

PS**THE
PREVENTIVE
MAINTENANCE
MONTHLY****ISSUE 660 NOVEMBER 2007**

TB 43-PS-660, 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.

**COMBAT VEHICLES**

M1-Series Tank Slave Starting
M1-Series Tank Mine Roller Dogbone
Stryker Tire Chains
Command Post Carrier Heat Exhaust Shield
Combat and Tactical Vehicle Exhaust Venting
MLRS Carrier Protective Tarp

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Winter Driving
Trailer Winter Maintenance
HMMWV Cold Windshield Warming

**SMALL ARMS**

Small Arms Clearing Rod
M16-Series Rifle, M4/M4A1 Carbine Sling
Small Arms Shipping

**MISSILES**

ITAS Connections

**CBRN**

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Radioactive Material Warning Signs

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

Just write to:

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

Or e-mail to:

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

Internet address:

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

By order of the Secretary of the Army:

GEORGE W. CASEY, JR.
General, United States Army Chief of Staff

Official:

Joyce E. Morrow

JOYCE E. MORROW
Administrative Assistant to the Secretary of the Army

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PS

November
2007

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-660

Approved for
Public Release;
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Unlimited

I DROVE THE HUMVEE,
MY MISSION, YOU SEE,
DEPENDS UPON THAT RIDE.
BUT THE HEATER STOPPED WORKING,
THE RADIATOR FROZE,
AND THE BATTERIES QUICKLY DIED.

Were you ever out
in the great alone,
when the moon was
awful clear,
and the icy mountains
hemmed you in with
a silence you most
could hear;
with only the howl of
a timber wolf, and
you camped there
in the cold,
a half-dead thing
in a stark,
dead world
because PM had
not been pulled?

SEE PAGE 27!



Get PS! Please!



WE COULD REALLY USE A COPY OF PS RIGHT NOW.

IT SEEMS LIKE WE NEVER GET THEM ANYMORE!

PS writers go out to the field several times each year to talk to the soldiers who fix the Army's equipment. What better source for preventive maintenance information than the troops who actually do the maintaining!

But too often writers are told about equipment problems whose solutions have recently appeared in PS. When repair people are told that, the response usually is: "No kidding! But we haven't seen PS in months."

If the information in PS is to do any good, it must get to people who will use it: mechanics, repairmen, armorers, CBRN specialists and all operators. Every one of these soldiers needs to see PS every month.

Commanders, make sure your unit is getting PS and make sure PS is making it to the motor pools, hangars, arms rooms, CBRN rooms and day rooms.

Soldiers, if you're not seeing PS, let your commander know.

If you're not receiving enough copies, tell your pubs clerk to order more. PS is free.

And remember you can always check out PS on the Internet! Complete issues for the last eight years are as close as your computer, as well as indexed links to all individual articles for the last 17 years. In addition, the PS website now features a global search capability for all articles published since January 2000.

You can also find info there on how to order PS and how to contact PS with questions. Go to:

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

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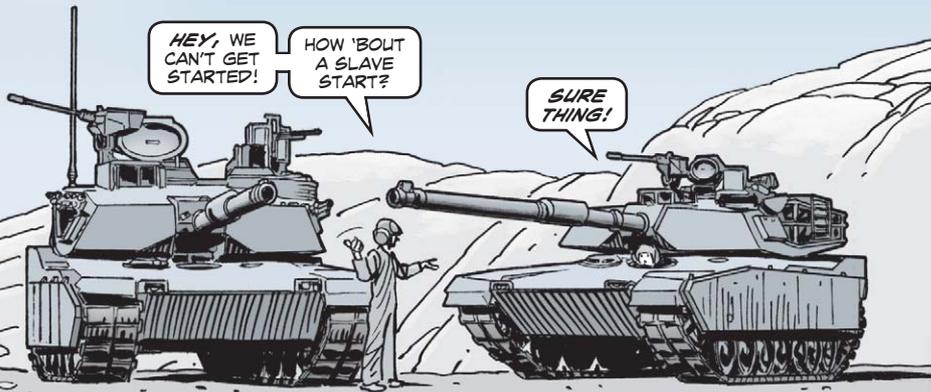
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SLAVE STARTING BY THE BOOK



Your tank already has trouble if you need a slave start, crewmen. Don't compound the problem by slaving it the wrong way.

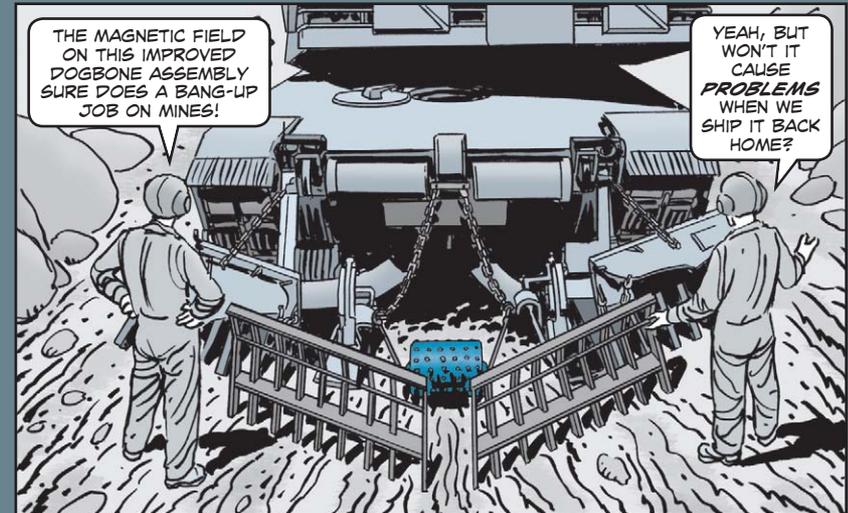
You'll find instructions for slaving your M1A1 tank starting on Page 2-623 of TM 9-2350-264-10-2 (Mar 03). In particular, make sure you don't use the NATO connector on the external auxiliary power unit (EAPU) for slave starting. That will damage the EAPU.

Slave starting instructions for the M1A2 tank start on Page 2-817 of TM 9-2350-288-10-2 (Jul 95, w/Ch 11 dated Sep 03).

Refer to the instructions starting on Page 2-781 of TM 9-2350-388-10-2 (Feb 01, w/Ch 6 dated Feb 07) when slave starting M1A2 SEP tanks.

Change 6 added procedures for using the external NATO slave receptacle for slave starting. Taking shortcuts or not following TM procedures will result in damage to the hull power distribution unit (HPDU).

COVER THE DOGBONE



Crewmen, when you get the improved dogbone assembly (IDA), NSN 3815-01-369-7497, for your tank's mine clearing blade or IDA roller, NSN 2590-01-380-4852, **do not** throw away the steel casing it comes in!

The IDA emits a magnetic field that's designed to activate magnetic mines. Problem is, unless the IDA is properly shielded during transport, the magnetic field can also affect the accuracy of navigational electronics on aircraft. Not good!

So make sure you hang onto the steel packing container. You'll need it in order to ship the IDA from place to place.

Already tossed the container? You can't order a new one through the supply system, but you can have one fabricated.

The container should be cylindrical in shape and measure 17 to 17 1/2 inches long with an inner diameter of 13 1/4 to 13 1/2 inches. Make the cylinder out of 1/4-in thick mild steel plate stock and seam weld the entire length following the instructions in IDA drawing #12500468.

For a copy of the drawing, send an email to Half-Mast at:

half.mast@us.army.mil

Secure the shield in place over the rubberized portion of the IDA before repackaging for shipment. Keep in mind that the magnetic field can also affect watches and pacemakers.

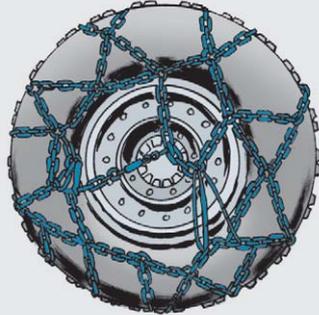
Get the Right Tire Chains



Tire chains can come in handy for your Stryker when winter weather arrives. But the chains were left out of some of the -10 TM additional authorized lists (AAL), while one other lists the wrong chain.

The correct NSN for Stryker tire chains is 2540-01-498-8821. This is a 0.8-mm chain that's made of high-grade material and fits the Stryker's tires perfectly.

Use proper tire chains on your Stryker

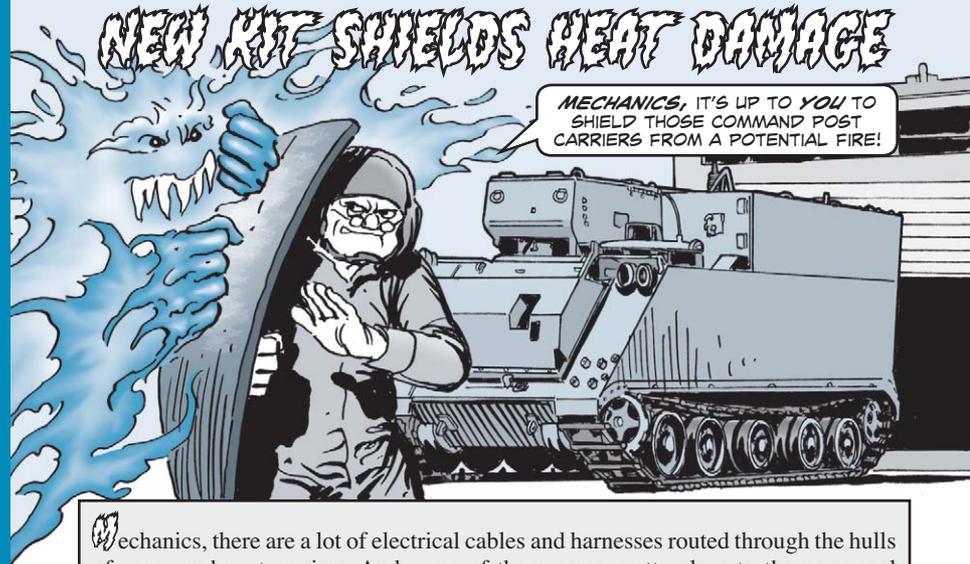


UNTIL THE NEXT UPDATE, ADD THIS CHAIN TO THE AAL OF THE FOLLOWING TMS...



- TM 9-2355-311-10-2, M1126 RV
- TM 9-2355-311-10-4, M1130 CV
- TM 9-2355-311-10-5, M1127 RSV
- TM 9-2355-311-10-6-2, M1132 ESV
- TM 9-2355-311-10-7, M1134 ATGM
- TM 9-2355-311-10-8, M1133 MEV
- TM 9-2355-311-10-9, M1131 FSV

TM 9-2355-311-10-3, the M1129E1 MC (B Variant) lists the wrong tire chain, NSN 2540-21-914-4252, in the AAL. This is a 0.5-mm chain that's actually made for the Marine Corps LAV. It won't fit properly on the Stryker and doesn't last very long, so scratch it out and replace it with NSN 2540-01-498-8821.



Mechanics, there are a lot of electrical cables and harnesses routed through the hulls of command post carriers. And some of them come pretty close to the personnel heater exhaust.

The high temperatures generated by the heater can damage those cables and potentially lead to a vehicle fire.

A special protective shield has been developed to prevent this heat damage. So, inspect your unit's vehicles to determine how many of the free-issue heat shield kits are needed. Then contact Kris Kessinger at (586) 977-8540 or email:

krisk@z-systems.com

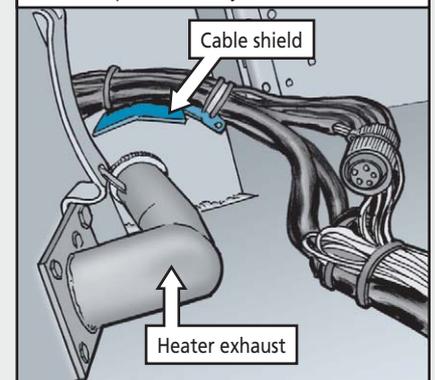
Be ready to provide unit identification, vehicle type, serial number, unit mailing address, POC name and phone number. A copy of the installation instructions will be included with the heat shield kit.

For the straight scoop, check out TACOM ground precautionary message (GPM) 07-006. You'll find it at the AEPS website:

https://aeps2.ria.army.mil/commodity/gpm/tacom_wn/07/gpm07-006.html

You'll need your AKO login and password to access the GPM.

Shield keeps cables away from heater exhaust



EXHAUST THOSE FUMES!



Running vehicles indoors without proper ventilation is a death wish. But that's what's happening in a lot of motor pool bays.

Some mechanics think raising the bay doors is all that's needed to let out vehicle exhaust. But if there's no wind, the exhaust stays right there in the bay. Sometimes, the wind can even keep the exhaust from escaping the bay. And that's bad for your health.

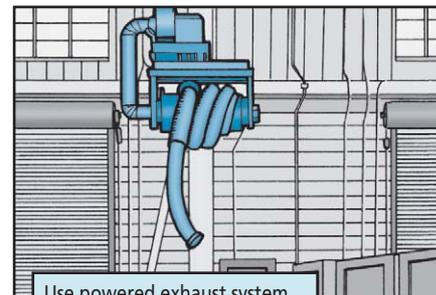
Today, many motor pools are equipped with powered exhaust systems that pull away those fumes. If you don't use them, they can't do their job, so hook them up to any running vehicle.

If your motor pool doesn't have an exhaust system, run those exhaust fumes safely outside with flexible exhaust extensions. You'll need a snug fit of extension-to-exhaust pipe to prevent leaks, so order the extension you need from this list:

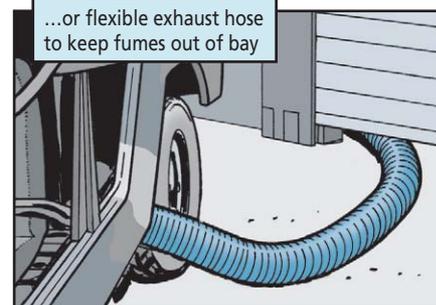
NSN 4720-00-	Inner Diameter (in inches)
174-4668	1
278-8030*	1 1/2
278-8027	1 3/4
278-8031*	2
174-6818	2 1/2
174-4664	3
174-4671	4

*These NSNs have an AAC of V. Once supplies are exhausted, no more will be available.

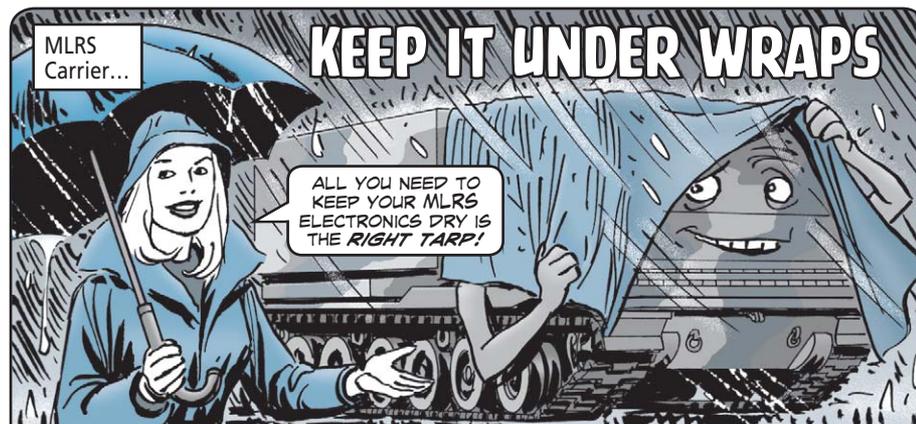
The unit of issue is feet, so order the length you need.



Use powered exhaust system...



...or flexible exhaust hose to keep fumes out of bay



MLRS Carrier...

KEEP IT UNDER WRAPS

When rainwater collects in the hull of your MLRS, it shorts out cables, corrodes connectors and gets inside line replaceable units (LRUs).

Leaving the hull drain plugs open will let out excess water, but it doesn't keep components from getting wet in the first place.

Prevent water damage by covering the cab and engine portion of your MLRS with a waterproof tarp. A 12x17-ft OD green tarp, NSN 2540-00-587-2532, will do the trick. Or order a 12x17-ft tan tarp with NSN 2540-01-330-8062.

Wheeled Vehicles...

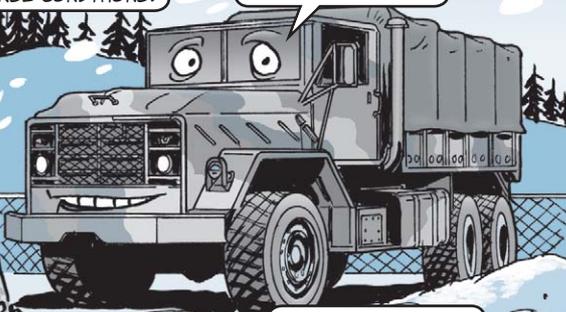
DRIVING IN WINTER

OPERATORS, YOU SHOULD TAKE **EXTRA** CAUTION WHILE DRIVING IN THE WINTER, ALL SKIDDING ASIDE.

IN FACT, EXTRA CAUTION IS HELPFUL WHILE DRIVING IN **ALL** ADVERSE CONDITIONS.

DRIVE SAFELY BY USING THE GUIDANCE FOUND IN YOUR VEHICLE'S -10 TM.

PLUS HEED THE FOLLOWING TIPS TO PREVENT A PROBLEM DOWN THE ROAD.

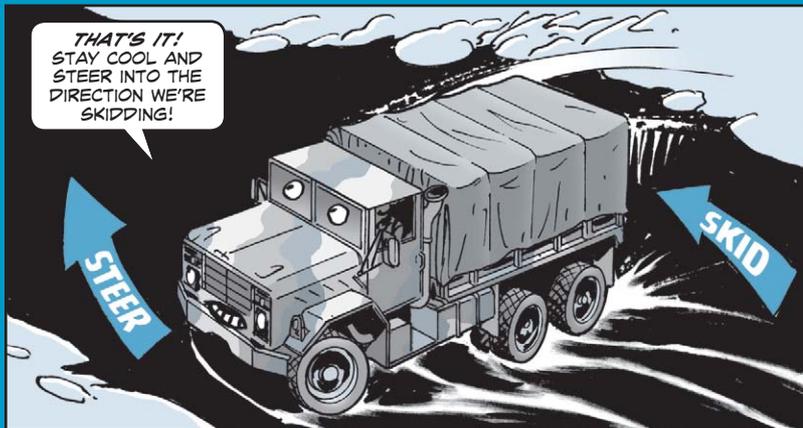


Adjust Speed to Conditions

Adjust your speed to road conditions. Steep hills, sharp curves and ice- or snow-covered roads mean trouble if you don't!

And on a slick road, **don't** count on your brakes to stop you. Slamming on the brakes will make your vehicle slide.

THAT'S IT! STAY COOL AND STEER INTO THE DIRECTION WE'RE SKIDDING!



If you skid, take your foot off of the throttle and steer in the direction the rear of the vehicle is headed. If driving a tractor-trailer, steer away from the direction of the sliding trailer. Don't oversteer. Steer just enough to correct the skid.



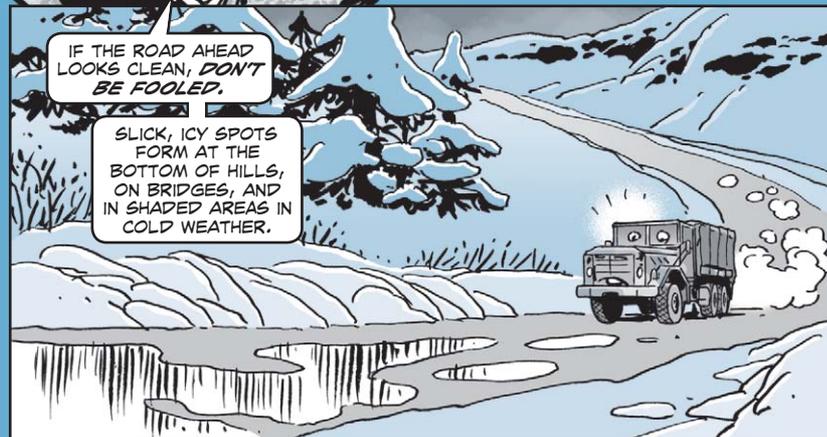
ALSO, LOOK AHEAD FOR DANGERS AND KEEP YOUR EYES MOVING. BE READY TO REACT OR STOP AT ALL TIMES. WHEN STOPPING, AIM TO STOP 20 TO 30 FEET SHORT TO ALLOW FOR UNEXPECTED TROUBLE.

USE ENOUGH POWER TO HELP YOU AROUND CURVES AND TO HOLD TRACTION- THE ALL-IMPORTANT GRIP YOUR TIRES HAVE ON THE ROAD.

BE ESPECIALLY CAUTIOUS ON SHARP CURVES. NEVER GO TOO FAST OR CENTRIFUGAL FORCE WILL SLING YOU OFF THE ROAD, CREATING A BAD DAY FOR BOTH YOU AND YOUR UNIT. SO SLOW DOWN BEFORE GOING INTO A CURVE OR DOWNGRADE. ENGINE DRAG HELPS, TOO. JUST EASE OFF THE THROTTLE.

IF THE ROAD AHEAD LOOKS CLEAN, **DON'T BE FOOLED.**

SLICK, ICY SPOTS FORM AT THE BOTTOM OF HILLS, ON BRIDGES, AND IN SHADED AREAS IN COLD WEATHER.



BRIDGES AND OVERPASSES FREEZE FIRST.

COLD AIR PASSES UNDER THEM, THE PAVEMENT COOLS QUICKER, AND WATER FREEZES.

CROSS SAFELY BY GOING EASY ON THE THROTTLE WITH NO BRAKING OR QUICK STEERING.



PS MORE

Climbing Hills

When climbing a hill, momentum and traction are your friends. However, you call the shots. Remember:

- If momentum is too slow for wheel speed, the result is lost traction and the wheels spin.
- If momentum is too fast for wheel speed, that also results in lost traction and the vehicle skids.
- If the momentum is in tune with wheel speed, you have traction and good control.

On hills, the more momentum you have, the less traction you need. It's a good idea to let the vehicles ahead of you make it to the top first. Then you won't have to stop half-way up. And remember to keep your distance.

LAY BACK...KEEP MOVING SLOWLY 'TIL HE GETS TO THE TOP OF THE HILL.

Get a running start so when you reach the peak, you've got enough momentum left to get you over. Try to get to the top of the hill in one smooth uninterrupted run.

Tire Tips

Keep tires in good condition and properly inflated to help traction. Distribute loads evenly and place partial loads over the rear axle. Avoid poor driving, like quick starts, sudden stops and sharp turns. They cause you to lose traction.

Y'GOTTA EASE DOWN ON MY ACCELERATOR!

No Shady Shifting

Watch shifts, especially downshifts. Downshifts can break traction, so make each shift as smooth as possible. With a manual transmission, you could get over the top of the grade using one or two gears higher than you'd use under ideal conditions.

On a dry road, you might want to shift down to a lower gear to use the engine as a brake. On ice, that can cause problems. The engine holding back your wheels is applying force to them just as the brakes would do. It can throw you into a skid. So if you feel your vehicle start to slide, speed up until your wheels are no longer sliding.

Safe Braking

If you have conventional hydraulic brakes, pumping 'em is permitted. But if your vehicle has anti-lock brakes (ABS), do not pump them. Apply firm, even pressure instead. And if you have air brakes, apply light, steady pressure. Don't pump 'em.

If your vehicle has a Jacobs brake (known as a Jake brake), don't use it in slippery conditions.

In icy conditions, it takes more distance—up to 12 times as far—to stop. So make sure you allow plenty of room to stop.

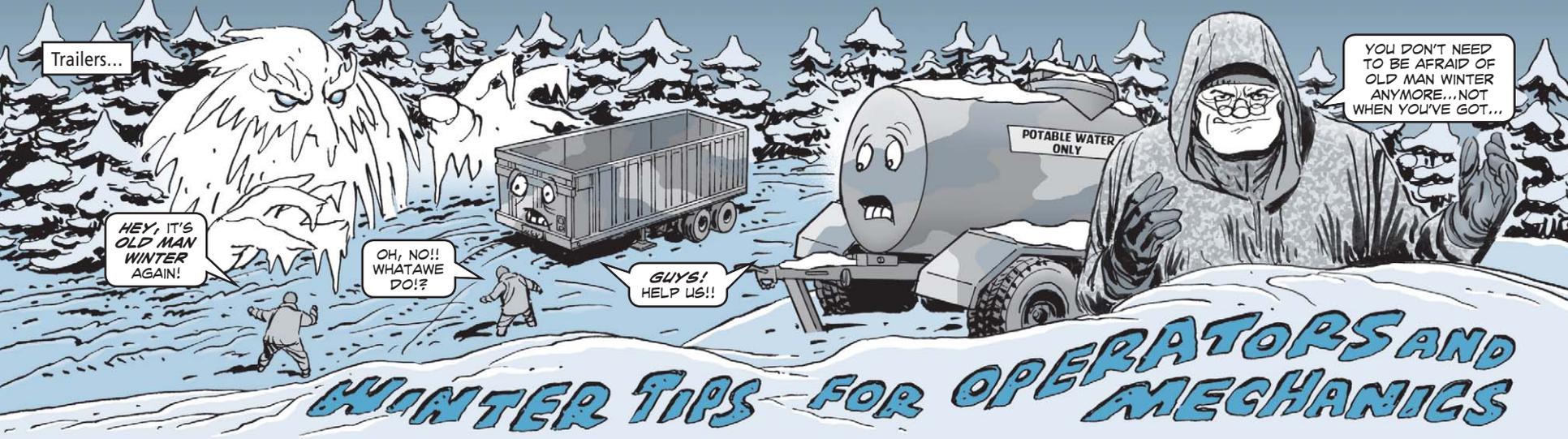
NEVER GO TOO FAST OR THE CENTRIFUGAL FORCE WILL SLING YOU OFF THE ROAD!

AND NEVER SLAM ON THE BRAKES!

FRONT WHEELS LOCK WITH HEAVY BRAKING AND YOU LOSE STEERING.

HEY! HOW 'BOLT SOME TIRE CHAINS HERE?!

TIRE CHAINS HELP YOU COMPLETE MISSIONS IN HEAVY SNOW AND ICE! FOR THE WORD ON CHAINS, SEE <https://www.logsa.army.mil/psmag/archives/ps2006/648/648-10-11.pdf>



Trailers...

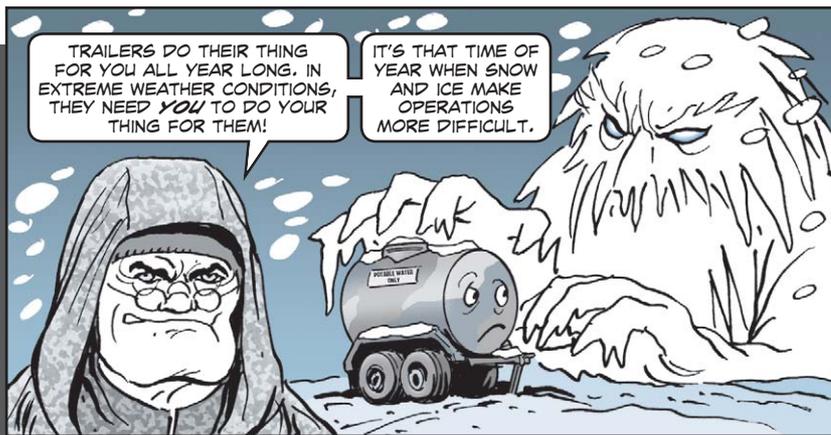
HEY, IT'S OLD MAN WINTER AGAIN!

OH, NO!! WHAT A WE DO!?

GUYS! HELP US!!

YOU DON'T NEED TO BE AFRAID OF OLD MAN WINTER ANYMORE...NOT WHEN YOU'VE GOT...

WINTER TIPS FOR OPERATORS AND MECHANICS



TRAILERS DO THEIR THING FOR YOU ALL YEAR LONG. IN EXTREME WEATHER CONDITIONS, THEY NEED YOU TO DO YOUR THING FOR THEM!

IT'S THAT TIME OF YEAR WHEN SNOW AND ICE MAKE OPERATIONS MORE DIFFICULT.



SO PAY ATTENTION TO THE FOLLOWING WINTER MAINTENANCE TIPS.

THEY CAN MAKE LIFE A LITTLE EASIER FOR YOU AND YOUR TRAILERS.

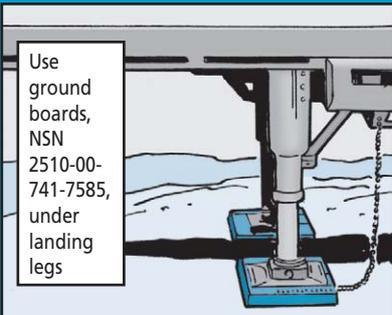
Parking Practices

- If your trailer's not parked on hard stand, put dunnage under the tires to keep them from sinking and freezing into the ground.
- Make sure ground boards are placed underneath the landing legs when you park. Use dunnage if you don't have ground boards.
- Park the trailer so the front end sits a little higher than the rear end to help water drain.

Park trailer higher in front to help water drain



Use ground boards, NSN 2510-00-741-7585, under landing legs



- Place a tarp over the side panels and storage areas of bulkheads. That'll stop ice from freezing stakes, panels and retaining hardware to the bulkhead.

Maintenance Matters

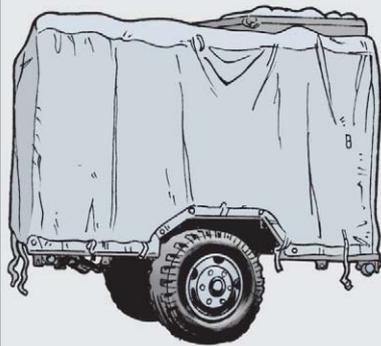
- Make sure the air system is drained to keep water from freezing in the air lines.
- When possible, flush out all those road chemicals from underneath the trailer and the axle ends to stop corrosion on frames, air chambers, brake systems, rails, fittings and lines. Use clean, low-pressure water.
- Use dielectric grease, NSN 6850-01-525-0776, on all electrical connectors.



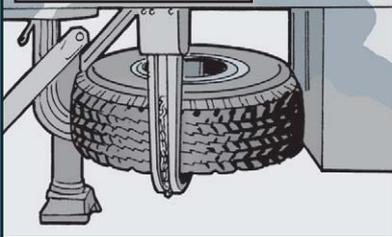
The Deal for Wheels

- Clean, prime, and paint all rusted areas. This includes wheels—and don't forget the spare tire.
- Make sure the spare tire carrier and retaining hardware are serviceable.
- Maintain proper tire pressure on all of the tires, using your trailer's TM for guidance.

Maintain proper tire pressure on all tires



Make sure spare and hardware are serviceable



Before You Chill

- Make sure bolster plate holes and all drain holes are open and clear of grease and debris so water can drain. Keep storage box drain holes open, too.
- Keep lighting and reflector lenses clean so you're visible to others while operating.
- Make sure your gladhands and seals are serviceable and protected when not in use by using dummy gladhands. For swing-away types, make sure there is a good seal against the protective cup. Keep swing-aways lubed so the arms move freely. And make sure they are color coded or tagged properly.
- Protect the BII/AAL by properly storing and tagging it. Make sure it is in serviceable condition.
- Make sure oil points are lubed, such as landing gear foot axles, deck tie-downs, BII box hinges, lift points, crank handles and the manifest box hinge.
- Do a good job visually inspecting the trailer for areas that require protection. Use common sense! Perform scheduled services and plan ahead to keep your trailer mission ready.

Keep lighting and reflector lenses clean and fixed for good visibility



PS
END

HMMWV...

WINDSHIELD WARM UP

HOW DID THOSE CRACKS GET THERE!?

I DIDN'T EVEN TOUCH THE GLASS!

BUT THE HOT AIR FROM YOUR DEFROSTER DID!



A cold and frosty HHMV windshield can become a cracked windshield in a heartbeat! How so?

A blast of hot air from the vehicle's defroster will send your windshield to an early grave.

One solution is to let the windshield warm up as the cab warms up before you direct hot air to it.

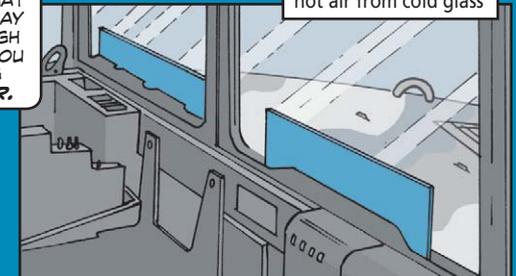
That works well enough, but that's not the fastest way to defrost the windshield.

A quicker solution is to put a temporary shield of cardboard or plastic across the bottom of the windshield. The hot air mixes with the cold air in the cab before it hits the windshield and prevents most cracks.

Once the windshield is clear, remove the shield and move out.

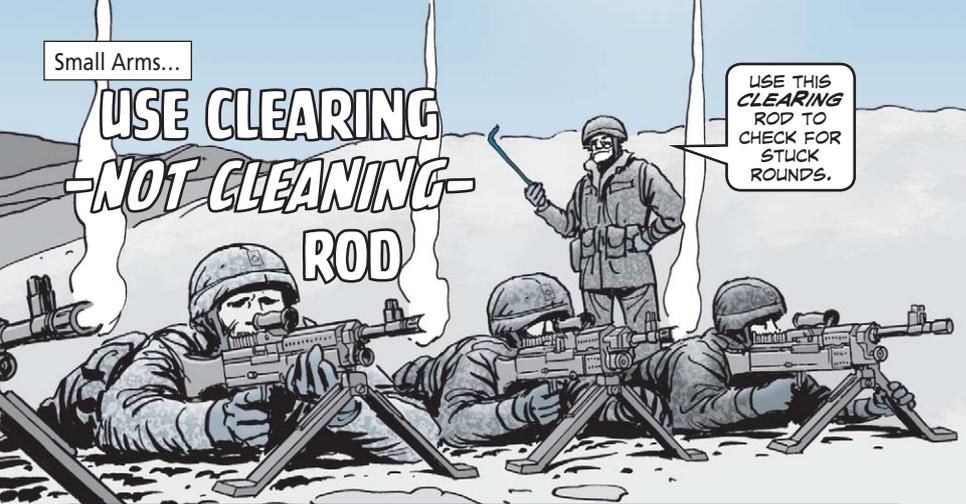
Cardboard deflects hot air from cold glass

HAVING THAT "EDGE" MAY BE ENOUGH TO GET YOU MOVING SOONER.



Small Arms...

USE CLEARING -NOT CLEANING- ROD



USE THIS
CLEARING
ROD TO
CHECK FOR
STUCK
ROUNDS.

Dear Editor,

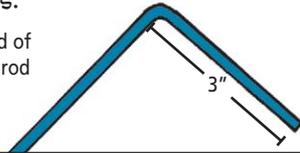
I was surprised to see on Page 21 in PS 642 (May 06) the suggestion that gunners run a cleaning rod down the muzzle to check for a stuck round.

Here at Ft Leonard Wood we do everything we can to get soldiers NOT to use a cleaning rod to check for stuck rounds. A cleaning rod can unscrew and come apart in the weapon's barrel. The soldier doesn't realize part of the cleaning rod is still in the barrel. The next time the weapon is fired the barrel blows up. We've seen this happen several times.

We encourage units firing on the range to use a *clearing* rod. You can easily make one by using a 36-in long, 3/16-in diameter brass welding rod, NSN 3439-00-244-4541. Put a 90° bend three inches from one end to make a handle. File off any burrs or sharp edges.

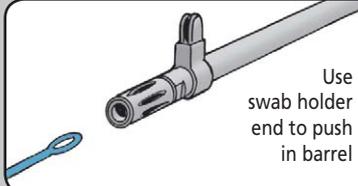
Easy does it inserting the clearing rod so that you don't damage the muzzle crown. Don't slam the rod into the bolt face, either. If you find a stuck round, don't try to remove it with the rod. Use the clearing procedure in the weapon's -10 TM.

Bend end of
welding rod
90° for a
handle



Weapons Instructor
Ft Leonard Wood, MO

Editor's reply: Good point, . . . Using a clearing rod on the firing range is entirely the call of your local commander. He can make it part of your local SOP. In the field, of course, soldiers may have to use a *clearing* rod to check for unfired rounds. In that case, use a rod's swab holder section at the end of the rod you push in the barrel. When you pull out the rod, check for the swab holder. That way you know part of the rod is not in the barrel.



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

SLINGS FOR LEFT-HANDERS?

Dear Half-Mast,
Is there an M16 rifle three-point sling for left-handers? I can't find anything in the TM.

SGT T.H.



Dear Sergeant T.H.,

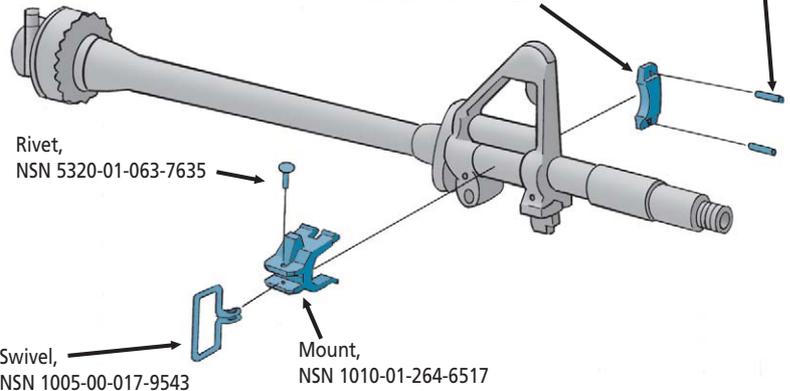
The only three-point sling for the M16 and the M4/M4A1 carbine available through the Army comes with NSN 1005-01-541-1771. It is being free-issued through the Rapid Fielding Initiative. It should work for both right- and left-handers. All you need to do is move the side swivel from one side of the weapon to the other.

The side swivel comes standard with the M4/M4A1 carbine. To add the side swivel to the M16, you will need the following:

Parts needed for side swivel

Locking bar,
NSN 5340-01-474-2845

Two spring pins,
NSN 5315-00-690-0544



When the M203 grenade launcher is mounted on either weapon, the side swivel mount must be on the right side to avoid interference loading and ejecting 40mm rounds.

Half-Mast

Safe Shipping



All the care you give your rifle, machine gun, or pistol in the field can go to waste if you don't show the same care when you ship it to or from SWA.

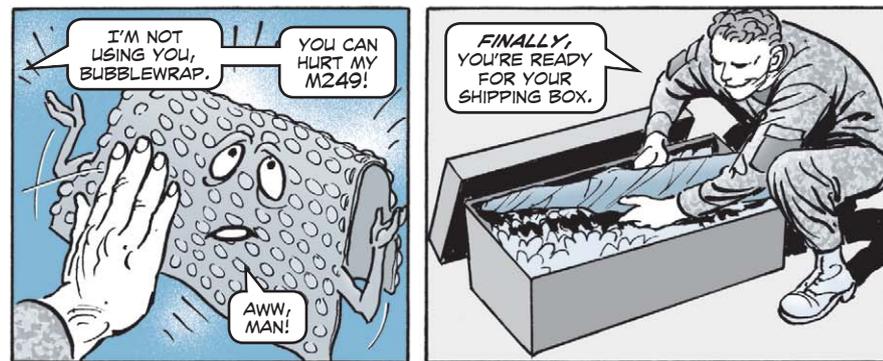
If you just toss your weapon in a box for shipment, moisture can let corrosion turn it into an expensive piece of junk by the time it arrives at its destination. And that has happened many times in the last four years. Too many weapons have been ruined because PM was forgotten when it came time to ship them.

But your weapon can have a safe journey if you just remember these rules:

- **Clean 'em.** Completely clean your weapons like their -10 TMs say to. **But no steam cleaning!** That surely leads to corrosion because it also cleans out all lubricant.
- **Lube 'em.** That means CLP for all weapons except the MK19. For it, use corrosion preventive compound (MIL-PRF-16173 grade 3), NSN 8030-00-244-1293, cut 50 percent with mineral oil; or use general purpose lubricating oil (MIL-PRF-3150), NSN 9150-00-231-2356; or general purpose lubricating oil (MIL-PRF-32033), NSN 9150-00-231-9062, if it's used with vapor corrosion inhibitor (VCI). All three lubes can also be used for all weapons if necessary.
- **Wrap 'em.** Wrap weapons in VCI barrier and secure the barrier with tape. NSN 8135-00-664-0015 brings a 3 x 600 foot roll of VCI.
- **Do not use bubblewrap.** Some bubblewrap contains a chloride that when mixed with moisture forms an acid that causes corrosion. There's no way to tell which is which, so avoid **all** of them!

Some units have reported problems getting these VCI materials through the supply system. Band-All is another source for VCI bags and will ship them within 24 hours. Their bags can be heat-sealed, taped or closed with a twist tie, and come in 31x21x51, 42x36x58 and 58x48x90 inch sizes.

For Your Weapons



The 31x21x51 bag will hold an MK19 or M2 without the barrel attached. An M2 barrel will fit in this bag if it's angled in.

The 42x36x58 and 58x48x90 bags will hold several weapons. Use at least one sheet of greaseproof paper between layers of weapons. The best protection is to sandwich corrugated fiberboard between two sheets of greaseproof paper and put that between weapon layers. Greaseproof paper comes with NSN 8135-00-753-4661, NSN 8135-00-233-3871 or NSN 8135-00-224-8885.

Contact Band-All at (309) 794-9544.

Another source for VCI bags is MRN Enterprise. They offer

- a 14x16-in rifle bag that also can be used for the M2 (without barrel), M240, and M249.
- an 18x60-in bag that can hold the M16, M240, M249, MK19 with barrel, and M2 without barrel.
- a 14x50-in bag that works for the M16, M249, and M2 without barrel
- a 10x18-in bag for pistols and bayonets.

Call 412-221-9111 or order at their website: <http://www.mrnenterprises.com>

• **Box 'em.** Place the wrapped or bagged weapons into weather-resistant fiberboard boxes. Tape all open seams and edges to prevent the VCI from escaping and dirt and moisture from getting inside. Put filler material in the boxes to keep the weapons from shifting.

Fiberboard boxes can be ordered through GSA. Their NSNs, sizes, type, and what weapons they can hold are listed on the chart on the next page.

At most posts, you can find large boxes at the ammunition refuse yard and the DOL receiving area.

Plastic containers can also be used for shipping weapons. Wal-Mart and other large discount stores usually carry these kind of containers in the automotive department for around \$35. Many of these containers can be padlocked.

For more information, go to:

<https://aeps2.ria.army.mil/commodity/win/tacom/corrosion-preventive.html>

Log in with your AKO password.

NSN 8115-00-	Box size (inches)	Weapon	Type	Qty	Cost
579-8461	38 x 14 x 20	M2 or MK19 w/o barrel, M16	Flaps	3	\$35.57
993-2790	40 x 28 x 28	M2 or MK19 w/o barrel, M16	Flaps	3	\$76.03
616-9154	43.5 x 18 ¹ / ₂ x 13	M2 or MK19 w/o barrel, M16, M249	Flaps	3	\$45.68
935-5906	43 x 31 ¹ / ₄ x 35 ¹ / ₄	M2 or MK19 w/o barrel, M16, M249	Flaps	1	\$38.63
559-5516	45 x 14 x 22	M2 or MK19 w/o barrel, M16, M249	Flaps	3	\$31.32
559-9999	45 x 22 x 22	M2 or MK19 w/o barrel, M16, M249	Flaps	2	\$41.89
559-9996	46 x 46 x 22	M2 or MK19 w/o barrel, M16, M249	Flaps	1	\$35.24
935-6510	58 x 43 x 35 ¹ / ₄	M2 or MK19 w/o barrel, M16, M249, M240	Flaps	1	\$38.76
782-1695	48 x 40 x 28 ¹ / ₄	M2 or MK19 w/o barrel, M16, M249	Flaps	1	\$31.19
926-4886	46 ⁷ / ₈ x 38 ⁷ / ₈ x 26	M2 or MK19 w/o barrel, M16, M249	Top cap	1	\$32.63
926-4887	46 ⁷ / ₈ x 38 ⁷ / ₈ x 36	M2 or MK19 w/o barrel, M16, M249	Top cap	1	\$36.54
926-4888	46 ⁷ / ₈ x 38 ⁷ / ₈ x 42	M2 or MK19 w/o barrel, M16, M249	Top cap	1	\$40.32
953-0276	47 ¹ / ₂ x 39 ¹ / ₂ x 35 ¹ / ₂	M2 or MK19 w/o barrel, M16, M249	Top cap	1	\$48.29
935-1140	48 x 40 x 36	M2 or MK19 w/o barrel, M16, M249	Top cap	1	\$40.46
142-9594	46 ⁷ / ₈ x 38 ⁷ / ₈ x 15 ¹³ / ₁₆	M2 or MK19 w/o barrel, M16, M249	Top cap	1	\$32.63
559-9998	43 x 22 x 34	M2 or MK19 w/o barrel, M16, M249	Flaps	2	\$39.15
901-6435	47 ¹ / ₂ x 39 ¹ / ₂ x 28	M2 or MK19 w/o barrel, M16, M249	Top cap	1	\$32.63
901-6434	47 ¹ / ₂ x 39 ¹ / ₂ x 28	M2 or MK19 w/o barrel, M16, M249	Sleeve with double caps	1	\$35.87
935-5896	43 x 31 ³ / ₄ x 35 ¹ / ₄	M2 or MK19 w/o barrel, M16, M249	Flaps	1	\$30.28
753-4691	58 x 32 x 28 ¹ / ₄	M2 or MK19 w/o barrel, M16, M249, M240	Top cap	1	\$35.63



ITAS...

CONNECTING TO EASIER CONNECTING

“GEEZ!”

A LITTLE CONNECTOR PM WOULD SAVE US BOTH LOTS OF PAIN!



Dear Editor,

Dirt and sand can make hooking up the ITAS (improved target acquisition system) a real grind.

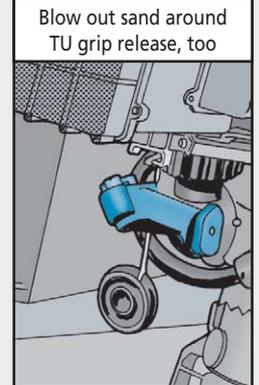
Dirt and sand get inside the connectors' pins and holes and prevent a good electrical connection. Dirt and sand also get inside the connectors' locking rings and prevent them from turning easily.

I've found a little air can make cable connecting practically effortless. Weekly, I blow out the connectors with low-pressure air, taking special care to get any sand or dirt out of the locking rings. Open the connectors and blow air at the cable side of the connector. Don't blow into the connector because that would drive sand or dirt in the pins and pin holes.



Blow out sand with air hose

It's also a good idea to periodically blow out sand or dirt in the traversing unit's grip release where it swivels and at the hand release.



Blow out sand around TU grip release, too

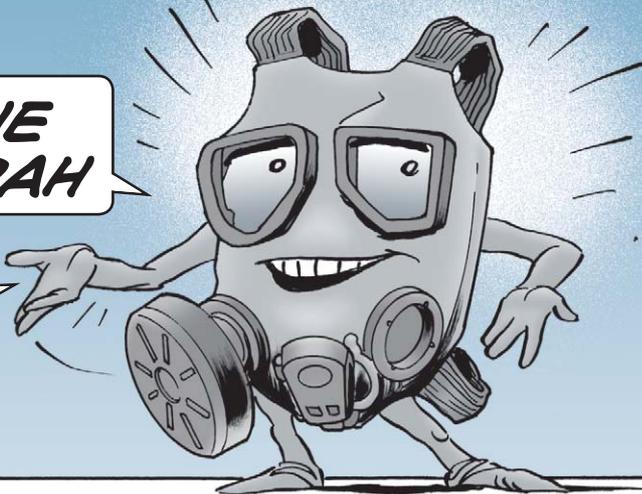
PVT
94th BSB
Ft Polk, LA

Editor's note: Using air to blow away sand and dirt is a great idea anywhere. Never use lube to help the locking rings move. Lube attracts more sand, and it can damage the cables.

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

**ZIP TIE
DOO DAH**

*I NEED
THAT ZIP
TIE!*



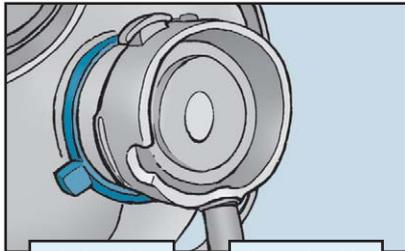
CBRN SPECIALISTS, HERE ARE A COUPLE OF WAYS TO KEEP YOUR M40/M42 MASKS IN TIP-TOP SHAPE AND YOUR UNIT BREATHING EASY...

Retaining clamp (zip ties)—Every one of your masks should have retaining clamps put on the outlet valve housing. The clamps are part of MWO 3-4240-347-20-1 and they prevent the silicone rubber of the outlet valve housing from pulling loose from the face piece.

If you have masks that are missing the clamps, get with your MWO coordinator or TACOM logistics assistance representative. They can get you the MWO kit and you can put the clamp on yourself.

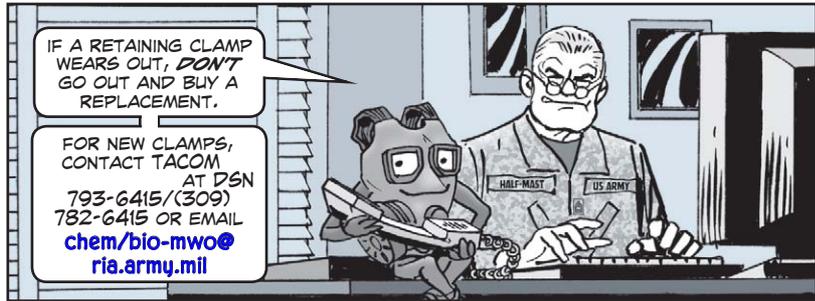
But remember that the clamp should go against the face piece **behind** the drink tube nipple with the tab on the tie between the 6 to 9 o'clock position. Some masks are ending up with the tab between the 12 to 6 o'clock position, which interferes with the drink tube.

The clamp is easier to install if you pull it hand-tight before using the tensioning tool to fully tighten it.



Tab should be in 6-9 position

Clamp should be against face



IF A RETAINING CLAMP WEARS OUT, **DON'T** GO OUT AND BUY A REPLACEMENT.

FOR NEW CLAMPS, CONTACT TACOM AT DSN 793-6415/(309) 782-6415 OR EMAIL chem/bio-mwo@ria.army.mil

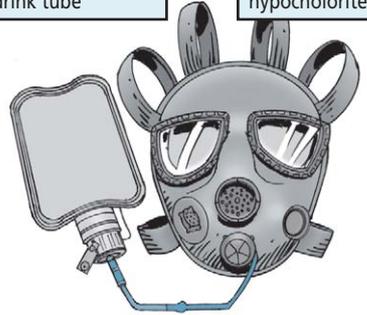
Clean drink tube—The drink tube can become pretty gross if it's ignored. Stress to your unit that they should never drink anything other than water through the tube. Soft drinks leave a sludge in the tubes. The sludge can cause leaks in the quick disconnect coupling half from a sticking plunger.

It's a good practice to blow through the tube before stowing the mask. That should detect a blocked tube.

Periodically flushing the drink tube with water can really keep it clean. Just fill a canteen with clean water and attach it to the external drink tube. Turn the canteen upside down and squeeze it while holding the face piece upside down with the internal drink tube facing away from the face piece. Do this until all the water has run through the drink tube.

Run water through drink tube

If tube is really dirty, use calcium hypochlorite



If the drink tube is **really** filthy, add 1/2 teaspoon of calcium hypochlorite, NSN 6840-00-242-4770, to a gallon of water and fill the canteen with that mixture. Make sure the hypochlorite is completely dissolved. Run the mixture through the drinking tube and then run two canteens of clean water through it. These procedures are on Page 2-79 and 2-82 in TM 3-4240-346-20&P.



OF COURSE, ANY TIME YOU GIVE A USED MASK TO A DIFFERENT SOLDIER YOU MUST REPLACE THE INTERNAL DRINK TUBE.

IT'S CHEAP AND THAT PREVENTS THE SPREAD OF GERMS.

Shelters...

Filter Help for CBRN Fan

DARN, MY CBRN CENTRIFUGAL FAN HAS PLUGGED UP AGAIN!

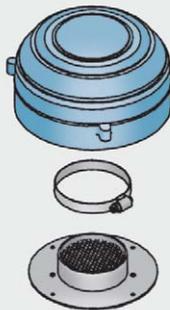
I SURE NEED THAT NEW DUST SEPARATOR ADAPTER KIT!



The CBRN centrifugal fan, NSN 4140-01-234-8170, needs all the help you can give it in the desert. Sand can quickly clog it up and shut it down. Then your shelter loses the positive pressure that shuts out chemical agents in an attack.

To help your fan seal out sand, you can now get a dust separator adapter kit, NSN 4240-01-526-5468. There are 725 kits available by free issue through the supply system. After they're gone, the kits will cost \$147. Instructions for installing the dust separator adapter come with the kit.

Remember, in the desert the fan can conk out if the temperature goes above 120°F. And sometimes it does get hotter than that in Iraq. You can help the fan keep fanning by rigging a shade over it when the temperature tops 100°F. That keeps it out of direct sunlight, which helps it stay cooler.



Dust separator adapter helps seal out sand

The fan is used with the vans for the AN/TSM-191(V)2 electronic shop, AN/TSQ-179(V) Target Acquisition Subsystem, Theater High Altitude Air Defense, and the AN/TPQ-36 and AN/TPN-31 radar sets.



Shade fan in extremely hot weather

CBRN...

HOW DO I GET RADIOACTIVE MATERIAL WARNING SIGNS?



Dear Half-Mast,

CBRN specialists are supposed to post radioactive material warning signs in the CBRN rooms because items like the ACADA have small amounts of radioactive material. But where do you get these signs? I can't find any NSNs for them.

SSG J.H.

Dear Sergeant J.H.,

Thanks to the Internet, you can just go on-line and print out not only radioactive material warning signs, but other required signs as well. You will need a color printer. Go to:

https://www.monmouth.army.mil/rso/formsign/public_matrix.pdf

You will need to sign in with your AKO login and password or CAC. The radioactive caution signs are at the top of the page. Just print out the number you need and post them in your CBRN room.

For instructions on the number of signs required and where or how to post them, go to the survey training module:

https://www.monmouth.army.mil/rso/training/unit_rso/unit_rso_web.pdf

and see Page 73.

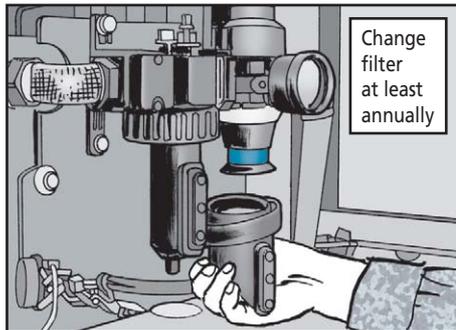
Half-Mast

CHANGING FILTER ELEMENT

The air regulator/water separator filter elements for the M7 forward repair system should be replaced at least annually. Unfortunately, the M7's TM doesn't give the NSN for the element.

Order the elements with NSN 2940-01-519-9304. To replace the element in each unit, remove the regulator bowl by turning the retaining nut counterclockwise. Then remove the retaining nut, filter housing, and the filter. Once you've replaced the element, reassemble the filter assembly.

For more info, see Page 2-28 in TM 9-4940-568-20.



Tools...

Toolbox Liners?

Dear Half-Mast,

I know the new tool kits come with liners that have cutouts where the tools fit in the drawers. But I still have some of the older kits that don't have liners. I would like to make liners for these kits, but I don't know where to get the styrofoam. Is there a styrofoam NSN?

PFC J.A.

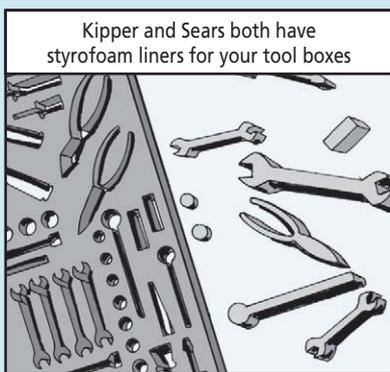
Dear Private J.A.,

No NSN, but you can order liners from Kipper Tool. They have 12x12x1-in black over white foam sheets available for \$10 each plus shipping. Call (800) 295-9595 or email dave.scott@kipper.tool.com

Sears has a Craftsman Tool Kit Organization Set for \$17 that has blank sheets of foam that you can lay your tools on, trace them, and then cut out the shapes. The set can be ordered with PN 00965417000. Go to:

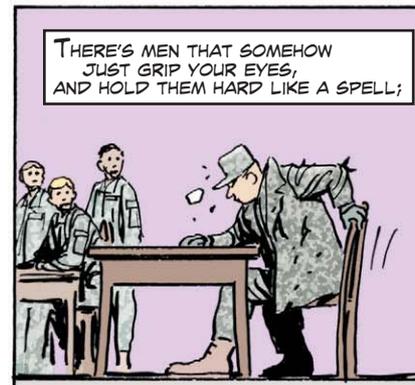
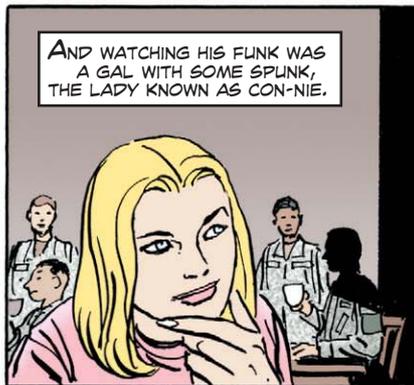
<http://www.sears.com>

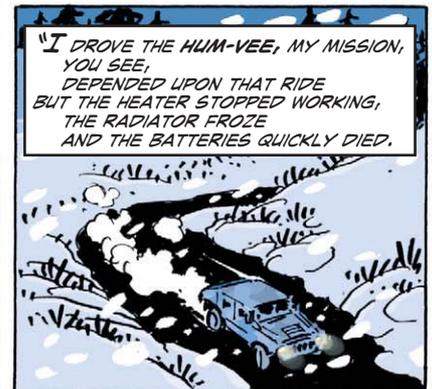
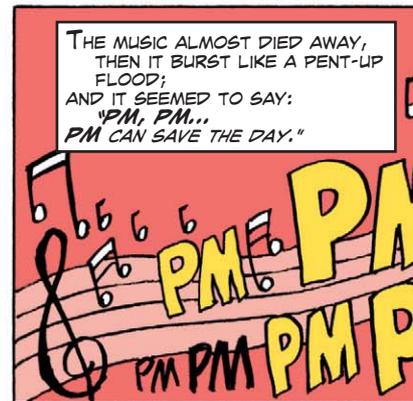
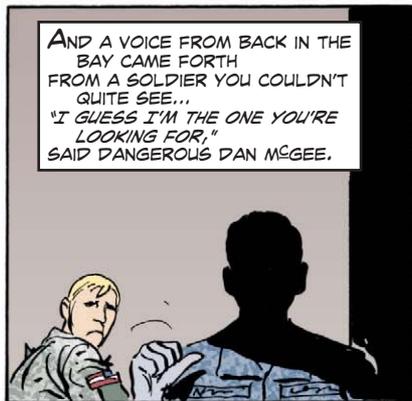
Type 00965417000 in the search block and click GO.

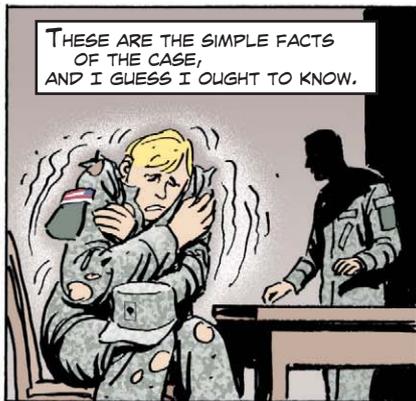


Half-Mast







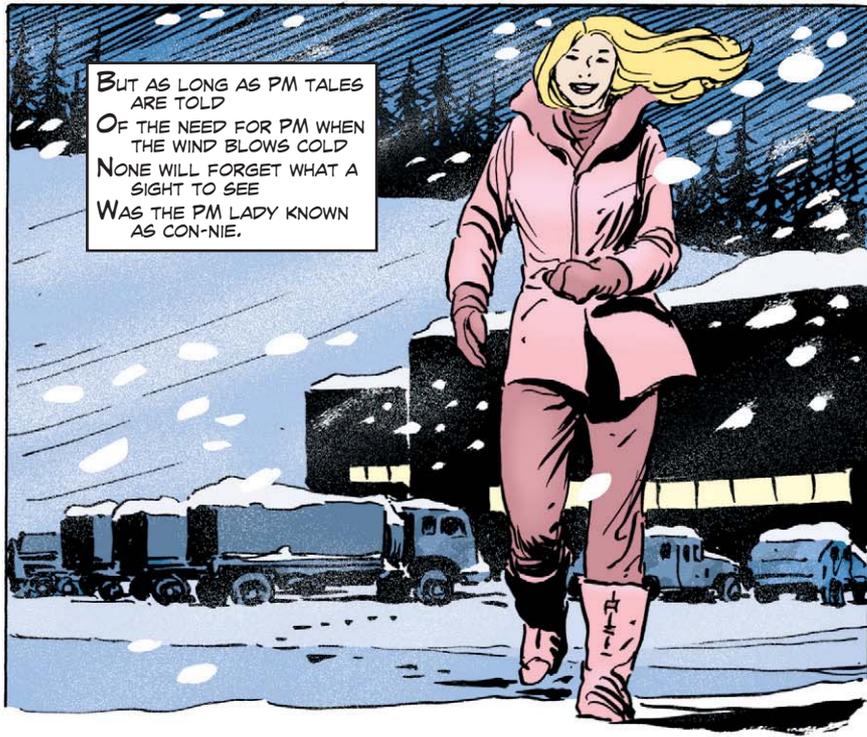




AND HER JOB NOW DONE, SHE
FAPED AWAY
INTO THE COLD NIGHT AIR,



AND ONLY A LINGERING
FRAGRANCE REMAINED
OF THE WOMAN WITH THE
BLOND HAIR.



BUT AS LONG AS PM TALES
ARE TOLD
OF THE NEED FOR PM WHEN
THE WIND BLOWS COLD
NONE WILL FORGET WHAT A
SIGHT TO SEE
WAS THE PM LADY KNOWN
AS CON-NIE.

All Aircraft...

The Word is Watch Your Step

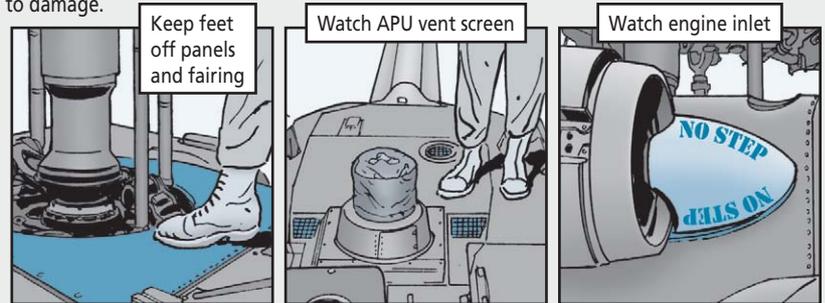


When you're driving down the road, the word STOP means apply the brakes, not accelerate. If you decide to ignore the stop sign and put the pedal to the metal, you could wreck your car or worse.

Aviator mechanics, the word is, watch your feet and your hands when you're walking or climbing up on top of your bird to do inspections or rotor head maintenance.

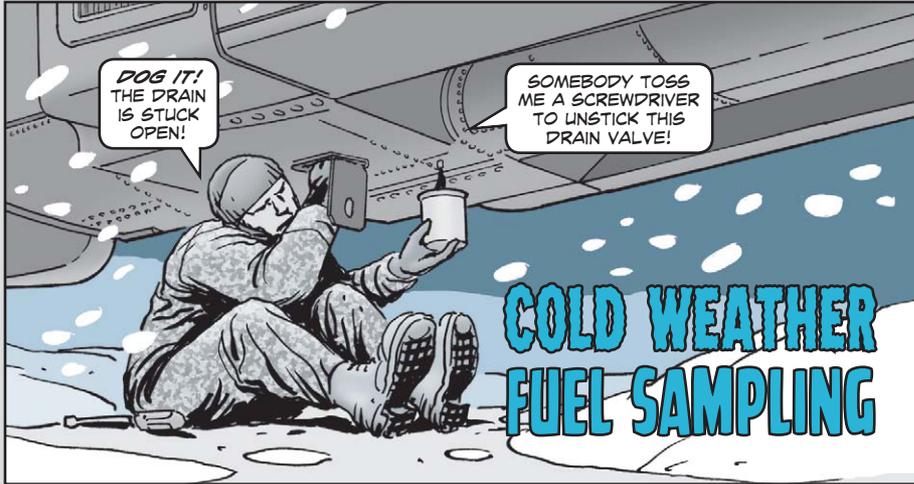
NO STEP areas mean keep your big feet off. NO HOLD areas mean keep your hands off, too.

If you come down too hard on a NO STEP area or pull too hard on a NO HOLD area, you could easily crack your bird's thin outer skin or break off components. Standing on unsupported areas of your bird—like the main rotor fairings, panels, engine inlets, upper pilot windows and APU vent screens—is guaranteed to lead to damage.



So if you plan to go top side again, make sure you know where the steps, handholds, walkways, NO HOLD and NO STEP zones are. 'Course, always check TM 55-1500-345-23 for NO STEP and NO HOLD zones. Walk, step and grab only where you should. Otherwise, you'll damage your bird. *Ouch!*

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Mechanics, when you need to get a fuel sample from your AH-64 during the cold season, be prepared!

Cold weather affects aircraft in many different ways. Sometimes when you depress the fuel sump drain control to get a fuel sample, the valve sticks open.

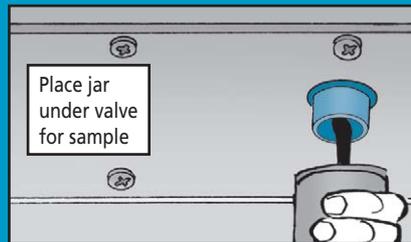
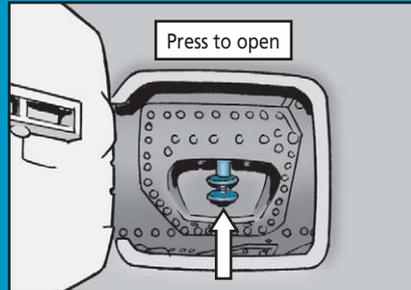
If that happens, fuel pours out of the drain cock all over you and the ground. Then you've got a HAZMAT problem.

So, when you go to get your fuel sample, take the proper hand tools with you just in case the valve port sticks open. You may have to use a tool to manually close the valve if it sticks open after you've taken a sample.

If that happens, put the hand tool into the port to force the valve closed.

Without the proper hand tool, you'll have to rush back to the hangar looking for something to close a stuck valve. By that time, gallons of fuel can spill on the ground.

In the end, what was supposed to be a simple task turns into a messy situation. So don't let the cold stick you!



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NEW CLEANING COMPOUND



Mechanics, don't waste time ordering the corrosion cleaning compound, NSN 6850-01-339-5227, listed on EM 0126, TM 1-1520-Longbow/Apache. It's been discontinued.

Instead, order the replacement cleaning compound with NSN 6850-01-433-0873. Make a note until the next update to TM 1-1520-Longbow/Apache, EM 0126.

Also, remember to check out Chapter 2 of TM 1-1500-344-23-4 for other consumable materials for corrosion control.

NEW RESISTORS FOR AH-64 SIMULATOR

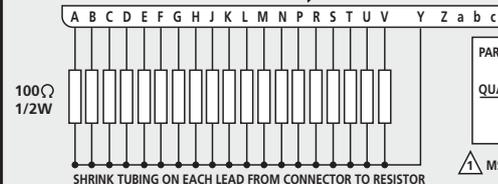
To improve performance, the resistors for the AH-64 A/D's rocket launcher simulator have been upgraded from 1-ohm, 1/2 watt to 100-ohm, 1/2 watt. Order the new resistors with NSN 5905-00-106-9344.

You'll need 19 of them. Update Appendix D in TM 9-1090-208-23-1-2 and attach documentation to IETM 1-1520 Longbow/Apache with the new info.

ROCKET LAUNCHER SIMULATOR

MS3470L16-26P

These resistors should be upgraded



PARTS REQUIRED		
QUANTITY	DESCRIPTION	PART NUMBER
1	CONNECTOR	MS3470L16-26P
19	RESISTORS, 100 OHM 1/2 WATT	RCR20G101J5

MS3120E16-26P OR MS63110E16-26vP MAY BE USED AS AN ALTERNATE

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All Aircraft...

I'D LIKE MY RADIO NOW, PLEASE.



PEFT! YOU WANT IT WHEN?!



YOUR PAPERWORK WASN'T COMPLETE... IT'S GONNA BE AWHILE!

IT IS UP TO YOU

The AVIM shops are responsible for many aircraft repairs. And units want to get their equipment back in a reasonable amount of time.

How well the process works is up to you. If you want your equipment back and repaired in a reasonable amount of time, you must do your part when it comes to completing DA forms. The turn-around time is shortened when the paperwork is submitted correctly.

Filling out paperwork correctly is a biggie. What you do with that stubby pencil determines what and if anything happens to your equipment.

No component should go to AVIM with partially completed forms. Be sure to describe the problem or fault as well as you can. Always think paperwork first, then turn in components for repair.

In some cases, the AVIM shop has no choice but to return items to you unrepaired because they can't afford to second guess the problem or to tear down components unnecessarily.

Long aircraft downtime and slow turn-around time caused by incomplete paperwork may be your fault. The only way you keep the wrench out of the works is to fill out paperwork right the first time.

If you don't know what to do, DA Pam 738-751, TAMMS-A, will help you fill in the blanks.



All Aircraft...

TO DO, OR NOT TO DO?

Many of you ask the question above concerning maintenance procedures. Can AVUM mechanics do AVIM tasks on aircraft when they feel like it?

No—and yes! Until the Army aviation headshed fully implements two-level maintenance, do **only** your AVUM tasks like the TMs say.

There is an exception though—an AVUM mechanic can do an AVIM task **only** when there's unit expertise **and** a logistics assistance representative (LAR) or engineer has given approval by letter.

What you don't want to do, new mechanics, is perform AVIM maintenance tasks because you didn't pay close attention when reading the TM.

Then you'll have to call AVIM for help when you're in a pinch because you weren't authorized to do the task.

Skimming through maintenance procedures and not fully reading the task creates headaches and aircraft downtime.

Seasoned mechanics must never leave an aircraft to the whims of new mechanics. You need to teach them to pay close attention to TMs and the difference between an AVUM and AVIM maintenance task.

Don't perform AVIM's job even if you think you have the expertise. You'll wind up calling them for assistance on problems you could have avoided by reading and performing the correct procedure.

But on the other hand, don't create an unnecessary paper trail with work orders for AVIM when you can do the task at your level.

CALL YOUR AVIM SHOP **ONLY** FOR AVIM PROBLEMS.



THAT MEANS, IF YOU CAN DO THE TASK AT YOUR MAINTENANCE LEVEL, DO IT!



Take A Stand Against Winter!



YOUR MAST-TYPE ANTENNAS NEED **SPECIAL** P/M WHEN OLD MAN WINTER BLOWS BLUSTERY INTO CAMP.

Frozen ground makes it tough to drive in a guy stake. So cold-weather stakes may be just what you need to make the going a little easier. Get the GP-101 cold-weather stake with NSN 4030-00-187-5265.

But you have to watch those cold-weather stakes. They're slimmer, so they don't hold as well when the ground thaws. Keep an eye on them during warming days.

If you're in an extreme cold and frozen situation, mountain pitons are excellent anchors for ropes. GSA supplies a variety of pitons under FSC 8465.

In addition, in extreme cold, ropes can freeze to the ground and to you. Wear gloves and take your time when handling them.

If even cold-weather stakes fail, tie your rope to something sturdy, like a tree or pole. In any case, never use fewer guys than your TM calls for. If you use less, your antenna may end up on the cold, hard ground.



Grease the Joints

To keep your antenna joints from freezing up, just add some lube. A little dab of silicone will usually do the trick.

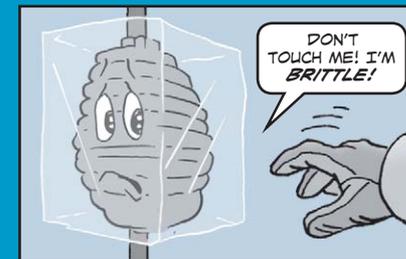
You can get an 8-oz tube with NSN 6850-00-880-7616.

Clean the mating surfaces inside and out before applying the lube.

Keep Bowl Dry

Water collects in ceramic bowls during warm weather. When a cold snap hits, water can turn into ice. That can crack the bowl. Also, freezing temperatures make the bowl more brittle. So handle it carefully.

Once you've wiped the bowl clean and dry, reach for your tube of silicone again. Run a bead of silicone to seal the insulator before you join the two halves.



Cable Care

Your RF cables need special handling during cold weather, too. Insulation becomes brittle and can break. That can damage delicate wiring inside and also let moisture in.

Protect the cable by taping it to the antenna. That keeps it from flapping in the wind.

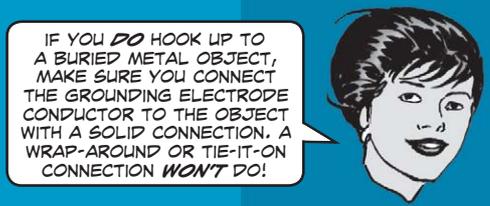
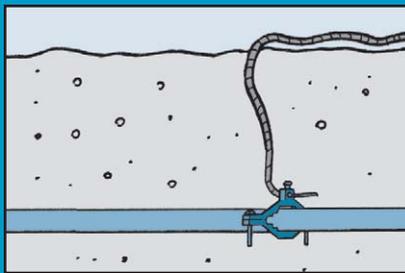
Normal tape loses much of its staying power in sub-freezing temperatures, so use cold-weather tape, NSN 5970-00-723-5413.



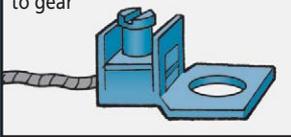
A GOOD GROUND IN THE COLD GROUND



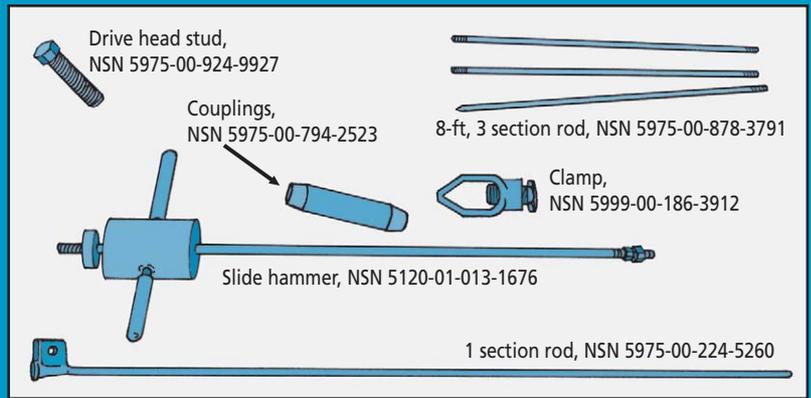
1. Try to ground to a buried metal object like an underground pipe. That will save you a lot of digging or driving in frozen ground. However, the metal object has to be buried at least 2½ feet below the surface; cannot contain—or transfer—natural gas, gasoline or other flammable liquids; must be all non-coated metal; and you must test its conductivity before you use it.



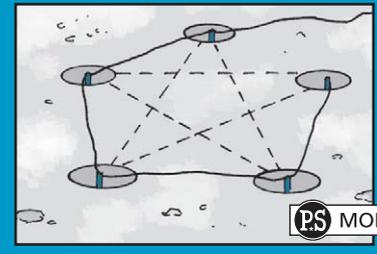
Use terminal lug, NSN 5940-00-271-9504, to connect conductor to gear



2. If no buried metal object can be found, use your ground rods. Drive them in as far as you can. If you use the 6-ft, single section rod, you'll have to use a sledge hammer to do the job. If you use the 8-ft, 3-section rod, you can use slide hammer to drive it in. If you use a sledge hammer, use a drive head stud.

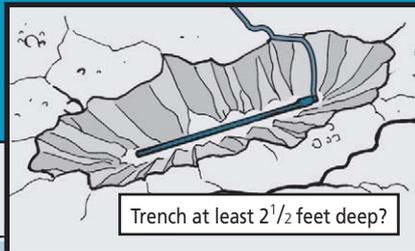


If you cannot get the rods deep enough—below the frost line and to the water table—install a cluster of shorter rods. Depending on the number of rods you have, you should install them around the perimeter of your shelter or generator in a triangle pattern. If you cannot install around the perimeter, use a star-pattern. The distance between rods should be 2-4 rod lengths.





3. Another option is to bury the rods horizontally. Dig a trench at least 2½ feet deep. Install the ground rod horizontally or put at least 10 feet of 2 AWG bare copper wire in the trench.



POUR A MIXTURE OF WATER AND SALT INTO THE TRENCH BEFORE BACKFILLING IT TO INCREASE SOIL CONDUCTIVITY.



4. It is very important in cold weather to bond equipment and shelters located within arms length of each other to eliminate any hazardous voltage that may develop between them. If the equipment is not bonded, that voltage can use you as the conductor if you touch both pieces of equipment at the same time.



SHELTER BONDING SHOULD BE DONE BY EITHER RUNNING A BONDING STRAP OF AT LEAST 6 AWG, NSN 6145-00-395-8799, BETWEEN THE TWO SHELTERS' GROUNDING TERMINALS OR BETWEEN THE TWO GROUND RODS PROVIDED FOR EACH SHELTER.



- The grounding electrode conductor should be as large as possible, at least 6 AWG.
- The conductor should be copper.

—Run the conductor as straight and as short as possible in a downward direction. Do not run the conductor up and over obstacles.



—Minimize any twists, loops or sharp bends and remove all knots from the conductor.



—Make sure the bonding surfaces are free of paint, corrosion, grease or dirt.

—Never twist or tie a ground wire around a ground rod. Use the bolt or clamp for a solid connection. If there is no bolt, then 24 tightly wound turns of stripped telephone wire or other bare wire should hold the strap in place. This is a temporary measure only. Get a clamp when you can.

—Think safety when installing ground rods. Wear goggles and gloves.



DOWNLOAD A COPY OF THE EARTH GROUND AND BONDING PAMPHLET PUBLISHED BY C-E LCMC AT

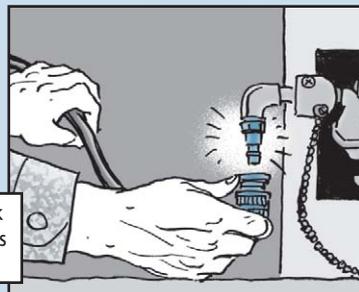
http://www.monmouth.army.mil/cecom/safety/sys_pub/tr9806.pdf



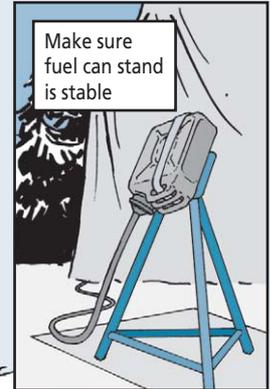
The Fine Points of Fueling



- Inspect fuel hoses for dry rot, cracks, cuts, wear and leaks. Replace them if necessary.
- Keep hoses' quick disconnect fittings clean and unblocked. Brush off snow and ice. They block fuel flow. Wipe off dirt, sand and debris. They can cut O-rings, causing fuel leaks.
- Inspect the O-rings. Make sure they're not cracked, cut or flattened.



- Run the fuel overflow hose outside away from the tent and slightly downhill. Put the end of the hose on a petroleum absorbent mat, NSN 7930-01-363-8631, to absorb fuel overflows.
- Take care when you screw the gravity feed adapter onto the fuel can. Screw it on slow and easy, gingerly, so you don't strip the can's plastic threads. Stripped threads lead to fuel leaks and fires. Take a close look at the adapter and make sure it's not crossthreaded.
- Open flames or sparks can ignite the external fuel supply. Set up the fuel supply on a cleared, level site about seven to eight feet away from the tent.
- Make sure the fuel can stand is stable. Untangle the tripod straps. Fully extend the tripod legs. Tighten the hook-and-pile straps to hold the fuel can to the stand.
- Store spare fuel cans outside of tents and shelters.
- Keep your eyes peeled for leaks—especially from the hoses, fuel can, gravity feed adapter and quick disconnects.
- Never try to fuel or light a hot space heater. You risk a fire or explosion. Instead, shut down the heater and allow it to cool completely before fueling from an external supply.
- Use only the approved fuels listed in your TM. Unapproved fuels—like gasoline, JP-4 or a mixture of fuels—pose a fire hazard.



Use only approved fuels

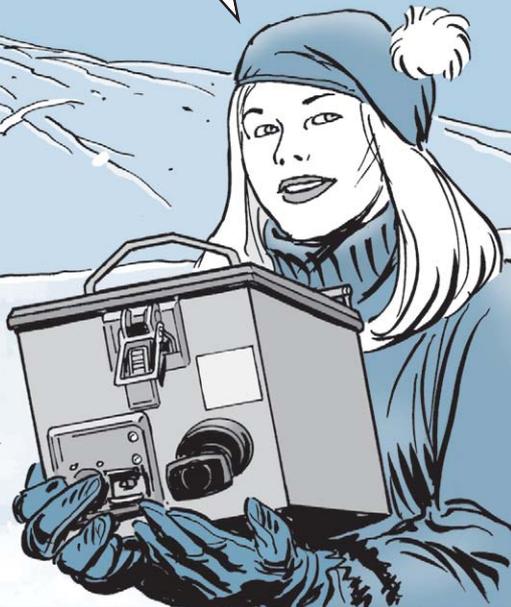


TM	Heater
9-4520-257-12&P	H-45 space heater (Type II, liquid fuel)
10-4520-261-12&P	Arctic space heater
10-4520-263-12&P	Small space heater

It's No Crock



THE WATER AND RATION HEATER, NSN 7310-01-387-1305, PROVIDES VEHICLE CREWS WITH ON-BOARD HOT WATER FOR HEATING MREs AND MAKING TEA, COFFEE OR HOT CHOCOLATE.



IT ALSO WORKS FINE AT HEATING WATER FOR PERSONAL HYGIENE AND MEDICAL NEEDS.



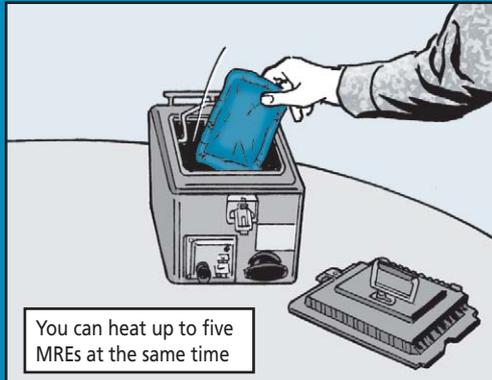
TO GET THE MOST OUT OF YOUR HEATER, KEEP THESE GUIDELINES IN MIND...

- The heater operates off 24 VDC and connects to your vehicle's auxiliary power supply with a single 2-wire power cable. When you use the heater, make sure the vehicle's engine is running so you won't drain the batteries.
- Although the heater was designed for mounting in military vehicles, it can also operate as a freestanding unit.

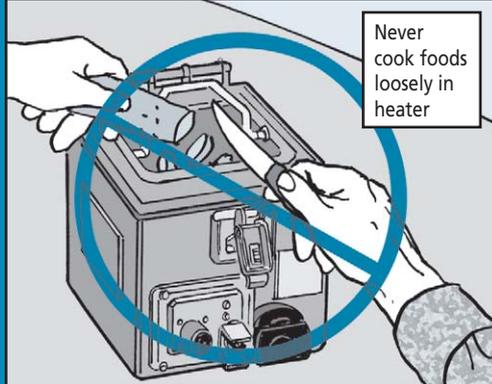
- The heater basin is large enough to heat a gallon of water. Or it can heat 40 ounces of water and up to five MREs at the same time. Just don't try to cram in more than five MREs at once. They won't cook properly.
- Although the heater looks somewhat like a crockpot, it's not. Heat only unopened MREs or rations in the heater. Never toss foods loosely into the heater and then try to bake, fry, stew or simmer them. You'll cook up a cleaning nightmare of burned-on food, oil and grease in the pot. Preparing food in this way can also cause a health hazard.
- The heater cannot get hot enough to disinfect or decontaminate water.
- The heater has two different models: RAK-15 and 471012. The current NSN for both models is 7310-01-387-1305.

In some cases, repair parts for the two models differ. The parts list in TM 10-7310-241-12&P spells out which parts support which model.

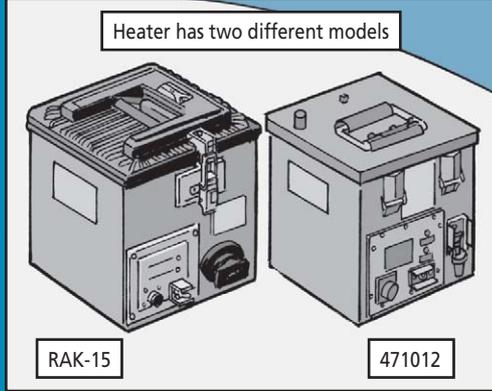
FOR THE WHOLE STORY ON THE USE AND CARE OF THE WATER RATION HEATER, SEE THE TM.



You can heat up to five MREs at the same time



Never cook foods loosely in heater



Heater has two different models

RAK-15

471012

Match the Food to the Mission



ARE YOU AND YOUR BUDDIES PLANNING TO HEAD OUT ON A LONG PATROL?

OR ARE YOU FACING A LONG STRETCH OF OUTDOOR DUTY IN COLD WEATHER?



IN EITHER CASE, YOU NEED TO GET OPERATIONAL RATIONS MADE JUST FOR THESE MISSIONS.

On Long Patrol

The long range patrol (LRP) food packet, NSN 8970-01-467-1749, is a restricted calorie ration meant for special operations. You take the LRP packets on missions where there's no resupply, or when you're traveling light and weight and volume matter. Usually, each soldier gets issued one meal pouch per day for up to 10 days. The LRP food packet comes in a tan pouch similar to the current MRE.

In the Cold

As its name implies, the cold weather meal (MCW), NSN 8970-01-467-1753, is intended to feed soldiers working in extreme cold. It won't freeze, and it comes with extra drink mixes for countering dehydration. Usually, each soldier gets issued three meal pouches per day. You'll need all that food to replace the calories you burn up in the deep freeze. The MCW is packaged in a white pouch.

Each NSN brings a box containing 12 meal pouches. And each pouch has a different menu that includes a dehydrated entree, snacks, beverage powder and an accessory packet.



Menu 1	Menu 2	Menu 3
Spicy Oriental Chicken w/Rice	Beef Stew	
Fruit Bar	Chocolate	
MRE Crackers	Peanut Brittle Bar	MRE Peanut Butter
MRE Peanut Butter	Nut Raisin Mix	Soup, Noodle, Ramen, Instant
MRE Beverage Base	Cocoa Beverage Powder	Cocoa Beverage Powder
LRP: Accessory Pack A MCW: Accessory Pack D	LRP: Accessory Pack A MCW: Accessory Pack D	LRP: Accessory Pack A MCW: Accessory Pack D
Spoon	Spoon	Spoon

Choose from 12 menus

Menu 5	Menu 6	Menu 7



FOR MORE ON THE MCW AND LRP PACKET, VISIT THE DEFENSE SUPPLY CENTER PHILADELPHIA (DSCP) SUBSISTENCE WEBSITE:
<http://www.dscp.dla.mil/subs/>

ONCE THERE, CLICK ON OPERATIONAL RATIONS. ON THE NEXT SCREEN, CLICK ON RATIONS PROGRAMS/PRODUCTS IN THE LEFT-HAND BANNER. ON THE NEXT SCREEN, CLICK ON MCW/LRP IN THE TABLE.



FMS FOR THE MOUNTAINS AND THE COLD

If you're heading to the mountains this winter, take along these field manuals:

- FM 3-97.61, *Military Mountaineering*
- FM 31-70, *Basic Cold Weather Manual*
- FM 31-71, *Northern Operations*

They're essential reading for those deployed in high country or in freezing climates. The FMs cover tactics, operations, survival skills, clothing, shelter, personal gear, sleds, first aid and much more.

You'll find the FMs at the Army Publishing Directorate website:
<http://www.apd.army.mil/>

Gloves...



Save Your Skin

REMEMBER WHEN YOU WERE A KID OUT ON THE PLAYGROUND DURING A FREEZING WINTER AFTERNOON?

AND SOME LOUD-MOUTH DOUBLE-DOG-DARED YOU TO PUT YOUR TONGUE AGAINST THE METAL FLAGPOLE?

YOU WEREN'T FOOLISH ENOUGH TO PULL A STUNT LIKE THAT, WERE YOU?

OF COURSE NOT.



But now that you're older, you just might be foolish or careless enough to reach out and grab some ice-cold metal barehanded. The outcome is just as harmful. Your skin can freeze to cold metal the moment you touch it. You need hand protection if you work around metal in icy weather.

Extreme cold weather mittens are too bulky for most maintenance jobs. Better to wear gloves that shield your skin while letting your fingers stay nimble.

That's where thin, anti-contact gloves come in. They're brown, knitted, cotton work gloves for men and women. They have gauntlet cuffs, and the thumb, fingers and palms are covered with leather.



Anti-contact gloves protect your skin but keep your fingers nimble

The gloves allow you to handle metal but not freeze to it. Just don't wear them alone longer than you have to. They won't keep your hands warm for very long in frigid temperatures.

So, save your skin this winter with anti-contact gloves—and don't take any double-dog-dares to put your tongue against a freezing metal flagpole.

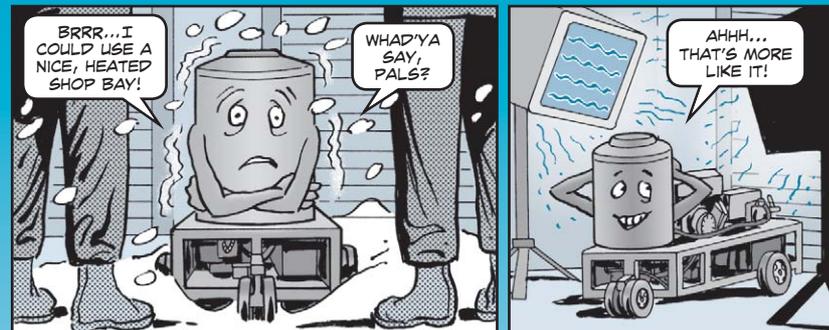
Size	NSN 8415-00-227-
Small	1220
Medium	1221
Large	1222

Here's what's available:

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

Steam Cleaners...

NOT NECESSARILY THE OUTDOOR TYPE



Outdoors in cold weather is no place for an unprotected steam cleaner. Because you can't drain all the water, it'll freeze, bursting coils, pipes and fittings.

This winter, follow these steps to defend your steam cleaner against extreme cold weather temperatures.

Indoors

Whenever possible this winter, store and use the steam cleaner inside a heated motor pool or shop. Make sure the area is heated to above freezing at all times. If it isn't, winterize your steam cleaner just like you were storing it outside.

Outdoors

If you store your steam cleaner outside, perform the following PM before temperatures drop to 32°F or below:

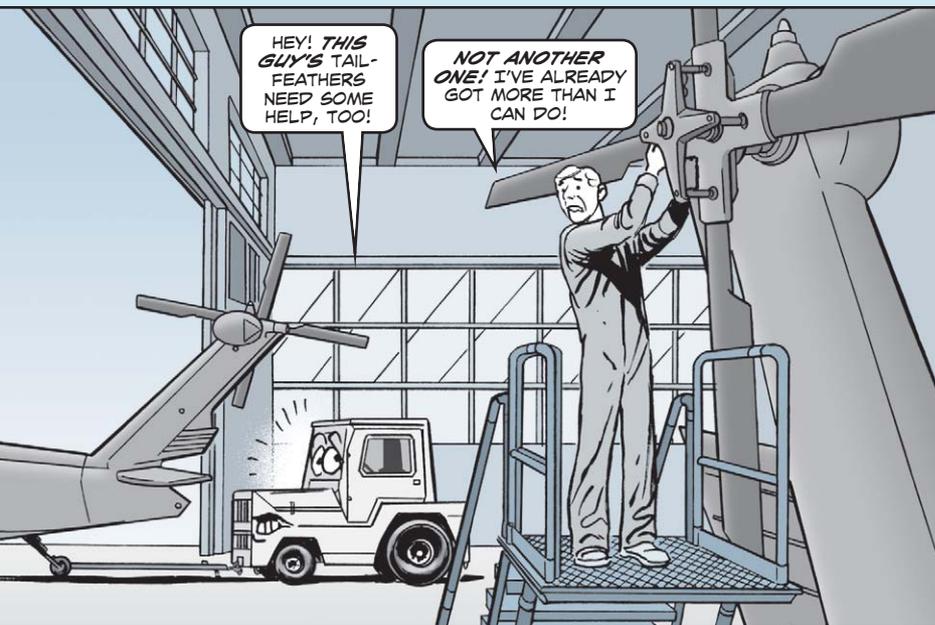
- Charge it with a 50/50 mixture of antifreeze and water. Be sure you fill all lines and parts with the mixture.
- Note on the steam cleaner's DD 314, Preventive Maintenance Schedule and Record, that there's antifreeze in the equipment.
- Before using the steam cleaner, pump out the antifreeze/water mix and save it. You can always use it later.
- Consider tucking in the steam cleaner nice and cozy under a tarp to keep off rain, sleet and snow.
- Read the manufacturer's manual to see if it offers any advice about putting your steam cleaner in long-term storage.



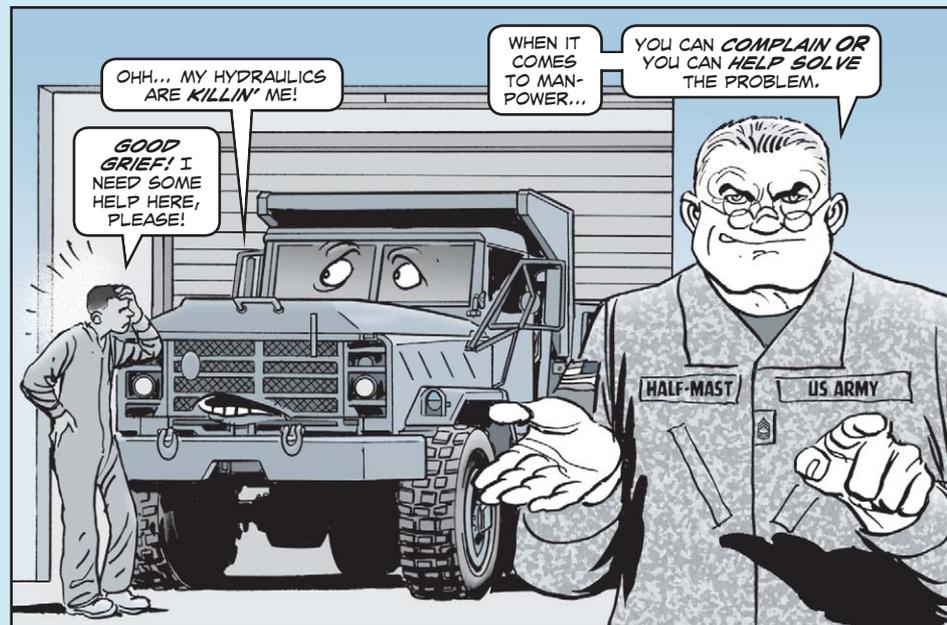
Before you store cleaner outside, fill it with a mixture of water and antifreeze

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

OVERWORKED?



RELIEF IS UP TO YOU!



Commanders, do you think your mechanics are overworked? If so, relief is up to you.

The Army determines maintenance manpower requirements for aviation and ground systems based on the maintenance man-hours reported in ULLS and SAMS STAMIS. The number of mechanics units will have in the future is dependent upon the accuracy of their reports.

Mechanics, getting some extra hands begins with you. Whenever you complete a maintenance action, take the time to enter the correct maintenance man-hours on your maintenance form. Ground system mechanics turn their maintenance forms into their TAMMS clerk who records the man-hours in the STAMIS computer. Aviation mechanics enter their man-hours into their maintenance laptops.

When the Army can't get good man-hour data, it must contract out special manpower studies such as on the Stryker and Army aircraft. Millions of dollars are spent to obtain accurate man-hour data. How big is the problem? Less than 15 percent of Army units submit accurate maintenance man-hours.

The Army is making efforts to change critical STAMIS reporting fields to improve maintenance man-hour reporting. But the action that will do the most toward getting accurate numbers of mechanics still resides at the unit level.

Company commanders and maintenance supervisors need to emphasize accurate man-hour reporting. The number of mechanics authorized on unit MTOEs can be changed once accurate man-hours begin to show up on maintenance reports.

By not accurately reporting maintenance man-hours, mechanics, maintenance supervisors and commanders miss their best shot at getting needed mechanics within their organizations.



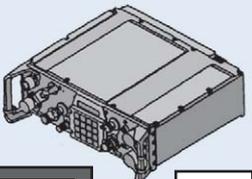
WHAT GOES and WHAT STAYS

- GETTING READY TO TRANSFER OR TURN IN A PIECE OF EQUIPMENT?
- TRYING TO FIGURE OUT WHAT ITEMS GO WITH THE EQUIPMENT AND WHAT ITEMS YOU SHOULD KEEP?
- WANT TO KNOW THE DIFFERENCE BETWEEN COEI, BII, AAL, AND EXPENDABLE/DURABLE SUPPLIES AND MATERIAL?



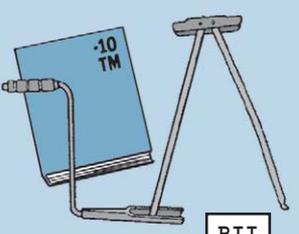
READ ON!

Components of End Item (COEI) are part of the end item, but are removed and packed separately for transportation or shipment. These items must be with the end item whenever it is transferred or turned in. An example is the AS-3683/PRC manpack antenna for the AN/PRC-119A radio set. COEI are authorized by the end item's technical manual.



COEI

Basic Issue Items (BII) are required to support and maintain an end item. They stay with the end item throughout its service life, even through turn in. Examples are the -10 TM and the jack handle, NSN 5120-01-032-6042, for the M998 HMMWV. BII are authorized by the -10 TM for the end item.



BII

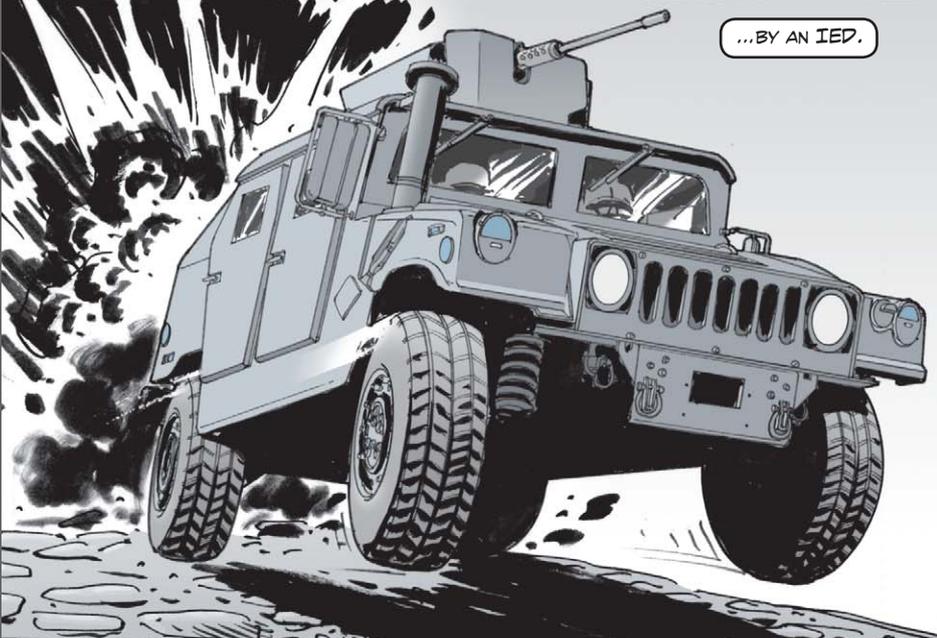
Additional Authorization List (AAL) items are authorized by MTOE, TDA, or common or joint table of allowances for use with the end item. However, the unit retains these items if the end item is transferred or turned in. Examples of radio AALs are cables, adapter wires and various batteries.



AAL

Expendable/durable supplies and materials are used to take care of end items. They include things like rags, adhesives, lubricants, rope, and tape. They are authorized by CTAs 50-970 or 8-100.

Maintaining the *Most Important System* of All



Army information technology gurus often talk about developing the system of systems. Mostly they forget to talk about an Army system of systems that has existed since George Washington became a general.

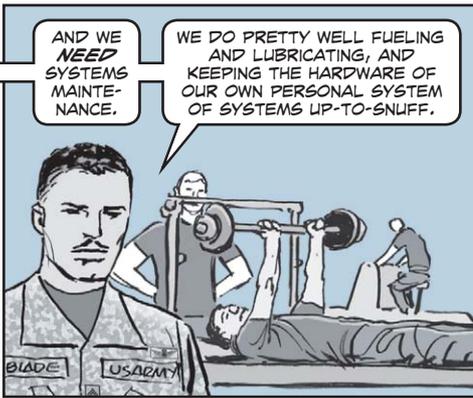
It's a highly adaptive system that shoots, moves and communicates with whatever hardware is added to it. Mostly it's hardy and stands up to more punishment than most of its secondary components.

It comes equipped with the most powerful computer known to man. Unfortunately, many believe this computer needs little maintenance. In fact, some actively avoid doing preventive maintenance on this computer, even when it sends warning alerts that its been shaken up, program processors are overloaded, and some processes aren't functioning well.



THAT SYSTEM'S END ITEM IS WITH EACH SOLDIER DAY AND NIGHT.

THE SOLDIER IS THE END ITEM... THE ULTIMATE SYSTEM OF SYSTEMS.



AND WE **NEED** SYSTEMS MAINTENANCE.

WE DO PRETTY WELL FUELING AND LUBRICATING, AND KEEPING THE HARDWARE OF OUR OWN PERSONAL SYSTEM OF SYSTEMS UP-TO-SNUFF.

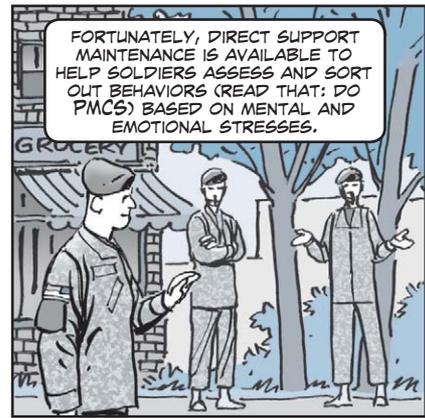


FOR TOO LONG WE'VE BEEN RELUCTANT TO DIAGNOSE OUR SYSTEMS WHEN OUR THINKING (PROCESSORS) GET SHAKEN UP AND STRESSED.

PMCS OF OUR BRAINS, EMOTIONS AND BEHAVIORS IS AS IMPORTANT AS PHYSICAL EXERCISE, FOOD, WATER AND REST.



AS STRESSFUL AS COMBAT IS, RETURNING TO A NON-COMBAT ENVIRONMENT PRESENTS NEW STRESSES BEFORE WE'VE HAD THE CHANCE TO RECOVER FROM THE DAILY GRIND OF WARFIGHTING.



FORTUNATELY, DIRECT SUPPORT MAINTENANCE IS AVAILABLE TO HELP SOLDIERS ASSESS AND SORT OUT BEHAVIORS (READ THAT: DO PMCS) BASED ON MENTAL AND EMOTIONAL STRESSES.



A NEW WEBSITE HELPS SOLDIERS WITH...

- BEFORE, DURING AND POST-DEPLOYMENT BEHAVIORAL HEALTH
- STRESS DISORDERS
- SUICIDE PREVENTION
- BATTLEMIND TRAINING
- RESOURCES FOR SOLDIERS AND THEIR FAMILIES

BATTLEMIND TRAINING TEACHES SOLDIERS HOW TO IMPROVE RESILIENCY AND REDUCE THE STRESSES OF WARFIGHTING.

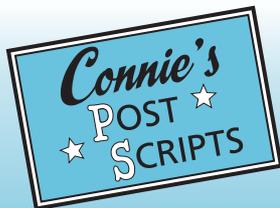
RECOGNIZING AND TREATING THE SYMPTOMS OF WAR-FIGHTING POST-TRAUMATIC STRESSES CAN HELP PREVENT THE STRESSES FROM DEVELOPING INTO DISORDERS.

SO USE THE WEBSITE LIKE YOU'D USE A TECHNICAL MANUAL.

GET ONLINE AND START DOING PMCS ON YOURSELF AND YOUR FELLOW SOLDIERS.



VISIT THE ARMY'S BEHAVIORAL HEALTH WEBSITE:
<http://www.behavioralhealth.army.mil/>



M984 Wrecker Cable Assembly

Use NSN 6150-01-282-1182 to get the remote-control cable assembly for the wrecker's HIAB crane (right side under cargo body). This NSN replaces the one shown as Item 3, Page B-3 of TM 9-2320-354-10.

M915 Armored Doors NSN Corrections

If you've ordered armored doors for your unit's M915A3P1, M915A2P1, M916A3P1, M917A2P1, M915A4P1, M917A1P1, M916A1P1, and M916A2P1 trucks with a Simula armor kit, you probably already know that the NSNs and part numbers listed for Item 17 of Fig 4 in TB 9-2320-302-13&P-1 are reversed. Use NSN 2540-01-533-7510 (PN 0257040002-00) to get the right hand door assembly, and NSN 2510-01-533-9728 (PN 0257040001-00) to get the left hand door assembly. Make a note until the TB is updated.

AN/PSC-5 SPITFIRE ENHANCED CONTROLLER RECEIVER-TRANSMITTER

The AN/PSC-5 Spitfire enhanced controller receiver-transmitter, NSN 5895-01-498-2524, has been upgraded and given a new NSN. Order this upgraded receiver-transmitter with NSN 5895-01-541-6805. If you have an unserviceable receiver-transmitter that has not been upgraded, turn it in and it will be repaired and upgraded.

SOLAR SHIELDS ARE COMING

Shadow units, keep your eyes peeled. The AMCOM PEOAVN is working a plan to field solar shields to protect the wings of your Shadow 200 RQ-78 Tactical Unmanned Aircraft System (TUAS) from the blazing sun.

If you've been using sleeping mats to shield the wings, remember they were only a substitute, not the primary equipment. The shield kit consists of six wing clips and two foam pads. Store the pads flat, not rolled up.

Solar shields minimize fuel loss through the fuel relief valve on the wing tip. Fuel loss is caused by fuel expansion from heat. The lost fuel is caught in the overflow container on the wing tip relief valve. If the valve fails to relieve the pressure, the wing can be damaged.

Make sure you check your operator's manuals on how to use the solar shields.

As fielding of the solar shield kits continue, make sure you add them to your unit's property book as part of the Shadow system. The shield kits are being fielded directly from the prime contractor. No NSN has been assigned to the shields. Order replacement parts through AAI Corporation's field representatives.

If you have questions, call (256) 313-5370, (256) 842-7196, (256) 313-5432 or (256) 313-5395. Or, you can email them:

@us.army.mil
@us.army.mil

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M939/A1/A2 VALVE STEM

You can get the 5-ton truck wheel assembly's valve stem shown as Item c in Fig 292 of TM 9-2320-272-24P-1 by ordering NSN 4820-00-203-3260. Now you won't have to order Item 11 (that includes parts 12 thru 15) just to get the valve stem.

PLS Air Filter and Air Drier Parts Kits

If your M1074 or M1075 PLS has a 4500 SP transmission, use air filter parts kit, NSN 4330-01-541-5349, and air drier parts kit, NSN 4440-01-493-3498, to maintain your truck. You can find both kits in TB 9-2320-364-13&P-3. Keep this in mind when it's time for service.

AN/PYQ-10(C) SIMPLE KEY LOADER BATTERY CHARGER COMPONENTS

The battery charger assembly, NSN 6130-01-548-1505, for the AN/PYQ-10(C) simple key loader, NSN 5810-01-517-3587, has three components that can be ordered separately. If you need just the charger, order it with NSN 6130-01-525-1640; the power cord comes with NSN 6150-01-551-3064; and the AC/DC adapter with NSN 6130-01-551-3902.

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