

Issue 655

**PS**

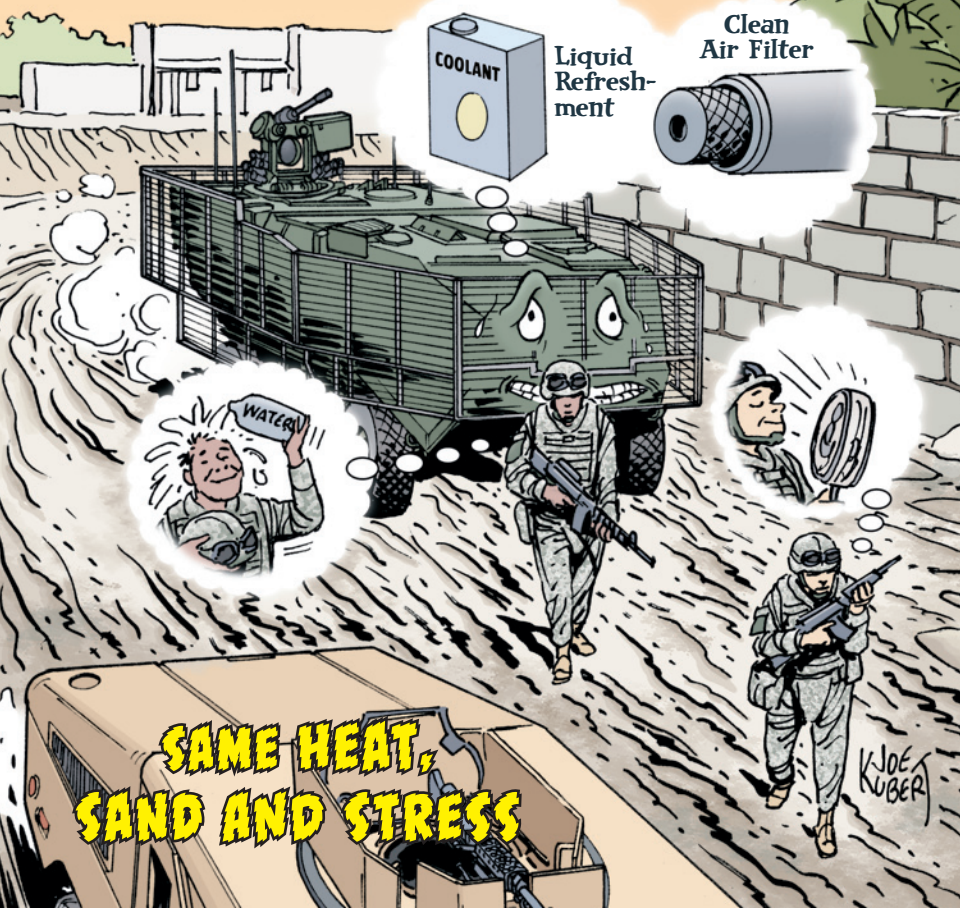
June  
2007

# THE PREVENTIVE MAINTENANCE MONTHLY

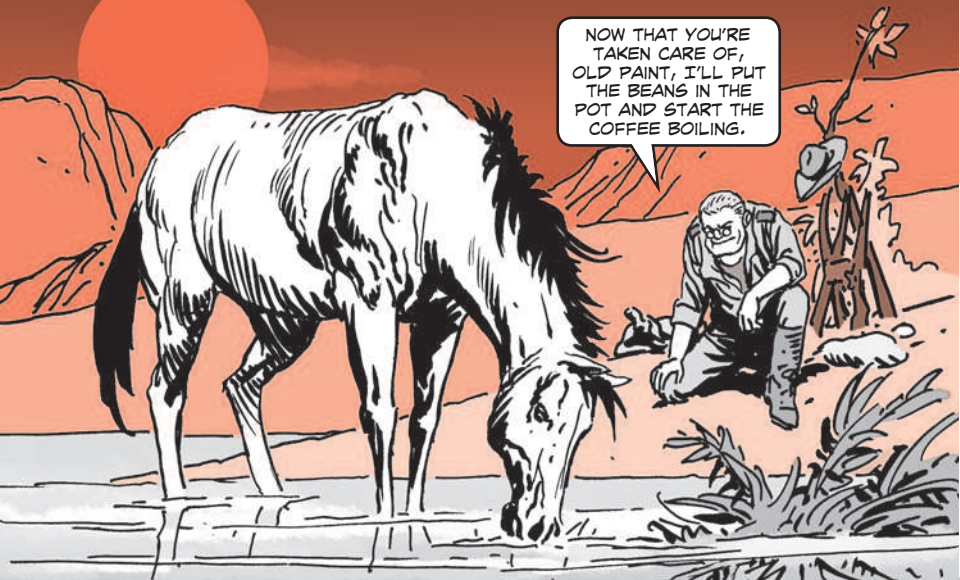
TB 43-PS-655

Approved for  
Public Release;  
Distribution is  
Unlimited

## HOT WEATHER ISSUE



# HOT TIME! SUMMER IN THE SERVICE



It's the dead of summer and oh, soldier, it's hot! It's hotter than a fox in a forest fire. It's hotter than a two-dollar pistol. It's hotter than a tabasco-soaked jalapeno sizzlin' in a skillet.

Your mouth is so dry your pucker has puckered out. Your uniform is plastered to your skin like the cap of a tube of Super Glue® is stuck to its spout. Your boots are so hot, you wish your tired feet were fireproof. Yep, it's summertime and the livin' ain't easy, because it's so darn hot!

Now, answer this: If the heat is doing that to you, what's it doing to your equipment?

I'll tell you.

Your equipment is warping, peeling, cracking, drying out and drying up. Lubricants are melting and fluids are boiling over and leaking away.

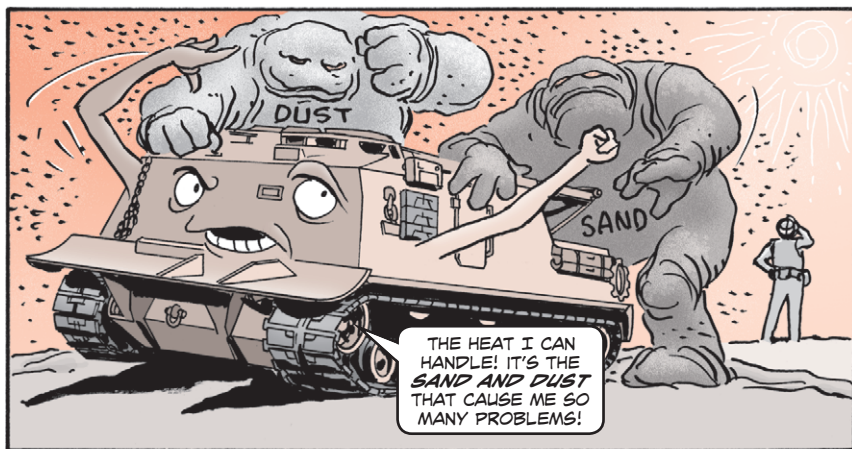
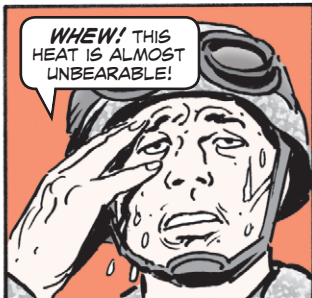
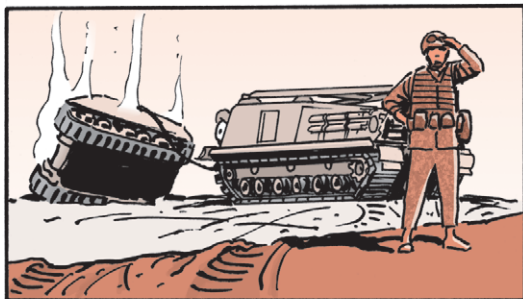
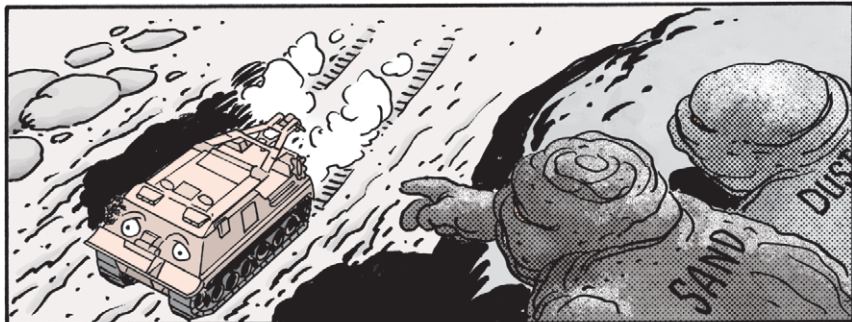
Do you want a drink, soldier? So does your vehicle. Do you want a cool place to rest? So does your radio. Do you want to just chill for a while? So does your generator.

At one time, a cavalry soldier never drank until his horse did; never ate until his horse was fed; never shucked his boots and dipped his feet until his horse's hooves were checked, cleaned and resting on soft grass. That soldier was betting his life on the well-being of his horse. So he took good care of that horse.

What equipment are you betting your life on this summer? It ain't summer fun working under that sun, but the day is not over until PM is done.

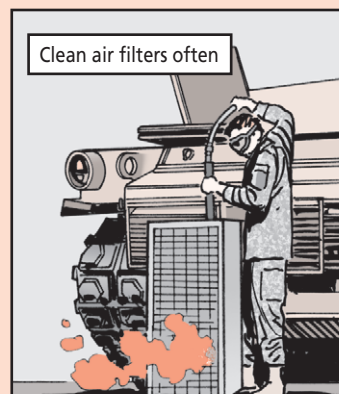


# BATTLING THE ELEMENTS



## Clean Air

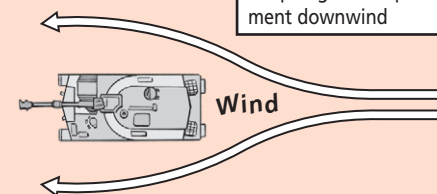
Make sure your air induction system is in good shape. That includes hoses, inlets, outlets, precleaners, and filter elements. Cracks, tears, holes and loose clamps let sand and dust get into engines.



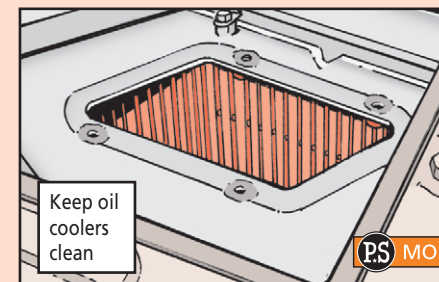
Pay attention to air restriction indicators. Clean air filter elements as often as necessary to keep engine performance high.

Park your vehicle with the engine compartment downwind. That allows the bulk of the vehicle to shield the engine from blowing sand or dust.

Keep engine compartment downwind



Keep all air-cooled surfaces—oil coolers and radiators—free of oil and grease. These surfaces transfer heat away from the oil and water inside as air flows past them. Oil and grease attract dust and sand like magnets and act like insulation that traps heat and blocks air flow. Increased heat damages engines and transmissions.



## Clean Fuel

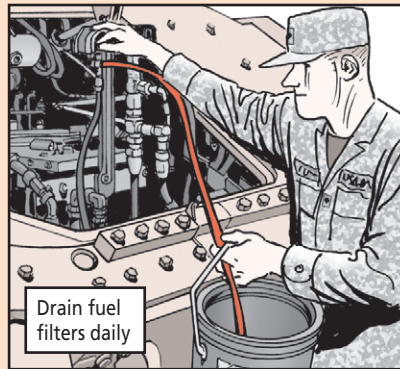
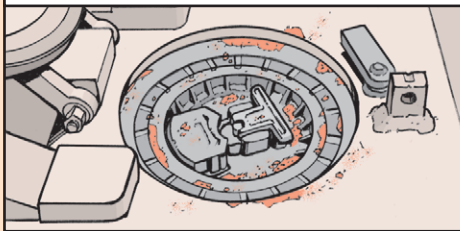
It's critical to keep fuel clean during refueling. Always wipe off the nozzle before refueling. If you suspect there's dirt inside the nozzle, flush it out or take the nozzle off and clean it. Keep the fuel nozzle capped when it's not in use.

Blow away loose dust and sand from the vehicle's fuel filler opening before removing the cap. When the fuel nozzle is in place, use a clean rag to close off any gaps between the nozzle and the fuel filler opening. That keeps blowing sand and dust from getting into the fuel tank. Close the fuel cap tight when you're finished.

No matter how careful you are, some dirt is going to get into the fuel system. That means draining the fuel filters to keep 'em from clogging.

Draining the fuel filters also gets rid of condensation that results from hot days and cool nights. You may need to drain fuel filters more than once a day to keep engine performance high, but they should always be drained at least once a day to keep water from mixing with the fuel.

Blow away dust and sand before opening fuel cap

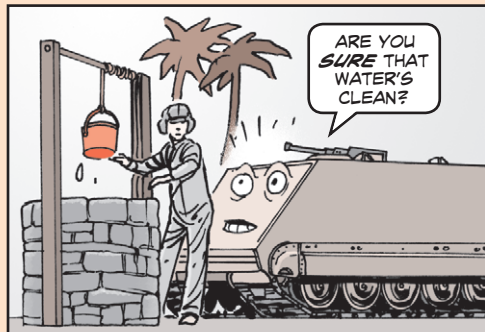


Drain fuel filters daily

## Clean Water

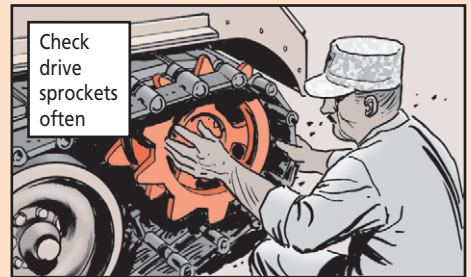
Use only clean water from a reliable source for filling radiators. Local water supplies often contain mineral deposits that will eventually clog up radiator cores.

If local water must be used, filter it through a clean cloth before adding it to a radiator. Then, clean and purge the radiator at the next opportunity.



## Track Maintenance

Check the drive sprocket assembly, roadwheel mounting bolts, end connector bolts, track pin nuts, and centerguide bolts before, during and after operation. Sand, rocks and gravel tend to break or damage lube fittings and relief valves. Rough terrain causes hardware to work loose.



Check drive sprockets often

Never neutral steer in soft sand. That lets sand build up in the track assembly components and can result in a thrown track. Make fast turns wide. Keep short turns slow.

Pay attention to the tracks during at-halt inspections. Check track tension. Look for cracked end connectors and broken track pins.

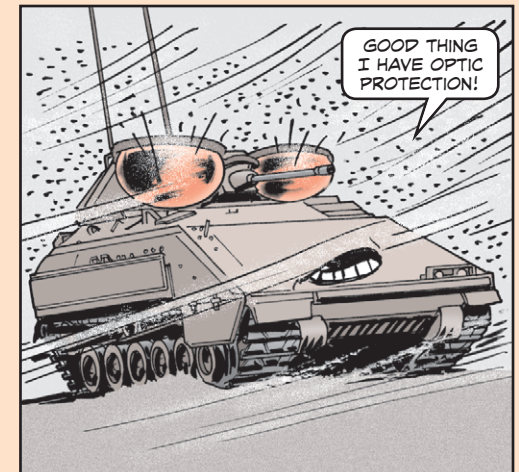
Since you'll be lubing bearings much more often in sandy and dusty conditions, make sure you wipe away any excess lube when you're finished. Grease attracts sand, and the two combined can grind away metal.

## Optics Care

Cover glass surfaces when they're not being used. Scouring and etching by sand and dust will ruin them. That's especially true for sighting and fire control equipment.

The buildup of dust on these surfaces can also degrade low-light vision. So keep surfaces as clean as possible using the specific cleaners called out in your TMs. Optical lens cleaning compound, NSN 6850-00-227-1887, can be used if your TM does not list one.

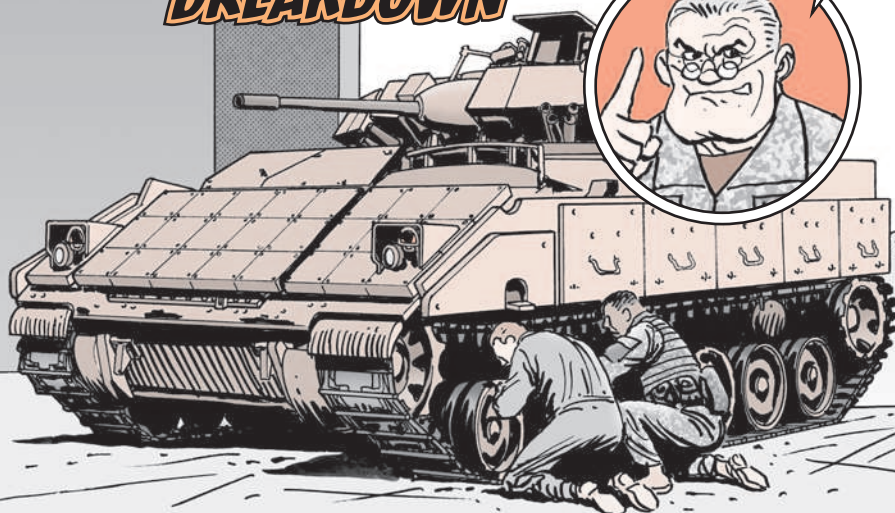
During dust or sandstorms, you might want to use self-clinging plastic film to cover optics between missions. NSN 8135-00-043-5331 gets a 100-ft roll of 11 1/2-in wide film.





# BREAK-IN PREVENTS BREAKDOWN

A PROPER  
BREAK-IN PERIOD  
IS **ESSENTIAL**  
FOR KEEPING NEW  
ROADWHEELS IN  
SERVICE!



**M**ost operators know it's important to properly break in new track on their combat vehicles. After all, it's outlined in WP 0016 of TM 9-2530-200-24.

But what you may **not** know is that it's just as important to break in new roadwheels. Immediately exposing new roadwheels to normal or high-speed use can wear them out quickly. They may also suffer from other damage, including blowouts.

Break-in will help prevent roadwheel blowouts



Breaking in roadwheels will help restore the rubber's natural resilience, especially on roadwheels that have been in storage for a long time.

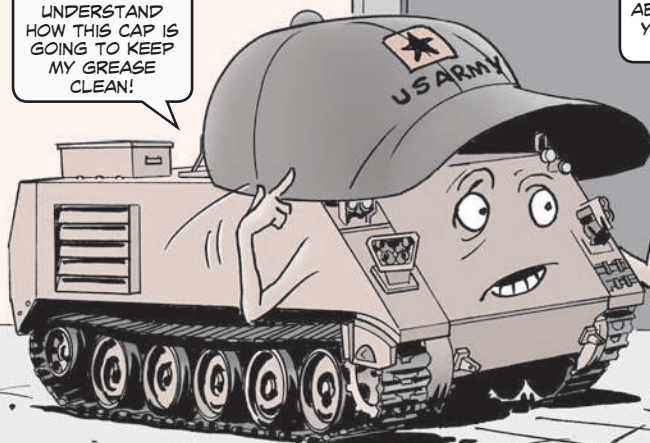
Break in a new roadwheel by driving at low speeds for the first 50 miles. Best results come from speeds no higher than 20 mph during high outside temperatures.

Even if you've broken in the new roadwheels, keep an eye on them if you operate at high speeds on asphalt or concrete. Excessive heat builds up in the roadwheel because of heat transfer from the track shoes.

# CAPS KEEP GREASE CLEAN

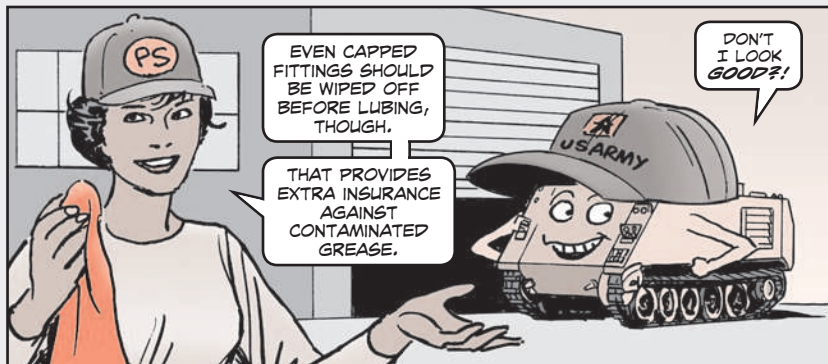
HEY! I DON'T UNDERSTAND HOW THIS CAP IS GOING TO KEEP MY GREASE CLEAN!

I WAS TALKING ABOUT CAPS FOR YOUR **GREASE FITTINGS!**



Getting all the dirt, mud, and sand off your combat vehicle's grease fittings before lubing is important, crewmen. Using a dirty grease fitting forces dirt and sand in along with the grease. Contaminated lube not only won't do its job, but it can damage bearings and other components.

One way to ensure clean fittings is to keep 'em covered. Protective caps, NSN 4730-00-289-8148, do a great job of keeping grease fittings unclogged and dirt-free. So keep plenty on hand and use 'em when doing PMCS.



EVEN CAPPED FITTINGS SHOULD BE WIPED OFF BEFORE LUBING, THOUGH.

THAT PROVIDES EXTRA INSURANCE AGAINST CONTAMINATED GREASE.

DON'T I LOOK GOOD?!



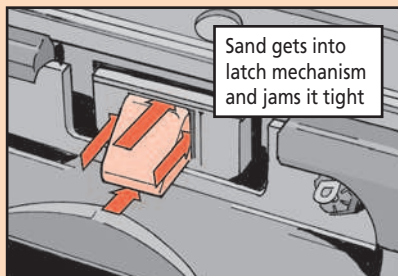
# Blow the Sand Out

I HOPE THEY CLEAN  
MY CARGO HATCH  
LATCH MECHANISM  
WHEN WE GET BACK.

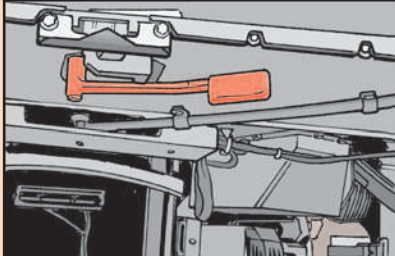
IT'S CHOCK  
FULL OF  
SAND!

The powdery Iraqi sand gets into every nook and cranny. That includes the cargo hatch latch mechanism on your Bradley.

When enough sand gets inside the mechanism, it's nearly impossible to use the latch handle to open the cargo hatch. Some frustrated crewmen have even tried using a hammer, only to break off the handle.



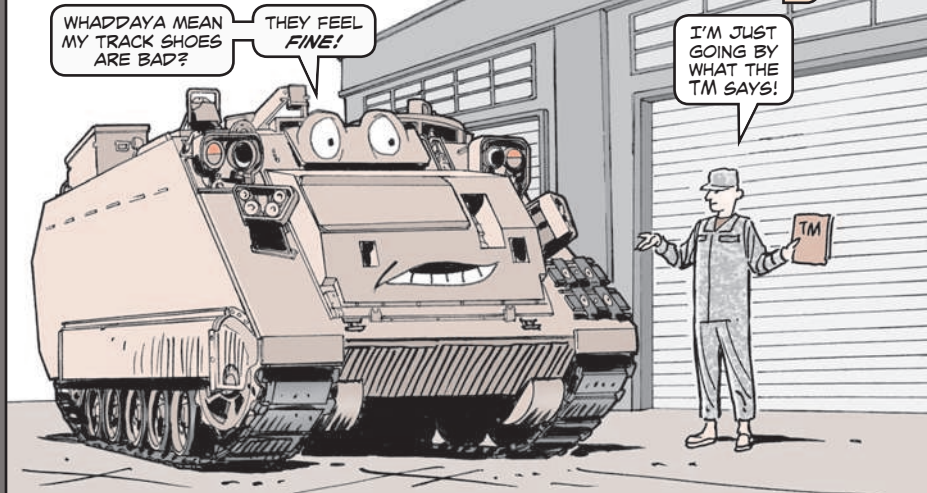
Handle on jammed latch won't move



It's a good idea to clean out the mechanism regularly with compressed air. Work the handle back and forth to operate the latch while blowing out sand. Just make sure you're wearing safety goggles to protect your eyes!

If the latch mechanism's already too jammed with sand, tell your mechanic. He'll disassemble the latch mechanism for cleaning.

# TM Fix for Track Wear Gauge



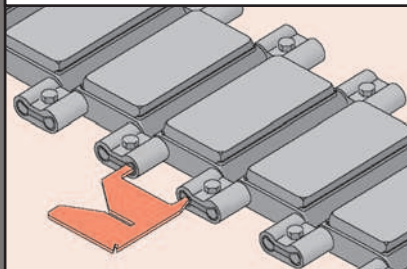
**C**rewmen, the -10 TMs for your M113-series vehicles have some wrong information about track shoe wear limits.

The problem is with the bushing wear limits for T150 track. You'll find the mistake in step 8 of WP 0082 00-4 of TM 9-2350-261-10, WP 0094 00-3 of TM 9-2350-277-10, WP 0052 00-3 of TM 9-2350-366-10-1, and WP 0061 01-3 of TM 9-2350-247-10.

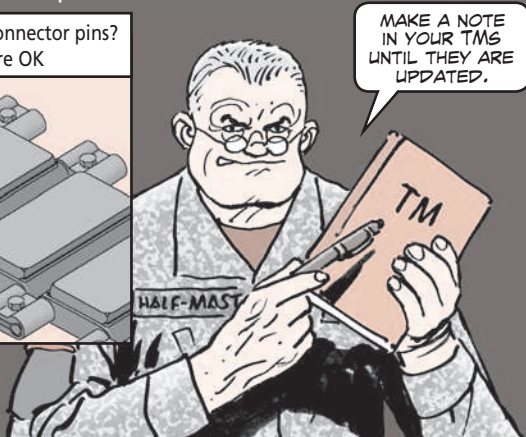
The TMs say that the bushings are worn if the track gauge pins enter both end connector pins. That's wrong.

If the track gauge pins enter both track shoe pins, the bushings are still good. It's only when the track pins have been stretched too far apart for your gauge to enter both pins that you need to notify your mechanic to replace the track shoe.

Gauge pins fit into both end connector pins?  
Track shoe bushings are OK

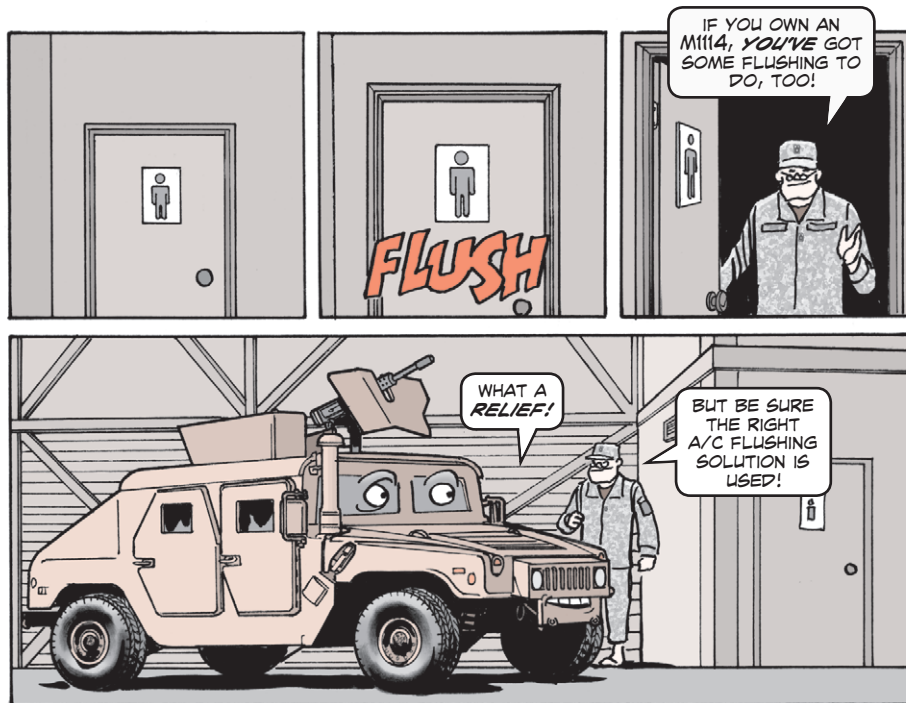


PS 655





# New Way to Flush Your A/C's Junk



In general, flushing lets you get rid of the old stuff, resulting in a cleaner system. So when you flush the air conditioning (A/C) system on your M1114, contaminants such as oil, sludge, and particles are removed.

But did you realize that not knowing when and how to flush can actually cause damage? When replacing a failed compressor, you've gotta flush the A/C system to prevent damage to the new compressor. And you've gotta use an approved A/C flushing solution that's compatible with R-134a so you won't leave residue. Otherwise, you won't get rid of all the junk in the system and your A/C won't work as well as it should.

Also, you might think that TM 9-2320-387-24-2 tells you the right way to flush your M1114's A/C system. Not so now, because TACOM has revised those flushing procedures. Get the new procedures on the AKO website:

<https://www.us.army.mil/suite/folder/197841>

Click on AC, then select M1114A Flushing to pull up the information.

And PM-LTV has developed an A/C flush kit. Supplies are limited, so get yours now by contacting Dave Stein:

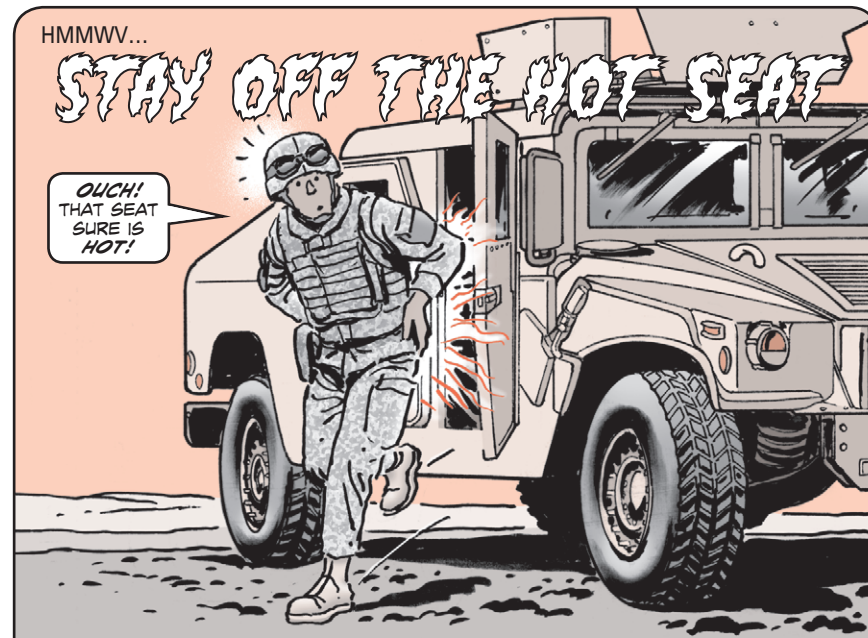
[dave.stein@us.army.mil](mailto:dave.stein@us.army.mil)

or John Ziegler:

[john.ziegler3@us.army.mil](mailto:john.ziegler3@us.army.mil)

Here are the kit components:

Qty	Description	CAGE	Part Number
1	Flush gun kit	11284	36780
1	Flush catch hose	11284	36786
1	Flushing agent (1 case, quart size)	11284	37689
1	1/4" x 1/4" flare to male pipe half union	NA (local purchase)	A-80



If the HMMWV commander's seat is hot, that might not be just because the sun is beaming. You may have a problem with battery arcing.

Battery arcing occurs if the commander's seat mounting bolts aren't installed correctly. It could also result from premature wear of the battery crossover cable insulation caused by improper securing of cables in the battery box.

Be proactive and prevent damage by paying closer attention to the commander's seat mounting bolts and by properly securing cables in the battery box.

For details, look at TACOM GPM 05-009 on the AEPS website:

[https://aeps2.ria.army.mil/commodity/gpm/tacom\\_wn/05/gpm05-009.html](https://aeps2.ria.army.mil/commodity/gpm/tacom_wn/05/gpm05-009.html)

# ONE THING LEADS TO ANOTHER



Dear Half-Mast,  
While inspecting M925A1 5-ton trucks, we've noticed what looks like oil in the vehicle's air filter element and air cleaner assembly. What gives?

Mr. D.C.

Dear Mr. D.C.,

This question comes up from time to time. No way is oil supposed to be in the 5-tonner's air filter, but there it is—something that looks like oil. So where did it come from? Fouled air filters often start with an overfilled fuel tank. How does that happen? Well, one thing leads to another.

The fuel tank, transmission gear case and transfer gear case all vent into the air cleaner duct. Fuel from an overfilled tank can run through the vents and end up in the gear cases. Then, the fuel-oil mess from the overfilled gear cases is forced out through the vent lines... and ends up in the air filter.

It's also possible that a leaking interlock air cylinder can pressurize the transfer and push oil into the air filter.

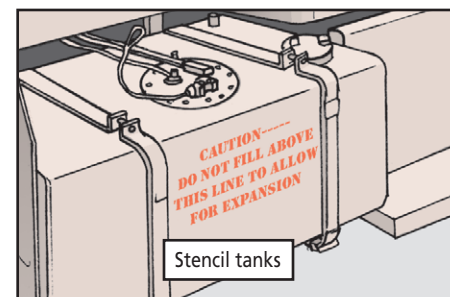
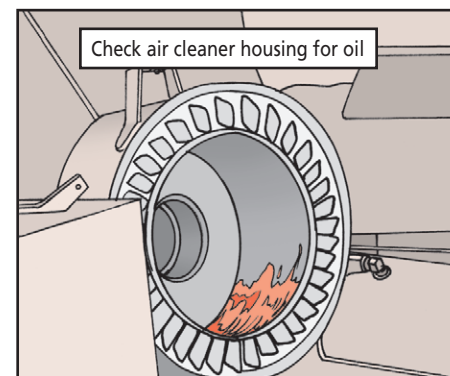
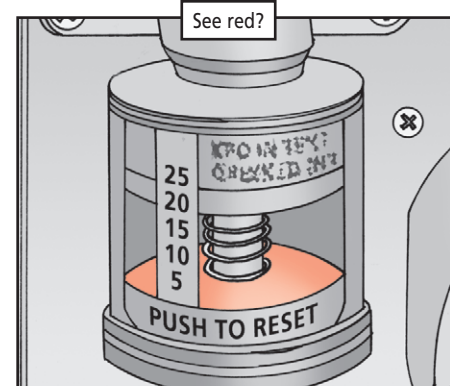
Regardless, if the air restriction indicator in the cab shows red, check the air cleaner. If it's oil-clogged, check the levels in the transmission and transfer gear cases. If they're overfilled, have your mechanic drain the excess. Oil in these components may contain fuel. Sniff the oil, and if you smell fuel, change the oil.

If either gear case is low, support can check the transfer interlock air cylinder for leaks.

A good reminder not to overfill the fuel tank is to paint a line two inches from the top of the tank. Then, stencil "**CAUTION: Do not fill above this line to allow for expansion**" in 1-in black letters as shown in Fig 20 of TB 43-0209, Color, Marking and Camouflage Painting of Military Vehicles, Construction Equipment and Materials Handling Equipment (Oct 90 with Change 1, May 91).

Also, an expired MWO 9-2320-272-20-6 installed a fuel tank ventilation kit that prevents oil from getting forced into the air cleaner element and housing.

*Half-Mast*





Tires...

# TIPS TO KEEP 'EM ROLLING



TIRES ARE TO YOUR VEHICLES  
WHAT SHOES ARE TO YOUR BODY.  
SO GIVE YOUR TIRES THE SAME  
ATTENTION AND CARE YOU WOULD  
GIVE YOUR SHOES BEFORE  
STARTING THAT BATTALION RUN.

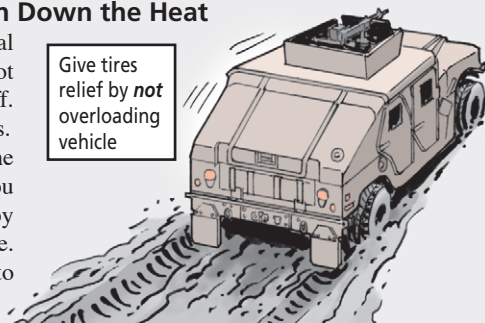
NO MATTER HOW GOOD YOUR  
TIRES ARE, HOWEVER, HEAT MAKES  
THINGS TOUGH ON THEM. SO BEAT  
THE DAMAGE THAT HEAT CAN BRING  
BY HEEDING THESE PM TIPS.

## Turn Down the Heat

Tires get hot during normal operations, and when it's hot outside, the tires can't cool off. Continuous heat weakens the tires.

You can't turn down the temperature outside, but you can give tires some relief by not overloading the vehicle. Overloaded vehicles add heat to tires, so reduce the load.

Give tires  
relief by **not**  
overloading  
vehicle



## Sinking Sand

Reduced loads decrease the chance that you'll sink in sand. You'll really want to do this for the trailers you're pulling! So load them as lightly as possible.

Also, lower tire pressures allow for more flotation and traction in sand. That's why some vehicle operator's manuals list a lower tire pressure for driving in sand. But make sure you add air back to those tires before you drive on the pavement again.

## Tire Pressure Points

Make sure all tires, including the spare, have the right amount of air in them. Gauge a tire that looks low, and check your TM for the right pressure.

One sign of underinflation is worn tread at each side of the tire. And underinflated tires flex more than properly inflated tires. That flexing creates heat, which ruins tires and may cause a blow out.

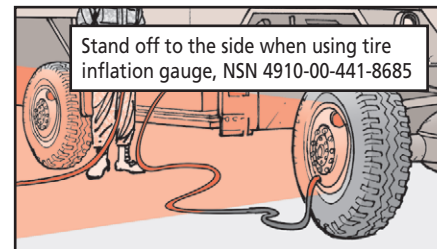
Low tire pressure also leads to sidewall cracks. If you see a sidewall crack, make sure the crack doesn't extend 1/16 inch or deeper or go to the cord or steel. If it does, report it.

Try to add air as necessary **before** operation, and **before** the tire gets too hot. Adjusting tire pressure while the tire is hot can lead to not enough air being added, since tire pressure increases in the heat.

Worn tread at each side of tire  
is a sign of underinflation



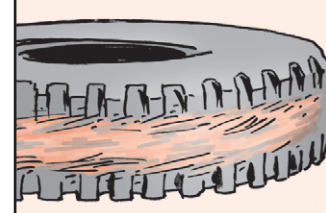
Also, note that if you need to add more than 10-15 psi to the tires, you have to use tire inflator gauge, NSN 4910-00-441-8685. That'll keep you safe. It gives you 10 feet of hose between the gauge and the chuck so you avoid the danger of getting hit by a flying split ring or an exploding tube.



But make sure you stand off to the side—to not in front of the tire assembly—to avoid the path of an exploding tire. Also, if the underinflated tire is below 80% of its recommended pressure, fully deflate it, remove it from the vehicle, and inspect it using the guidance in TM 9-2610-200-14.

Overinflated tires can be a problem, too. They don't flex enough and wear in the middle since the middle tread takes all the weight. And when an overinflated tire hits a large rock or a rut, the cords or steel belts inside snap and break, weakening the tire. So keep your tire's pressure within prescribed limits.

Overinflated tires wear in middle



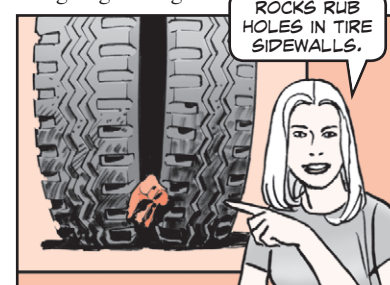
## Avoiding Flats

Keep your vehicle moving by avoiding flats. Try not to run over growth or brush that could have spines and thorns that break off in tires and work their way through. And look for nails, metal or rocks lodged in the tire. They'll take the tires to "leak city," so if you see 'em, report 'em.

Also, drive carefully over rocky, rough terrain. Radial tire sidewalls are thinner than those of bias tires, and rocks can make some severe cuts. Wheeled construction and material handling equipment are especially prone to tire damage because the mission often requires them to work where the going is rough.

Check the air pressure in tubeless tires often because tubeless tires can have a bead-breaking problem. The bead pulls away from the rim, letting air escape. That can be caused by traveling over rocky terrain.

And when you stop, take a few seconds to look for rocks caught between dual tires. Trapped rocks rub holes in tire sidewalls, so get them out of there.



Wheeled  
Vehicles...

# Hawker Battery OK in SWA

HEY, HAWKER,  
WANNA JOIN  
OUR TEAM?

SORRY, I  
CAN'T.

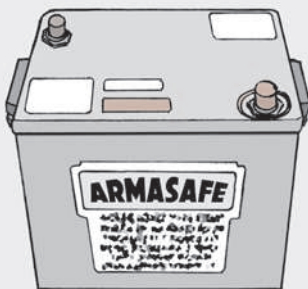
I LAST LONGER  
THAN YOU, AND  
I WORK BEST  
ALONE!



**W**ant fewer maintenance challenges during your unit's deployment? Or do you just want to cut the time it takes to pull maintenance, period? Well, when it comes to batteries, we've got a maintenance-free solution for you—the Hawker!

TARDEC's Team Power has officially approved the Hawker battery, NSN 6140-01-485-1472, as a substitute for 6TL, 6TN and 6TMF batteries in all combat and wheeled vehicles **in SWA**. You can use it in the Stryker FOV and M915 FOV tractor trucks at any location, but it's not approved for all other wheeled vehicles outside SWA just yet, unless your commander says otherwise.

Get Hawker battery using NSN 6140-01-485-1472



That's because the Hawker battery is expensive, but it will save you dollars in the long run. It can be stored for up to 30 months. And if it's re-charged every six months while in storage, it will last almost indefinitely.

But **don't** mix Hawker batteries with other batteries. That's a safety risk that could result in charging problems.

For more information on Hawker batteries, go online to eyeball our article on Pages 4-5 in PS 650 (Jan 07):

<https://www.logsa.army.mil/psmag/archives/PS2007/650/650-04-05.pdf>

# LOOSEN THE NUT TO FILL YOUR CUP



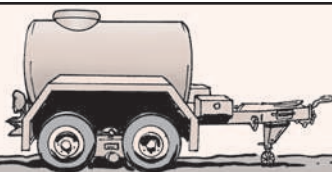
WHEN YOU'RE THIRSTY,  
WATER THAT COMES OUT  
OF THE TAP IN DRIPS  
JUST ISN'T FAST ENOUGH.



A STEADY STREAM  
IS WHAT YOU NEED,  
ESPECIALLY AFTER  
YOU'VE BEEN OUT IN  
THE HOT SUN.



WHEN YOU TURN ON  
THE M1112 WATER  
TRAILER'S FAUCET  
ALL THE WAY, YOU  
SHOULD GET A FULL  
STREAM OF WATER.



BUT IF YOU DON'T,  
THERE'S A PROBLEM  
THAT MOST LIKELY  
HAS A SIMPLE FIX.



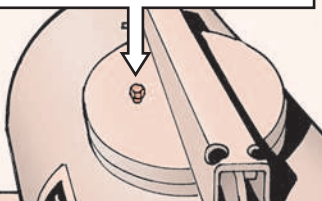
FIRST, MAKE SURE THE  
WATER TRAILER IS FILLED  
WITH WATER. IF IT ISN'T,  
THEN RE-FILL THE TANK.



IF THE WATER TRAILER  
*IS* FULL, LOOSEN THE  
SMALL NUT ON THE  
MANHOLE COVER. A  
TIGHTENED NUT WON'T  
LET AIR INTO THE TANK  
SO A VACUUM FORMS.

THAT CAUSES THE WATER  
TO COME OUT AS A TRICKLE  
RATHER THAN A STREAM.  
SO LOOSEN THAT NUT, THEN  
FILL YOUR CUP!

Loosening nut on manhole cover releases  
vacuum so more water flows out





# STOP SAND FROM STOPPING YOU



SAND CAN **STOP** YOUR RIFLE, MACHINE GUN, OR PISTOL FROM **FIRING**.

SAND BLOWS IN PLACES LIKE THE MUZZLE AND EJECTION PORT AND STOPS MOVING PARTS.

EVEN WORSE, IT MIXES WITH LUBE...

...AND FORMS A SCOURING POWDER THAT GRINDS UP PARTS.

STOP SAND FROM STOPPING YOU AND YOUR WEAPON BY PAYING ATTENTION TO A FEW RULES...

## CLEAN YOUR WEAPON OFTEN.

THAT MEANS **AT LEAST DAILY** IN THE DESERT.

SOMETHING AS QUICK AS WIPING OFF THE OUTSIDE OF YOUR WEAPON WITH A CLEAN CLOTH EVERY CHANCE YOU GET WILL HELP.

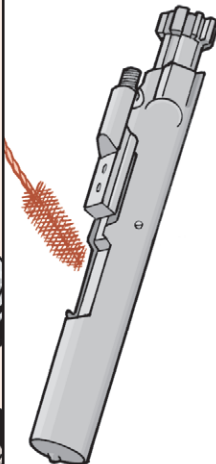
CLEANING THAT INVOLVES DISASSEMBLY SHOULD BE DONE ONLY IN ENCLOSED AREAS, LIKE YOUR TENT. OTHERWISE, BLOWING SAND WILL DEFEAT YOUR CLEANING.



## PAY SPECIAL ATTENTION TO MOVING PARTS LIKE THE BOLT CARRIER.

WIPE AND BRUSH THEM CLEAN.

BLOW OUT SAND FROM AREAS LIKE THE TRIGGER ASSEMBLY THAT YOU'RE NOT ALLOWED TO TAKE APART.

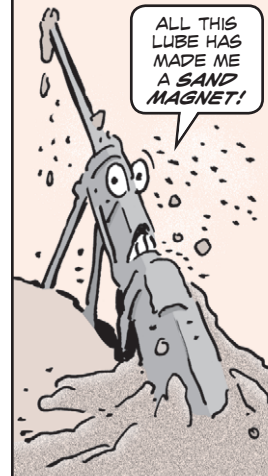


## EASY ON LUBRICATION.

LUBRICANTS LIKE CLP ATTRACT SAND.

CORROSION IS NOT A BIG PROBLEM IN THE DESERT, SO YOU DON'T NEED AS MUCH LUBE.

LUBE ONLY INTERNAL PARTS. WIPE THE OUTSIDE OF THE WEAPON DRY.



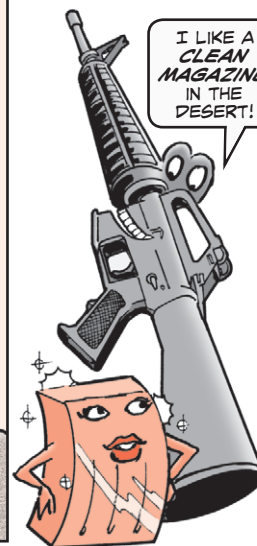
ALL THIS LUBE HAS MADE ME A **SAND MAGNET!**

PS 655

## CLEAN MAGAZINES.

MAGAZINES JAM WITH SAND. UNLOAD AND WIPE OFF AMMO DAILY.

RUN A RAG THROUGH THE MAGAZINE. DON'T PUT ANY LUBE IN MAGAZINES OR ON AMMO.



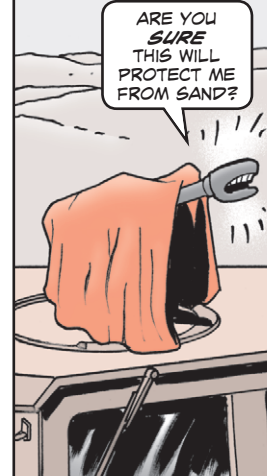
I LIKE A **CLEAN MAGAZINE** IN THE DESERT!

19

## USE RIFLE COVERS, MUZZLE CAPS, AND SPARE MAGAZINE BAGS.

COVER MOUNTED MACHINE GUNS.

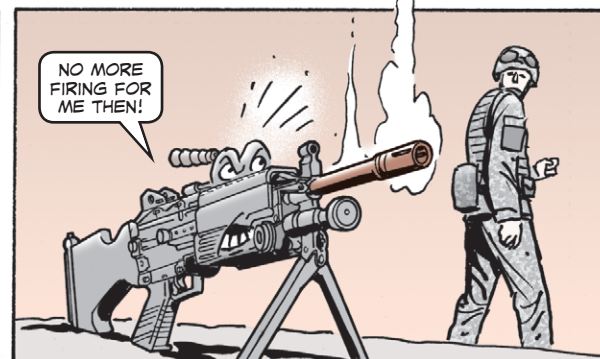
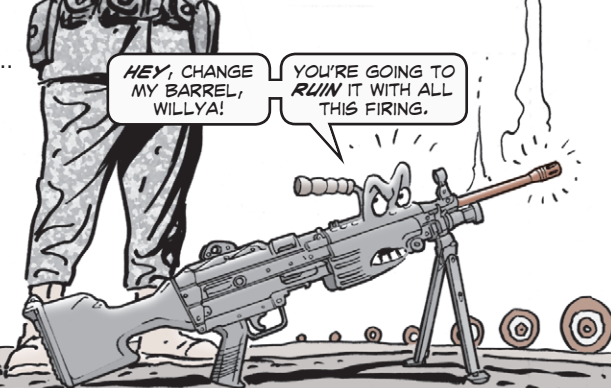
KEEP THE M16/M4'S EJECTION PORT COVER CLOSED AND A MAGAZINE INSTALLED.



ARE YOU **SURE** THIS WILL PROTECT ME FROM SAND?

JUNE 07

# DON'T FORGET SECOND BARREL



Dear Editor,

I'm a small arms inspector in Kuwait, where I've noticed problems with the second barrels for the M2, M240, and M249 machine guns.

Many deploying units are shipping the second barrel separately from the machine gun. The second barrels never catch up to the weapons they belong to. Gunners are forced to fire with only one barrel, which can quickly ruin that barrel when there's lots of firing. They also risk a cookoff. And a machine gun without a second barrel is deadlined.

Plus when they turn in the weapon for services, they don't have the second barrel. Gauging can't be done without the second barrel.

We've also found that even when the unit has the second barrels they often don't take them to the field, which means they can't change barrels. Or even worse, they don't use the second barrel the weapon was headspaced for. They just grab any barrel. That can cause the weapon to explode.

Please alert gunners to the importance of keeping and using the second barrel that was headspaced for their machine gun. That will save weapons and lives. Both barrels should be marked with the gun's serial number so there won't be any doubt about which barrel goes with which gun. Put on the serial number with paint or put it on a dogtag. *Don't* etch it in the barrel!

Doug Stephens  
Kuwait

**Editor's note:** Excellent advice, Doug.

For any gunners who have forgotten the rules on changing barrels, use these intervals for both live and blank ammo:

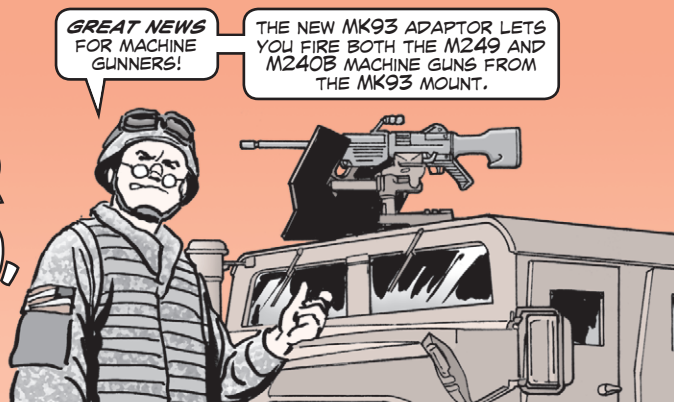
**M2**—If you're firing single shot, wait until the end of the day to change barrels. If you're firing 40 rounds or fewer per minute, change the barrel every hour. If you're firing 200 rounds or more per minute, change the barrel every half hour.

**M240**—Change the barrel every 10 minutes during sustained fire (100 rounds per minute) and every two minutes during rapid fire (200 rounds per minute).

**M249**—During both sustained fire (50 rounds per minute) and rapid fire (100 rounds per minute), change the barrel every 200 rounds.

Machine Guns...

# MOUNT ADAPTOR FOR M249, M240B

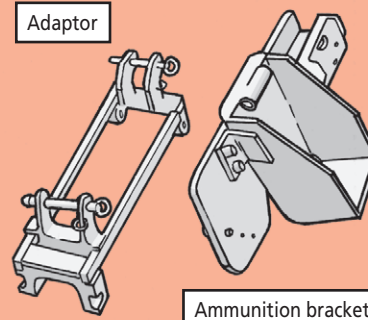


That means you can quickly and easily switch from an M2 or MK19 heavy machine gun to the lighter M249 or M240B when firing from the MK93.

The adaptor also provides an ammunition bracket capable of holding a 200-round 7.62-mm metal or 5.56-mm plastic ammunition container.

No tools are required to install the adaptor. Instructions come with the bracket.

Order the MK93 adaptor with NSN 1005-01-531-1676 and the ammunition bracket with NSN 1005-01-531-1666.





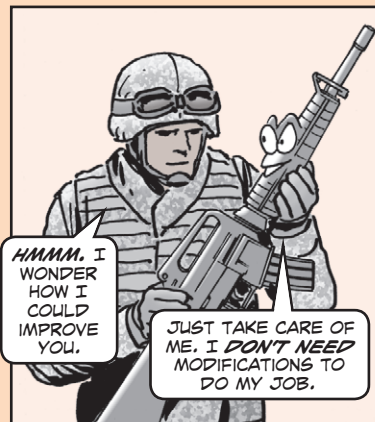
# KNOW WHAT YOU'RE SHOOTING

FOR THE LOWDOWN ON WHAT AMMO YOU SHOULD BE SHOOTING WITH YOUR M16 RIFLE, M4 CARBINE, OR M249 MACHINE GUN, EYEBALL THESE TIPS FROM AN AMMO SPECIALIST IN IRAQ.

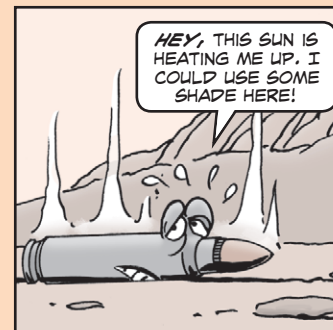
Dear Editor,

I am a quality assurance specialist ammunition (QASAS) in Iraq and have encountered several problems that soldiers should be warned about:

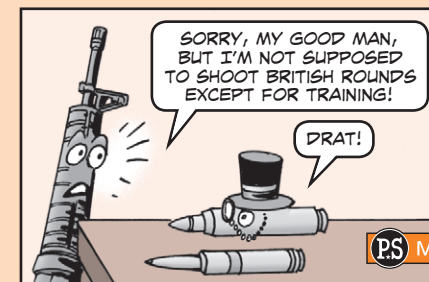
- Soldiers are modifying weapons or using unauthorized weapons. Both practices are prohibited because a modified or unauthorized weapon could be unreliable and unsafe. That endangers the soldier and his unit.
- Soldiers are using unauthorized ammo in their weapons. I've found Italian, Romanian, and Yugoslavian ammo in soldiers' magazines. Some soldiers didn't even realize they were using unauthorized ammo. Unauthorized ammo can't be relied on and shouldn't be used. Use only the approved ammo you get through the Army supply system.



- Soldiers should remember to protect ammo as much as possible from the heat and sun, which of course is very difficult in the Iraq desert. The hotter ammo gets, the faster its propellant burns, which means greater pressure inside the weapon. If ammo has been exposed to high heat, let it cool before firing it.



- The British 5.56mm round should be used only for training with the M16-series rifle, M4/M4A1 carbine and M249 machine gun. In fact, it's good to use for training since that saves U.S. ammo for combat. The British round leaves more powder residue, which causes the weapon to jam if it's not cleaned frequently. The British ammo is stamped on its base with either L2A2 or L1A2. After firing British ammo, clean your weapon and then re-zero it using US ammo. That way you'll hit what you're aiming at!





- Many soldiers don't realize there are different types of ammo for each weapon and that some types work better than others. It would be a good idea for PS to educate soldiers on what ammo is best to use.

Jeffrey Dykeman  
Iraq

**Editor's note:** Excellent points, Jeff. Now let's start the education on what soldiers should use in the M16/M16A1, the M16A2/M16A4 and M4/M4A1, and the M249:

### **M16/M16A1**

The M16/M16A1 is designed to shoot M193 (ball) and M196 (tracer) cartridges. Because the M16/M16A1 has a one turn in 12 inches twist, it can't accurately shoot the heavier bullets used in the M16A2/M4-series. You can ID M193 cartridges by the unpainted bullet tips and M196s by their red tips.

M193 has an unpainted tip

M196's is red



### **M16A2/M16A4, M4/M4A1**

The M16A2/M16A4 and M4/M4A1 have a one turn in seven inch rifling twist and work best with the M855 (ball) and M856 (tracer) cartridges. If you shoot the M193 or M196 cartridges, your effective range is reduced 16 percent. M855 cartridges have a green tip and M856s have an orange tip.

M855 has green tip

M856's is orange



### **M249**

The M249 also works best with the M855 and M856 cartridges. If you shoot M193 and M196 cartridges, the M249's effective range is reduced from 1,000 meters to 500.

Ammunition information notice (AIN) 88-06 gives the lowdown on 5.56-mm ammo. You can find the AIN at

<https://aeps2.ria.army.mil/commodity/ain/jmc/06/ain88-06.html>



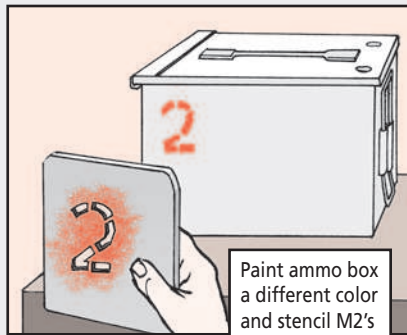
# TURN AMMO BOX INTO STORAGE BOX



Dear Editor,

The M2 machine gun has lots of tools and other stuff that it needs in the field. It's easy for the items to go missing, which can be serious in the case of something like a timing gauge.

We've managed to stop losing so many M2 items by turning an old ammo box into a storage box. We paint the box a different color than a normal ammo box so it won't be mistaken for one. Then we stencil the M2's ID number on the box.



Here's what we keep in the box:

- *headspace and timing gauges*
- *ruptured cartridge extractor*
- *operator's TM*
- *cleaning kit*
- *barrel change mitt*
- *range card*
- *a list of what's kept in the box*

We check the list before we go to the field to make sure everything's in the box. Then we make sure the box goes with the M2.

SGT Steven Fester  
SGT Justin Ford  
SPC Gerald Aquino  
PV2 Michael Scharfenberg  
FMC 296  
Ft Lewis, WA

**Editor's note:** A good, cheap way to keep your M2 tools and accessories where you can find them! Thanks for the suggestion.

THIS SAND AND HEAT ARE TERRIBLE!

I'M GOING TO NEED EXTRA CARE OUT HERE...

...OR WE'RE BOTH GOING TO BE IN BAD TROUBLE!

## Breathe Easier

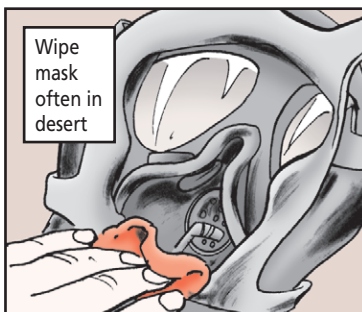
The sand and heat of Southwest Asia can do a real number on your M40- and M42-series masks. Sand can plug airways, while heat and the desert sun can shorten the life of some mask parts. This advice, though, can provide your mask an oasis in the desert:

**Keep it clean.** The fine sand of Southwest Asia will penetrate every part of your mask, which could lead to poor breathing or seeing. The only ways to fight sand are to keep your mask in its carrier as much as possible and to clean the mask often.

Areas you want to pay special attention to when cleaning are around the outlet valve disc, the inside lenses, the canister's air intake, and in the mask's inner lining. You can shake out or blow out much of the sand and use a dry, clean cloth to wipe out the rest.

Of course, if your mask is really caked with sand the best option is to wash it. Remove the hood, outserts, outlet valve disc and cover, second skin and canister. Dip a clean cheesecloth in clean water and wring it almost dry. Then use the cloth to clean out all sand inside and outside the facepiece. Wipe the mask dry with a dry cloth. Make sure the mask is completely dry before you put it back in the carrier.

If the mask is really filthy, mix liquid soap, NSN 8520-00-228-0598, in the water. After cleaning with the soap-water mixture, wipe out the mask with a clean cloth that's been dipped in clean water. Then wipe out the moisture with a dry cloth.



## in the Desert

### Second skin and facepiece.

Check both the skin and facepiece for cracking or sticky or soft areas. Pay special attention to the parts of the skin where it is stretched, such as around the canister, the voicemitter, and eyelenses.

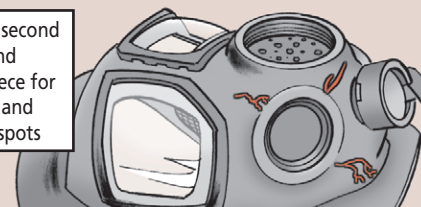
### Outserts.

Use them. They protect the eyelenses from blowing sand that will scratch up the lenses and make it difficult for you to see. Scratched outserts can be replaced quickly. Scratched eyelenses mean you need a new facepiece.

**Water only.** If you drink anything other than water through the drink tube, the drink tube will gunk up. That doesn't make for a pleasant drinking experience. And keep the drink tube coupling stored in the outlet valve cover at all times to help it stay clean.

PS 655

Check second skin and facepiece for cracks and sticky spots

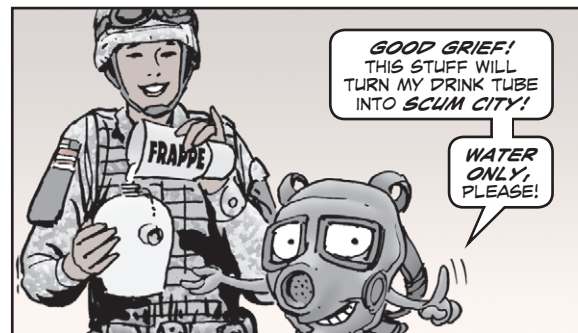


Use outserts. They protect eyelenses



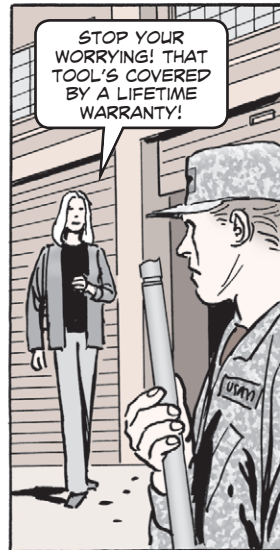
GOOD GRIEF! THIS STUFF WILL TURN MY DRINK TUBE INTO SCUM CITY!

WATER ONLY, PLEASE!





# WARRANTY MEANS **FREE** REPLACEMENT



**S**ome units are spending their own money to replace broken tools in their tool kits. That is a waste of unit funds.

Many of the tools in the Army's modernized sets, kits and outfits (SKO) have lifetime or limited term warranties. That means if a tool breaks through normal use you get a replacement free, often within two business days. Of course, the warranty does not cover abuse, improper use of tools or lost or stolen tools.

To obtain warranty and replacement info, go to:

<https://pmskot.army.mil>

Click on REPLACEMENT/WARRANTY and that will bring you to the page that has both replacement and warranty links. For a warranty claim, click on the warranty link and enter the requested info.

If you need to replace a tool broken through abuse or that's been lost or stolen, get it through the replacement process. That way PM SKOT can give you worldwide Army support. Click on the replacement link and enter the tool and credit card info. If you don't have a unit credit card, click on the PM SKOT link for further instructions.

PS 655

28

HERE ARE SOME OF THE NEW SKOS THAT HAVE LIFETIME WARRANTIES...



4933-00-930-1957, Boresight Kit  
 5180-01-516-1429, CTK— Carpenters Tool Kit  
 5180-01-499-3546, Carpenters Tool Kit  
 5180-01-542-3603, CROWS  
 6635-00-641-3641, Concrete Test Set  
 4340-00-264-6206, Cutting and Welding Kit, Shop Equipment Set 2  
 4940-00-357-7778, Cutting and Welding Kit, Shop Equipment Set 5  
 1385-01-526-0332, EOD Heavy Components  
 5180-01-168-0487, Electronics System Maintenance (ESM Tool Kit)  
 1375-00-047-3750, Explosive Initiating Electrical and Non-electrical  
 1385-01-487-8701, Explosive Ordnance Disposal Response Kit  
 4940-01-533-1621, Forward Repair System (FRS)  
 4940-00-754-0743, Full Tracked Vehicle Kit  
 5180-01-483-0250, General Mechanics Tool Kit (GMTK) (d)  
 5180-01-483-0249, General Mechanics Tool Kit (GMTK) (k)  
 5180-01-516-0223, IAARTS (Individual Aircraft Armament)  
 5180-00-900-8559, Light Engineer Squad Kit  
 5180-01-513-5123, Lineman's Safety Tool Kit  
 5280-00-511-1950, Machinist, Post Camp and Station Tool Kit  
 5280-00-278-9919, Measuring Tool Set, Machinist  
 5180-01-493-1665, Multi-capable Maintainers (Tools Only)  
 5180-01-493-1664, Multi-capable Maintainers Tool Kit (MCMTK)  
 4940-01-463-7940, Forward Repair System (FRS),  
 SN 0228 and below (does not include SNs with a -R designating them as RESET)  
 SC 4940-95-E41  
 4940-01-533-1621, Forward Repair System (FRS),  
 SN 0229 and above (includes SNs with a -R designating them as RESET) SC 4940-95-E42  
 3820-00-950-8584, Pneumatic Tool and Compressor Outfit  
 4931-00-065-1110, Purging Kit  
 4910-01-490-6453, SATS - Standard Automotive Tool Set (Base)  
 4910-01-501-7342, SATS - Standard Automotive Tool Set (Mod - 1)  
 4910-01-501-7343, SATS - Standard Automotive Tool Set (Mod - 2)  
 4940-01-333-8471, SECM - Shop Equipment, Contact Maintenance, Compressor, Welder, and Inverters  
 5180-01-523-4872, SECM - Shop Equipment, Contact Tool Load  
 5180-01-531-1677, Service Refrigeration Ordnance Tool Kit Supplement  
 4940-00-454-9877, Shop Equipment Welding (SEW)  
 Serial Numbers 101-580 (No Warranty)  
 Serial Numbers 581 and Above  
 4940-00-754-0714, Shop Equipment, Electronic Component Repair  
 4340-00-357-7737, Shop Set, Glass Cutting, Vehicle Glass Repair  
 4933-00-754-0664, Shop Set, Small Arms Field Maintenance  
 5180-01-506-8287, Small Arms Repairman Tool Kit  
 6675-01-073-3832, Survey Set, Supplementary Equipment  
 5180-01-517-6129, TAARTS - Team Aircraft Armament  
 5180-01-115-5351, Turret Mechanic Tool Set Bradley Vehicle



TO CHECK ON YOUR KIT OR FOR MORE INFORMATION ON ARMY TOOL KITS, GO TO:  
<https://pmskot.army.mil>

IF YOU HAVE ANY SKO QUESTIONS OR YOU HAVE SUGGESTIONS FOR TOOLS THAT SHOULD BE ADDED TO ANY TOOL KITS, WRITE:

**Product Manager, PM SKOT**  
**ATTN: AMSTA-LC-CT**  
**Rodman Ave, Bldg 104,**  
**1st floor**  
**Rock Island, IL 61299-7630**

OR CALL  
**1-877-4PM-SKOT**  
**(1-877-476-7568)**  
 OR FAX  
**DSN 793-6701/**  
**(309) 782-6701**

OR EMAIL  
**ROCK-PM-SKOT@**  
**conus.army.mil**

FOR QUESTIONS ABOUT THE WARRANTY OR REPLACEMENT PROGRAMS, EMAIL:  
**ROCK-PMSKOT-WARRANTY@**  
**conus.army.mil**  
 OR  
**ROCK-PMSKOT-REPLACEMENT@**  
**conus.army.mil**

JUNE 07

# THE SANDBOX SEVEN

I THINK THE SANDMAN WANTS TO PUT ME TO SLEEP... PERMANENTLY!

READ THE FOLLOWING TIPS TO STAY ON TOP OF SAND PROBLEMS.

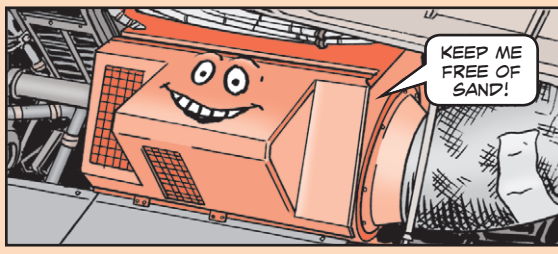
## 1. The F and F Boys: Fans and Filters

If an aircraft cooling fan doesn't turn, it won't cool. Sand can be super fine and can clog a fan faster than you can blink an eye. So build a house around your bird.

A few grains caught in the wrong place and a fire will soon happen.

The newer filters stop sand in the desert better. They work so well that you'll have to do PMCS more often on the filters than the TM requires. That's because they clog faster. For example, cleaning engine inlet filters more than once a day is a must.

Otherwise, a clogged filter means no air flow and your bird could be on the ground for a while.

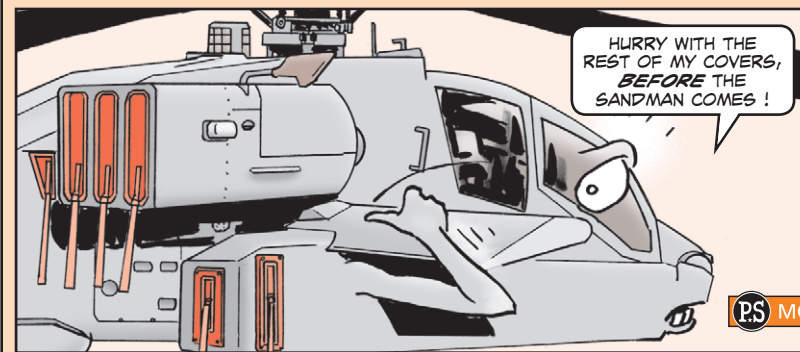


## 2. The Big Coverup

All aircraft have flyaway items. They're better known as covers. Covers are to sand what an umbrella is to rain. With an umbrella, you stay dry. Without one, you get drenched. With covers installed, your aircraft stops sand just like an umbrella stops rain.

Use all approved covers in the desert. If you don't have 'em, order 'em. Or get your canvas shop to make some. And make sure you have "Remove Before Flight" streamers attached. Get a new streamer with NSN 8345-00-673-9992.

Install windshield covers tight. Even a small opening will let sand get between the cover and the windshield. If sand gets in, your cover basically becomes a big piece of sandpaper that will grind sand into your windshield.

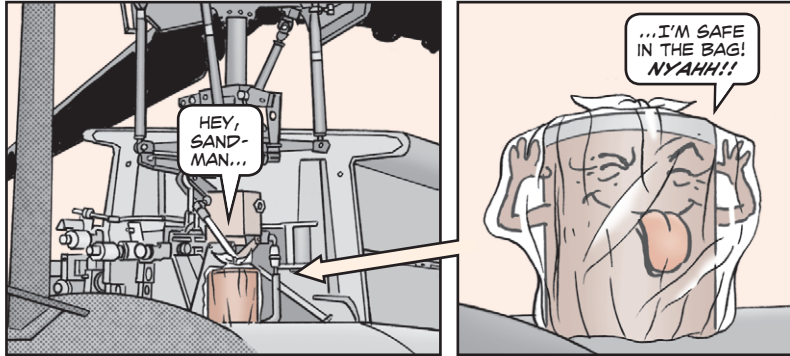




### 3. It's In the Bag

As soon as you've popped the top on a can of oil or hydraulic fluid, sand zooms in. The solution is to stick the can or bottle in a plastic bag along with an opener. Seal the bag, then open the container.

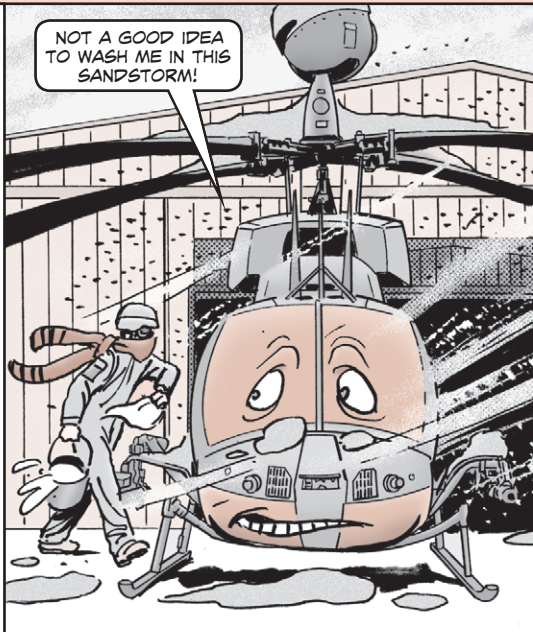
Remove the bag at the fluid add point on your aircraft. Make sure the area around the add point has been wiped clean. Shelter the area with your body as you add the fluid.



### 4. To Bathe or Not to Bathe

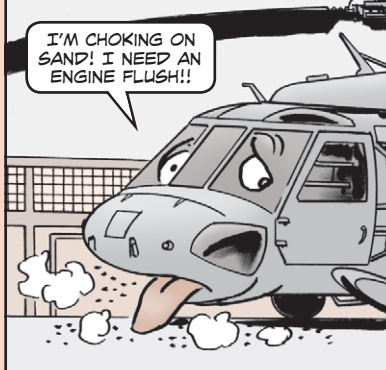
Giving your birds a bath in the desert is a call you make based on desert conditions. Your aircraft will need washing, but remember that adding water to sand and sand makes mud.

Bathe your birds when blowing sand is at a minimum. Wipe them down before you hit them with water. A sand and water mix will foul up transmissions, gearboxes, and electrical connectors. Remember, any water—clean or dirty—will foul up these items when washing.



### 5. Flush the Sand

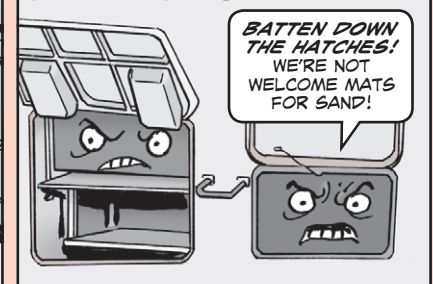
Do engine flushes by the book and more often in the desert. Frequent engine washes help the engine last longer and run more efficiently.



### 6. Easy Access

Your aircraft's access doors have the welcome mat out for sand and dust.

Even when closed, access doors just can't seal out all the fine penetrating sand. So check all door seals and replace if needed. 'Course, clean out any sand you find in any compartment.



### 7. It's Always Batteries

No matter what the conditions, battery compartments always fill up with sand. No matter what kind of batteries you have on your bird they will need frequent checks and clean-ups.

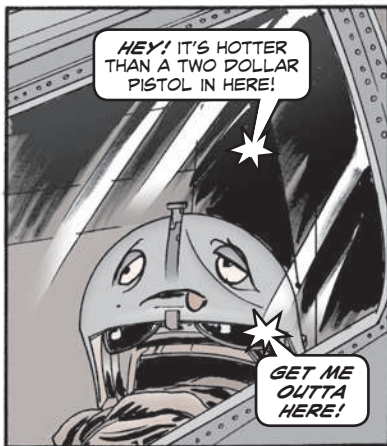
Make sure any changes in your maintenance procedures or intervals have the commanders approval. Keep in mind, though, that maintenance by the book and by schedule is just a part of maintenance in the desert. Checking and rechecking your aircraft frequently is a full-time job.



SO KEEP THE SANDBOX SEVEN IN MIND WHEN DOING AIRCRAFT MAINTENANCE.

YOUR BIRDS WILL THANK YOU FOR IT!

# THE HEAT IS ON!



**P**ilots and gunners, don't incur the wrath of your ALSE tech by mistreating the AH-64 integrated helmet and display sight system (IHADSS).

That means when your mission is complete, don't leave the helmet in the cockpit when outside temperatures reach triple digits. Inside the cockpit it can be even hotter, and the helmet is cooked!

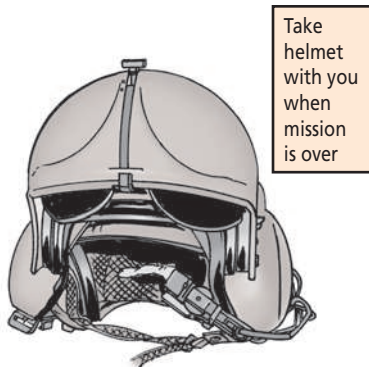
Heat can melt or deform the helmet's earcups. The IHADSS helmet has many internal electrical sensors and parts that can be damaged or fried by heat and sunlight. For example, the outer cover on the IR harness, NSN 5995-01-186-8601, is not heat resistant and could melt or damage delicate internal wiring. Then you'll have communication problems.

In addition to the damage to the IR harness you could also have heat damage to the helmet's communication system.

To make matters worse, a cooked helmet cannot be boresighted to the aircraft or the 30mm gun. That means, out of the three elements of battle—move, shoot and communicate—all you can do is move.

In the end, the ALSE shop has to disassemble the helmet looking for damage at their level. Depending on how bad the heat damage is, the helmet may have to go to depot for repair.

So, carry your helmet inside with you and spare it from being broiled!



# WHERE'S YOUR BIRD GOING?

EVERYTHING THAT'S GOT A COVER *WILL* BE COVERED.

LOOK'S LIKE I'M COVERED!

**I**n the classic story “The Wizard of Oz” Dorothy’s house got caught in a whirlwind. Who would have guessed the house would come to rest in the land of Oz on top of the Wicked Witch of the East?

An AH-64D in a whirlwind of sand won’t know where it’s going either, mechanics, if you don’t keep the helicopter air data system (HADS) probes free of sand, dirt and grime.

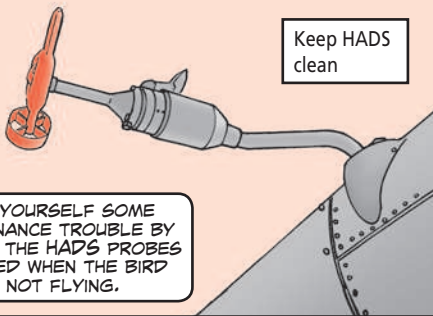
The HADS gives pilots and copilots readings on air speed and directional control. If the probes are plugged, the HADS can’t tell the crew where they’re going or how fast they’re getting there. The bird will be like Dorothy’s house in the wind.

If the system fails or the probes get clogged, the aircraft is NMC until they are replaced. That means—to simple, regular maintenance—you’ve added complicated pitot static tube checks and HADS leak checks.



SAVE YOURSELF SOME MAINTENANCE TROUBLE BY KEEPING THE HADS PROBES COVERED WHEN THE BIRD IS NOT FLYING.

Keep HADS clean





# FIGHTING THE SUMMER SUN

**I**n the summertime heat—at NTC, in Iraq or elsewhere—maintenance of radio sets and other electronic equipment is tough. It's easy for heat to damage equipment.

Here are a few high-temperature maintenance tips:

## Good Moisture

Put damp rags on the tops of radios to keep them cool. Make sure the rags are damp, not soaking wet. Soggy rags lead to water inside the radio. Some of you have tried letting ice melt on top of a set. Don't! That much water will get inside and do damage. However, ice laid against a set can do some cooling without getting water into the equipment. Try large plastic bags to hold the ice.

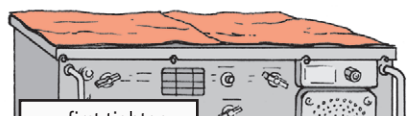
Before you put on the damp rag or use ice on the sides, make sure all screws are screwed down tight and all seals are in good condition.

Of course, whenever possible, shade your radio. Use cardboard or your vehicle's canvas top. Anything that keeps the glaring sun off the radio will help as long as it doesn't hold in the heat.

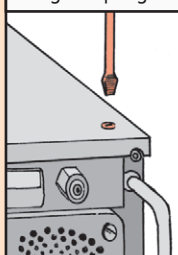
Lessons learned have shown that shade is a valuable tool and that almost anything can be used to give your radio some shady relief.

A fan will run itself to death trying to cool your radio. Give the radio the moisture-and-shade treatment to help the fan.

Cool radio down with damp rags, but...



...first tighten screws and check seals before adding damp rags



Give radio shade!

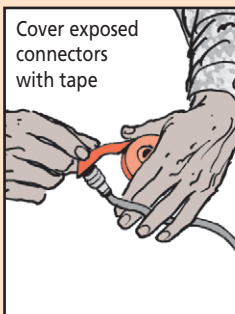
## Bad Moisture

Overnight, condensation forms on metal surfaces that are cooler than the air temperature.

This condensation can affect electrical plugs, jacks and connectors. If condensation is affecting your commo connectors, tape over all connectors that may be exposed to moisture overnight. This prevents that moisture from contaminating the contacts.

Plugs should be dried before inserting them into equipment jacks. Excessive moisture or dew should be removed from antenna connectors to prevent arcing.

Cover exposed connectors with tape

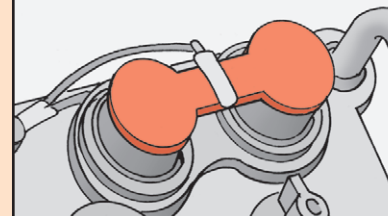


## No Moisture

Static electricity is common in areas of extreme, dry heat. It's caused by wind-blown debris and extremely low humidity. Poor grounding conditions aggravate the problem. Make sure your equipment is properly grounded.

Be sure to use tip caps on all antennas to cut down on wind-caused static discharges.

Keep caps on radio connectors, too

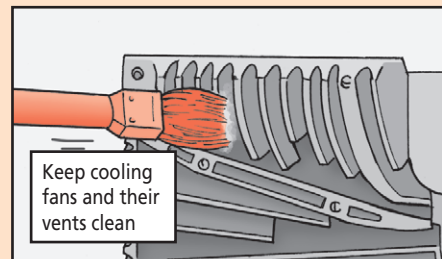


## A Little More Cleaning

Keep all cooling fans clean and their vents clear of all clogging sand and dirt. Dirt magnifies the bad results of high temperatures.

Use a brush or compressed air—whatever your equipment TM says—to clean the fan and the areas around it.

Keep cooling fans and their vents clean

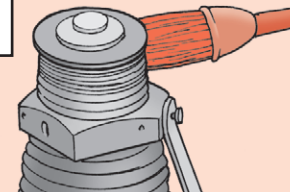


## A Few More Things

If you have any broken or missing knobs, switches or connectors, get them replaced before you hit the heat.

Check the whip antenna's mast base to be sure the contact is clean. If it's dirty, use low-pressure air or a soft brush to clean it.

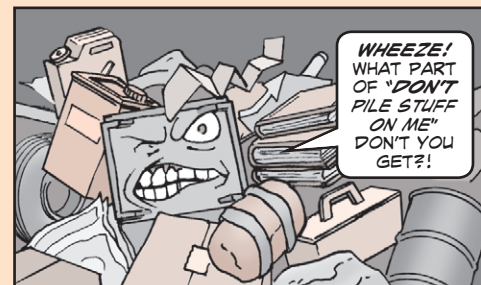
Clean antenna contact with soft brush or low pressure air



## Room to Breathe

Give your communication equipment room to breathe. If you pile gear on or around it, heat quickly builds up. Keep field gear, maps, manuals and other items away from the RT blower fan. Blocking the airflow will cause the heat to build up inside your set.

WHEEZE! WHAT PART OF "DON'T PILE STUFF ON ME" DON'T YOU GET?!



Commo Batteries...

# HANDLING IN THE HEAT

IT'S TOO HOT! I CAN'T TAKE IT ANY-MORE!

EVEN THAT BUNNY CAN'T SAVE US NOW!

HOW IRONIC! I WAS GOING TO POWER A FAN!!

I'D ASK TO BE DISCHARGED... BUT IT'S ALREADY HAPPENED!

In hot weather, proper storage and handling procedures for commo batteries are a must. Here are some storage and handling tips every commo equipment user and repairman, whether at a large storage facility or just in a unit, should know.

## Make Sure You're Safe

Get your post fire department to help you pick a battery storage location and to inspect it periodically.

For large bulk storage of batteries, a sprinkler system is recommended. Small extinguishers will do the job for small fires of combustibles such as packaging. Lithium battery fires should only be handled by trained firefighters. Store them in an area with a sprinkler system, if possible.

Do not smoke, eat or drink in battery storage areas. An open flame could lead to an explosion and eating around toxins is never a good idea.

Personal protective equipment such as gloves, face shields and aprons must be available and must be worn whenever handling leaking or vented batteries.

## When It's Too Darn Hot

Temperatures in battery storage and maintenance facilities must not exceed 130°F. Among the problems high heat causes are the loss of available capacity and, in the case of rechargeables, the loss of their capacity for recharging.

If the temperature in your storage area consistently hits the 110-degree mark, it's time to think about cooling off the area or finding another storage spot.

Remember, temperatures inside a MILVAN or similar container in SWA will exceed this. Read SB 11-6 for ideas on how to keep them as cool as possible. Try to find somewhere else to store your batteries.

## Don't Mix 'em

Battery chemistries don't mix well with each other. Some combinations can cause explosions and others harmful gases. So segregate batteries in storage. Keep lead-acid batteries away from nickel-cadmium or nickel-metal hydride.

The same tools and materials must not be used between battery chemistries. So color code the tools. Pick a color for each type of battery a tool could be used on and mark the storage area, as well as the tool, with that color.

Do not mix new and used batteries. Each type needs its own storage area. Do not let used batteries pile up. Dispose of them quickly.

## It's in the Package

Keep batteries in their original packaging until they are used. The original packaging helps you identify the batteries and does offer some protection from crushing, puncturing and shorting.

## What Have You Got and What Shape are They In?

Periodically inspect stored batteries for defects such as bulges, cracks or leaks and monitor their expiration dates.

Keep only authorized batteries on hand and keep only the number that you need. It's a good idea to display in your storage area a list of available batteries and the equipment they're used in.

## Know Your Metal

Watch out when using metal tools or materials that you don't short circuit a battery or cause sparks that could lead to an explosion.

## Use Your Eyes, Nose and Ears

Check the packaging and the batteries for leaks, stains, bulges, cracks or other signs of damage.

Know the odors, such as the smell of rotten eggs, and sounds, such as hissing and popping, associated with abnormal battery behavior. Let your nose and ears tell you when you might have a problem with a stored battery.

Also, immediately disconnect any battery that is hot to the touch.

## Train, Train, Train

Last, but certainly not least, all personnel should be properly trained in maintenance procedures, first aid, personal protection equipment and the hazards of battery maintenance operations.

Check out the following that are available on the LOGSA website:

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

The US Army supply bulletin, SB 11-6, *Communications Electronic Batteries, Supply and Management Data* and the US Army technical bulletin, TB 43-0134, *Battery Disposition and Disposal*.

WHAT ARE YOU OLD GUYS DOING HERE?

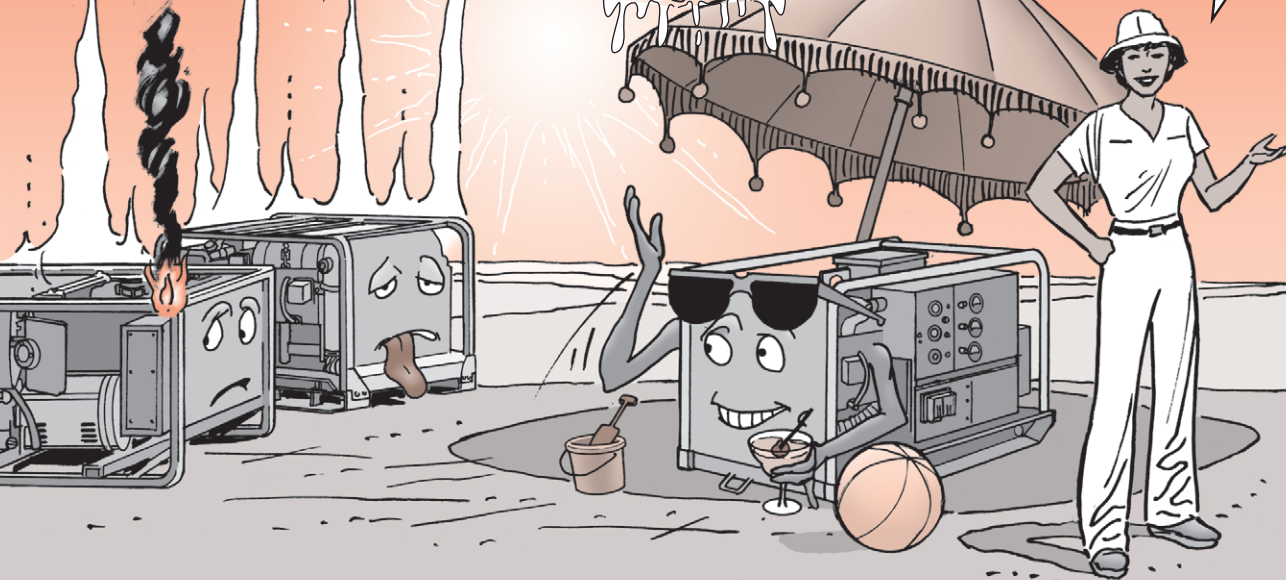
YOU'RE NOT S'POSED TO BE STORED WITH US!





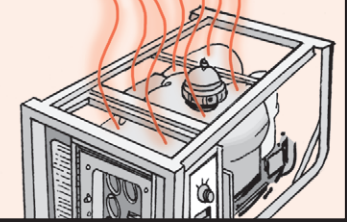
Generators...

# HEAT LEADS TO LEAKS



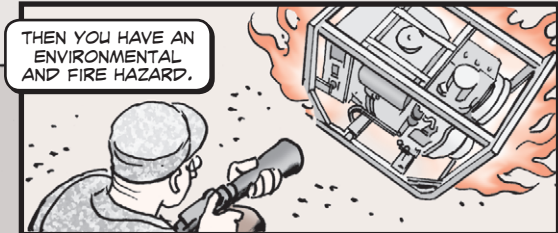
HOT WEATHER IS A **PRIME TIME** FOR LEAKING FUEL FROM YOUR GENERATOR.

FUEL **EXPANDS** WHEN THE WEATHER IS HOT AND THE GENERATOR'S NOT RUNNING.



IF YOUR FUEL TANK IS MORE THAN 3/4 FULL, EXPANDING FUEL CAN **LEAK** OUT THROUGH THE FUEL CAP.

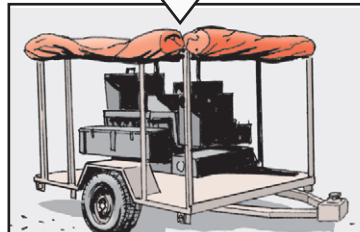
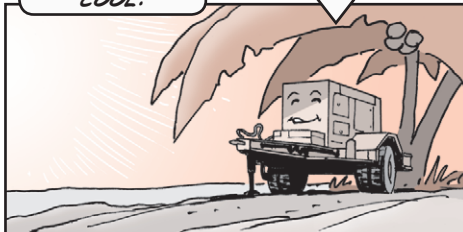
THEN YOU HAVE AN ENVIRONMENTAL AND FIRE HAZARD.



ONE WAY TO STOP FUEL FROM EXPANDING IS TO KEEP YOUR GENERATOR **COOL**.

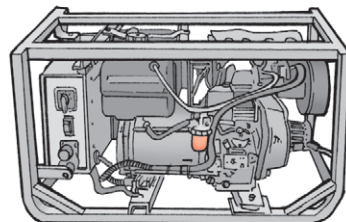
IF YOUR GENERATOR IS TRAILER-MOUNTED, PARK THE TRAILER IN THE **SHADE**.

USE THE CANVAS COVER TO KEEP DIRECT SUNLIGHT OFF OF THE GENERATOR, BUT ROLL UP THE SIDES OF THE COVER TO GIVE IT AIR.



THE **BEST** WAY TO PREVENT FUEL LEAKS FROM THE FUEL TANK CAP IS TO KEEP THE TANK LESS THAN 3/4 FULL OF FUEL.

YOUR TANK MAY HAVE A LINE ON IT TO INDICATE WHERE YOU STOP WHEN FILLING OR YOU MAY NEED TO KEEP AN EYE ON THE FUEL GAUGE WHEN YOU'RE FUELING UP.



ON SOME GENERATORS YOU CAN DOUBLE CHECK THE AMOUNT IN THE TANK BY TAKING OFF THE CAP AND LOOKING INSIDE.



IF THE FUEL REACHES **HALFWAY** TO THE TOP OF A VISIBLE STRAINER, THEN THE TANK'S FULL **ENOUGH**.

THE TEMPTATION IS STRONG TO FILL A TANK TO THE TOP, JUST LIKE YOU DO WITH YOUR CAR, BUT IT'S BEST **NOT** TO.

FUEL LEAKED ON THE GROUND OR ON YOUR GENERATOR DOES NO ONE ANY GOOD.





Solar Shades...

# OUT IN THE MIDDAY SUN?



IN THE DESERT OR IN THE TROPICS IT'S FOOLHARDY TO VENTURE OUT UNDER A MERCILESS SUN AT HIGH NOON.

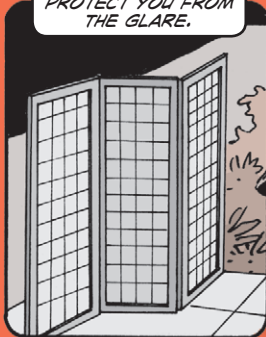
THIS SENTIMENT WAS BEST EXPRESSED BY THE ENGLISH WIT, NOEL COWARD...

...IN A LITTLE DITTY HE WROTE NEAR THE END OF THE BRITISH COLONIAL PERIOD...

NOEL COWARD



"IN THE PHILIPPINES THEY HAVE LOVELY SCREENS TO PROTECT YOU FROM THE GLARE.



IN THE MALAY STATES THERE ARE HATS LIKE PLATES WHICH THE BRITISHERS WON'T WEAR.



AT TWELVE NOON THE NATIVES SWOON AND NO FURTHER WORK IS DONE; BUT MAD DOGS AND ENGLISHMEN GO OUT IN THE MIDDAY SUN."

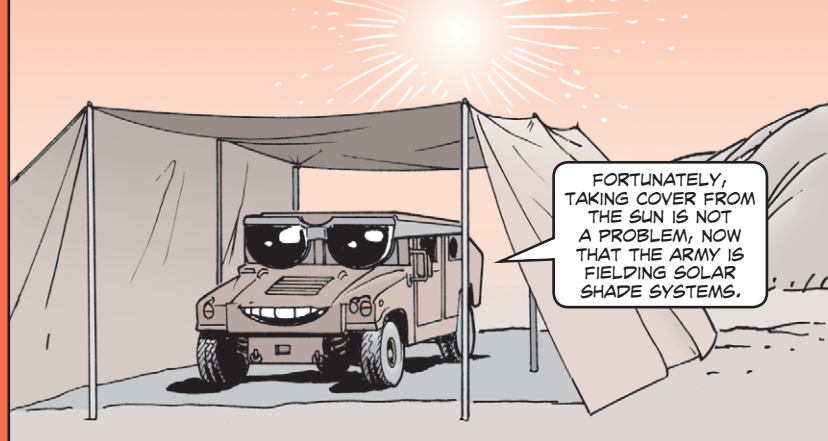


SOLAR SHADES COME IN TWO SIZES.

HERE ARE SOME OF THEIR FEATURES...



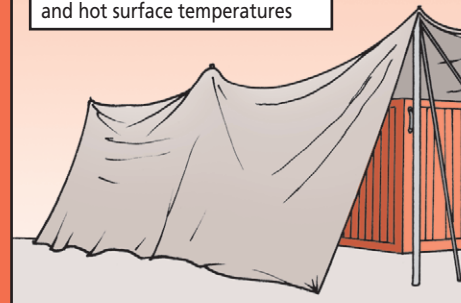
- Type I system, NSN 5410-01-519-7041, is 35 x 35 feet, with a floor area of 892 square feet.
- Type II system, NSN 5410-01-519-7185, is 50 x 50 feet, with a floor area of 2,000 square feet.
- Each system includes cover, poles, stakes and repair kit.
- Telescoping poles are made of aluminum.
- The systems are modular, that is, you can fit together two or more solar shade systems to create different sizes and shapes.
- You can erect the systems high enough to drive vehicles through them.
- Two soldiers can erect the Type I system in 30 minutes and the Type II system in one hour.



FORTUNATELY, TAKING COVER FROM THE SUN IS NOT A PROBLEM, NOW THAT THE ARMY IS FIELDING SOLAR SHADE SYSTEMS.

Solar shades are large cloth shelters you erect to keep out the sun. Made from tan, lightweight, open weave fabric, the shades block out up to 60 percent of the sunlight. They protect not only soldiers but also supplies, weapons, vehicles, ammo and other equipment. Their shade cuts down ultraviolet light and reduces hot surface temperatures—two culprits that damage your gear.

Shield gear from ultraviolet light and hot surface temperatures



USE THE FOLLOWING  
NSNS OR CAGE/MIL  
SPECS TO GET  
REPLACEMENT PARTS.



ALL THE PARTS IN  
THE TABLE WORK  
WITH TYPE I AND  
II SOLAR SHADE  
SYSTEMS.

Item	NSN 8340-00-	Part number	CAGE
Toggle, tent	242-7872	MIL-DTL-10035	81349
Foot loop rope, 3/8-in diameter	—	MIL-R-24049	81349
Guy line, 3/8-in diameter	—	MIL-R-24049	81349
Slip, tent line	205-2759	MIL-DTL-1734	81349
Steel tent stakes, 12 inches	823-7451	23B28126-1	70167
Steel tent stakes, 18 inches	985-7461	MIL-P-501	81349

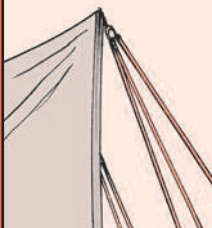
Toggle



Foot  
loop



Guy lines



Line slip



Tent stake



If you need a replacement pole for the Type I solar shade system, get it with NSN 5410-01-547-6529. NSN 5410-01-547-6528 brings a pole for the Type II system.



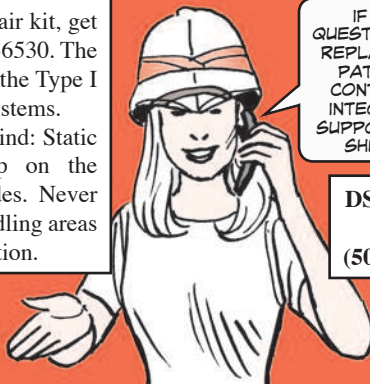
SOLAR SHADES  
ARE ISSUED WITH  
REPAIR KITS.

EACH KIT INCLUDES  
SIMPLE INSTRUCTIONS  
AND SPARE PARTS...

- patches that do not require sewing
- guy lines
- foot loops
- line slips
- replacement toggles
- disks
- repair instructions

If you need a spare repair kit, get it with NSN 5410-01-547-6530. The kit can be used with both the Type I and Type II solar shade systems.

One thing to keep in mind: Static electricity can build up on the surface of the solar shades. Never use the shades in fuel handling areas or to cover loose ammunition.



IF YOU HAVE ANY  
QUESTIONS OR YOU NEED  
REPLACEMENT COVERS,  
PATCHES OR DISKS,  
CONTACT THE TACOM  
INTEGRATED LOGISTIC  
SUPPORT CENTER (ILSC)  
SHELTERS TEAM...

DSN 256-4589/6083  
or  
(508) 233-4589/6038

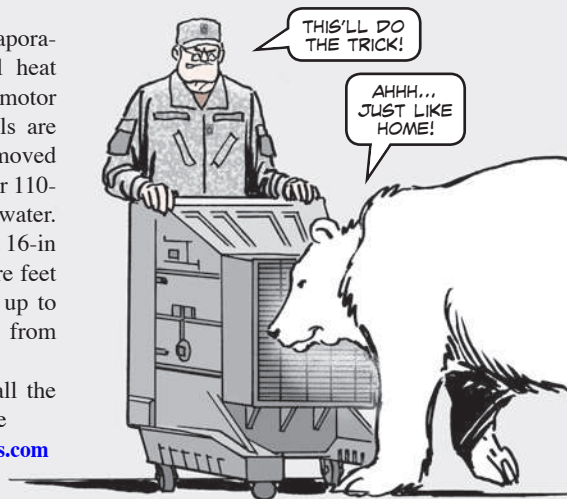
# TOO HOT FOR PM?



Soldiers often have to serve and do maintenance in VERY HOT climates, as the troops in the desert can testify. It can be torture to try to pull PM on equipment too hot to touch.

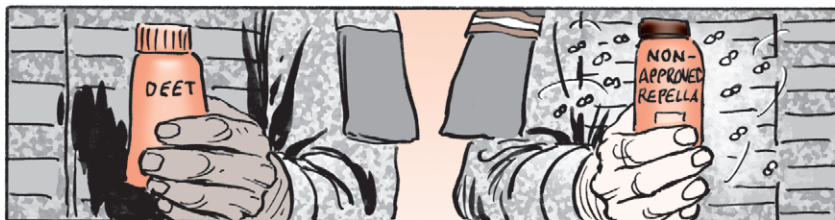
The Port-a-Cool portable evaporative cooling system helps cool heat problems in environments like a motor pool or arms room. Port-a-Cools are on wheels and can be easily moved around. They operate on a 220- or 110-volt power source and use tap water. Port-a-Cools range in size from a 16-in model that cools up to 600 square feet to a 48-in fan model that cools up to 3,500 square feet and in price from \$550 to \$2,700.

DLA has assigned NSNs to all the models and their accessories. See <http://www.portacoolmilitarysales.com> for NSNs and more info.





# DEET Still the Gold Standard



**S**o, you think you've found some insect repellents that work better than DEET, NSN 6840-01-284-3982. You know the ones we mean: repellents containing picaridin or oil of lemon eucalyptus. Well, think again.

The Army has not okayed these repellents. It has approved only DEET, which has proven to be safe, effective and long-lasting. It's still the gold standard of repellents.

DEET's reputation is based not just on tests, but also on a 50-year history of worldwide use against a variety of pests: mosquitoes, sand flies, tsetse flies, chiggers and other biting insects.

Only DEET  
is approved  
by Army



## Using DEET

- Apply a thin coat of DEET to uncovered skin. One application wards off insects for up to 12 hours, depending on the climate.
- Do not apply over cuts, wounds, sunburned or irritated skin. Avoid the eyes and lips. Apply sparingly around the ears.
- Do not apply repellent when you're near food.
- Keep in mind, between dusk and dawn are the prime hours for biting insects—especially mosquitoes and sand fleas.
- Wash your treated skin with soap and water when you're no longer exposed to biting insects.
- For the maximum protection against biting insects, use the DoD Insect Repellent System. The system includes:
  - treating clothing with permethrin
  - applying DEET to exposed skin
  - wearing your uniform properly (roll sleeves down, tuck pants into boots and wear an undershirt that's tucked into pants)
  - sleeping under a permethrin-treated bed net

For more information, go to the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) website:

<http://chppm-www.apgea.army.mil>

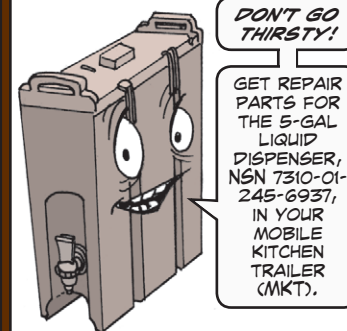
When you reach the home page, click on DoD Insect Repellent System.

Also see:

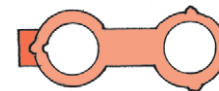
PS 631, pages 52-55 or  
<https://www.logsa.army.mil/psmag/archives/PS2005/631/631-52-55.pdf>

Mobile Kitchen Trailer...

## LIQUID DISPENSER PARTS



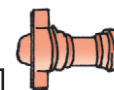
Vent cap, snap-on  
NSN 7320-01-213-6160



Faucet assembly  
NSN 7320-01-245-9048  
(includes faucet, C-nut  
and wing nut)



Spout assembly  
NSN 7330-01-250-7730  
(includes spout, O-ring  
and hex nut)

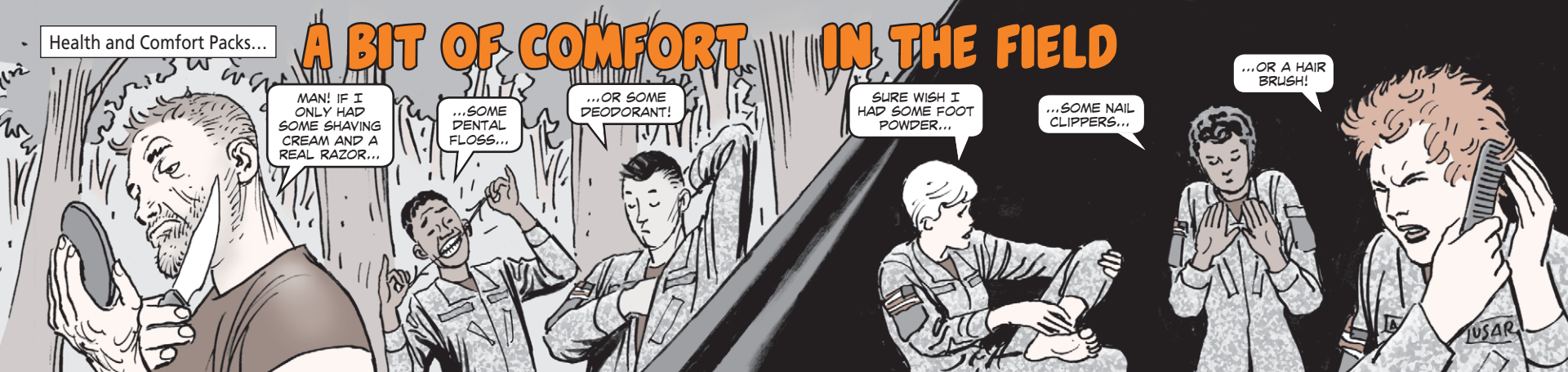


Latch assembly  
NSN 7320-01-224-0074  
(includes four latches and 16 screws)



Lid gasket  
NSN 5330-01-255-2588

# A BIT OF COMFORT IN THE FIELD



Deployed far from home? Spending weeks or months in the field? Stationed far from the PX or local stores? Times like these you could use a well-stocked care package from home, filled with personal items that make life a bit more tolerable.

Well, now you can get a care package courtesy of the Army. They're called health and comfort packs (HCPs). HCPs provide forward area troops with everyday necessities for good hygiene and comfortable living. About the only thing these packs **don't** contain is food.

THERE ARE **THREE TYPES** OF HEALTH AND COMFORT PACKS AVAILABLE...



• **Type I HCP**, NSN 8970-01-368-9154, contains items used by both men and women. You get 10 plastic drawstring bags, each packed with a 30-day supply of necessities for an individual soldier. Here's what you get in each bag:

Toothbrush	Shaving cream	Bottle of shampoo
Tube of toothpaste	Bar soap	Deodorant stick
Dental floss	Foot powder	Ballpoint pen
10 disposable shaving razors	Moist towelettes	Petroleum jelly
	Tissues	Self-sealing plastic bag

The **Type I HCP** also includes supplemental items intended to be shared among 10 soldiers:

Laundry detergent	Hair brush	Shaving gel
Combs	Mirror	Writing tablet
Sewing kit	Hair moisturizer	Band aids
Fingernail clippers	Boot/shoe polish	Electric shaving lotion
Fingernail file	Shoe brush	Hand and body lotion
Flat-tip tweezers	Moist towelettes	

Before you order any HCPs, you need to know the ground rules about how they're issued:

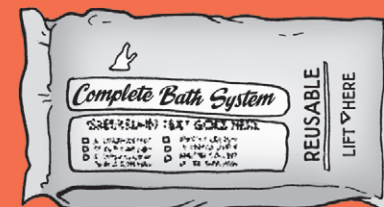
- When your unit deploys for more than 15 days to a place where there's no support for personal items, the Army can issue HCPs to your unit free of charge.
- The Army expects your unit to supply its own personal items to cover the first 15 to 30 days of deployment.
- Under any circumstances your unit may purchase HCPs from its own funds.

• **Type II HCP**, NSN 8970-01-368-9155, is for women only and includes articles for feminine hygiene. It'll supply 10 women for 30 days. Here's what you get:

Item	Quantity	Item	Qty
Sanitary napkins, regular	48	Disposable plastic bags, 3 x 7	150
Sanitary napkins, super	72	Plastic bags, 10-15 gallon	10
Tampons, regular	60	Ponytail holders	10
Tampons, super	84	Hair brush	1
Panty shields	250	Combs	2
Moist towelettes	20 packs of 20	Bobby pins	50
Self-sealing plastic bags, 1 gallon	20	Personal hygiene body wipes	10

• **Type III HCP**, NSN 8970-01-487-7488, contains washcloth-sized personal hygiene body wipes. You get 44 packets with eight body wipes in each packet. This HCP is intended to supply 10 soldiers.

All HCPs have a shelf life of two years at 50-72°F.





# WASH BEFORE YOU WET YOUR WHISTLE

BY NOW, YOU  
PROBABLY  
KNOW ABOUT  
THE BENEFITS  
OF A HYDRATION  
SYSTEM...

- cooler water,
- cleaner taste,
- hands-free access
- a 3-liter capacity

BUT DID YOU  
KNOW THAT  
THESE SYSTEMS  
NEED CLEANING  
NOW AND THEN  
TO STAY IN TOP  
CONDITION?

## Outer Nylon Carrier

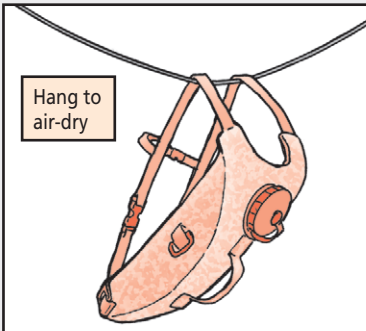
Washing the outer nylon carrier helps to prolong its life and makes it more comfortable to wear. Here's how it's done:

- First, remove the bladder. Then sweep the carrier with a cloth or soft brush to remove any caked-on dirt. Or scrape off dirt with a dull tool. Never use anything sharp that will cut the fabric or webbing.
- You can hand-wash or machine-wash the carrier in cold water with a mild laundry detergent. Just don't use chlorine bleach, cleaning fluids or solvents. These products can discolor the carrier, weaken the fabric and shorten its life.
- To clean stubborn, soiled spots—like grease or oil—apply a mix of detergent and water directly on the spots and scrub with a soft brush.
- After washing, rinse thoroughly in clean water until all traces of soap are gone.
- Hang the carrier to air-dry. Don't use a clothes dryer. That can fade the carrier and put it through unnecessary wear and tear. And never dry it near a heater or open flame—they'll fade and shrink the fabric.

Brush off  
caked-on  
dirt



Hang to  
air-dry



## Bladder

You might say that keeping the bladder clean is a matter of good taste. A clean bladder, drinking tube and bite valve keep the water fresh and tasting good.

Here's the routine:

- If you can, remove the bladder from the carrier. Fill it with warm water and some biodegradable dishwashing liquid, NSN 7930-01-418-1128. Scrub the bladder (especially the inside), the drinking tube and the bite valve. Cleaning brushes are available from CamelBak Products.

- Every once in a while you may want to freshen your bladder.

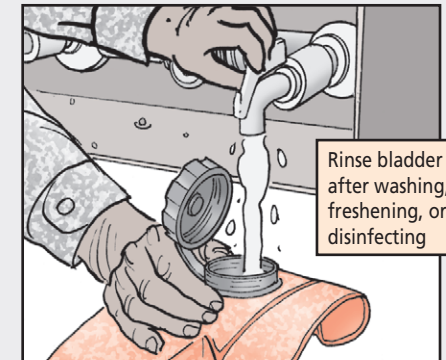
Add two teaspoons of **baking soda** to a full bladder of water. Let it soak overnight.

- Nothing spoils the quality and taste of water like mold and bacteria growing in the bladder. Although some newer hydration systems are designed to curb the growth of mold and bacteria, you still might want to disinfect the bladder occasionally. Disinfecting is especially important if the water starts tasting funny or if you haven't used your system for a while.

Fill the bladder with water and add two teaspoons of household bleach. Let it soak overnight.

- Whether you're washing, freshening or disinfecting with bleach, afterwards you'll need to rinse the system thoroughly with clean water. Hang it up to dry with the cap propped open. Make sure all parts are dry before storing them in a cool, dark place.

- Sports drinks and other beverages containing sugar speed up the growth of mold and bacteria in the bladder. If you use sports drinks with your hydration system, make sure you keep it clean. Wash and rinse the bladder, the drinking tube and the bite valve after each use.



Rinse bladder  
after washing,  
freshening, or  
disinfecting

One of the leading makers of hydration systems is CamelBak Products. Their website is:  
<http://www.camelbak.com/index.cfm>

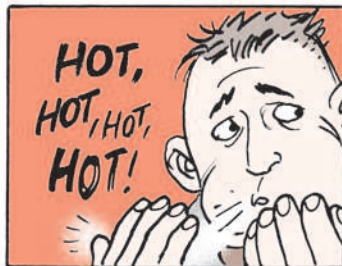
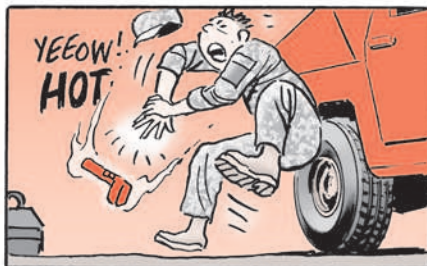
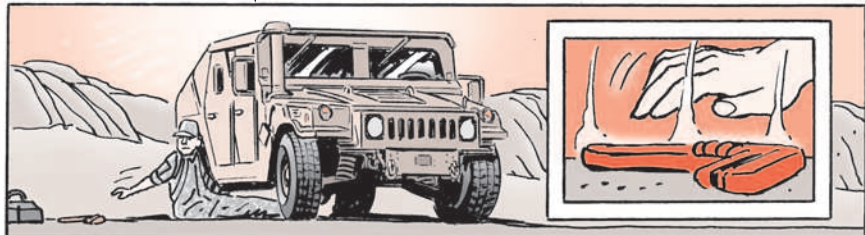
There you'll find a variety of systems and replacement parts, including bite valves and covers, cleaning supplies, bladders and drinking tubes.

You can reach CamelBak by email: [military.sales@camelbak.com](mailto:military.sales@camelbak.com)

Or you can phone them at (800) 767-8725 or (707) 792-9700.

Gloves...

# How to **AVOID** the **HOT METAL HANDSHAKE**



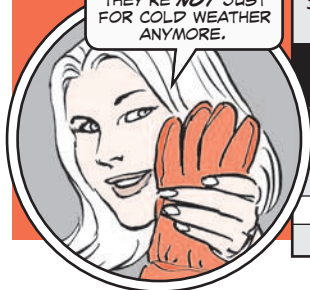
AS THIS YOUNG SOLDIER HAS SO GRAPHICALLY DEMONSTRATED...

...WORKING AROUND METAL ON A HOT, SUNNY DAY CAN BE LIKE SHAKING HANDS WITH A SIZZLING SKILLET!



IF YOU WANT TO AVOID THE HOT METAL HANDSHAKE, COVER UP WITH GLOVES.

THEY'RE **NOT** JUST FOR COLD WEATHER ANYMORE.



## Heavy Duty Work Gloves

Leather with gauntlet cuff.  
Strap and buckle for tightening.  
For men and women.

Size	NSN 8415-00-268-
1	7871
2	7872
3	7869
4	7870
5	7868

## Anti-Contact Glove

Cotton with leather palm and finger. Gauntlet cuff.  
For men and women.

Size	NSN 8415-00-227-
Small	1220
Medium	1221
Large	1222



# Finding Info on the AMC Portal



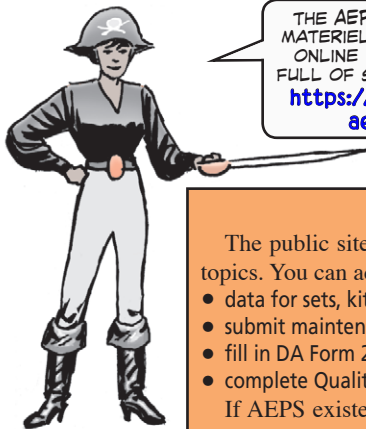
THERE ARE SOME LOGISTICS TREASURE TROVES WORTH SEARCHING BY EVERY MAINTENANCE AND SUPPLY PIRATE...  
AH... **SOLDIER.**

ON THE NEXT TWO PAGES, WE'VE UNCOVERED THE TREASURE OF THE ONLINE PRODUCTS AND SERVICES OFFERED BY AEPS.

ONE OF THEM IS THE ARMY ELECTRONIC PRODUCTS SUPPORT (AEPS) PORTAL.

YOU OWE IT TO YOURSELF TO EXPLORE THIS TREASURE CHEST OF LOGISTICS LOOT.





THE AEPS WEBSITE IS ARMY MATERIEL COMMAND'S HUB OF ONLINE INFO, AND IS CHOCK FULL OF SUBJECTS AND DATA:  
<https://aeps.ria.army.mil/aepspublic.cfm>

AEPS HAS BOTH **PUBLIC** AND **SECURE** WEBSITES. HERE'RE SOME SAMPLES OF THESE GLEAMING TREASURES...

### Public Website

The public site is a kind of one-stop place to access several useful topics. You can access:

- data for sets, kits, and outfits
- submit maintenance suggestions through SMART
- fill in DA Form 2028 publication update ideas
- complete Quality Deficiency or Supply Discrepancy reports.

If AEPS existed for no other reason it would be a great time saver for logisticians. But the secure site offers much more—40 more applications, a selection of logistics programs, group pages and more.

The AMC NSN Search (myNSN) offers some info found on the Army Master Data File, but it also offers item manager info, analyst codes, back order info, DODACC queries and more.

Your unit can get loan equipment through the **Army Loans Tracking System (ALTS)**. ALTS allows you to request equipment loans, extend loans, and track loaned equipment status.

The **Gun Card Firing Data** application lets you create, edit and view firing data on gun tubes. It also helps you use historical data to identify potential problems.

**Publications** provides links to technical equipment pubs such as EIR Digest and PS Magazine. It also has a commodity search index through 2003 that covers more than 25,000 articles concerning Army equipment. The index is not hyperlinked, but it may, like a treasure map, lead you to the info you need. The index can be saved as a PDF file.

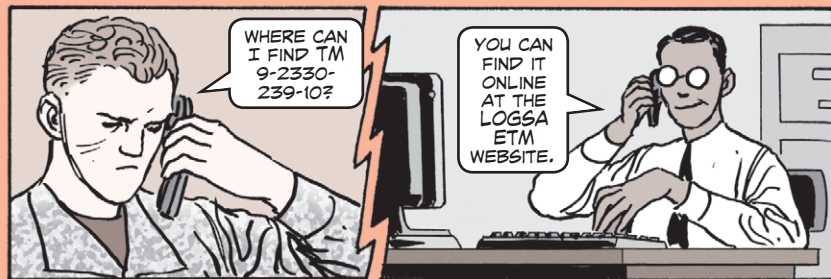
**Secure Website**  
The secure website is accessed from the public page by clicking on the Restricted Access icon. You can use either your AKO logon and password or your CAC and pin to gain access.  
Here's a sampling of what's available:

It doesn't matter what **safety message** gems you're looking for. They're consolidated here for easy access. A new feature allows you to subscribe to the type of safety messages that would affect your unit. When those messages are released through normal message traffic, you'll get an email version of it.

The **tactical toolbox** is a group page with links to a logistics assistance office locator, the safety messages, asset visibility, gun cards, shipment tracking, requisitions and more.



# Finding ETMs Online



Dear Half-Mast,

As a reference librarian, I get a lot of questions from soldiers who don't know about the LOGSA ETM website. Could you do an article on "how to get there and what to do?"

Mr. P. N.

Dear Mr. P.N.,

To access both public and restricted distribution ETMs you have to login to LOGSA's Logistics Information Warehouse (LIW):

<https://www.logsa.army.mil>

If you don't already have access to LIW, you'll have to click on System Access Request (SAR). Follow these directions.

In the SAR, select Controlled Access, under Special Accounts highlight ETM Access, move it to the Selected Applications box, and finish the SAR. Once you have access, you'll use your AKO login and password to enter LIW.

LIW access is needed because many ETMs require restricted access. You can tell which pubs are restricted by looking at the distribution code column (DIS Code) on the ETM Search Results screen.

Distribution codes are one to three letters long. Anything other than DIS Code "A" is restricted to authorized users. If the second and third letters are "NF" it means NO FOREIGN release.



- The WebETM, EM0038, is Distribution B. Among the pubs found on this CD the most restricted pub is Distribution B.
- The IETM, TM 9-4935-600-14, is Distribution DNF. So it's restricted to distribution at command level D and cannot be released to foreigners.
- The PDF TM is Distribution A and is open for public release.

ON THE LIW HOMEPAGE, CLICK ON **ETMs Online.**

ON THE ETM SEARCH SCREEN ARE **SIX WAYS** TO SEARCH FOR TECH PUBS.



A black and white line drawing of a man in a flight suit. He is holding binoculars to his eyes with his right hand and saluting with his left hand. He is wearing a flight helmet and goggles. The background is a solid light blue.

**PIN Number**—If you know the PIN number of the pub you want (e.g. 074758), enter it here and click SEARCH.

**Pub Number**—Enter the type of pub and its number (e.g. TM 9-2330-398-10 or TB 43-0209) If you use only the pub number, i.e., 9-2320-398, you'll get all the pubs for that series, including: TMs, TBs, MWOs, LOs, etc.

**LIN Search**—Enter the LIN for the major item in the tech pub. If a LIN Search doesn't find your item, try using the Pub Title Text Search.

**NIIN Search**—Enter the NIIN of the major item in the tech pub. This may find NSNs that appear in the title. If you don't find your item, try using the Pub Title Text Search.

For instance, a search for HEMTT in the Pub Title Text block results in 41 matches.

- Pub Type (WebETM, IETM, PDF)
- PIN
- TM/EM Number
- Current Change
- Publication Title

*Anything underlined is  
linked to the applicable pub.*

ELECTRONIC TECHNICAL MANUALS

# ETM Search Results

Current Change

- Publication Title

*Anything underlined is  
linked to the applicable pub.*

41 matching selection(s) found

	PIN	TM/EM Number	Current Change	DIS Code	Publication Title (partial)
<u>WebETM</u>	<u>075685</u>	<u>EM 0038</u>		<u>B</u>	<u>WETM EM 0038 HEAVY EXPANDED MOBILITY TACTICAL TRUCKS</u> <u>IETM PATRIOT SUPPORT AND MAINTENANCE EQUIPMENT SHOOTING</u> <u>EQUIPMENT, AN/TS (BATTALION MAINTENANCE CENTER) SHOOTING</u> <u>EQUIPMENT, AN/TS-164 (BATT MAINTENANCE CENTER) SEMI-TRAILER</u> <u>MAINTENANCE; M1032 (SMALL REPAIR TRANSPORTER) HEAVY</u> <u>MOBILITY TACTICAL TRUCK (HEMTT); M9 (LARGE REPAIR PLANT</u> <u>TRANSPORTER) GUIDED MISSILE TRANSPORTER; M9 (PATRIOT</u> <u>DEFENSE GUIDED MISSILE SYSTEM)</u>
<u>IETM</u>	<u>078804</u>	<u>TM 9-4935- 600-14</u>		<u>DNF</u>	<u>OPERATORS MANUAL VOLUME NO. 2 M977 SERIES, 8X8 HEAVY</u> <u>MOBILITY TACTICAL TRUCKS (HEMTT) TRUCK, CARGO, WITH WINCH</u> <u>M977 (2320-01-097-0260) TRUCK, CARGO, WITHOUT WINCH</u> <u>(2320-01-099-6426) TRUCK, TANK, FUEL, WITH WINCH, M978 (2320-01-099-6426)</u> <u>TRUCK, TANK, FUEL, WITHOUT WINCH, M978 (2320-01-099-6426)</u> <u>TRUCK, TRACTOR, WITH WINCH, WITHOUT CRANE, M978 (2320-01-099-6426)</u> <u>TRUCK, TRACTOR, WITH WINCH, WITH CRANE, M978 (2320-01-099-6426)</u> <u>TRUCK, WRECKER-RECOVERY, M984 (2320-01-099-6426)</u> <u>TRUCK, WRECKER-RECOVERY, M984 (2320-01-099-6426)</u>
<u>PDF</u>	<u>062079</u>	<u>TM 9-2320- 279-10-2</u>		<u>A</u>	<u>OPERATORS MANUAL VOLUME NO. 2 M977 SERIES, 8X8 HEAVY</u> <u>MOBILITY TACTICAL TRUCKS (HEMTT) TRUCK, CARGO, WITH WINCH</u> <u>M977 (2320-01-097-0260) TRUCK, CARGO, WITHOUT WINCH</u> <u>(2320-01-099-6426) TRUCK, TANK, FUEL, WITH WINCH, M978 (2320-01-099-6426)</u> <u>TRUCK, TANK, FUEL, WITHOUT WINCH, M978 (2320-01-099-6426)</u> <u>TRUCK, TRACTOR, WITH WINCH, WITHOUT CRANE, M978 (2320-01-099-6426)</u> <u>TRUCK, TRACTOR, WITH WINCH, WITH CRANE, M978 (2320-01-099-6426)</u> <u>TRUCK, WRECKER-RECOVERY, M984 (2320-01-099-6426)</u> <u>TRUCK, WRECKER-RECOVERY, M984 (2320-01-099-6426)</u>



Want to review which automatic notifications you're subscribed to? Click on **View Current Notifications** at the bottom of the ETM Search Page.

*That's a quick rundown of how to find and use the ETM website. Now save yourself some time and use it.*

PICK AND CHOOSE  
YOUR AUTO  
UPDATES!

# Notification Request

Email Address

Enter your email address above.

Select the ETM(s) that you would like to subscribe to and click continue at the bottom of the page.

☐ Select All
☐ Unselect All

<input type="checkbox"/> LO 9-2320-354-20	<input type="checkbox"/> TM 9-2320-354-10	<input type="checkbox"/> MWO 9-2320-279-20-4
<input type="checkbox"/> LO 9-2320-355-20	<input type="checkbox"/> LO 9-2320-279-12	<input type="checkbox"/> TM 10-4930-247-13&P
<input type="checkbox"/> TM 9-2320-279-10-HR	<input type="checkbox"/> TM 9-2320-354-24&P	<input type="checkbox"/> TM 9-2320-279-24P-1
<input type="checkbox"/> TM 9-2320-279-10-1	<input type="checkbox"/> MWO 9-2320-279-20-6	<input type="checkbox"/> TM 9-2320-279-24P-2
<input type="checkbox"/> TM 55-2320-279-14	<input type="checkbox"/> TM 9-2320-355-10-HR	<input type="checkbox"/> TB 9-2320-279-14



## M109A6 Cable Assembly NSNs

Mechanics, the part number and NSN for two of the Paladin's cable assemblies were accidentally reversed in TM 9-2350-314-24P-2. So grab your stubby pencils and make the following corrections:

Fig	Cable	Correct PN	Correct NSN
112L	W92A	12999092	6150-01-522-0774
112M	W93B	12999091	6150-01-522-0773

## NEW ABRAMS FIRE CONTROL SYSTEM MANUALS

The fire control system manuals for your M1-series tank have been replaced. TM 9-1200-206-34-1, -34-2 and -34P have been superseded by TM 9-1200-206-40-1 through -40-5 and -40P. These new manuals cover two-level maintenance. Until your unit maintenance and parts manuals are updated, pencil in the new TMs wherever the old TMs are referenced.

## GENERATOR WIRE MIXUP

On Page 36 of PS 652 (Mar 07), we told you the heat shrink tubing, NSN 9390-01-494-3834, is marked with the stud numbers. That was wrong. Mechanics must mark the tubing with the correct stud numbers as shown on Page 39 of PS 594 (May 02).

## M113A3 FOV IR HEADLIGHTS

Crewmen, when you get your M113A3, M577A3, M1059A3, M1064A3, M1068A3 or M58 vehicle back from RESET, you may notice something missing: the infrared (IR) headlight, NSN 6220-00-984-5180. If your current vehicles have IR headlights that don't work, **do not** repair them. An inoperable IR headlight no longer makes your vehicle NMC.

## No Human Lifting of IPADS

When it comes time to lift the IPADS (improved position and azimuth determining system) in its travel case, don't try to do the job with a few buddies. The only safe way to lift the IPADS in its case is with a mechanical lift.

The job used to be considered a six-man lift. But six people can't fit around the IPADS and it's too heavy for fewer people to pick up.

To lift the IPADS mechanically, run a cargo strap through one handle on the long side of the case and then underneath the case and through the matching handle on the other side. Run another strap through the other two handles. Attach the lift through the two straps.

Stencil on the case in 3-in letters LIFT BY MECHANICAL MEANS ONLY.

## SHOTGUN NOT ON TARGET

In PS 652 (Mar 07), we told you to press the Mossberg shotgun barrel to a target like a door lock. **Don't do that!** That could cause the barrel to rupture and explode in your face. Hold the shotgun as close as possible to the lock without totally blocking the barrel. But keep your eyes on the target so you don't pull the barrel away from it when you fire.

Wear ESS Land Operation Goggles for door breaching protection. They come in foliage green, NSN 4240-01-540-5576, or desert tan, NSN 4240-01-540-5580.

If you need to breach a lock and have a pry bar available, use the pry bar, not your shotgun. That's much safer for you and your shotgun.

## 24/7 Hawker Battery Hotline

A 24/7 customer support line is now available to answer your questions on the Hawker A+ battery, NSN 6140-01-485-1472. Call toll-free: 877-485-1472. But you can't place orders here! A Hawker battery website is in the works, too. We'll give you that link when it becomes available.

## M1151 Spring Replacement Update

On Page 61 of PS 647 (Oct 06), we gave you a website for front spring installation procedures on your up-armored HMMWVs, but you won't find the procedures at that link. Instead, eyeball Para 6-27 on Page 6-60 in TM 9-2320-387-24-1 for details on how to do the work. And use NSN 5360-01-457-8029 to get the M1114 front springs for your M1151s that sit low in front.



## CONNIE'S POST SCRIPTS!

### STRYKER OPERATOR'S MANUALS AVAILABLE

The Stryker operator's manuals are now fully authenticated and available by pinpoint distribution through the US Army Publishing Directorate (USAPD). Order by PIN from this list:

TM 9-2355-311-	Stryker Model	PIN
10-1-1	Stryker Common Items, Vol 1	083059
10-1-2	Stryker Common Items, Vol 2	083241
10-2	M1126 ICV	083060
10-3	M1129E1 MC (B model)	083061
10-4	M1130 CV	083062
10-5	M1127 RSV	083063
10-6-1	M1132 ESV, Vol 1	083064
10-6-2	M1132 ESV, Vol 2	083242
10-7	M1134 ATGM	083065
10-8	M1133 MEV	083066
10-9	M1131 FSV	083067

You can also access the TMs online at the LOGSA ETM website: <https://www.logsa.army.mil/etms/>

### M1129 Stryker Mortar Corrosion

If you're getting ready to ship an M1129 Stryker mortar carrier to or back from a deployment, listen up. If you don't properly prepare the 120mm mortar tube for shipment, it may arrive a rusty pile of scrap metal. You'll find the procedures to follow in TM 38-470, *Storage and Maintenance of Army Prepositioned Stock Materiel*. Pay special attention to Para 5-10 of the TM. You can download it on the LOGSA ETM website:

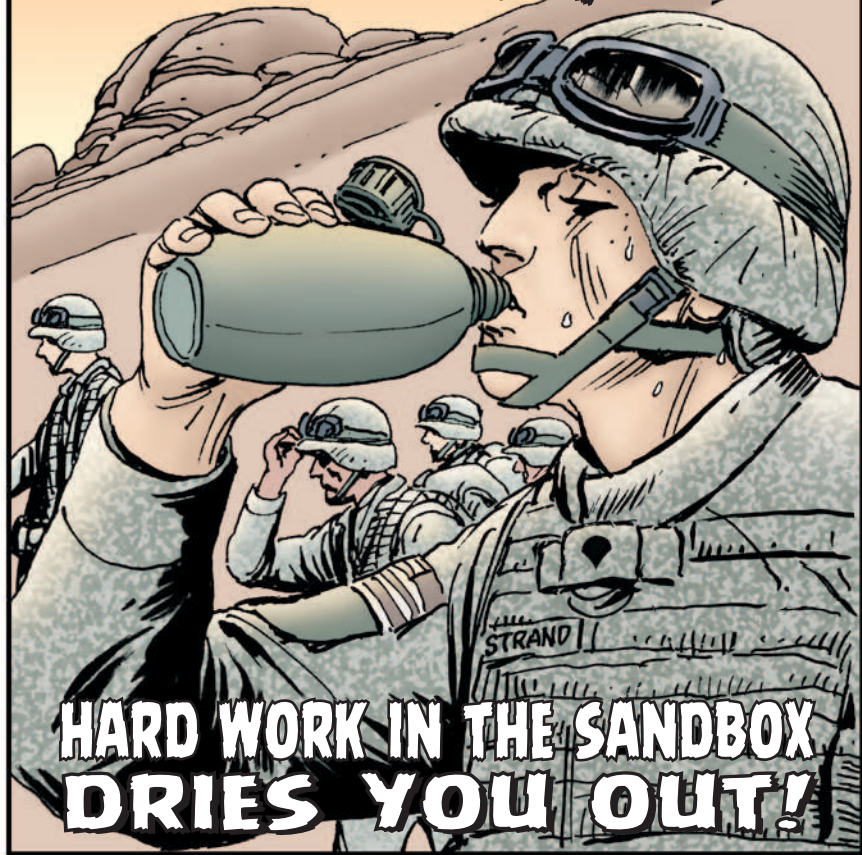
<https://www.logsa.army.mil/etms/>

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?

**PM IS NOT JUST  
FOR EQUIPMENT**

**IT'S FOR YOU, TOO!**



**DRINK ONE QUART  
-- A FULL CANTEEN --  
OF WATER EACH HOUR!**





# THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-655, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.

ISSUE 655 JUNE 2007



## COMBAT VEHICLES

2

Combat Vehicles Hot, Dusty and Sandy Conditions

2-5

Combat Vehicles Roadwheel Break-in

6

Combat Vehicles Grease Fitting Caps

7

M2/M3-Series Bradley Cargo Hatch Latch

8

M113-Series FOV Track Gauge Usage

9



## WHEELED VEHICLES

10

M1114 Air Conditioner Flushing

10-11

HMMWV Commander's Seat Caution

11

M939-Series Truck Air Filters

12-13

Tire Maintenance

14-15

Hawker Battery Usage in SWA

16

M1112 Water Trailer Venting

17



## SMALL ARMS

18

Small Arms Maintenance in the Sand

18-19

M2, M240, M249 Machine Guns Spare Barrels

20-21

M249, M240B Mount Adaptors

20-21

Small Arms Modifications and Ammo

22-24

M2 Machine Gun Accessory Storage

25



## CBRN

26

M40-, M42-Series Mask Maintenance

26-27



## TOOLS

28

Tool Warranties and Replacements

28-29



## AVIATION

30

Aircraft PM Tips for Desert Situations

30-33

AH-64A/D IHADSS Protection

34

AH-64D Helicopter Air Data System

35



## COMMUNICATIONS

36

Hot Weather PM for Commo Equipment

36-37

Hot Weather PM for Commo Batteries

38-39

Generator Maintenance in the Heat

40-41



## SOLDIER SUPPORT

42

Solar Shade System NSNs

42-44

Portable Cooling Systems

45

Insect Repellent Use

46-47

MKT Liquid Dispenser Parts

47

Health and Comfort Packs

48-49

Hydration System Cleaning

50-51

Glove NSNs for Hot Weather

52



## LOGISTICS MANAGEMENT

53

AEPS Logistics Information Overview

53-55

Online ETMs

56-59

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>

By order of the Secretary of the Army:

GEORGE W. CASEY, JR.

General, United States Army Chief of Staff

Official:

JOYCE E. MORROW

Administrative Assistant to the Secretary of the Army

0708001

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.