankcase dipstick and check for water in the oil. Little blobs will show on the dipstick. Report any slime or blobs that you see.



**Drivers, note that air-cooled systems don't need much attention. All they need is a good flow of air. That means all the airflow shrouds must be in place.**

# WHICH TORQUE IS RIGHT?



Dear Half-Mast,

I'm having problems with the torque specs for the locknuts on the upper ball joint in front of my M998A1 HMMWV. Page 6-58 of TM 9-2320-280-20-2 tells me to torque the locknuts to 37 lb-ft, but when I did that, a couple of the bolts broke. I also broke a couple of replacement bolts. The bolts didn't even make it to 30 lb-ft when they snapped off! What torque should I really be using?

SGT T.C.B.

Dear Sergeant T.C.B.,

Having your bolts snap off as you follow the TM's guidance on torquing would make some people want to snap! Here's what you need to know.

If your HMMWV is an A0 or A1 model, and it hasn't been upgraded with a suspension kit, then there should be  $\frac{5}{16}$ -18 bolts, NSN 5306-00-226-4829, holding ball joints to the control arm. The right torque for this bolt is 21 lb-ft.

If your truck has been upgraded with a suspension kit, or if you have an A2 model,  $\frac{3}{8}$ -24 bolts, NSN 5305-01-412-5994, should be installed and torqued to 37 lb-ft. TACOM will update the manuals to eliminate the torque confusion.

*Half-Mast*

M939-Series  
Trucks...

SOME-  
THING'S  
MISSING  
FROM THIS  
STORY!



I'LL TELL 'EM  
ABOUT THE BATTERY  
RELOCATION MOD KIT!



## Battery Box Business

Dear Editor,

You provided an excellent article on 5-ton truck battery maintenance on Page 14 of PS 650 (Jan 07). But there's another piece of information that your readers with M939s should know about when it comes to batteries.

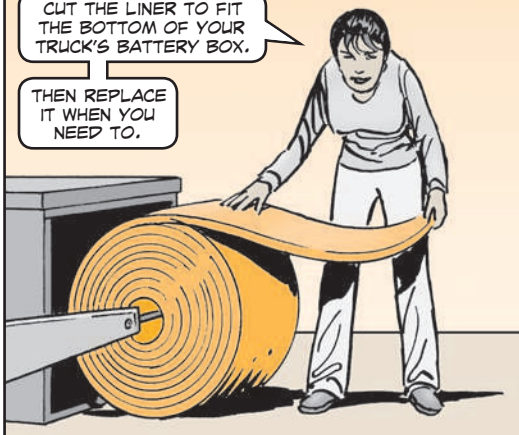
The battery relocation modification kit, NSN 2590-01-475-4479, will ease maintenance and add to safety. The kit relocates the battery boxes out of the cab to where they should have been installed when the vehicle was manufactured.

MSG John Compitello  
98th Division  
Maintenance NCO  
Rochester, NY

**Editor's note:** To prevent corrosion, you might also want to use battery box liner, NSN 6160-01-389-1966. It absorbs and neutralizes battery acid. Thanks for the tip, Master Sergeant!

CUT THE LINER TO FIT  
THE BOTTOM OF YOUR  
TRUCK'S BATTERY BOX.

THEN REPLACE  
IT WHEN YOU  
NEED TO.





# HOW TO GET ARMORED DOORS



Dear Half-Mast,

I'm in Afghanistan and no one here seems to be able to help me out with this issue. I need armored doors for the rear compartment on my M978 HEMTT fueler. Can you help?

SSG T.D.

Dear Sergeant T.D.,

Can do! There aren't any NSNs for those doors right now, but you can still order them on a DD Form 1348-6 using CAGE 6W728 and the part numbers in this table:

Item	Color	Part Number
Door assembly, rear left	Green	6433089-01M1
Door assembly, rear left	Tan	6433089-200M1
Door assembly, rear right	Green	6433088-01M1
Door assembly, rear right	Tan	6433088-200M1

Also, this info is in the new operator's and field level maintenance manual for the HEMTT tanker armor module kit, TB 9-2320-279-13&P-3. You can view it on-line on LOGSA's ETM website:

<https://www.logsa.army.mil/etms/index.cfm>

*Half-Mast*

M16-Series  
Rifle,  
M4/M4A1  
Carbine,  
M203  
Grenade  
Launcher...

# What Have I Got? Part 2

THE CHARACTERISTICS  
OF THE DIFFERENT  
MODELS OF THE M16  
RIFLE, M4 CARBINE,  
AND M203 GRENADE  
LAUNCHER HAVE  
CHANGED.

HERE'S THE LATEST  
WORD ON WHAT MAKES  
UP EACH MODEL.

**S**ince PS ran an explanation in PS 615 (Feb 04) of the different models of the M16 rifle, the M4 carbine, and the M203 grenade launcher, things have changed.

The M5 adapter rail system (ARS) now replaces the round hand guards for the M16A4 per MWO 9-1005-319-20-2 and the M4 ARS replaces the round hand guards for the M4/M4A1 per MWO 9-1005-319-20-1. For both weapons, the back-up iron sight (BUIS), NSN 1005-01-484-8000, replaces the removeable carrying handle, NSN 1005-01-465-0401.

So what does this mean to you? **First**, the ARS and BUIS are no longer classified as additional authorized list (AAL) items. They are now part of the standard configuration of the M16A4 rifle and the M4/M4A1 carbine. **Second**, it means if you turn in your M16A4 or M4/M4A1, the rails and the BUIS go with the weapon. **Third**, it means if the following conditions exist, the M16A4 or M4/M4A1 is considered NMC:

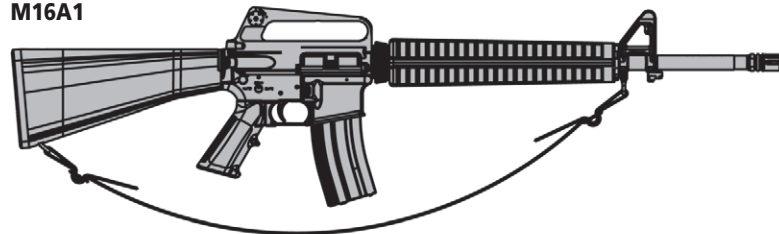
- Rear flange of upper hand guard (rail) is broken/cracked or locator pins are missing
- Heat shield missing from lower hand guard (rail)
- Spring pins that secure the rear clamp and forward leaf spring missing from upper hand guard (rail)
- Rear clamp, clamp screw, or forward leaf spring missing from upper hand guard (rail)
- Barrel stop missing (M16A4 only)
- Upper or lower hand guards (rails) missing entirely
- Forward leaf spring on top of hand guard cap

The rifle or carbine can't go the field until the ARS is repaired using the parts found in TM 9-1005-319-23&P. The carrying handle is now considered AAL and must be ordered separately from the weapon. If the weapon is turned in, the unit keeps the carrying handle.

HERE ARE  
UPDATED  
CHARTS  
OF THE  
DIFFERENT  
MODELS OF  
THE M16,  
M4,  
AND M203.

## M16 Rifle

### M16A1

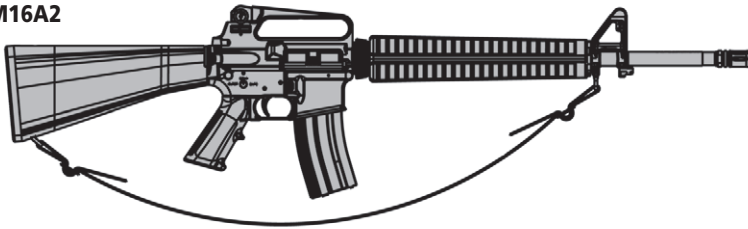


**Mode of fire:** semi/auto  
**Upper receiver:** built-in (integral) carrying handle without elevation adjustment  
**Barrel:** 1/12 twist, 20 inches long

PS MORE

## M16 Rifle (continued)

### M16A2

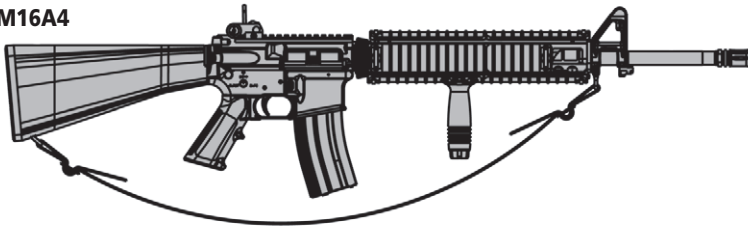


**Mode of fire:** semi/burst

**Upper receiver:** built-in (integral) carrying handle with elevation adjustment

**Barrel:** 1/7 twist, 20 inches long

### M16A4



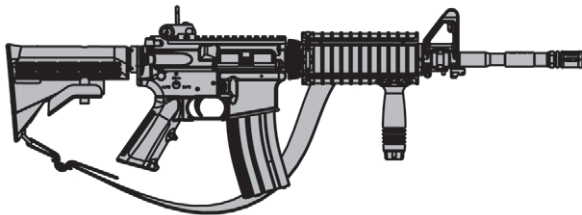
**Mode of fire:** semi/burst

**Upper receiver:** flat-top with BUIS

**Barrel:** 1/7 twist, 20 inches long

## M4 Carbine

### M4



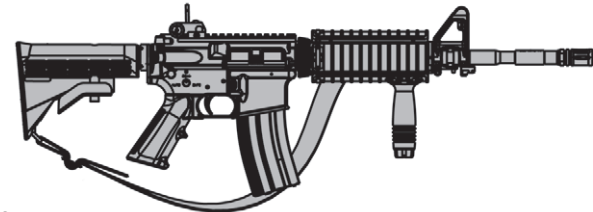
**Mode of fire:** semi/burst

**Upper receiver:** flat top with back-up iron sight

**Barrel:** 1/7 twist, 14.5 inches long

## M4 Carbine

### M4A1



**Mode of fire:** semi/auto

**Upper receiver:** flat top with back-up iron sight

**Barrel:** 1/7 twist, 14.5 inches long

## M203 Grenade Launcher

### M203



**Host weapon:** M16-series rifle

Long handguard with leaf sight, carrying handle mounted quadrant sight, and mounting hardware (bracket, screws, bushings, and lacing wire)

### M203A2 (result of MWO 9-1010-221-30-4 applied to an M203 or M203A1)



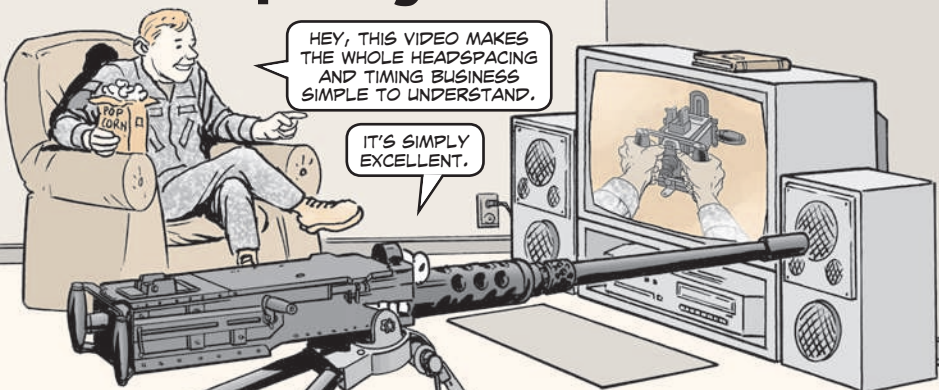
(M16A4 shown)

**Host weapon:** M4/M4A1 carbine with M4 adapter rail system installed or M16A4 rifle with M5 adapter rail system installed

No handguard; leaf sight/rail grabber assembly that mounts on the M4 or M5 adapter rail system, carrying handle mounted quadrant sight, and mounting hardware (quick-release bracket)



# Headspacing Video Available



If you gunners have trouble remembering how to headspace and time your M2 machine gun, you can now download a video that shows you the entire procedure.

Just go to:

<https://aepd-demo2.ria.army.mil/Services/Training/50Cal/headspac/headspac.cfm>

You will need to use your AKO login and password.

The video is large and takes quite a while to download, even with a good Internet connection. If you have problems downloading it, you can get a DVD of the video from your local TACOM-RI logistics assistance representative, DOL, or Army Learning Center.

A poster and smart card of the procedure are also available. Your pubs clerk can order the poster with DA PAM 750-98 and the smart card with GTA 09-06-045. Armorers should order a smart card for every M2 gunner in their unit so that they can keep a copy in their pocket.

## M16-Series Rifle, M4/M4A1 Carbine...

# SAFETY INDICATOR FOR DEPLOYMENT?

Dear Half-Mast,

How do you get the L-shaped white plastic device that shows your rifle or carbine's bolt can't go forward? We need it for deployment.

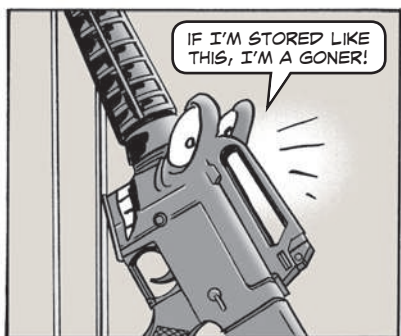
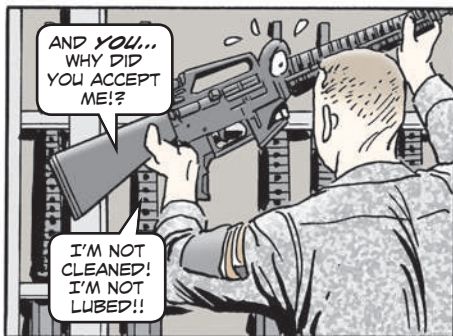
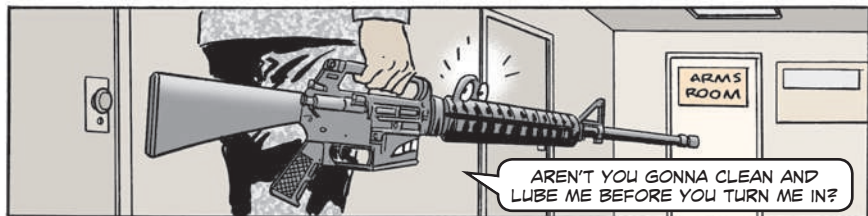
SGT H.O.

Dear Sergeant H.O.,

The technical name for the device is safety indicator, but it's also known as a chamber plug, chamber flag, or bolt block. You can order it with NSN 1005-00-418-8557 for 14 cents.

*Half-Mast*

# Clean Weapons Before Storing



Dear Editor,

Thank you for the article in PS 656 on the importance of keeping a dehumidifier running in the arms room to prevent moisture from corroding expensive weapons.

One other point you should make about weapons storage is that it's critical that weapons be thoroughly cleaned and lubed **before** they're stored.

The operator should clean out all burnt gunpowder and carbon from his weapon before he turns it in to the armorer. And the armorer should check that the operator has done that and refuse to accept a weapon that hasn't been thoroughly cleaned and lubed.

Burnt gunpowder or carbon mixed with moisture from humidity can eat a weapon up with corrosion.

Of course, even properly cleaned and lubed weapons should be checked for corrosion at least every 90 days while they're stored, like the -20&P TMs say. No use taking chances.

SPC Bret Pchelka  
MATES  
Ft Bragg, NC

*Editor's note: Just a little attention to your weapons pays valuable dividends. Thanks for helping again, SPC Pchelka.*

PLAY IT AGAIN, UNCLE SAM.

... BUT JUST REMEMBER THIS

REEK!  
REEK!

THERE ARE A FEW THINGS EVERY SENTINEL REPAIRMAN SHOULD **REMEMBER** TO MAKE HIS JOB EASIER AND KEEP THE SENTINEL RADIATING.

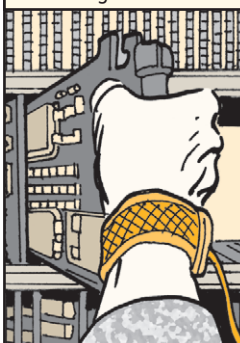
FOR INSTANCE...

**Wear ESD (electrostatic discharge) protection when handling circuit cards.** Some of the Sentinel circuit cards cost thousands and thousands of dollars. Just one tiny spark of ESD can ruin one of those cards and your future in your unit.

Before you handle any circuit card, put on an ESD wrist strap and plug it in. Make sure the Sentinel is properly grounded or the ESD strap won't do you much good. Never put circuit cards down on metal. Lay cards down on an ESD mat or place them in an antistatic pouch.

NSN 4940-01-253-5368 brings an ESD kit with two wrist straps, a grounding cord, mat, three antistatic pouches, and three barrier bags. **For more info on ESD, see page 40.**

Wear ESD strap when handling circuit cards

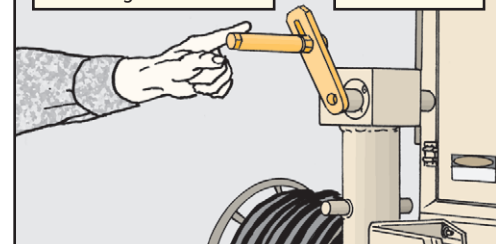


**Keep the eccentric plate.** If you turn in the azimuth drive motor for repair or replacement, don't turn in the eccentric plate, which is the mounting bracket for the motor. The plate has a serial number and is meant to stay with the Sentinel it came with.

**Check the leveling leg handle during weekly PMCS.** Crewmembers have a bad habit of using the handle as a step. If the handle gets out of alignment, it starts hitting the retaining arm and that damages the crank handle. Soon you can't adjust the leveling leg.

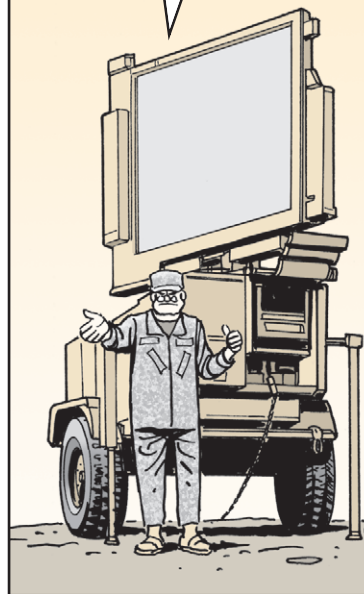
Check leveling leg handle for misalignment

Keep your feet off handle



## POWERFUL SENTINEL SUGGESTION

HERE'S A TIP TO HELP YOUR SENTINEL DO ITS JOB OF ALERTING YOU TO TROUBLE.

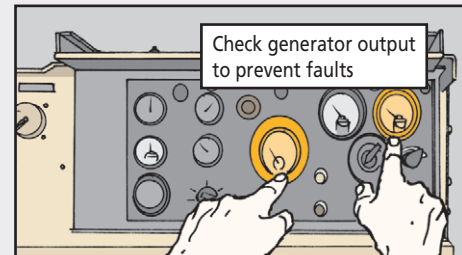


Dear Editor,

Here's a tip to help keep your Sentinel searching the skies for the enemy:

**Keep an eye on the generator.** If the generator is not putting out the right amount of power, your Sentinel will start displaying faults. You can waste troubleshooting time trying to figure out why. Before you power up the Sentinel, check the generator's hertz gauge for 400 Hz and the voltage gauge for 208VAC. Less than that causes faults. Adjust the generator's output if necessary.

Check generator output to prevent faults



SPC Jesus Rocha  
4-5 AMD  
Ft Hood, TX

**Editor's note:**  
Good tip, Specialist.  
Thanks for the benefit of your experience.



UH-OH! MY  
ECH HANDLE  
IS BROKEN  
AGAIN!

LISTEN UP TO  
THIS FORT HOOD  
SUGGESTION!

# GET HANDLE ON LAUNCHER HANDLE PROBLEMS

Dear Editor,

The Patriot launcher's engagement control handle can be very touchy to work with. If you don't use the right touch, you can break it. Here are a few ways to get a handle on handle problems:

**Keep the handle adjusted.** It's supposed to be adjusted during annual services, but it may need adjusting more often. If you consistently have trouble getting the handle to lock in position, ask your repairman to adjust it. If you force the handle, it will break.

**Don't trust the launcher control unit screen.** The screen may say the handle is in the STOW position when really it isn't. Maneuver the handle until you feel it lock in place. Then you know without a doubt it's in STOW.

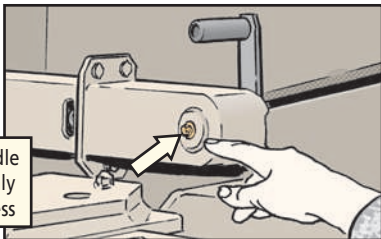
**Check the handle bolt monthly.** Vibration during operations and travel loosens it. Then you'll have trouble getting the handle to lock in place. Tighten the bolt if necessary.

SGT Duane Fish  
SPC Daniel Kinna  
4-5 ADA  
Ft Hood, TX

Make sure handle locks in STOW



Check handle  
bolt monthly  
for looseness



**Editor's note:** I think Patriot crews can handle your excellent handle suggestions. Thanks.

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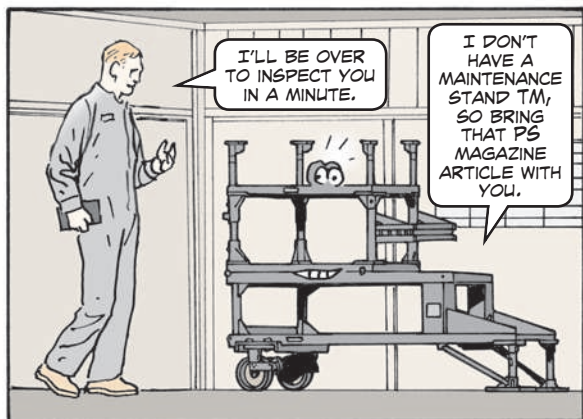
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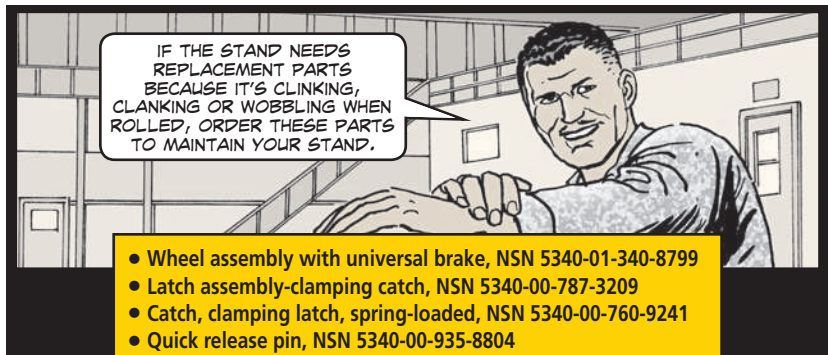
# MAINTENANCE PLATFORM CARE



**I**f you're looking for a low-level maintenance platform TM, don't waste your time. There is none.

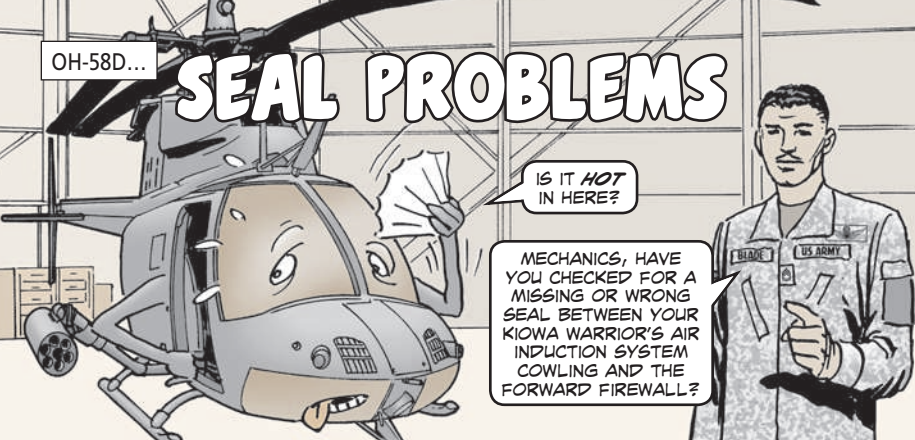
For general maintenance info, check out Chapter 9 of TM 1-1500-204-23-9, *General Aircraft Maintenance*. For example, there is a requirement to use 4-inch wide reflective tape, NSN 9390-00-949-8047, for marking the stand.

The low-level maintenance stand, NSN 1730-00-269-8283, is limited to 500 pounds maximum. It's a good idea to stencil that max weight on the stand.



Make a note that the low-level maintenance stand does not fall under the guidelines of TB 43-0142, *Safety Inspection and Testing of Lifting Devices*, because that bulletin is for lifting devices and lifting fixtures.

# SEAL PROBLEMS



IS IT **HOT**  
IN HERE?

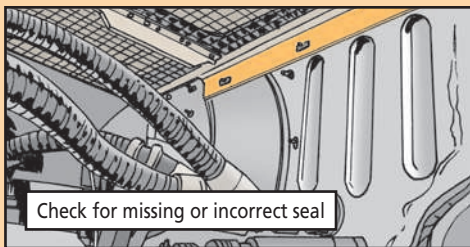
MECHANICS, HAVE  
YOU CHECKED FOR A  
MISSING OR WRONG  
SEAL BETWEEN YOUR  
KIOWA WARRIOR'S AIR  
INDUCTION SYSTEM  
COWLING AND THE  
FORWARD FIREWALL?

**A** missing or wrong seal means your bird will have some heated problems in the engine compartment.

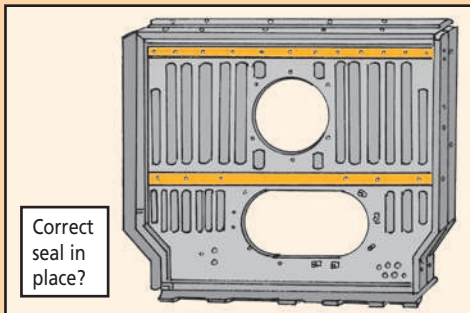
The air induction system connects to the forward firewall and has a seal between them in two places. In the event of an engine fire, if the seals are missing or the wrong ones used, fire can get past the firewall and into the cockpit.

The firewall also assures that outside air is drawn over the engine to keep it cool, and prevents other engine damage.

On your next visual inspection make sure you have the correct seal, NSN 5330-01-468-9672. It's a "make from" item so it has to be cut to fit. Check TM 1-1520-248-23P, Fig 56 on EM 0246, for the details.



Check for missing or incorrect seal



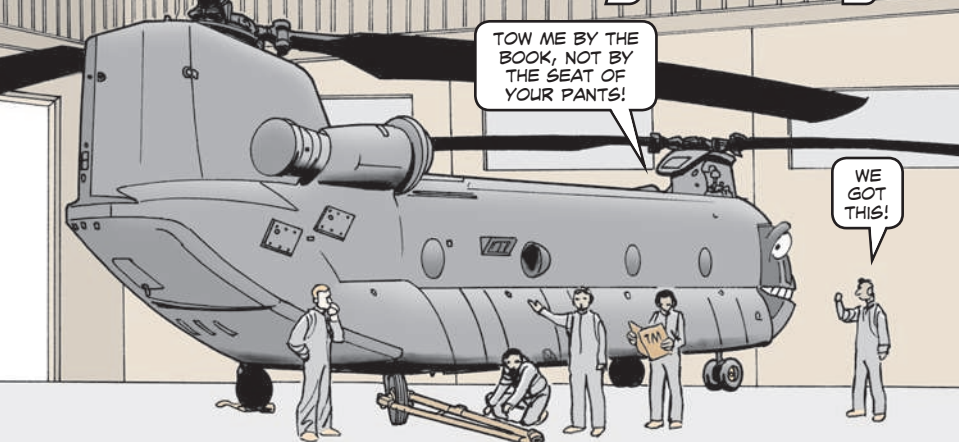
Correct  
seal in  
place?

IF YOU'RE TEMPTED  
TO USE ANTI-CHAFING  
TAPE OR PROSEAL  
ANYWHERE ON THE  
FORWARD FIREWALL,  
**DON'T! THEY  
WON'T WORK!**





# Tow The *Right* Way



Towing your Chinook from the rear—the normal method—means paying close attention to all CAUTIONS and procedural steps in TM 1-1520-240-23&P and TM 1-1520-271-23&P.

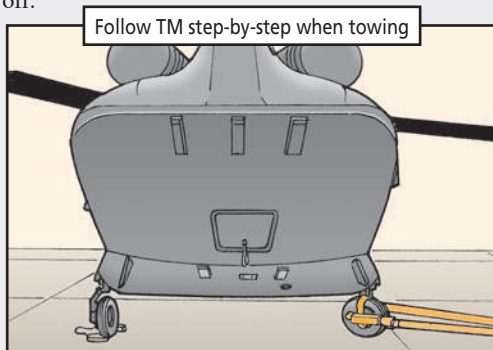
If the landing gear are not positioned properly prior to towing, your bird could end up grounded with a broken leg. And that's no joke.

OK, I guess you're not laughing. And you shouldn't be because the laugh will be on you if a wheel gets damaged or the landing gear snaps because the towing setup was wrong.

Prior to towing, the left aft wheel must be rotated 120 degrees from the trailing position so that the brake and brake disk are facing outboard. If the left aft brake and brake disk are not pointing outboard, the wheel will attempt to turn during towing and the landing gear could snap off.

The aft right wheel stays in the trailing position (with the brake and brake disk facing inboard) and the tow bar attached to it.

You should never tow the aircraft with the tow bar attached to the aft left landing gear. And don't forget that all towing (normal or alternate methods) must be done with the swivel locks disengaged.



PEE-YOO!  
SOMETHING  
STINKS!

I WOULDN'T  
STINK IF YOU'D  
WASH MY LINER  
AND TPL!

## KEEP YOUR HELMET CLEAN

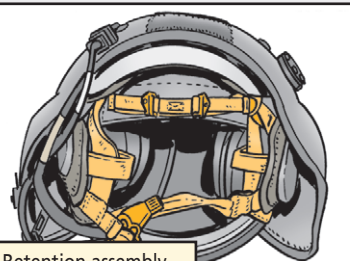
Aircrew, it's not the ALSE tech's job to be your personal aircrew integrated helmet system (AIHS) cleaner.

When your helmet starts smelling like a rotten sneaker, that means it's overdue for operator cleaning. Good PM starts with cleaning your helmet like it says in IETM, EM 0250 TM 1-1680-377-13&P.

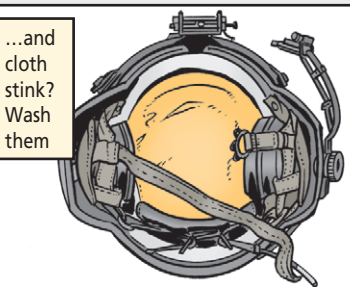
A buildup of sweat, body and hair oil, dirt and grease in the chin strap, the thermal plastic liner (TPL), NSN 8515-01-395-0001, the retention assembly cloth, NSN 8415-01-394-8023, and the earcups doesn't make for a pleasant smell. That's right, your helmet stinks from a lack of cleaning.

To clean your TPL cover like EM 0205 TM 1-1680-377-13&P says, you'll need to cut the thread holding the TPL in the cover. You can hand or machine wash the cover on gentle cycle using liquid detergent, NSN 7930-00-282-9699. Make sure you re-stitch the cover and replace the two-sided tape when you're finished.

Some crews clean their TPL and cover in the shower using their favorite shampoo. After lathering your hair, take your TPL and cover and rub it over your soapy head. Then rinse both your head and cover. You may look funny but it's quick and easy. And since you don't separate the cloth cover from the plastic TPL, there's no need to restitch the cover back to the TPL. Either method you use is good but remember not to tumble dry the TPL. Always air dry your TPL.

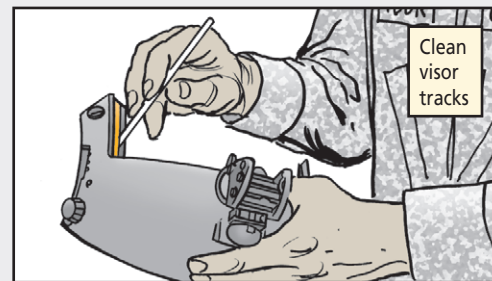


Retention assembly...



...and cloth  
stink?  
Wash  
them

While you're getting rid of that rotten sneaker smell, grab a cotton swab and clean out of the visor tracks, too. You can also use low-pressure air to blow out gunk and sand. The visor can get stuck when dirt and sand get in the track. NSN 8515-01-017-2177 gets you a box of 1000 swabs.



Clean  
visor  
tracks

UH-60 Series/  
CH-47D...

## A STICKY SITUATION

LOOK! THE SAND-  
MAN COMETH!

IT DOESN'T MATTER!  
OUR DOPPLER  
CONTROL HEADS  
ARE COVERED!

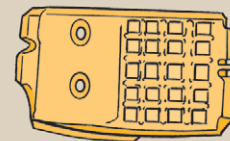
Pilots and copilots, sand is often the culprit for aircraft avionic problems because it gets into everything.

Do your Black Hawk or Chinook a favor and make sure you have the plastic cover, NSN 7045-01-459-8528, installed on the AN/ASN-128B doppler control head to protect the keys from sand invasion.

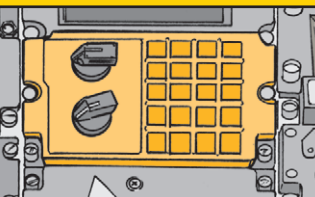
Your avionics shop will remove the face plate, install the plastic cover and put everything back together.

Sticking keys mean you won't be able to plot courses or know your position. Cover yourself and use the cover.

Order  
this  
cover  
for  
control  
head



Use  
cover  
to stop  
sticking  
keys





# DON'T GIVE 'EM ANY STATIC!



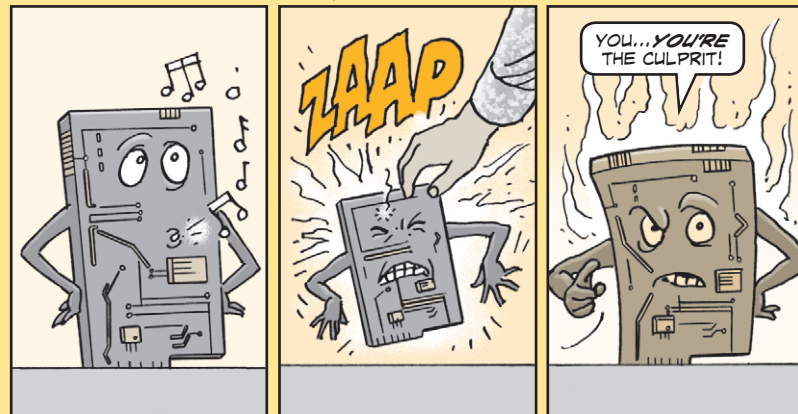
ELECTROSTATIC DISCHARGE (ESD), THE DISCHARGE OF STATIC ELECTRICITY, DESTROYS OR DEGRADES TRANSISTORS, RESISTORS AND INTEGRATED CIRCUITS OF CIRCUIT CARDS.

ESD CAN HAPPEN DURING PACKING, SHIPPING, HANDLING OR INSTALLATION OF CIRCUIT CARDS.

## What Causes ESD?

ESD comes from electrically charged objects in your work area: clothing, rugs, chairs, paper, ordinary packaging materials, or the work surface itself.

But the main source of ESD is **you!**



You build up thousands of volts of static electricity by doing things like walking across the floor or combing your hair. Then, just by touching a circuit card, you'll discharge static electricity, often without realizing it.

A spark as little as 30 volts ruins a sensitive electronic device. You may not feel the discharge or see the damage, but you can bet it has happened. The circuit card may fail now, or be weakened enough to fail later.

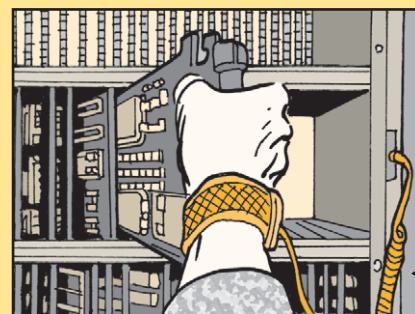
## Static-safe Workstations

Protect your circuit cards from ESD. Handle them only at a static-safe workstation that includes a grounded static-dissipative table mat, floor mat and wrist strap. They're designed to limit static buildup and carry already-existing charges to ground.

Check with your command for the name of an ESD POC. An ESD POC can recommend the best methods and equipment for your unit.

Here's what's generally available:

NSN 4940-01-250-4236 will bring you a static dissipative table mat, common point ground system, and wrist strap for use in all areas other than clean rooms or laminar flow booths. It also includes small/medium and large/extra large wrist cuffs.

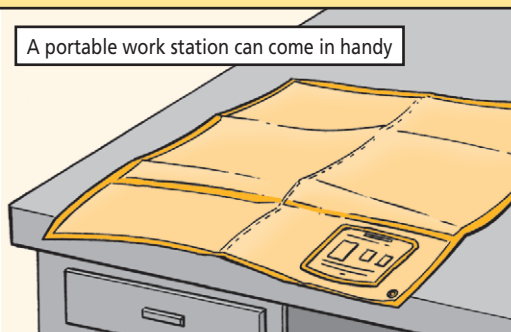


Use a wrist strap!

NSN 4940-01-250-4237 gets you a **portable work surface**, common point ground system, and wrist strap for use where other static control stations are not available. It also includes small/medium and large/extra large wrist cuffs.

NSN 4940-01-253-5368 brings a **field service kit** that has three pouches, MIL-P-81997, type II, NSN 8105-01-356-6365, 13x10-in; three barrier bags, MIL-B-81705, Type I, NSN 8105-01-385-6281, 12x10-in; two wrist straps; one grounding cord and a work surface mat. Instructions for a self-test and how to use the kit are printed on the work-surface mat.

A portable work station can come in handy



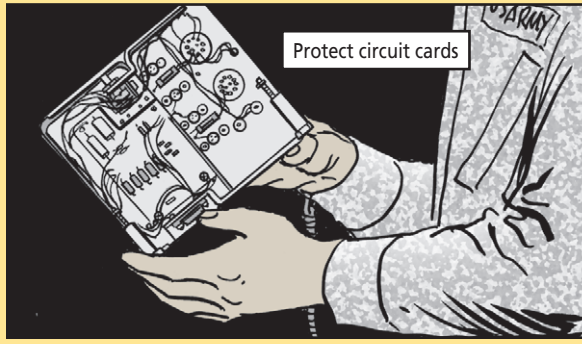
Use safe pouches



IF YOU'RE GOING TO PACKAGE ESD-SENSITIVE (ESDS) CIRCUIT CARDS, HERE ARE A COUPLE OF WAYS TO PROTECT THEM...

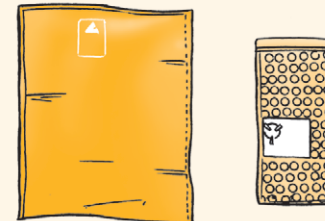
First, wrap the cards in anti-static bubble wrap, NSN 8135-01-234-6649, which brings a 500-ft roll from GSA. Then make a bag from static shielding barrier material, NSN 8135-01-185-6816. Heat seal the bag with a hand-held sealer, NSN 3540-00-975-4255. Order it from GSA, too.

Protect circuit cards



If the piece of electronic equipment is small enough, put it into one of these ESD-free flexible cushion pouches:

Pouch Size (inches)	NSN 8105-01-
12x12	197-2965
11x15	215-4752
10x10	197-2966
10x12	197-7846
8x8	215-0462



Use flexible cushion packs

Whichever way you go, finish the job with a fast pack. ESD fast packs are NSN 8115-01-019-4084 for 12x18x3 1/2 inches and NSN 8115-01-057-1244 for 10x10x3 1/2 inches.

THERE'S MUCH MORE TO KNOW ABOUT PACKAGING...

...AND YOU CAN GET THE WORD FROM A LOGSA PUBLICATION.

TO GET YOUR COPY OF **PACKAGING GUIDE FOR CIRCUIT BOARDS AND OTHER ESD ITEMS** WRITE TO...

LOGSA-PSCC  
ATTN: AMXLS-TP-P  
11 Hap Arnold Blvd  
Tobyhanna, PA 18466-5097

OR CALL DSN 795-7685, OR (570) 895-7685. OR EMAIL: [toby.pt@us.army.mil](mailto:toby.pt@us.army.mil)

OR DOWNLOAD A COPY FROM:  
[https://www.logsa.army.mil/pscc/PSCC\\_WebDev/P&T/PACKAGING/packagingwhatsnew.htm](https://www.logsa.army.mil/pscc/PSCC_WebDev/P&T/PACKAGING/packagingwhatsnew.htm)

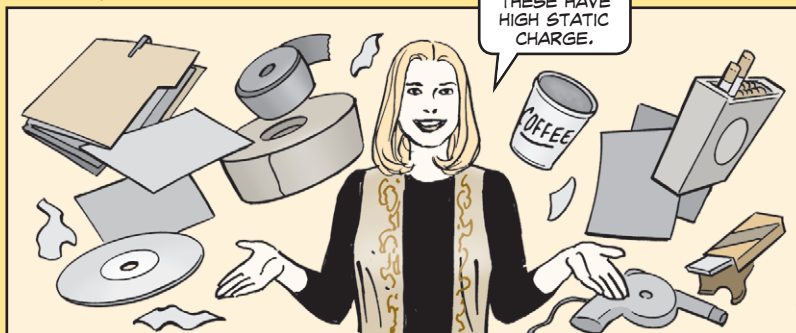
It's also a good idea to check with your command for the name of an ESD POC. If your command doesn't have one, your electronic repair depot will. An ESD POC can advise you on the latest ESD methods and equipment and recommend the best items for your needs.

PS MORE

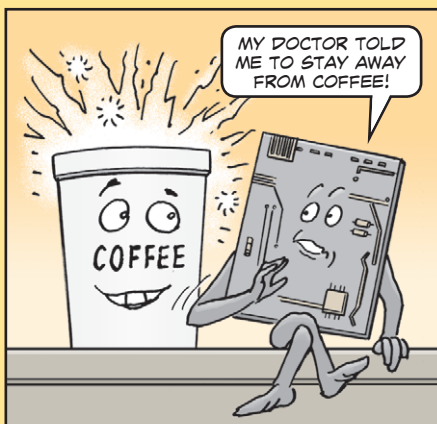


## High Charge

The slow discharge path of a workstation can protect your circuit card from discharging conductors such as metal or your body. Unfortunately, they can do nothing against the effect of common highly-charged, non-conducting items. Candy wrappers, folders, paper, Styrofoam cups, cigarette packs, plastic and masking tape, plastics, vinyl, heat guns with blowers and common packing material can have a high static charge which can act over a short distance from an exposed circuit. Keep them away from the work site.



Take for example that Styrofoam cup you left from your last coffee break. It can be a time bomb full of static charge! It could have as much as 20,000 volts charged by your body and can stay charged for hours. A cup as close as a foot away exposes sensitive electronic components to hundreds of volts. Later, when a printed circuit board is reconnected, BAM! That's 300 volts that break down a component. It's zapped by the discharge as surely as if it was touched directly!



A few precautions and regular PM around your workstation will keep high static electricity under control. Keep clutter away. Keep the board protected, even if you know you'll be right back.

If you must have technical manuals and paperwork at the workstation, store them in antistatic bags. Put an ESD-safe rubber band or conductive ESD-safe tape around the bag. Never use ordinary tape or ordinary rubber bands to fasten it. The tape and rubber hold static electricity.

Special things like magnets, radios, tape players and telephones can create an electromagnetic field. Keep them clear of the workstation.



If you must package an item in stretch-wrap or shrink-wrap, do it away from your workstation. Packaging an item with these materials generates static electricity.

## Training

People handling ESDS items should be trained in ESD precautionary procedures. Untrained personnel should never handle ESDS items when the items are outside the ESD protective packaging.

YOU CAN ENROLL IN A CORRESPONDENCE COURSE ON ELECTROSTATIC DISCHARGE CALLED PACKAGING AND HANDLING OF ELECTROSTATIC DISCHARGE SENSITIVE ITEMS, 90BF60-PT6000, THROUGH THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT (AIPD).

THEIR WEBSITE IS:  
[https://www.aimsrdl.atsc.army.mil/secured/accp\\_top.htm](https://www.aimsrdl.atsc.army.mil/secured/accp_top.htm)

YOU'LL NEED A PASSWORD TO USE THIS WEB-SITE.

## Clean Means Safe

Dirt and dust on the table and floor mats act as insulators, making it harder for the mats to carry electrical charges to ground. Clean the mats with a soft cloth, or brush them with a whisk broom.

Use only brushes made with natural bristles, such as horse hair. Brushes made with nylon or other synthetic bristles will generate static electricity.

Never wax or polish the table or floor mats. That leaves a residue that insulates the mats.

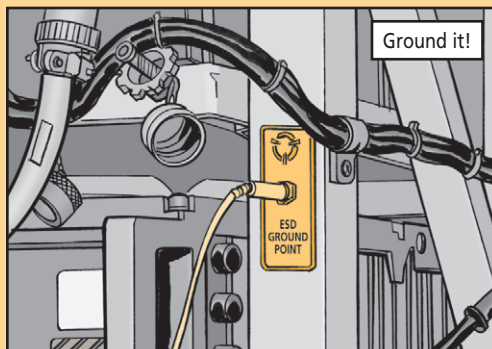


## Grounding

Connect table and floor mat grounding cords directly to shop ground. Ground each workstation individually. Never connect workstations in series to ground them.

Make sure your grounding cords are firmly attached to bare metal, not paint.

Wear your wrist strap on your skin, not over your sleeve, or it won't work.



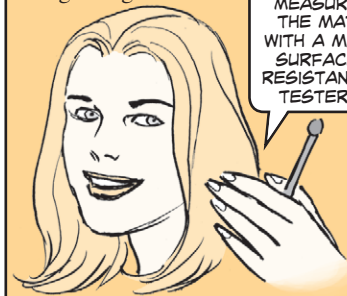
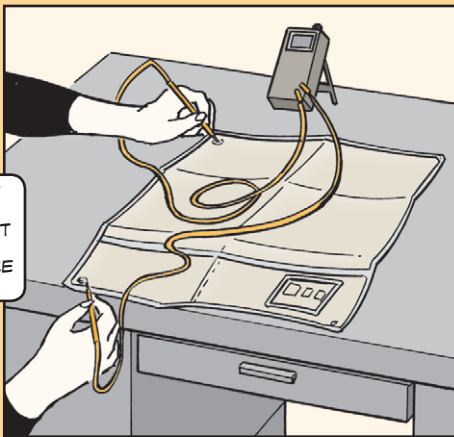
REPLACE  
GROUNDING  
CORDS IF  
THEY'RE  
BADLY WORN  
OR CUT.



## Resistance Checks

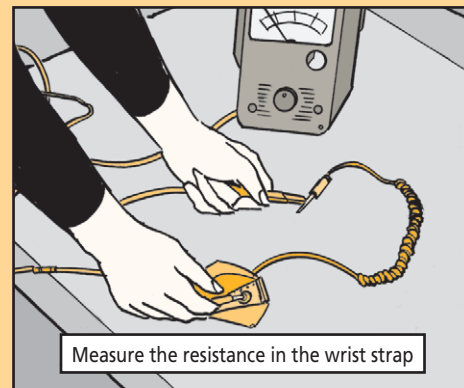
Follow the manufacturer's instructions for measuring the resistance of your workstation components. That's the only way to be sure your workstation's doing its job of carrying static charges to ground.

MEASURE  
THE MAT  
WITH A MAT  
SURFACE  
RESISTANCE  
TESTER!



Measuring resistance in the wrist strap is especially important. The strap gets more wear and tear than any other part of your workstation. Measure it at least daily.

The wrist strap has a resistor to protect you against high-voltage shocks. If the resistance is too low, the strap can't protect you. Too much resistance means the strap can't draw static electricity away from your body. Either way, you'll need to replace it.



You may want a battery-powered wrist strap tester designed for a quick GO/NO GO test if there are several strap stations to be tested.

Have your workstation tested for resistance from the surface of the table or floor mats to ground. That takes special testing equipment and special support. Contact your local TMDE support folks or C-E LCMC LAR for help.



For more information on ESD protection, see these publications: MIL-HDBK-773, *Electrostatic Discharge Protective Packaging*; DOD-HDBK-263B, *Electrostatic Discharge Control Handbook*; MIL-STD-1686B, *Electrostatic Discharge Control Program*; and MIL-W-87893, *Electrostatic Discharge Control Work Station*.

If you can't find copies locally, order them from the Defense Automated Printing Service, Philadelphia, PA. Just call DSN 442-0159 or (215) 697-0159. Or fax your request to DSN 442-1462, (215) 697-1462.

Another alternative for finding MIL-HDBK-773 is the USAMC Logistics Support Activity website:

[https://www.logsa.army.mil/pscc/PSCC\\_WebDev/P&T/PACKAGING/packagingregs.htm](https://www.logsa.army.mil/pscc/PSCC_WebDev/P&T/PACKAGING/packagingregs.htm)

Updates and new material can be found there, too.



# Getting Dressed by the Numbers

**YOUR MISSION:**  
CLEAR A MINE FIELD.



**YOUR PROTECTION:**  
THE BODY ARMOR SET, INDIVIDUAL COUNTERMINE (BASIC).



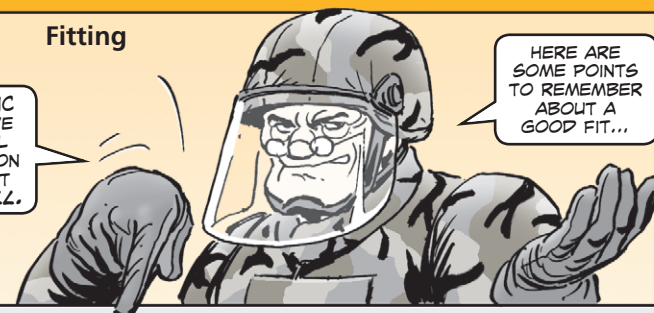
IF YOU'RE NEW TO THE BASIC, OR JUST NEED A REFRESHER, BEFORE YOU DO ANYTHING ELSE, TAKE THESE STEPS...

- Learn to put on its components in the correct order.
- Make sure the BASIC fits right.

## Fitting

THE BASIC CAN'T GIVE YOU FULL PROTECTION UNLESS IT FITS WELL.

HERE ARE SOME POINTS TO REMEMBER ABOUT A GOOD FIT...



- The BASIC vest cover comes with a collar in the same size. But if you need to, you can choose from different vest and collar sizes to get the best fit.

There are no sizing guidelines for the collar. Choose the one that fits you best.



BASIC vest...

...and collar come in the same size



- For a vest cover that fits well, use a tape measure to measure the wearer's chest circumference at the fullest part of the chest.



THEN CHOOSE FROM THESE SIZES...

Chest Circumference in Inches	Vest Cover/ Collar Size
Less than 36	Small
36-42	Medium
Greater than 42	Large

- Upper and lower arm protectors come in the same size. But if you need to, you can choose from different upper and lower sizes to get the best fit.
- For upper and lower arm protectors that fit well, use a tape measure to measure the wearer's sleeve length. Make sure his arms are hanging at his sides and slightly bent. Measure along the outside seam of the Army combat uniform (ACU) from the shoulder joint to the wrist.



THEN CHOOSE FROM THESE SIZES...

Sleeve in Inches	Arm Protector Size
Less than 22	Small
22-24	Medium
Greater than 24	Large



- The face shield, chest plate, groin plate, groin plate carrier and spider boots are one-size-fits-all. Every other component requires sizing to get a good fit.
- The helmet cover, trousers, vest, collar and upper and lower arm protectors all come in three sizes.
- The BASIC fits over your uniform. The helmet cover fits over the PASGT helmet and the advanced combat helmet (ACH). The vest and collar fit over the fragmentation protective vest body armor or the interceptor body armor (IBA) base vest. Arm protectors and trousers fit over BDUs. And overboots (which are sized) or spider boots fit over your standard issue combat boots.
- Many of the fastening tabs, straps and bands on the BASIC come with hook-and-pile fasteners.
- WP 0008 of TM 10-8470-203-10, *Body Armor Set, Individual Countermine (BASIC)*, has more on fitting.

Face shield is a one-size-fits-all



Helmet cover comes in three sizes



## Putting On the BASIC

THE BASIC IS A BULKY SUIT.

WHEN YOU PUT IT ON, YOU MUST PUT ON THE COMPONENTS IN THE CORRECT ORDER.



OTHERWISE, YOU WON'T GET THE ENTIRE SUIT ON.

FOLLOW THESE STEPS...

1. Start by putting the helmet cover over the PASGT helmet or the ACH. Attach the face shield to the helmet. Set the helmet and shield aside for now. Put them on only after you've put on the rest of the BASIC. That will help you avoid heat stress.

2. Put on the overboots or spider boots and buckle them. It's easier to put them on if you're not wearing any other BASIC component.

3. Put on the trousers. Wear them high on the waist so that the bottom of the vest will hang three to four inches below the top of the trousers. The trousers should be loose enough so that you can move freely. Walk, turn, bend and squat. If the trousers are too tight, adjust the leg straps.

Start by putting cover over helmet...



...then attach face shield

Trousers must be long enough to fully cover the ankle and overboot or spider boot. But they shouldn't be so long that they drag on the ground while walking or standing.

4. Put on your fragmentation protective vest body armor or the IBA base vest with soft ballistic inserts.

If you put on the IBA vest, don't wear the IBA's collar and throat protector. If you wear them with the BASIC gear, they'll ride too high and you won't be able to turn your head. Also don't wear the IBA's groin protector or small arms protective inserts (SAPI). The BASIC has a groin plate, a groin plate carrier and a chest plate.

5. Attach the upper arm protectors to the BASIC's vest using the vest's straps and buckles. Strap the lower arm protectors to the upper arm protectors.

6. Connect the BASIC vest cover halves using the shoulder tabs. Put the vest on.

7. Put the chest plate in the vest's front pocket. Put the groin plate in the groin plate carrier. Make sure you fasten the hook-and-pile fasteners. Attach the groin plate carrier to the front bottom of the vest using the snaps and the hook-and-pile fastener.

8. Connect the vest halves using the side tabs.

9. Wrap both belly bands around your middle and secure them. The bands hold the vest tight to your torso.

10. Strap the upper and lower arm protectors around your arms.

11. Wrap the collar around your neck.

Make sure the hook-and-pile fastener is on the right side of the neck.

12. Put on the helmet and fasten the chin strap. Adjust the face shield by pressing the release hinge.

Ask a buddy to look over your BASIC. Make sure that:

- There are no unnecessary gaps in the armor.
- All components are fastened tight.
- The vest is centered on your torso. One side should not be higher than the other.

Make sure you can move freely: turn, bend, stoop and kneel. Swing your arms as though you're working a mine detector.

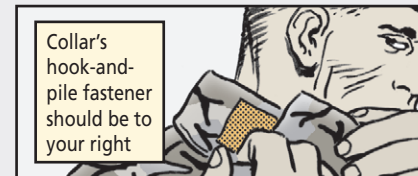
Wear trousers high on the waist for added protection



Vest plate slides up into vest's front pocket

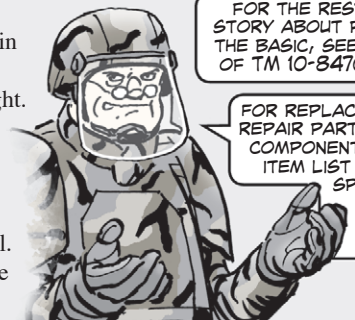


Collar's hook-and-pile fastener should be to your right



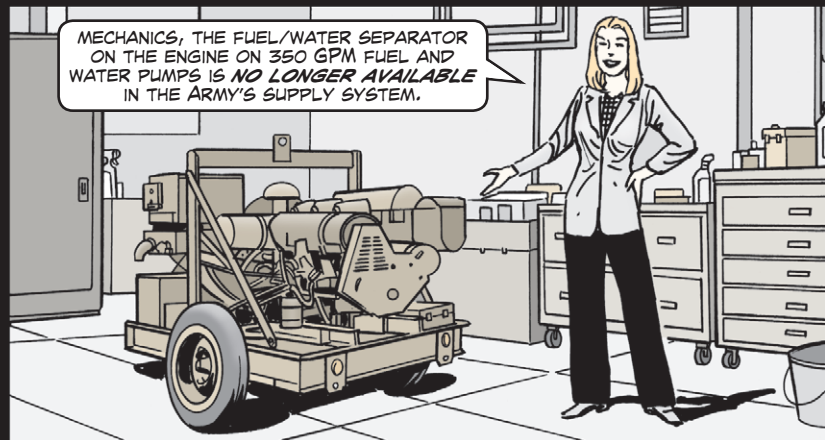
FOR THE REST OF THE STORY ABOUT PUTTING ON THE BASIC, SEE WP 0008 OF TM 10-8470-203-10.

FOR REPLACEMENT AND REPAIR PARTS, SEE THE COMPONENTS OF END ITEM LIST AND THE SPARE PARTS LIST IN TM 10-8470-203-10.



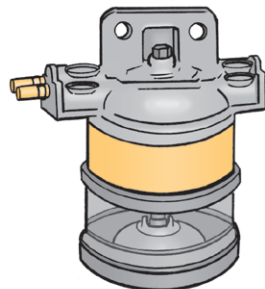


# Fuel/Water Separator Assembly



1. Remove plug #2 from the filter separator, NSN 4930-01-123-0398. Install the plug into the #3 port.

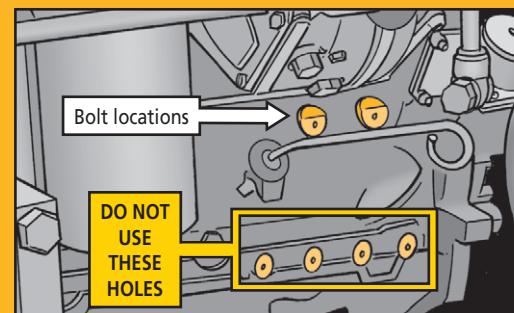
NSN 4730-00-764-8770 Nipple, tube



NSN 4930-01-123-0398 Separator, liquid

2. Install two fittings, NSN 4730-00-764-8770, into separator ports #1 and #2.
3. Use an 8mm x 1.25-in pitch tap and clean out the holes.

4. Place the separator, NSN 4930-01-123-0398, on the two holes of the engine block. Use two bolts, NSN 5305-01-473-6573, 8mm x 25mm long with washers, to mount the separator in place.

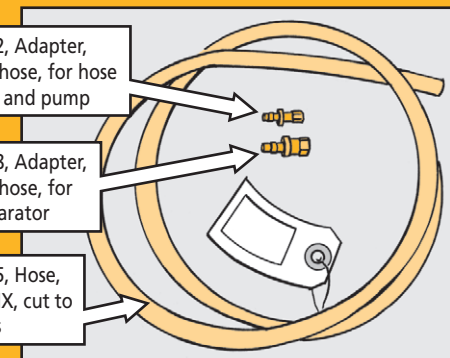


HERE'S WHAT ELSE YOU'LL NEED.

4730-00-555-1152, Adapter, straight, tube to hose, for hose to attach to tank and pump

4730-00-954-9508, Adapter, straight, tube to hose, for hose to filter/separator

4720-00-242-3135, Hose, non-metallic, CL IX, cut to make the 2 hoses



5. Attach fitting, NSN 4720-00-555-1152, onto the rubber hose that comes with NSN 4720-00-242-3135.

6. Screw the fitting into separator port #1.

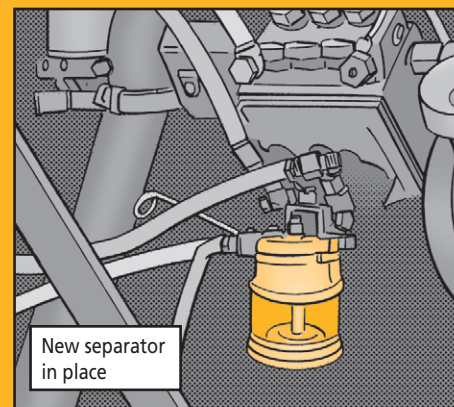
7. Using the assembled hose as a guide, route the hose to the fuel pump. Cut it to the length needed. Attach fitting, NSN 4730-00-954-9508, onto the short hose. Attach this hose to the fuel pump.

8. Attach fitting, NSN 4730-00-954-9504, and fitting, NSN 4730-00-555-1152, onto the other hose.

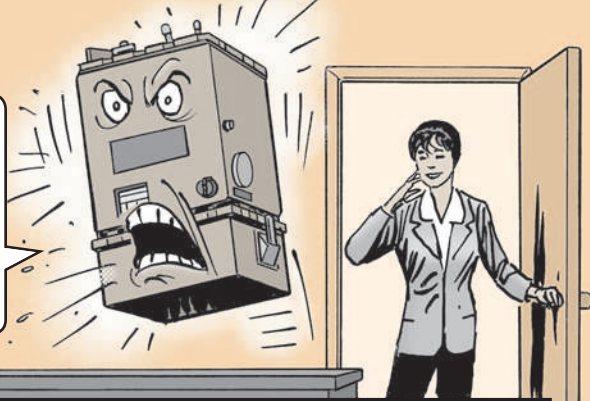
9. Install this hose from the separator's port #2 to the fuel valve on the right hand side of the fuel tank. Route the hose as needed.

10. Remove the old (existing) fuel/water separator from the fuel pump.

Drain any leftover fuel or water into an approved hazardous waste container. Never dump it down a drain or on the ground.



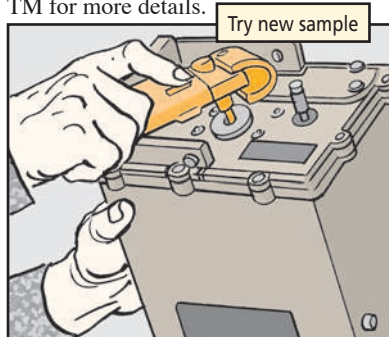
**WHAT  
THE  
H!?**



• Just because the green sample light comes on doesn't mean your ACADA is immediately ready to do an H reading. It's a good idea to wait five minutes after the light comes on before you do the H test. For more info, see Page 2-37 in TM 3-6665-321-12&P.



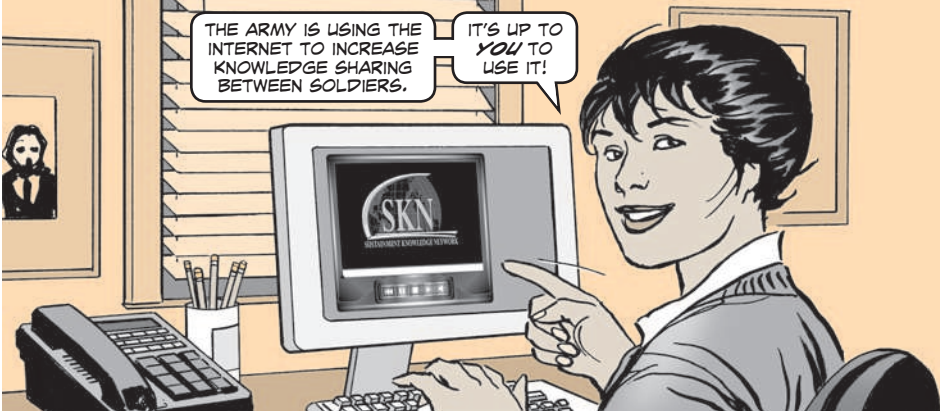
• If that doesn't do the trick, try taking an H reading with a new sample. The new sample sometimes kicks a sluggish ACADA into gear. See Page 2-38 in the TM for more details.



If neither remedy works, then it's time for a trip to repair.

Remember, be very, very quick when doing the sample confidence test: no more than one second for H and no more than a quarter second for G. If you leave the sample on longer, the ACADA is saturated and it must be run until it clears.

# SUSTAIN YOUR KNOWLEDGE ONLINE



The Internet has produced a number of websites that put information at your fingertips. A lot of Army websites are maintenance, supply or transportation related. Among them are: LOGNet, AKO, EOrdnanceU, and the CASCOM schools.

Wouldn't it be nice if you could find all these websites at just one website? Well, it is possible!

The Combined Arms Support Command (CASCOM), along with HQDA G4 and Army Material Command, have created the Sustainment Knowledge Network (SKN):

<https://www.us.army.mil/suite/page/372426>

From SKN there are links to LOGNet, AKO (and DKO and JKO), the DA G4 and AMC communities, MEDKN (the Medical Knowledge Network), ATHD (the Army Training Help Desk), eOrdnanceU, and the Sustainment Center of Excellence (SCoE) lifelong learning portal. Also available are: virtual presentations and a multitude of other knowledge sharing and lifelong learning capabilities sponsored by:

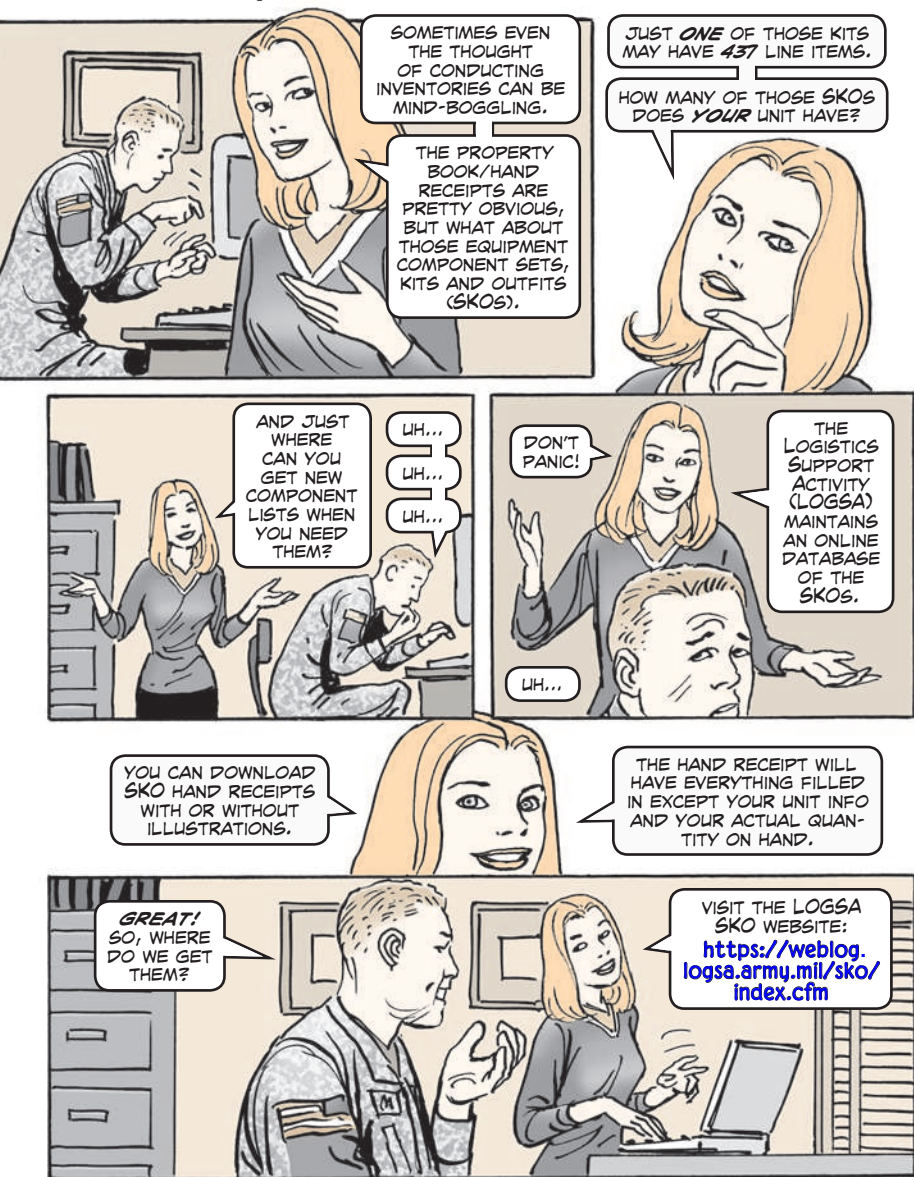
- DA G4, AMC and the SCoE
- Ordnance, Quartermaster and Transportation centers and schools
- the Soldier Support Institute
- the Army Logistics Management College

So check out the SKN...you might just want to add it to your Favorites list!





# Component Lists Made Easy



SKOs...

# Solving Component List Numbering Problems

I'M  
SOOO  
OLD!



**4940-  
95-CL-B04**

AND  
I'M SO  
MOD!



**4940-  
95-B04**

SOMETIMES NUMBERING CHANGES FOR  
SUPPLY CATALOG COMPONENT LISTS  
TAKE **YEARS** TO GET USED TO.

HERE'S THE SCOOP  
TO FIND WHAT YOU'RE  
LOOKING FOR.



It may be quicker to find a current component list by simply using the NSN or LIN sort feature on the SKO website or on EM 0074. Find your NSN or LIN and you'll have the right component list number.

However, sometimes all you have is the component list number. So if you're looking for a component list number that looks like SC 4940-95-CL-B04, you're looking at an old numbering system. The current component lists drop the letters that were found on all the old component lists. So component list numbers like SC 4940-95-CL-B04 now look like this: 4940-95-B04.

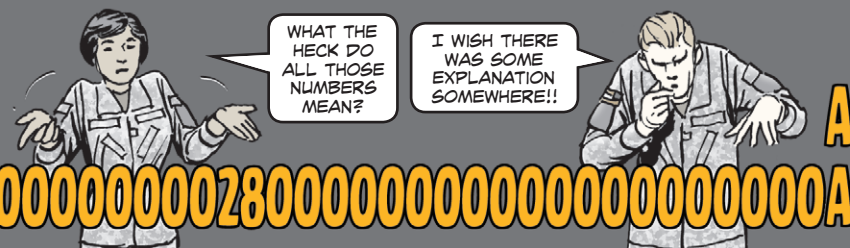
Also, the lists that had a compiler code of 90, instead of 95, also became 95s. So 4940-90-B04 is included on 4940-95-B04.

You can view the component lists and download their hand receipts from the SKO website: <https://weblog.logsa.army.mil/sko/index.cfm>

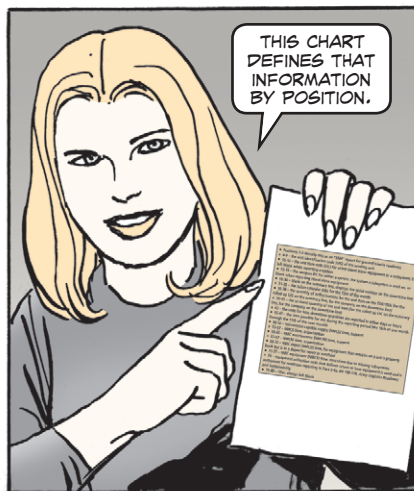
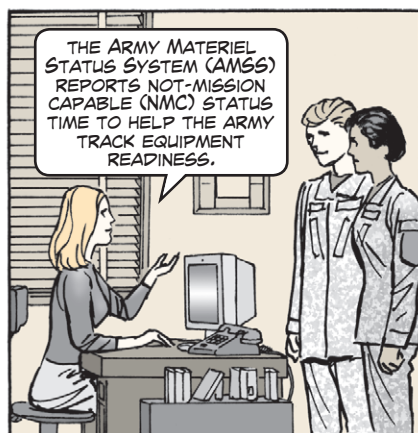
COMPONENT LISTS			
<div> <div>Sort by CL NUM</div> <div>Sort by NSN</div> <div>Sort by LIN</div> <div>Sort by Nomen</div> </div>			
SEP07			
Component List Number	National Stock Number	Line Item Number	End Item Description
4910-95-A31	4910-00-754-0705	T24660	SHOP EQUIPMENT, AUTOMOTIVE MAINTENANCE AND REPAIR, FIELD MAINTENANCE, BASIC, LESS POWER SETS, KITS, OUTFITS, AND TOOLS, FOR SHOP EQUIPMENT, AUTOMOTIVE MAINTENANCE AND



**XMFWSK0AABBF 103589 06288015014D000300000000028000000000000000000000A**



# Readiness Report Defined



- Positions 1-3 identify this as an “XMF” report for ground/missile readiness
- 4-9 – the unit identification code (UIC) of the sending unit
- 10-12 – the end item code (EIC) for either stand alone equipment or a subsystem; it is left blank when reporting a system
- 13-15 – the weapon EIC for either a system, the system a subsystem is used on, or blank when reporting stand alone equipment
- 16-30 – blank on the summary line, displays the serial number on the downtime line
- 31-35 – the Julian calendar date for the 15th of the month
- 36-38 – the quantity of authorizations for the end item on the TOE/TDA (for the rolled up UIC on the summary line, for the company on the downtime line)
- 39-41 – the on-hand quantity of the end item (for the rolled up UIC on the summary line, for the company on the downtime line)
- 42 – for the code for how downtime quantities are reported in either days or hours
- 43-47 – the time possible for use during the reporting period (the 16th of one month through the 15th of the next month)
- 48-52 – not-mission capable supply (NMCS) time, support
- 53-57 – NMCS time, organization
- 58-62 – NMC maintenance (NMCM) time, support
- 63-67 – NMCM time, organization
- 68-72 – NMC depot (NMCD) time, for equipment that remains on a unit's property book but is in a depot for repair or overhaul
- 73-77 – NMC equipment (NMCE) time, downtime due to missing subsystems
- 78 – equipment utilization code that defines where or how equipment is used and is authorized for readiness reporting in Para 2-4a, AR 700-138, *Army Logistics Readiness and Sustainability*
- 79-80 – filler, always left blank

# Connie's POST SCRIPTS

## ABRAMS/BRADLEY NEWSLETTERS

The Abrams Tank Information Paper (A-TIP) and Bradley Bits newsletters are available through the Army Knowledge Online (AKO) website. Getting to them can be a little tricky, though. That's why the Program Executive Office-Ground Combat Systems (PEO-GCS) website has links that provide instructions on how to get to the newsletters. Go to:

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

Select the PROJECT MANAGEMENT OFFICES drop down tab and click on HEAVY BRIGADE COMBAT TEAM. At the bottom of the page you'll find links for each of the newsletters. Click on the one you want and follow the instructions.

## BRADLEY TRAILER TOWING REVISITED

Pages 6-7 of PS 657 (Aug 07) told how to use a tow pintle extension kit to tow an M105 trailer with a Bradley. That information is incorrect. Bradley vehicles are **not** designed or authorized to tow trailers—with one exception. The M2A2 ODS-E Bradley is authorized to tow the M58 MICLIC trailer under the following restrictions:

- The trailer cannot be towed over roadway areas since the Bradley does not have connections to support lighting and air brake requirements.
- A strict speed limit of 5 mph for off-road terrain must be followed.

## LWP Exhaust Hose

Replace the exhaust hose, NSN 4720-01-527-2439, after 150 hours of use when operating the high-pressure pump module with the light water purifier (LWP) during cold weather. The hose is shown as Item 25 on WP 0135 00-7 of TM 10-4610-310-14. Make sure you inspect the hose daily for signs of damage.

## LOOP CLAMPS

You'll need the right size loop clamp to hold that wiring in place. Order from this list:

NSN 5340-00-	Inner Dia (inches)	Qty
845-2072	.125	1
291-5322	.173	1
291-5323	.235	100
200-8560	.313	1
598-0146	.36	1
200-8559	.438	1
291-5347	.5	1
286-9427	.75	1
286-9424	.875	1
286-9418	1	1
200-7449	1.125	1
200-3045	1.5	1
515-0595	2.25	1
579-9678	2	1
531-6857	2.5	1

## M88A1 ECD Rods

Need some replacement rods for the M88A1's exothermic cutting device (ECD) listed in TM 9-2350-256-10's additional authorization list? Order 'em with these NSNs:

Size (inches)	NSN	Qty
1/4 x 22	3439-01-325-7641*	25
3/8 x 18	3449-01-346-2545	50
3/8 x 36	3439-01-325-7642	25

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

## Flag NSNs

If you're looking for instructions on how to order flags, guidons, streamers, flagstaves or accessories, you'll find them at the U.S. Army Tank-automotive and Armaments Command (TACOM) Heraldry website:

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

The website lists a variety of heraldic items and their NSNs. There are step-by-step instructions for completing and submitting an online DD 1348-6 requisition form. You'll also be able to check the status of your requisition. For assistance, you can call the Heraldry toll-free number: 1-877-827-9026

## H-250 Handset POC Correction

Change the email address for the C-E LCMC POC in the *Improved for the Desert* article on Page 41 of PS 658 to:

[v.buffaloetaylor@us.army.mil](mailto:v.buffaloetaylor@us.army.mil)

## M9 ACE Hydraulic Filter Kit

Use NSN 2530-01-118-2872 to get the hydraulic filter kit shown as Item 2 (includes items 3, 4 and 5) in Fig 97 of TM 5-2350-262-24P. This kit does **not** include the hydraulic manifold and filter housing mislabeled as Item 2 directly above those same items in the illustration. Make a note until the technical manual is updated.

## AIRCRAFT WASH UNIT CARE

Need info on maintenance and parts for your wash unit, NSN 4920-01-185-6215? Check out TM 1-4920-456-12&P for the details on wash unit care. You can find the TM on the LOGSA website.

## RTCH Front Axle

Tell your buddies in support that NSN 2520-01-543-8060 gets the front axle for the rough terrain container handler. This NSN replaces the parts info shown as Item 1 in Fig 76 of TM 10-3930-675-24P.

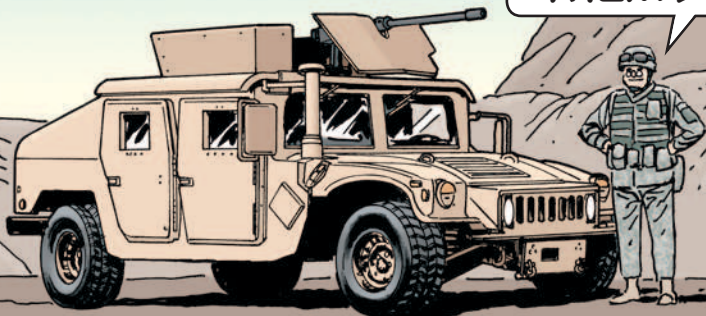
DISTRIBUTION: To be distributed in accordance with the initial distribution number (IDN) 340312, requirements for TB 43-PS-Series.

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



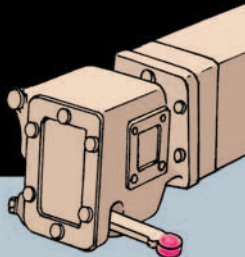
OPERATORS,  
LEAKS HAVE CLASSES.

DO YOU  
KNOW  
THEM?



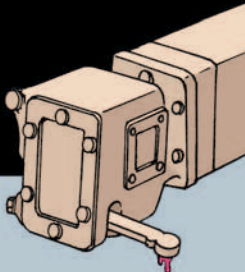
CLASS I LEAKS ARE IDENTIFIED BY **DAMPNESS OR DISCOLORATION**, BUT NO DROPS. KEEP AN EYE OUT WHEN YOU SEE THIS.

## CLASS I



CLASS II LEAKS FORM A DROP THAT **WON'T FALL**. CLEAN THE SPOT AND CHECK IT REGULARLY.

## CLASS II



CLASS III LEAKS FORM DROPS THAT **DRIP**. REPORT THEM TO MAINTENANCE RIGHT AWAY!

## CLASS III

