

Issue 615

**PS**

February  
2004

# THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-615

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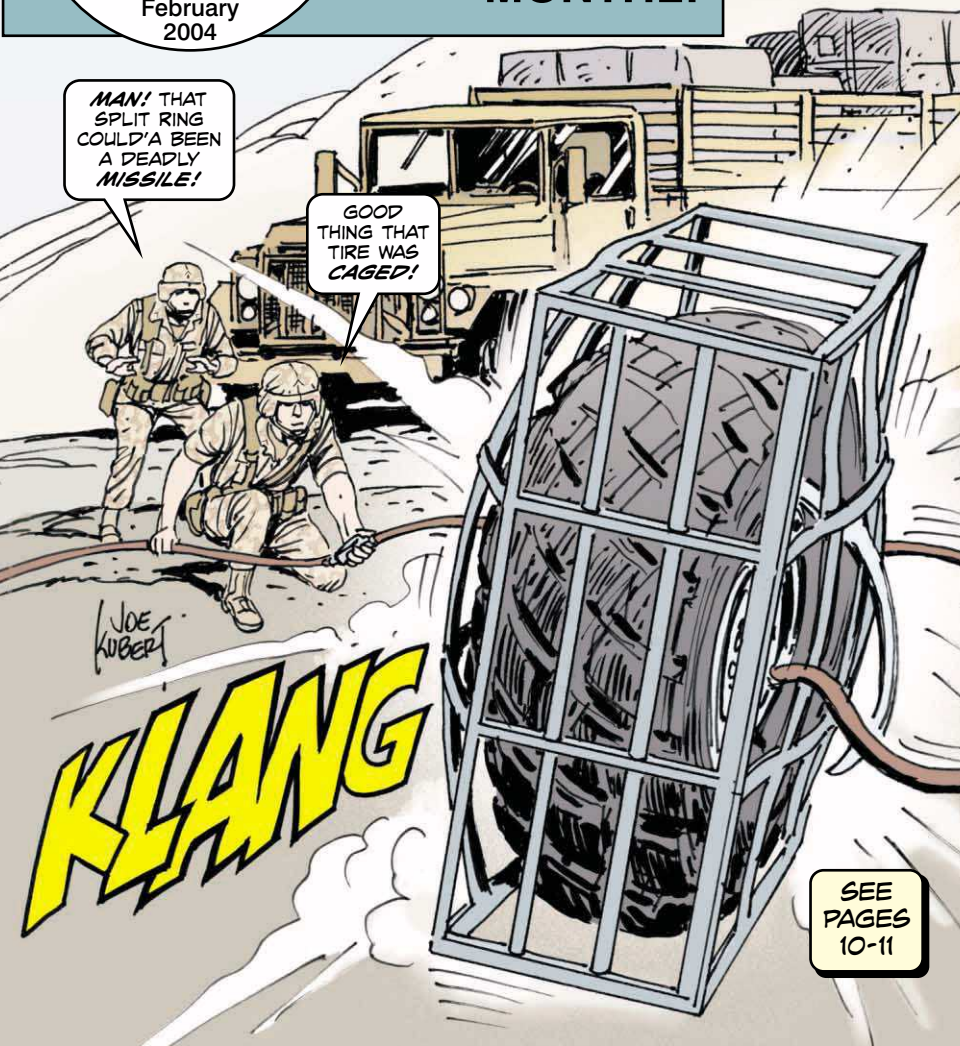
**MAN! THAT  
SPLIT RING  
COULD'A BEEN  
A DEADLY  
MISSILE!**

**GOOD  
THING THAT  
TIRE WAS  
CAGED!**

JOE  
HUBERT

**KLANG**

SEE  
PAGES  
10-11





# THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-615, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.

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By order of the Secretary of the Army:

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General, United States Army Chief of Staff

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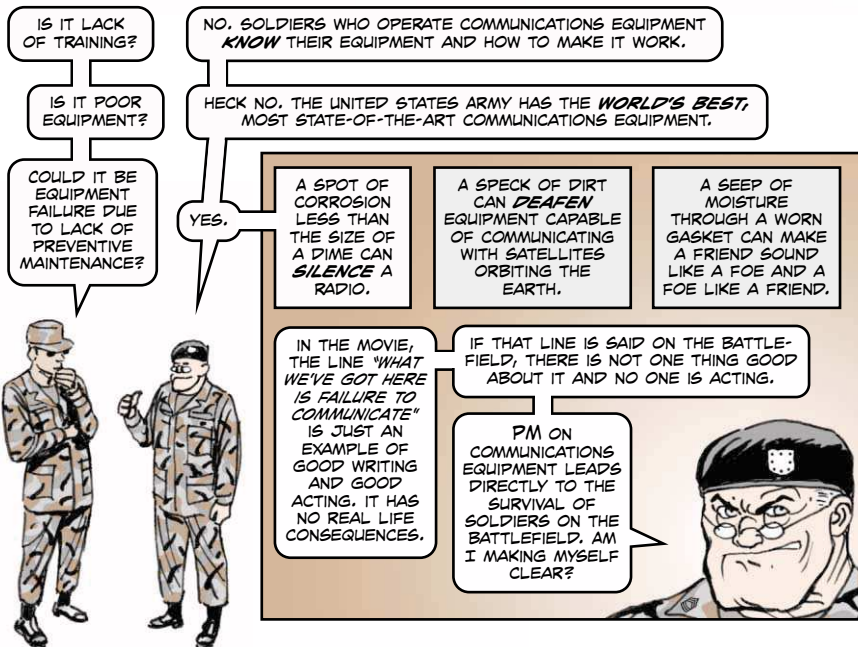
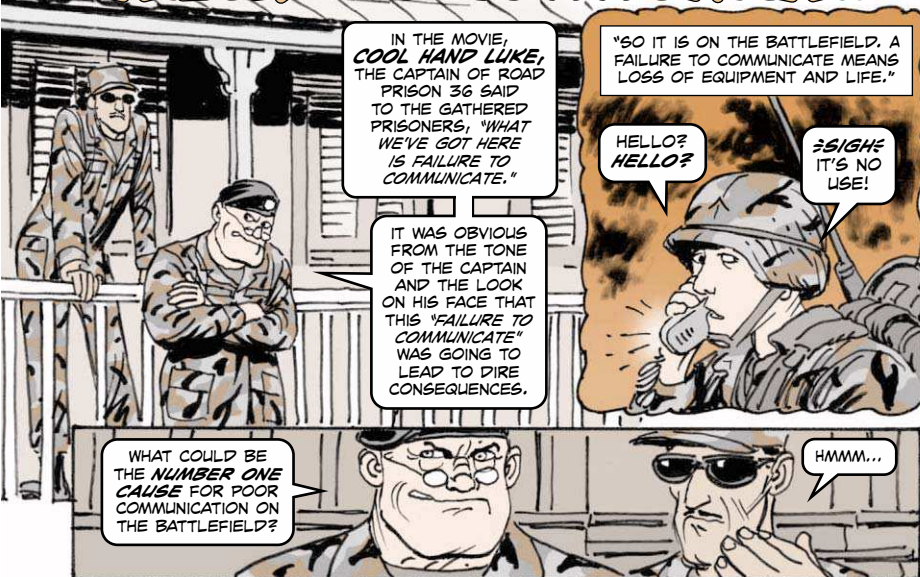
**JOEL B. HUDSON**

Administrative Assistant to the Secretary of the Army

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# FAILURE TO COMMUNICATE



THE  
PREVENTIVE  
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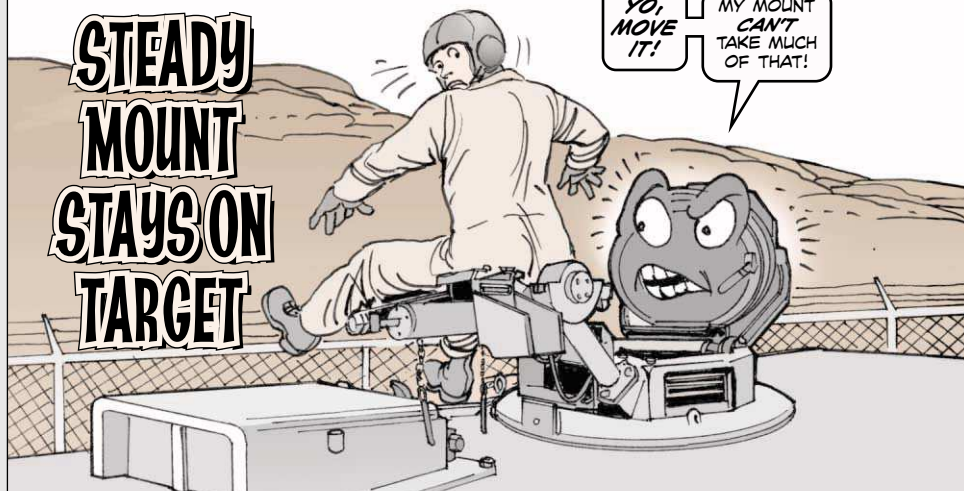
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A jerky, unsteady M2 machine gun is no good to anybody—except maybe the enemy! But that's exactly what you get if the mount on your tank is mistreated.

A wobbly mount is caused by two main problems:

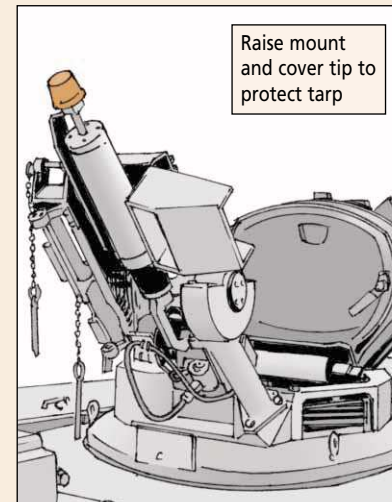
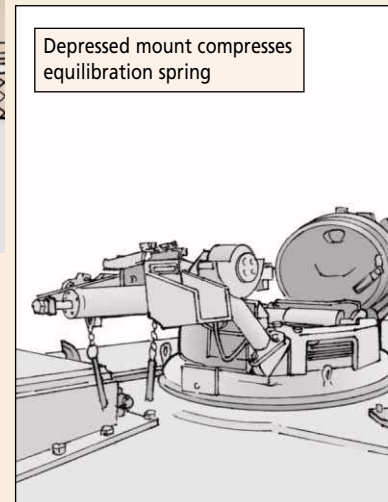
**Problem 1:** The mount is **not** a seat! Nor is it an arm rest, foot rest, or leaning post. Sitting or leaning on the mount puts pressure against the brass gear teeth inside the mechanical housing.

That pressure gradually eats away at the teeth. When the gear wears down too much, the mount floats and the machine gun won't hold steady when fired.

**Problem 2:** Operators lock the mount in the depressed position to keep the tip from poking a hole in the tarp when it's tied down.

Unfortunately, that also compresses the equilibration spring. If the spring is squeezed too long, it won't snap back. That lets the mount jerk when you're trying to hit a target.

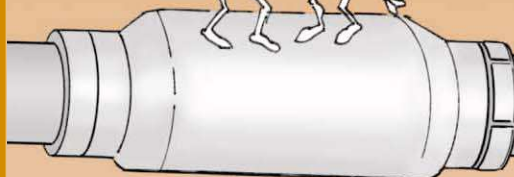
The solutions are simple: stay off the machine gun mount and keep it elevated. You may want to put a coffee cup or a piece of cardboard over the tip of the mount to protect the tarp.



# CHECK O-RINGS FOR DAMAGE

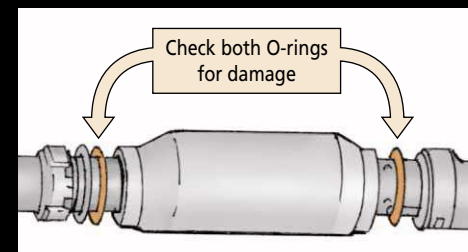
WE MAY JUST BE LITTLE O-RINGS, BUT IF WE'RE DAMAGED...

YOUR TANK IS NMC!



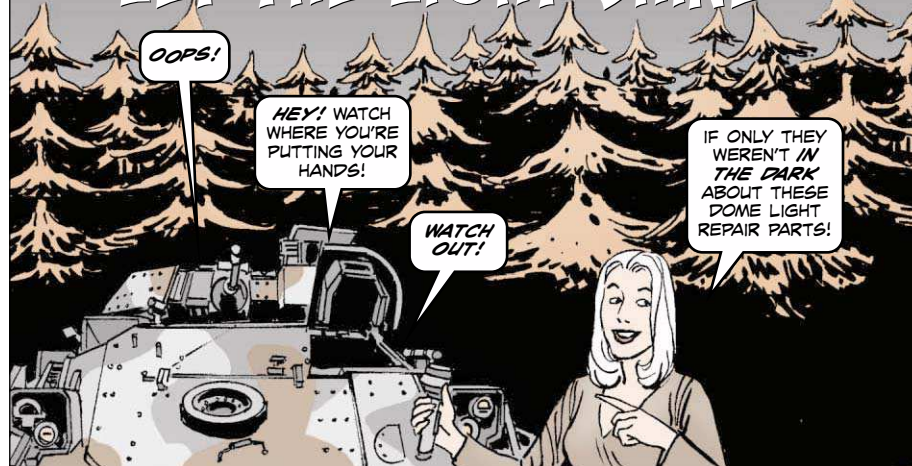
Crewmen, after firing the main gun on your tank, don't forget to service the bore evacuator. The maintenance instructions start on Page 3-247 of TM 9-2350-264-10-2, Page 3-138 of TM 9-2350-288-10-2, and Page 3-165 of TM 9-2350-388-10-2.

Pay special attention to the O-ring at the front and rear of the bore evacuator. Your tank is NMC if either O-ring is torn, cut, gouged or deformed in any way. Your mechanic will replace damaged O-rings using NSN 5331-01-498-9953.



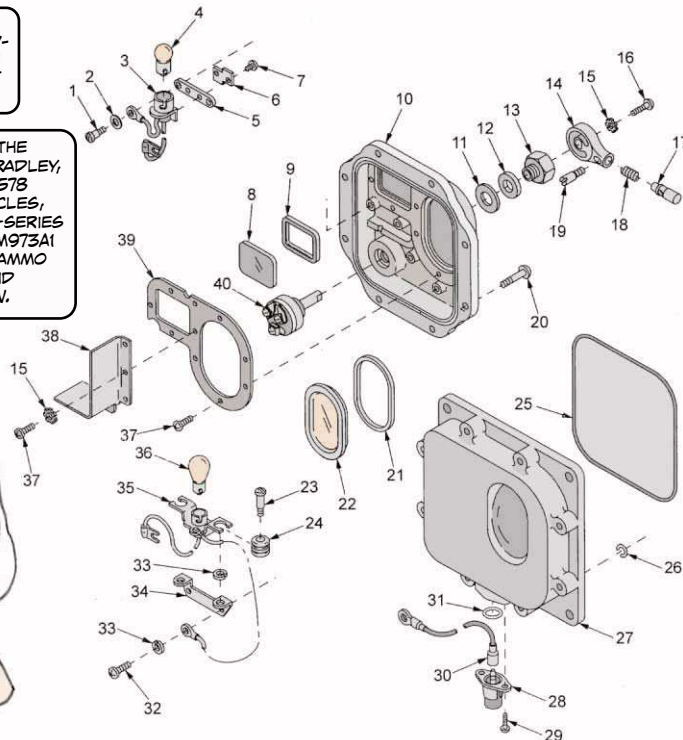
Combat Vehicles...

# LET THE LIGHT SHINE



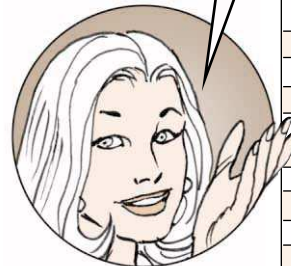
THE DOME LIGHT, NSN 6220-00-337-7463, IS USED IN SEVERAL COMBAT VEHICLES...

...INCLUDING THE M2/M3-SERIES BRADLEY, M88A1 AND M578 RECOVERY VEHICLES, M113A3 FOV, M109-SERIES SP HOWITZERS, M973A1 SUSV, M992A2 AMMO CARRIER, AND LAV III ICV.



YET ALL THE MANUALS-*EXCEPT* THE M578 AND M109-SERIES-LEAVE YOU IN THE DARK ON MOST OF THE REPAIR PARTS.

UNTIL THE TMS ARE UPDATED, USE THIS LIST FOR ORDERING REPAIR PARTS...



**PAY CLOSE ATTENTION WHEN ORDERING REPAIR PARTS.**

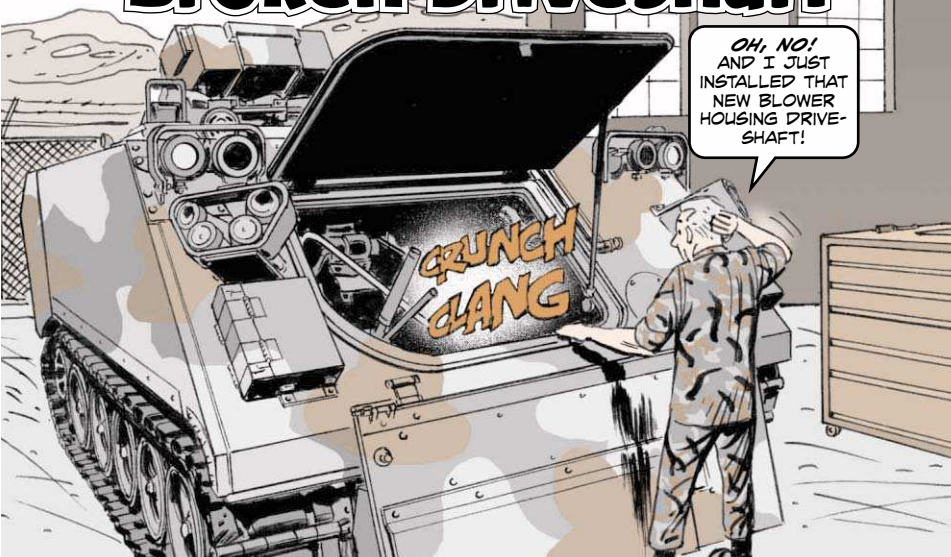
SOME OF THE NSNs BRING *MORE* THAN JUST ONE EACH.



No.	Item	NSN	Qty
1	Shoulder screw	5305-01-048-6596	2
2	Flat washer	5310-00-132-1438	2
3	Lampholder	6250-00-112-0475	1
4	Incandescent lamp	6240-00-019-3093	1
5	Rubber gasket	5330-01-078-3985	1
6	Mounting plate	6250-01-141-1543	1
7	Machine screw	5305-00-984-4988	2
8	Light lens, blue	6220-01-123-1353	1
9	Gasket	5330-01-186-5856	1
10	Lens retainer	6220-00-796-2241	1
11	Rubber gasket	5330-00-732-0655	1
12	Flat washer	5331-00-732-0654	1
13	Mounting nut assembly	5331-00-732-0652	1
14	Knob	5355-00-732-0656	1
15	Lockwasher	5310-00-209-0788	5
16	Machine screw	5305-00-984-4989	1
17	Push button	5930-00-705-7187	1
18	Spring	5360-00-705-7189	1
19	Setscrew	5305-00-732-0657	1
20	Machine screw	5305-00-737-5694	8
21	Rubber seal	5330-00-796-2242	1
22	Light lens, clear	6220-00-796-2244	1
23	Shoulder screw	5305-00-633-0785	2
24	Rubber grommet	5325-00-623-0928	2
25	Rubber seal	5330-00-796-2254	1
26	Retaining clip	5340-00-732-0642	8
27	Access cover	5340-01-163-1331	1
28	Receptacle connector	5935-00-622-4948	1
29	Machine screw	5305-00-984-6189	2
30	Electrical lead	6150-00-055-1751	1
31	O-ring	5331-00-796-2251	1
32	Machine screw	5305-00-889-3002	2
33	Lockwasher	5310-00-045-3299	4
34	Mounting bracket	5340-00-169-4162	1
35	Lampholder	6250-00-337-7465	1
36	Incandescent lamp	6240-00-295-2668	1
37	Machine screw	5305-00-984-4983	11
38	Partition	6220-00-087-9667	1
39	Window retaining plate	5340-00-087-9668	1
40	Rotary switch	5930-00-732-0651	1



# Two Tools for Broken Driveshaft



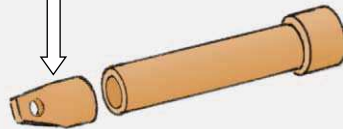
**M**echanics, removing a broken driveshaft from the blower housing in an M113-series carrier's 6V53 or 6V53T diesel engine can be frustrating.

If the driveshaft is stuck, so are you. Usually not even a magnetic retrieving tool works.

You can make a tool that'll get those broken driveshafts out quick and easy, though. Here's how to make and use it:

1. Cut off the small end from a used 6-in chem light. Pour out the contents.
2. Push the open end of the chem light into the blower housing until it comes in contact with the broken end of the driveshaft.
3. Wiggle the chem light and continue pushing inward. The chem light will fit tightly around the driveshaft. Once it's firmly in place, just pull out the chem light and the broken driveshaft will come with it.

Cut off small end of chem light



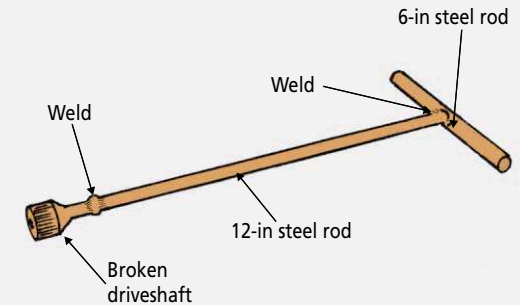
Of course, before you install a new driveshaft, you have to make sure the blower rotors will turn. Otherwise, the new driveshaft will snap, too.

Trouble is, even the smallest hands are too large to fit inside the blower housing. Many mechanics just put in a new driveshaft and hope for the best.

Instead, use the broken end of the driveshaft you just removed to make a second tool for testing the rotors.

Weld the broken driveshaft to a 12-in piece of 1/2-in diameter steel rod. Weld a second 6-in piece of rod to the other end of the tool to form a T-handle.

Insert the driveshaft end of the tool into the blower housing and try to turn the T-handle. If the rotors turn, everything's a go for installing a new driveshaft.



M2/M3-Series Bradleys...

## PICK IT UP!

NOW WHAT WAS IT I WAS S'POSED TO REMEMBER?



**S**o, mechanic, why is that string around your finger? Could it be a reminder to pick up all your tools after a repair job in a Bradley turret?

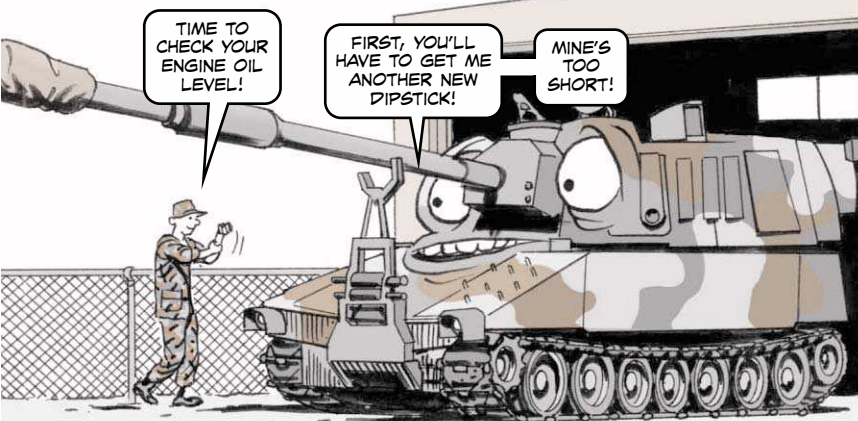
When those repairs are done, you must collect any and all tools that were used. Even the smallest screwdriver or wrench can cause a lot of damage if it's left under the floor plates.

The next time the turret is traversed, forgotten tools scratch up and gouge the turret walls while ripping up cables and connectors. You could even end up with a punctured fuel tank.

So keep track of the tools you use. If you bring a tool out to the vehicle, make sure it goes back with you. Then take one last look to make sure you've left nothing behind.

Oh, and don't forget to take that string off your finger!

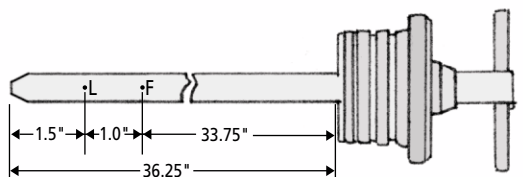
# DIPSTICK COMES UP SHORT



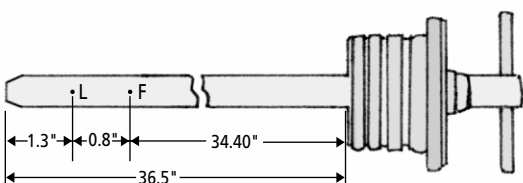
You're going to have a hard time checking the engine oil level on your howitzer or ammo carrier with replacement dipstick, NSN 6680-00-257-1396. It's a little too short for the job.

You'll need to order dipstick, NSN 6680-01-503-4823, instead. That dipstick is a little long, so you'll need to modify it according to the engine model in your vehicle.

For models 7083-7391, 7083-7396, and 7083-7399, cut, bevel the edges and add markings like so:

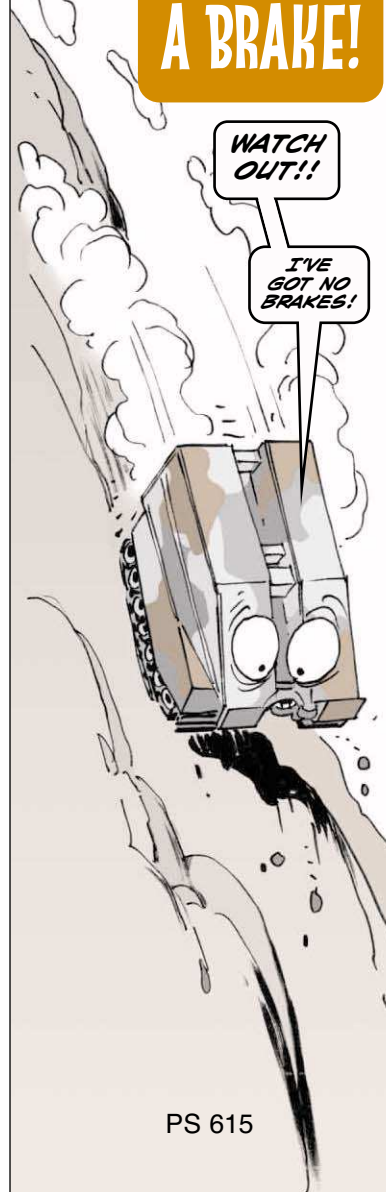


For models 7083-7395 and 7083-7398, cut, bevel the edges and add markings like this:



MAKE A NOTE OF THE NEW DIPSTICK NSN AS ITEM 2 IN THE BULK SECTION OF TM 9-2815-202-24P UNTIL THE TM CAN BE UPDATED.

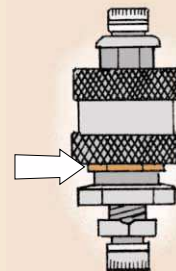
# GIMME A BRAKE!



What could be worse than driving an AVLB down a steep slope? How about starting down the slope only to discover you have no brakes? That's exactly what can happen if the brake line quick-disconnect (QD) separates during operation.

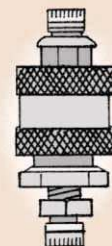
Sometimes the QD's male coupling, NSN 4730-01-074-8282, and female coupling, NSN 4730-01-074-9584, don't connect properly. They can pop loose during operation, leaving the AVLB brakeless.

Locking hex showing? QD may come apart



1. Open the rear grill doors.
2. Remove the exhaust shroud and look for the QD. It's located on the back left side of the transmission.
3. Clean off any dirt and fluid that's collected on the QD.
4. Disconnect and clean the male and female couplings. Make sure there is no dirt or fluid on the locking hex.
5. Reconnect the QD. Use an inspection mirror to check the bottom. The locking hex must be fully engaged in the locking collar.

Locking hex must fully engage locking collar

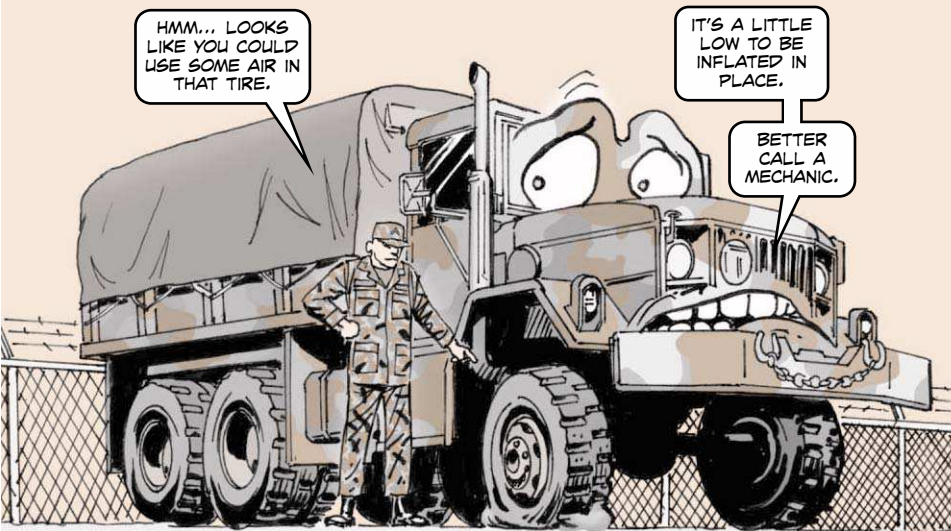


6. Pull on and shake the hose to make sure the QD doesn't pop loose.

Check out TACOM Safety-of-Use Message 03-011 (051844Z Aug 03) for the complete scoop.



# Never Tire of Tire Safety

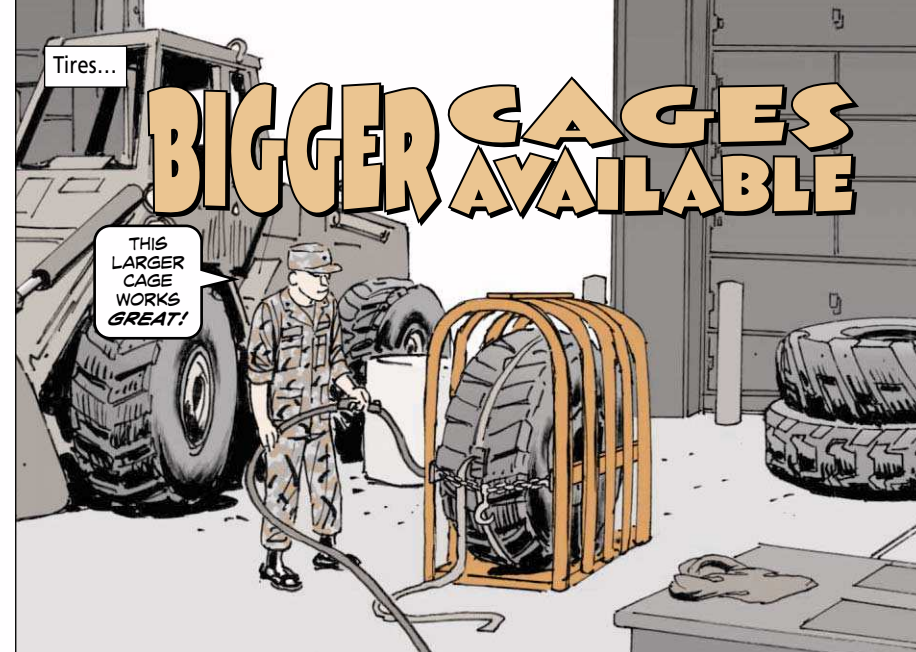


If your vehicle or trailer has an under-inflated tire with a split rim wheel, what's your next step, drivers?

That depends on just **how** under-inflated the tire is.

If the rim appears undamaged and the tire still has more than 80% of its TM recommended inflation pressure, you can inflate the tire while it's still on the vehicle. Just make sure you use the 10-ft tire inflation gauge, NSN 4910-00-441-8685, from the No. 1 or No. 2 Common shop sets. That allows you to stand out of the danger area just in case the split rim should go flying.

If, however, the tire has 80% or less of its TM recommended inflation pressure, call your mechanic. He'll need to remove the valve core and completely deflate the tire. After inspecting the tire and rim for damage, he can safely re-inflate it in a tire cage.



Mechanics need a bigger tire inflation cage to stay out of harm's way, especially when they have to inflate big tires, meaning ones larger than HEMTT tires.

NSN 4910-00-025-0623 gets a cage 76 inches long, 32 inches wide and 78 inches high. It weighs 1,600 pounds and is big enough for most construction and material handling equipment tires.

The best thing is, the cage is available to the Army through the supply system.

For those of you who inflate HEMTT, PLS and other smaller military tires, you can use tire cage, NSN 4910-01-373-0267. It's 40 3/4 inches long, 29 inches wide and 60 inches high. It weighs 375 pounds.

Do not fasten the cage to the floor of your shop. That prevents the steel plate bottom from flexing. If the plate cannot flex, explosive forces are concentrated on the cage bars and they can fail, releasing parts of the wheel rim.

Keep the cage at least 3 feet from any wall, too. That helps keep the cage from moving if a large volume of air bounces off the wall—and back toward the cage—when a rim separates.





Avenger Missile System...

# CARELESSNESS BLINDS YOUR AVENGER

I THOUGHT I HEARD SOMETHING. DID YOU SEE SOMETHING? MAYBE OVER THERE?

THIS GUY'S NOT GOING TO BE KNOCKING DOWN ANY PLANES... HIS SIGHTS ARE **BLIND!**

Ignoring the needs of your Avenger's laser range finder and forward looking infrared receiver (FLIR) or just being plain careless with their delicate optics will kill accuracy and cost your unit big bucks. These simple sight savers help your Avenger maintain 20/20 vision:

## Keep 'em Covered

That's the single most important protection you can give sights. Any time you're not firing and not in battle, cover the sights. If you drive down the road with sights unprotected against rocks and tree limbs and such, you're almost guaranteed expensive damage.

It's easy to cover the FLIR. It has a protective cap. If it's been lost, order a new one with NSN 5855-01-441-3189. But you need to make a cover for laser range finder lenses. Most units cut a piece of styrofoam to 12 x 18 inches. Punch a hole in it for the boresight guide pin cover. Stick it in front of the range finder lenses so the support bracket holds it in place.

Keep FLIR capped

Make cover for range finder lenses

## Clean 'em Right

You can't just grab anything to clean delicate sight optics. Rough material like your shirt sleeve or a dirty rag will scratch up the lenses. Clean the range finder lenses only with lens cleaner, NSN 6810-00-201-0906, and lens tissue. Clean the FLIR lens with dishwashing soap, NSN 7930-00-880-4454, and a clean rag. Remove any soap with a clean rag moistened with denatured alcohol. You can order 50 pounds of clean rags with NSN 7920-00-205-1711.

Clean range finder lenses with lens tissue and lens cleaner

Clean FLIR with clean rag and dishwashing soap

Patriot Missile System...

# Crane Needs Right Rope

HEY, LOOK! I GOT THIS CABLE AT THE BLUE LIGHT SPECIAL. WE **SAVED** A TON OF MONEY!

YOU'RE GOING TO **LOSE** A TON OF MONEY WITHOUT THE CORRECT CABLE!

AND YOU COULD **LOSE** EVEN **MORE** THAN THAT!

I COULD DROP A MISSILE ON SOMEBODY IF THAT CABLE BREAKS!

Buying a new wire rope for the crane on the Patriot's M985E1 guided missile transporter (GMT) is not a time to try to save money.

Some Patriot units have local purchased wire rope that was non-metric strand cable instead of the correct metric strand type. The wrong rope is more likely to kink and bird cage when a load is put on it. That could be a disaster when you're loading or unloading missiles. You could damage a missile or your fellow soldiers.

So when you find the crane's rope is kinked or broken and needs to be replaced, order the correct rope, NSN 4010-01-197-8303. It's Item 15 in Fig 27 in TM 9-2320-355-24&P. Check the rope during PMCS like it says in Item 4d in Table 2-1 of TM 9-2320-355-10.

When you get a new rope, lubricate all of it with GAA to help it last.

Check rope for kinks or breaks

Lube rope with GAA

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

WHAT HAVE I GOT?



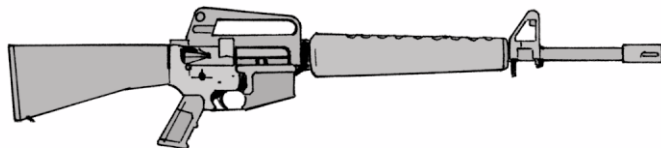
MANY ARMORERS  
MAY HAVE SEVERAL  
VERSIONS OF THE  
M16 RIFLE, THE M4  
CARBINE, AND THE  
M203 GRENADE  
LAUNCHER IN THEIR  
ARMS ROOM...

...AND SOMETIMES  
IT'S HARD TO TELL  
WHAT'S WHAT.  
WELL, HERE'S HOW  
TO TELL...

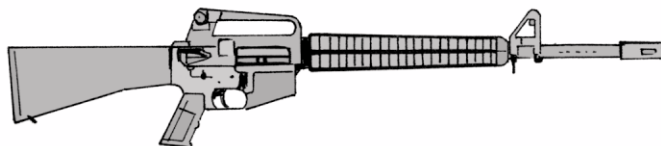


## M16 Rifle

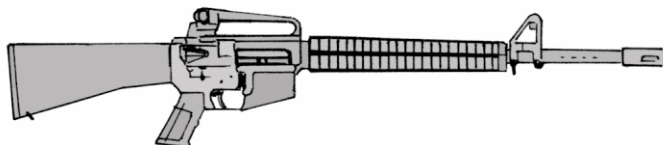
**M16A1** Mode of fire: semi/auto  
Upper receiver: built-in (integral) carrying handle *without elevation adjustment*  
Barrel: 1/12 twist, 20 inches long



**M16A2** Mode of fire: semi/burst  
Upper receiver: built-in (integral) carrying handle *with elevation adjustment*  
Barrel: 1/7 twist, 20 inches long

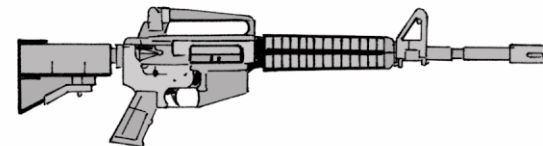


**M16A4** Mode of fire: semi/burst  
Upper receiver: flat-top *with removable carrying handle* and elevation adjustment  
Barrel: 1/7 twist, 20 inches long

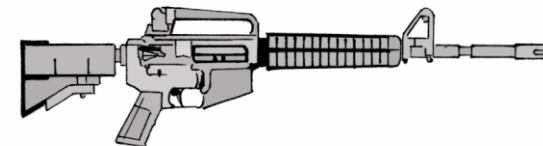


## M4 Carbine

**M4** Mode of fire: semi/burst  
Upper receiver: flat-top with elevation adjustment and removable carrying handle  
Barrel: 1/7 twist, 14.5 inches long



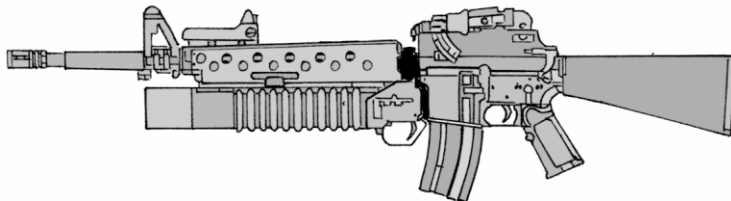
**M4A1** Mode of fire: semi/auto  
Upper receiver: flat-top with elevation adjustment and removable carrying handle  
Barrel: 1/7 twist, 14.5 inches long





## M203 Grenade Launcher

**M203** Host weapon: M16-series rifle  
Long handguard with leaf sight, carrying handle mounted quadrant sight, and mounting hardware (bracket, screws, bushings, and lacing wire)



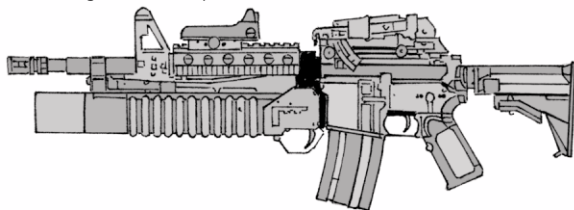
**M203A1** (result of MWO 9-1010-221-30-3 applied to an M203)

Host weapon: M4/M4A1 carbine  
Short handguard with leaf sight, carrying handle mounted quadrant sight, and mounting hardware (bracket assembly, screws, bushings, and lacing wire)

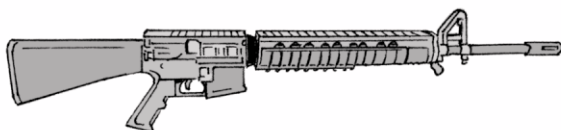


**M203A2** (result of MWO 9-1010-221-30-4 applied to an M203 or M203A1)

Host weapon: M4/M4A1 carbine with M4 adapter rail system installed  
M16A4 rifle with M5 adapter rail system installed  
No handguard, leaf sight/rail grabber assembly that mounts on the M4 or M5 adapter rail system, carrying handle mounted quadrant sight, and mounting hardware (quick-release bracket)



**Modular weapon system:** The primary components of the modular weapon system are the M4 and M5 adapter rail systems, the leaf sight/rail grabber assembly, and the quick-release bracket.



The components are only to be used with the M16A4 rifle or M4/M4A1 carbine.

PS END

M120/M121 Mortar...

## GOT YOUR WARNING DECALS?



**B**ecause three soldiers recently lost their lives during misfire removals with the M120/M121 mortar, the misfire and PMCS procedures have been changed by Change 3 to TM 9-1015-250-10. If you haven't seen the new procedures, see Pages 22-25 in PS 601 (Dec 02) or ask your TACOM logistics assistance representative to get you a copy. The article is on the Internet at:

[http://www.logsa.army.mil/pub/psissues/PS\\_601.pdf](http://www.logsa.army.mil/pub/psissues/PS_601.pdf)

Part of MWO 9-1015-250-30-2 is to add warning decals to the M120/M121 that say: WARNING! SET SELECTOR LEVER TO SAFE BEFORE ATTEMPTING TO EXTRACT MISFIRED ROUND. The decals should be put on the cartridge extractor, on each side of the carrier ammo racks, on the rifle rack, and on the underside of the step lid. The decal shows the proper setting for SAFE.

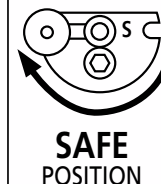
If you haven't gotten the decals or you have missing or damaged decals, contact your TACOM LAR or call TACOM-Rock Island's Joe Schmidt at DSN 793-3369/(309) 782-3369 or James Hayes at DSN 793-3229/(309) 782-3229 or email:

**TACOM-RI-Mortar-Systems@ria.army.mil**

MWO 9-1015-250-30-2 also explains where to put the decals on your mortar and TB 9-1015-250-30-1 shows how to replace damaged decals. Your TACOM LAR or TACOM-Rock Island can get you both publications.

### WARNING

SET SELECTOR LEVER TO SAFE BEFORE ATTEMPTING TO EXTRACT MISFIRED ROUND



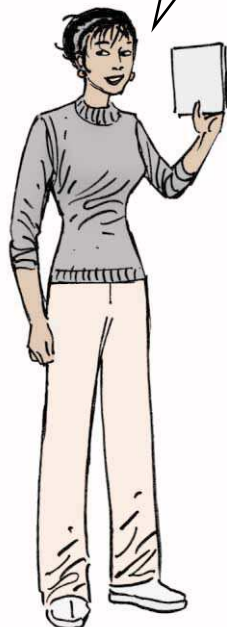
# WATER PM TIDBITS

CLEAN WATER  
IN THE DESERT!  
CAN'T BEAT  
THAT!

HERE'S  
HOW WE  
CAN HELP  
EACH  
OTHER!

YOU *WON'T*  
FIND THESE  
PREVENTIVE  
MAINTENANCE  
TIDBITS IN TM  
10-4610-239-10.

SO JOT THEM  
DOWN *BEFORE* YOU  
OPERATE THE  
REVERSE OSMOSIS  
WATER PURIFICATION  
UNIT.

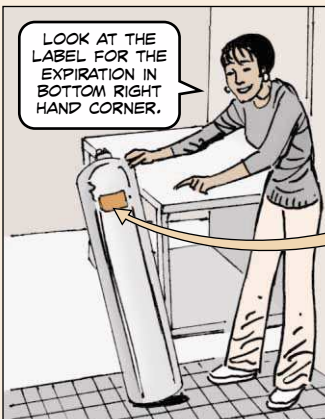


## Deionization Cartridge

Word from the ROWPU headshed is the deionization cartridges, NSN 4610-01-116-0501, used in the removal of nuclear contaminants now have an extended shelf-life.

These cartridges, also known as ion-exchange columns, have a paper decal near the top of the cartridge.

Look for the expiration date on the bottom right-hand corner of the decal. Whatever date is shown, you can extend it by 14 years. This time period might vary a year or two depending on storage conditions and wear and tear on the cartridge itself.



LOOK AT THE  
LABEL FOR THE  
EXPIRATION IN  
BOTTOM RIGHT  
HAND CORNER.

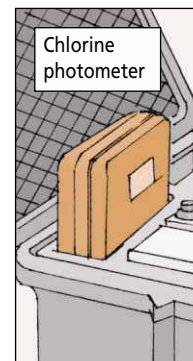
4610011281844  
4610-01-128-1844  
CAGE 97403 MFR/PN P2000  
PART NO 13221E8341-2  
DEIONIZATION CARTRIDGE  
1 CU FT ACTIVATED CARBON  
1 EA  
DAAK01-91-C-0014  
C/C MFD 11/90 EXP 10/92

Extend date by 14 years;  
10/92 becomes 10/06

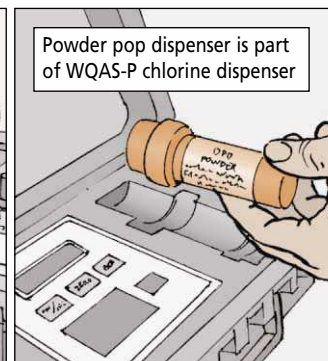
So play it safe. Test the effluent total dissolved solids (TDS) of the cartridge during operations. The water coming out of the ion exchange column should have close to a zero TDS. That way you can tell if the cartridge is still capable of removing nuclear contaminants.

## Powder Pop Dispenser

The powder pop dispenser, NSN 6640-01-491-6490, that is part of the WQAS-P chlorine photometer, NSN 6850-01-487-8812, now comes as two separate dispensers.



Chlorine  
photometer



Powder pop dispenser is part  
of WQAS-P chlorine dispenser

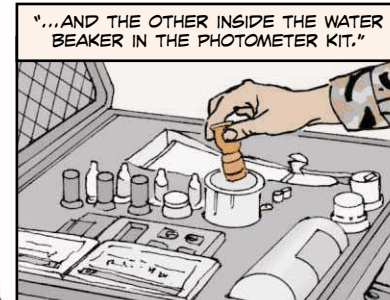


BYE-BYE!

I'M  
OUTTA  
HERE!

Each dispenser allows for 200 chlorine tests. The old dispenser that came under this same NSN came in one dispenser, allowing 400 tests.

WHEN YOU  
ORDER AND  
RECEIVE  
THE NEW  
DISPENSERS,  
STORE ONE  
DISPENSER IN  
ITS ORIGINAL  
FOAM SLOT...



"...AND THE OTHER INSIDE THE WATER  
BEAKER IN THE PHOTOMETER KIT."



# SWING BEARING NEEDS LUBE



A drop in temperature may cause the slowdown in your excavator's upper structure when it turns (rotates) during construction operations.

But when it continues to move in an unusual way or at a snail's pace, the structure probably needs some lube—EL PRONTO!

The two grease fittings that lubricate the structure's swing bearing get overlooked. They're located directly under the access cover for the boom's hydraulic hoses.

Make sure you follow these steps before you grab the grease gun. You'll find them on Page 15-1 of TM 5-3805-280-10 for HYEX Type I and II. Type III's steps are on Page 15-1 of TM 5-3805-281-10.

- Park the excavator on level ground.
- Lower the bucket to the ground.
- Turn the auto idle switch off.
- Run the engine so the RPMs are one third the way up the RPM gauge, without a load, for two minutes.
- Lower the RPMs to the slow idle position.
- Turn the key switch to OFF, then remove the key.
- Make a tag that says DO NOT OPERATE and attach it to the right control lever inside the cab.
- Pull the pilot control shut-off lever to the locked position.
- Give the fittings 10 shots of grease. Do this during each scheduled service.
- Start the engine. Raise the excavator's bucket several inches off the ground. Then turn the upper structure 45° and back.

ACCORDING TO PAGE 15-1 OF TM 5-3805-280-10, REPEAT THIS PROCEDURE **THREE TIMES** TO GET THE RIGHT AMOUNT OF LUBE INTO THE SWING BEARING.



## STRAINER STAYS PUT

PUT ME BACK!  
PUT ME BACK!!

I KEEP CRUD OUT OF THE TANK!



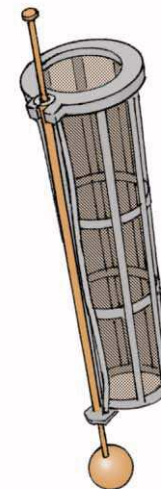
Don't remove the strainer from the excavator's fuel tank when you refuel the vehicle.

The strainer keeps dirt and crud from getting into the fuel tank during refueling. It also has a guide rod that helps you leave room in the tank for fuel expansion.

The guide rod slides up the strainer when its float ball touches fuel. It's a quick way to tell you when to stop refueling. Without the strainer in place, the tank can overflow when the fuel expands—Not good!

So play it safe. Keep the strainer in place when you refuel.

Guide rods tell you when tank is full



HYEX...

# No Grit Mustache Here



Operators, you can stop damage to the excavator's track adjuster cylinders by keeping sand and dirt out of 'em.

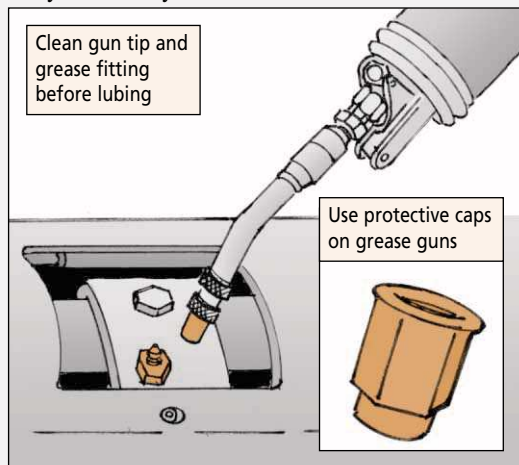
Dirt and sand stick to grease. With a dirty grease gun extension and a dirty grease fitting, an abrasive, sandpaper-like combo is pumped into the adjustment cylinder. Contaminated grease will score the cylinder every time.

Eventually, the excavator gets sent to support for cylinder repair or replacement.

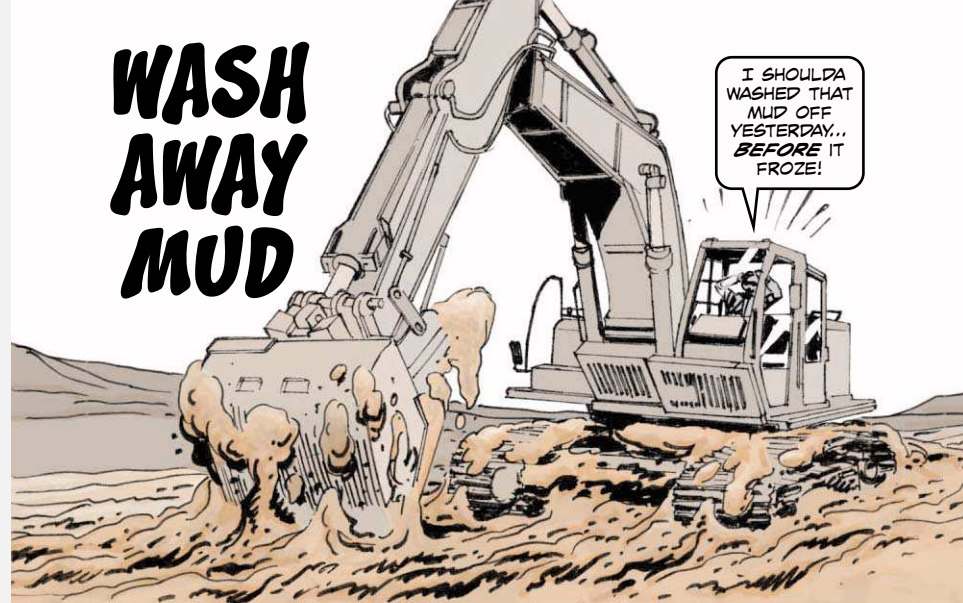
So wipe that gunk mustache off the cylinder's grease fitting before you start the lube job. Then wipe off the dirty end of the grease gun.

You can help keep the grease gun's extension tube clean and ready for use with a protective cap, NSN 5340-00-904-6633.

Get enough caps for all the grease guns in your No. 1 and No. 2 Common shop sets.



# WASH AWAY MUD

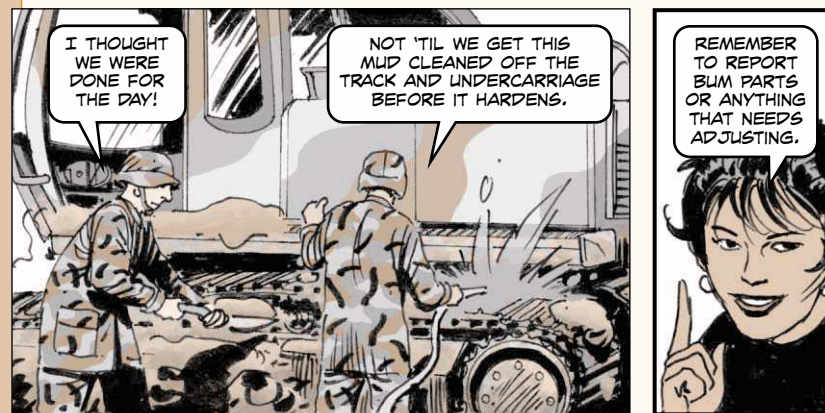


Operators, before you leave your HYEX for the day, make sure you dig and wash out all the mud it has picked up during operations.

That excavator can work in mud up to the upper deck of the undercarriage. But the mud will harden around the vehicle's drive wheels, mid-rollers and front and rear idler wheels.

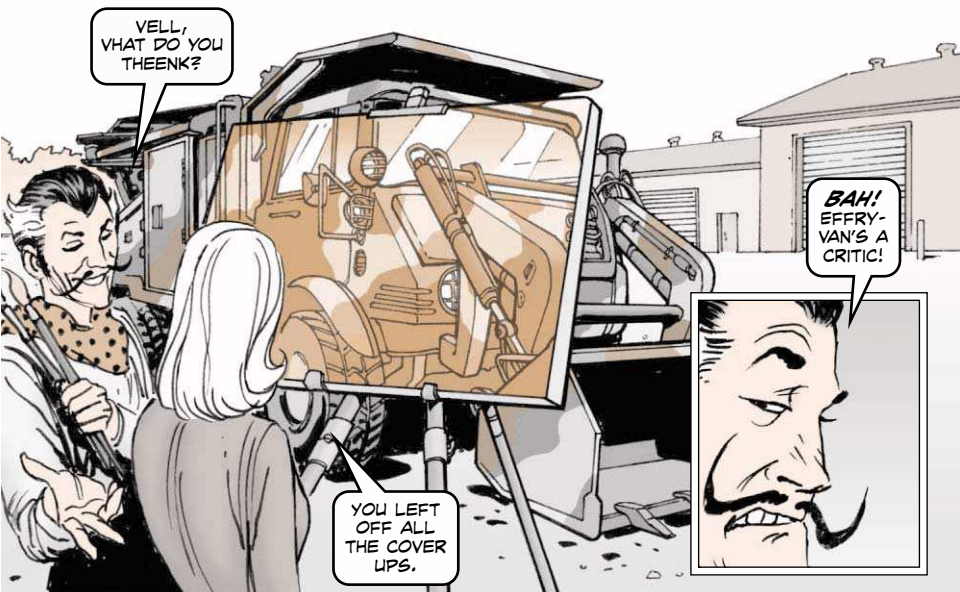
Once hard, that mud prevents the mid-rollers from turning properly. Flat spots form on the rollers and cause extra wear on the vehicle's track.

So get rid of the mud, and while you're at it, look for loose bolts, leaking seals, oil on the mid-rollers, and uneven track wear.





# The Right Cover Up for Painting



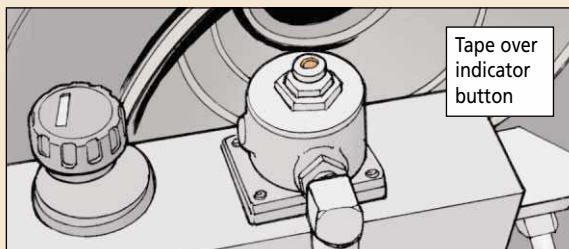
BEFORE YOUR EXCAVATOR HEADS TO THE PAINT SHOP, KEEP THESE COVER-UP POINTERS IN MIND.



## Indicator Button

Be sure to tape over the indicator button located on top of the hydraulic reservoir tank behind the spare tire and cab.

The indicator button pops up when the tank's filter element gets clogged and needs to be changed. When the button gets painted over, it stays stuck in place. Then you can't tell when the filter element needs changing.

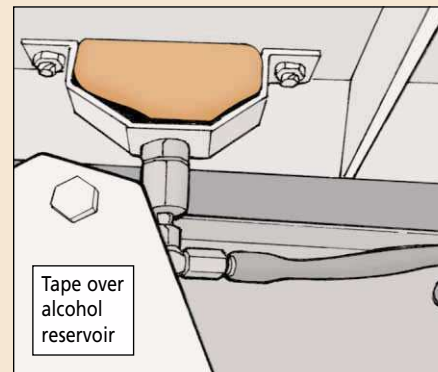


Remove the tape when the vehicle comes back from the paint shop.

## Alcohol Reservoir

The air brake system's alcohol reservoir is located above the automatic defrosting pump—inside the vehicle's back curbside wheel well. It's an open target for the spray gun. Problem is, CARC paint will deteriorate and crack the reservoir's plastic body. Eventually, the reservoir leaks and can't hold alcohol.

Tape over the alcohol reservoir before the excavator's next paint job. Just remember to remove the tape afterwards.



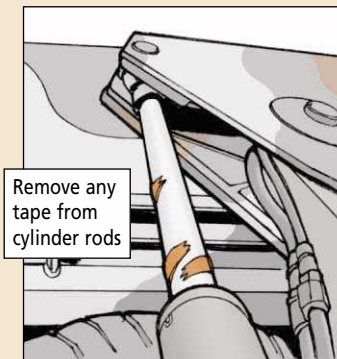
## "Tape Off" Reminder

Once your excavator has come back from the paint shop, you're ready to get behind the wheel and go. But before you do, walk around the vehicle and look at the areas that were covered by tape, especially the cylinder rods.

Any tape left on the cylinder rod will scrape or cut the rod's seals when the rod is extended or retracted. A damaged seal leads to fluid leaks, which leads to NMC equipment.

If you see any tape on the rods, take it off.

Walk around the vehicle a few more times and look for tape or paint on gauges, tail light covers, grease fittings and reflectors, too.



## Water Equipment O-ring Lube

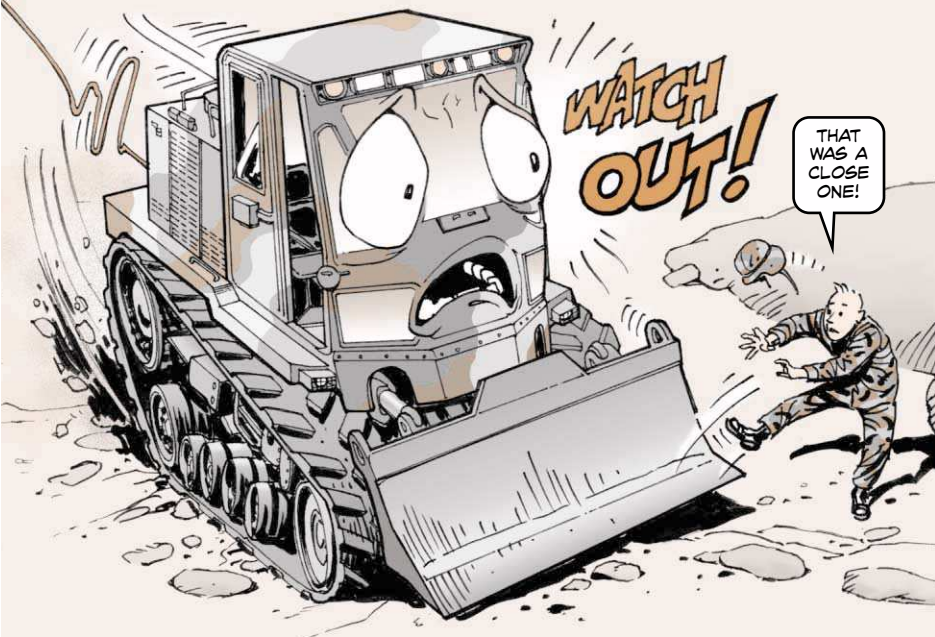
Use common glycerin, NSN 6505-00-153-8220, when you install victaulic gaskets on water purification, storage and distribution equipment. This NSN replaces the silicone O-ring lube, NSN 9150-01-132-8871, that's shown in the equipment's technical manuals.

## 6K VRRF Forklift O-ring

NSN 5331-00-972-8204 gets the O-ring (preformed packing) that seals the forklift's tire to its rim. This NSN replaces the parts info shown as Item 3, Fig 122 of TM 10-3930-660-24P.



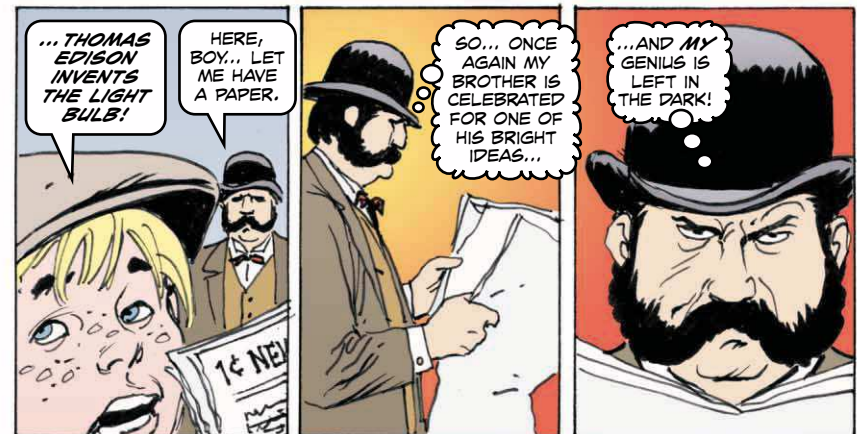
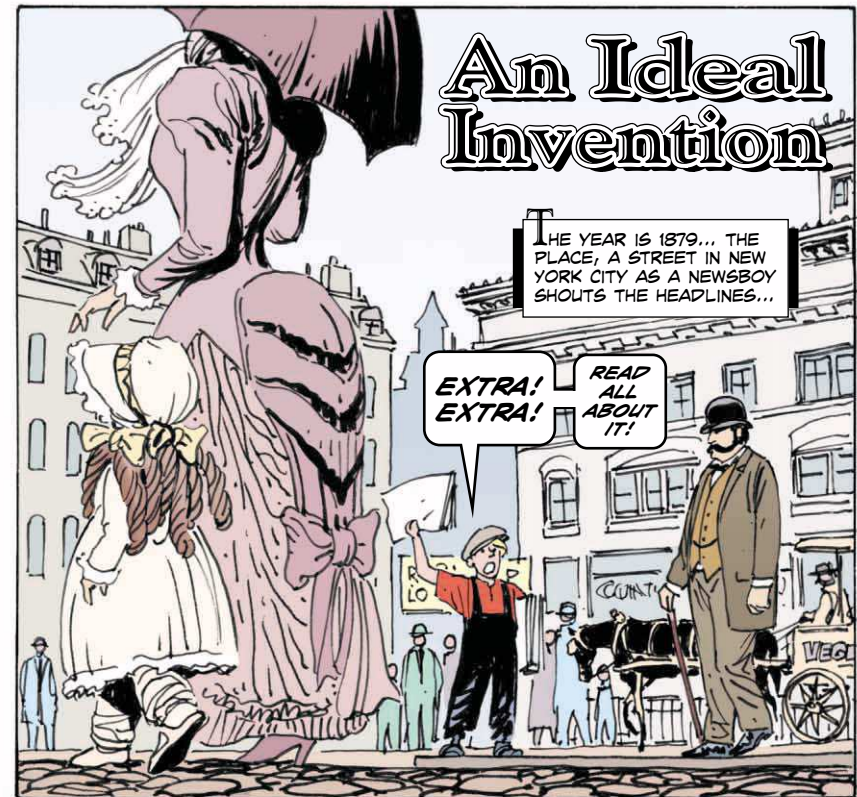
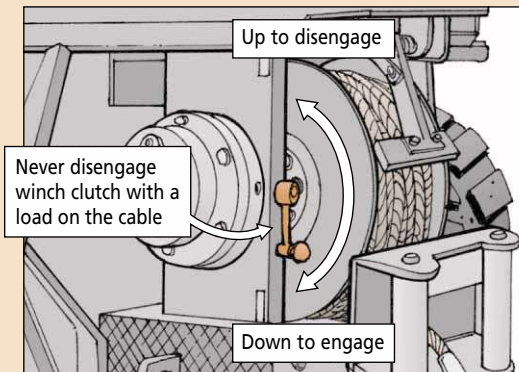
# Follow the WARNING



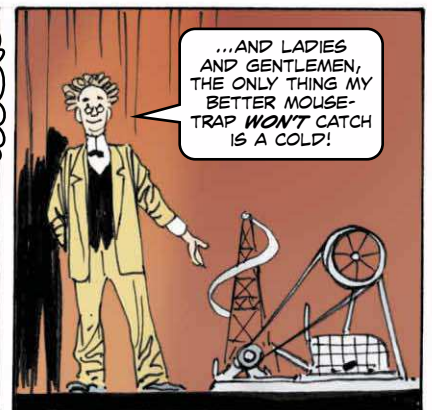
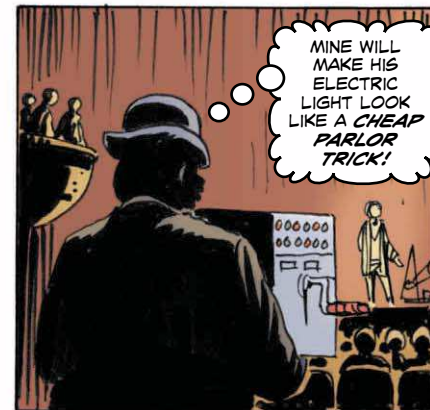
**M**ake sure you remember the WARNING on Page 51 of TM 5-2430-200-10 before using the Deployable Universal Combat Earthmover's winch.

That is, do **not** move the winch's clutch lever to the **DISENGAGED** position when there's a load on the cable. That releases the load on the cable and the earthmover will jump forward. Someone could be killed!

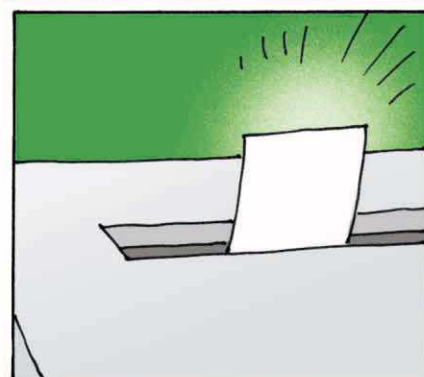
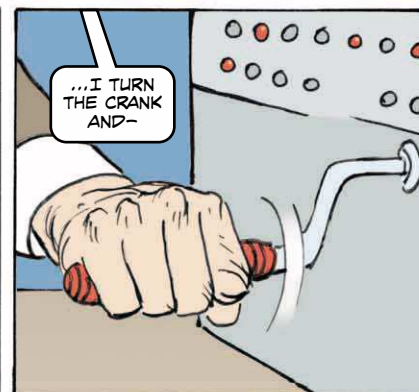
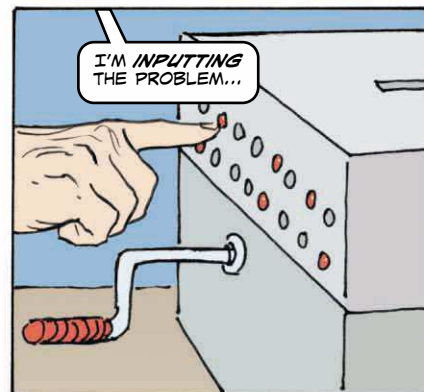
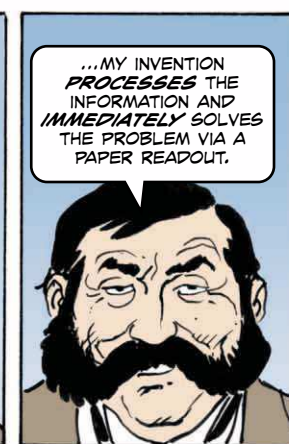
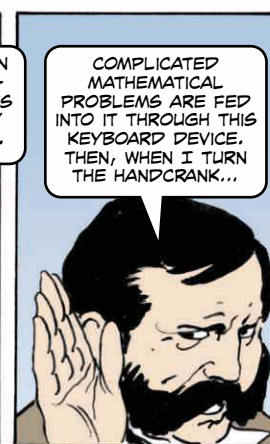
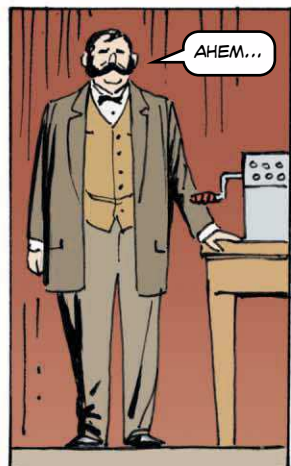
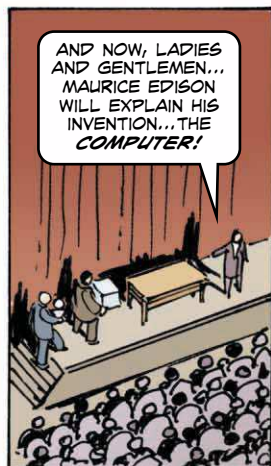
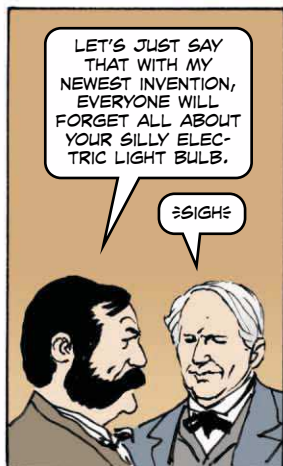
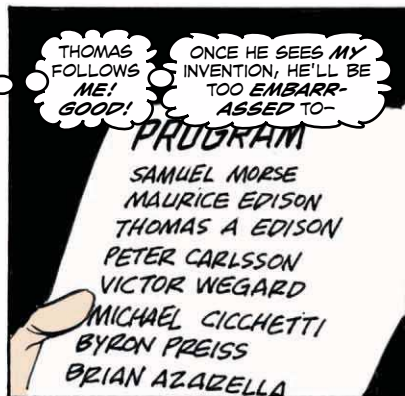
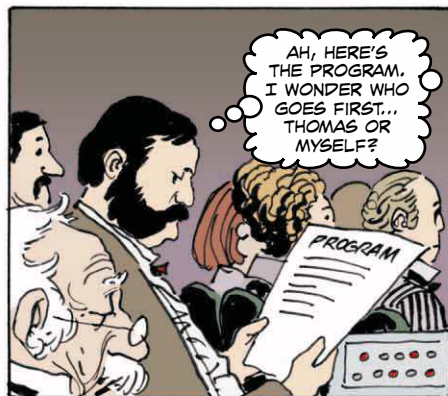
So for safety's sake, keep your hand away from the lever when there's a load on the cable.



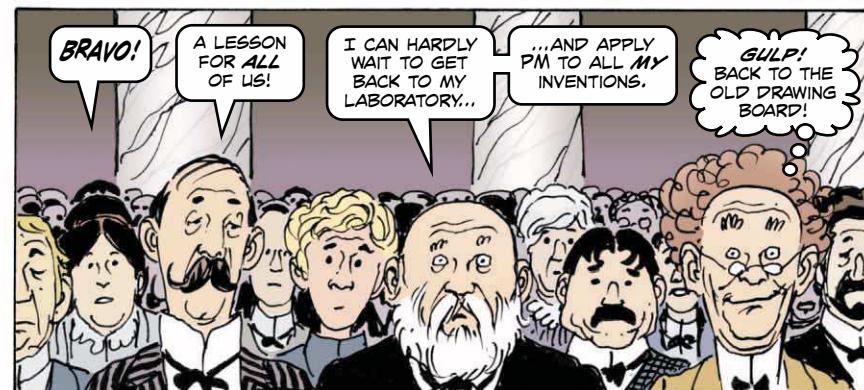
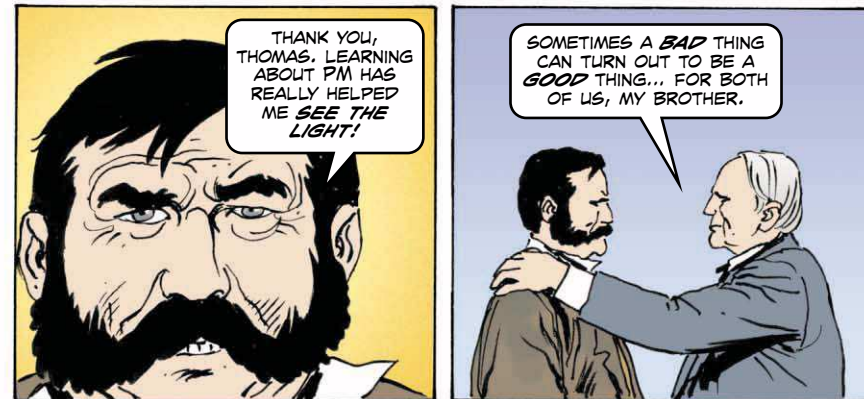
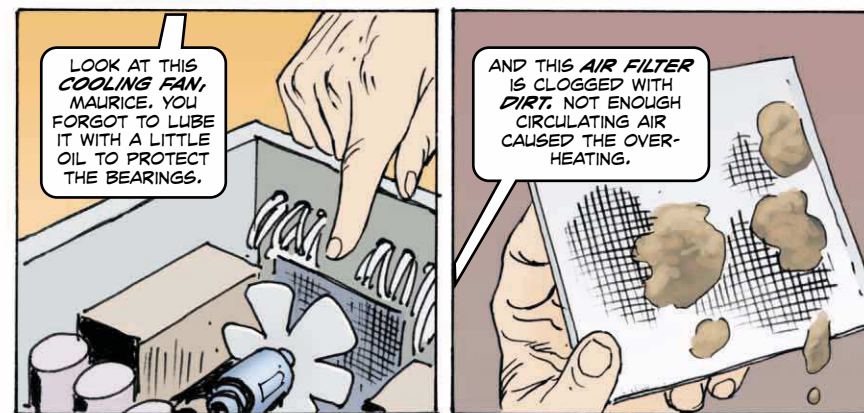
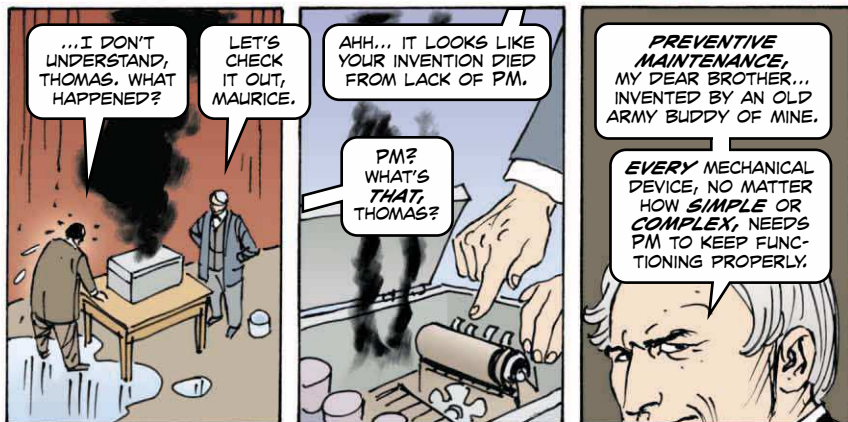
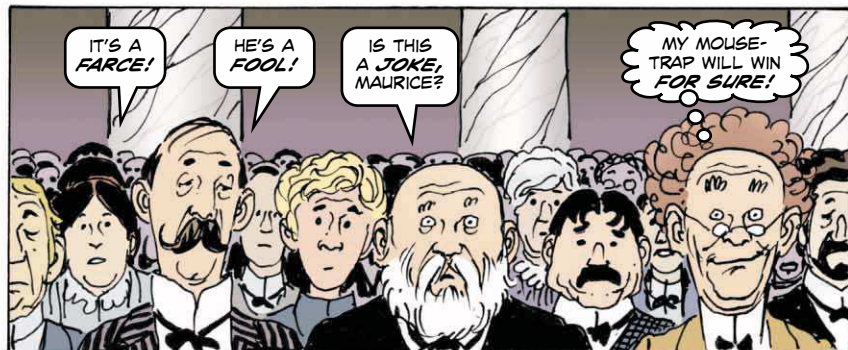




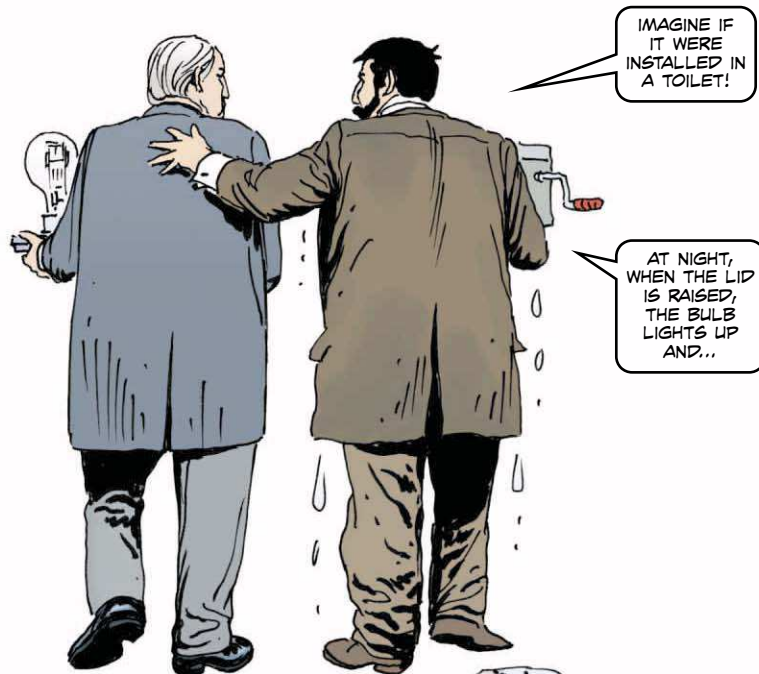
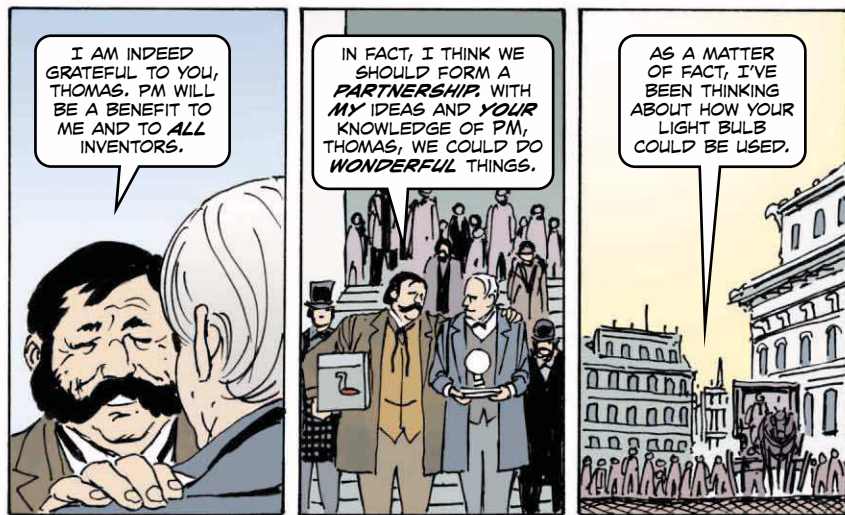




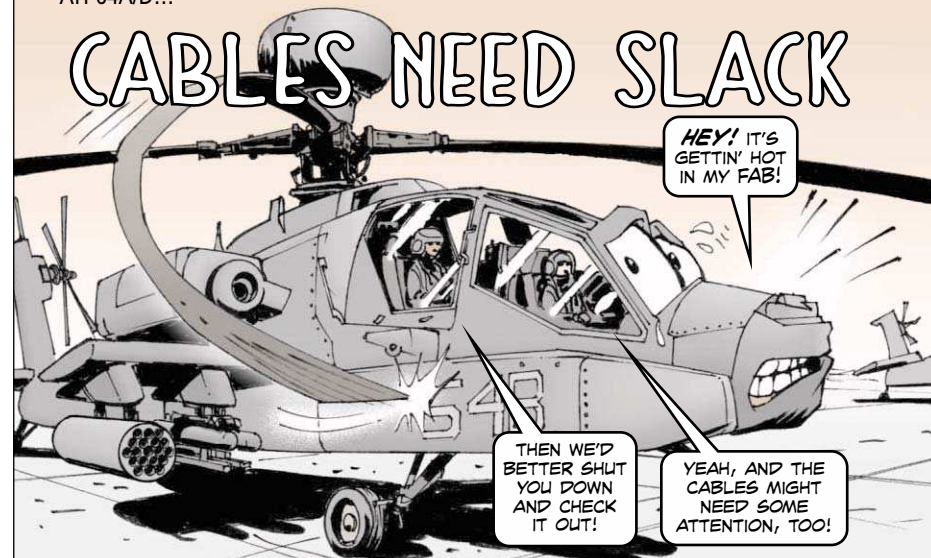








# CABLES NEED SLACK



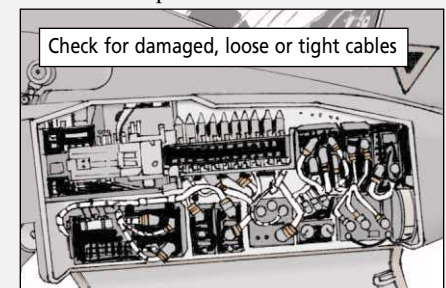
Mechanics, to stop cable chafing and broken connectors in the right and left forward avionics bays (FAB), give 'em a little slack and protection.

When you inspect your Apache's FWD components, look for slack, chafing and tight cable wire bundles. If you locate problems, remove the connectors and pull the slack out of the cable to provide clearance. That way the connectors are easier to reconnect and won't get damaged from excessive pulling, which can break connector pins and wires.

Since aircraft vibration and tight cables cause chafing, add a little extra cable protection by wrapping them with anti-chafe material, NSN 5970-01-143-6994. NSN 5970-00-617-1141 and NSN 9330-01-017-1440 are suitable alternatives.

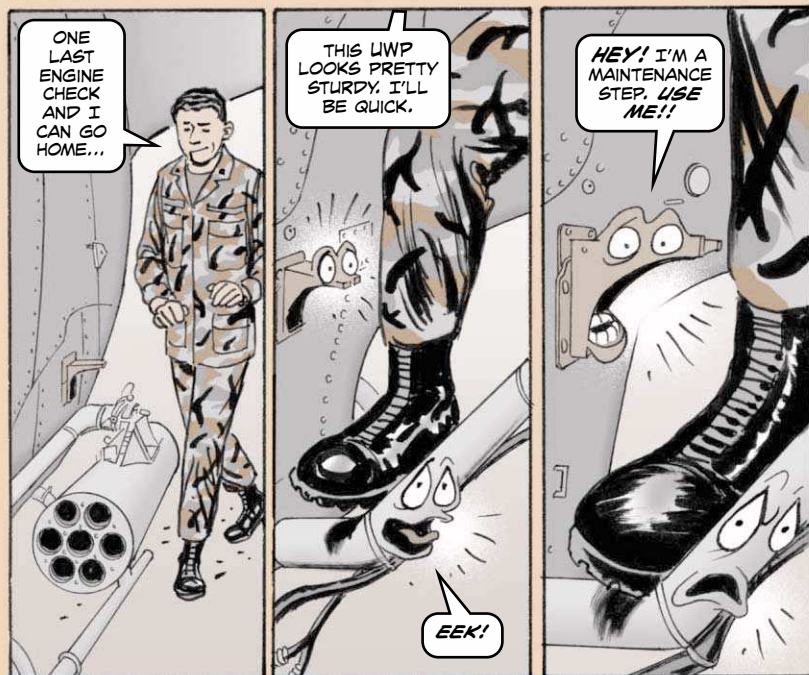
Remember broken cables in the FAB mean the fire control computer, gun control box, turret control box, or other components are NMC.

Also, when you perform aircraft run-ups, make sure there's good air circulation in the FAB. Just place your hand near the bay door vents and feel for airflow. If there's no airflow to cool the components, they will get hot and shut down. For the Apache Longbow, check out the procedure in the IETM to ensure FAB components stay cool.





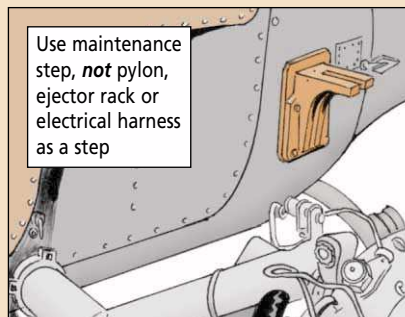
# A CRUSHING PROBLEM



**R**epairers, there is one place to stand while doing maintenance on your Kiowa Warrior. But the universal weapons pylon (UWP), the ejector rack and electrical harness are not it.

Use either a maintenance stand or your bird's maintenance step to go top-side. But keep those big feet off the pylon, the ejector rack and the electrical harness to avoid problems.

Stepping on the ejector rack's jettison cable can damage insulation and crush the internal wires. Also, you can bend or damage the UWP, knocking out proper clearances between the weapons and other parts of the airframe.



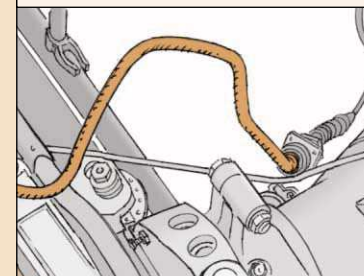
A crushed electrical harness can prevent ejection of a failed weapon in an emergency, or cause premature misfiring of the ejector rack impulse cartridges.

If that happens, you and your Kiowa's weapon systems are put in harm's way. For example, a defective Hellfire or Stinger missile that can't be jettisoned could go **ka-boom**.

So do yourself and the next person a favor and put your feet where they belong. Inspect the electrical harness for damage, wear, chafing from aircraft vibration, and exposed wires like it says in Paragraph I-4 of Appendix I in TM 9-1090-214-23&P. If you find damage, let your AVIM shop know.

If there is no damage, protect the harness by ensuring it is properly routed when re-installed like it says in Paragraph 4-72, Step 14, on page 4-422 of the TM.

Wrap undamaged cable with insulation sleeving, NSN 5970-01-465-1680



## All Aircraft...

THERE'S NEWS ON  
**Bottled  
Gases  
and  
ODS!**



If you need guidance or information on ordering and turn-in of industrial compressed gases and cylinders, contact DLA item manager, Alphonso Robertson, at DSCR, DSN 695-5340, (804) 279-5340 or by email at

[alphonso.robertson@dla.mil](mailto:alphonso.robertson@dla.mil)

Guidance for ozone depleting substances (ODS), including fire suppressants (Halon 1202, 1211 and 1301), refrigerants (R-11, R-12, R-114, R-500 and R-502) and solvent, CFC-113, is available at website:

<https://www.denix.osd.mil/denix/Public/News/DLA/ODS/odsres.html>

For more information about either industrial compressed gases and cylinders or ODS, contact (alternate) John Monroe at DSCR, DSN 695-6451, (804) 279-6451 or email at:

[john.monroe@dla.mil](mailto:john.monroe@dla.mil)

# MISHANDLING GROUND HANDLING WHEELS

AWRIGHT  
YOU WHEELS,  
YOU'VE GOT  
A *BIRD* TO  
MOVE!

YOU'RE NOT  
MOVING *ME* WITH  
*THOSE* WHEELS!

NOT AFTER  
ALL THAT  
ABUSE!

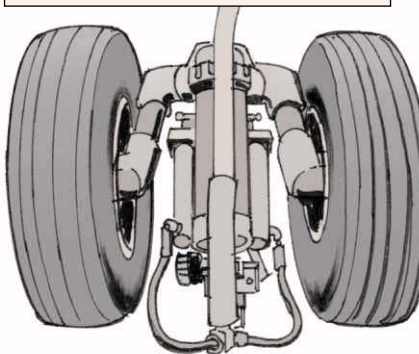
WHUMPSLAM!  
BOUNCE

If you don't take care of your car's wheels, it's a sure bet you won't be rolling anywhere.

Crews, the same is true for your Kiowa Warrior ground handling wheels. If you abuse, neglect or continually use them without doing PMCS, they won't roll when you need 'em.

Don't ignore your PMCS or maintenance. For instance, check oil reservoirs for proper oil level and lube as required. Do the **Before** and **Monthly** PMCS like it says in TM 1-1730- 232-13&P and the wheels will perform like a champ every time you need them to move your bird.

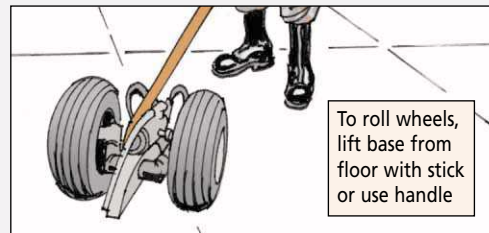
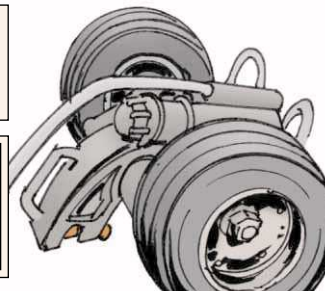
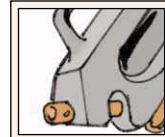
Check oil level in reservoirs, lube all points  
and do all PMCS



Ground handling wheels are bulky and heavy. Some folks tie a rope around the wheels and drag them across the cement hangar floor. That can wear down the metal at the base where the quick-release pin is inserted. Too much wear and abuse makes the wheels NMC and fit only for the scrap heap.

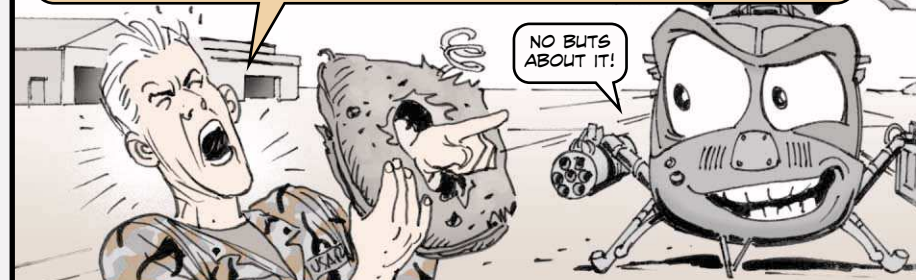
Course, it's a back-breaking effort to roll around the wheels for long distances with your back bent over. So use an old broom stick handle and lift up the cradle assembly and roll the wheels where you need them.

Dragging wheels  
damages base of  
quick-release  
pin hole



To roll wheels,  
lift base from  
floor with stick  
or use handle

## I WANT A NEW SEAT!



NO BUTS  
ABOUT IT!

CREW CHIEFS,  
IF YOU *CAN'T*  
FIND KIOWA  
WARRIOR SEAT  
CUSHIONS TO  
REPLACE WORN-  
OUT SEATS...

...ORDER  
THE PARTS  
FROM THIS  
LIST.



NSN 1520-	Nomenclature
01-500-7205	Closeout
01-500-7206	Seat back
01-500-7207	Seat base
01-500-7208	Rebound assy
01-500-7209	Back rest



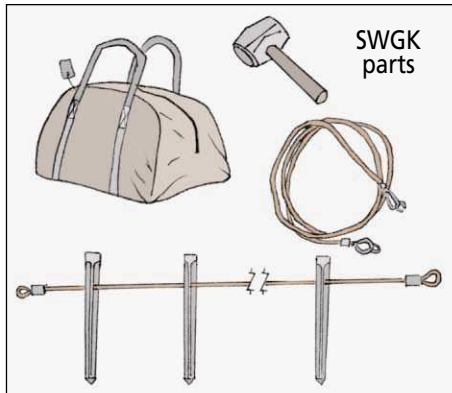
# When Should You Use It?



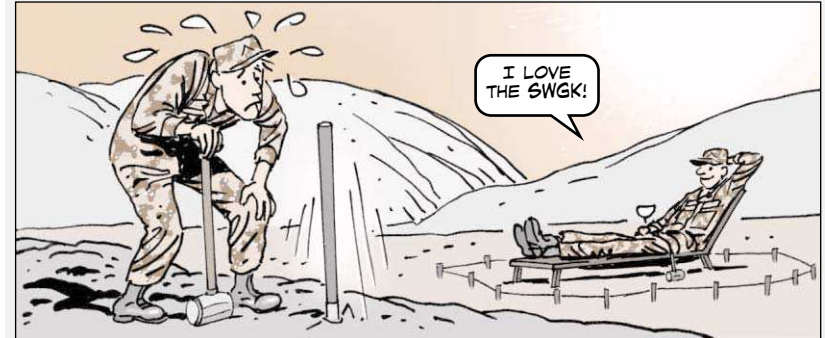
The surface wire grounding kit (SWGK) MK-2551A/U, NSN 5820-01-263-1760, is a good way to get an electrical ground in some situations, but not in others. The SWGK does not work well where the topsoil layer is very loose since it relies upon compression between the stakes, earth and cable to maintain electrical contact.

The SWGK has fifteen 10-in stakes that are driven into the ground in a circular pattern around the vehicle or moving shelter being grounded. The stakes are connected by 75 feet of steel cable.

The best grounds are those that use the 8-ft metal rod that can reach the water table. The next best is using a metal plate. Those are the types of grounds that you should think of using first.



First, if the system you are grounding needs to move and then set up again at a moment's notice. The SWGK is quickly installed and quickly removed. Driving fifteen 10-in stakes is often quicker and easier than driving a 8-ft rod into the ground and removing it without vehicular help, which bends the rod.



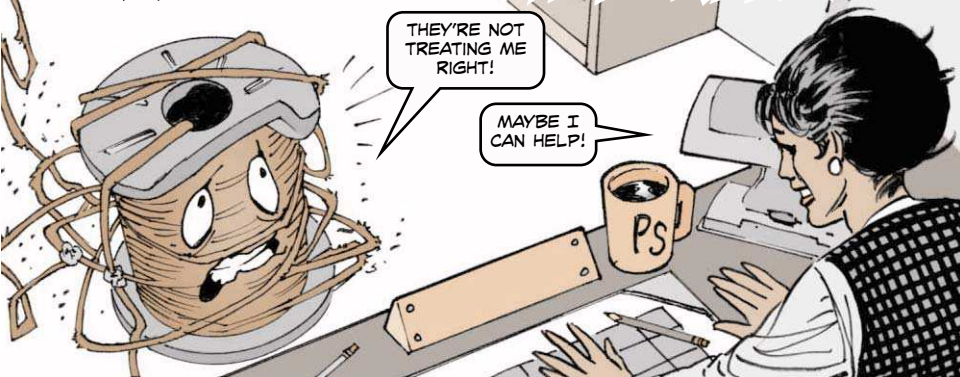
Second, when the ground is rock hard. Some places like desert areas and frozen tundra have ground so hard a jackhammer couldn't penetrate it. In those cases, the SWGK might be the way to go.



## BCS GDU ASIP W33A

The NSN for the 15-ft W33A cable that connects the SINCGARS RT-1523E (ASIP) to the gun display unit (GDU) of the battery computer system (BCS), AN/GYK- 29, is NSN 5995-01-128-6425. The cable is part of the GDU equipment and is listed in the BCS TM, TM 11-7440-283-12-1 and -2 and GDU TM 11-7440-283-12-2.

# ALL ABOUT WIRE. REELY!



Some of you are the aggressor in an abusive relationship. You're puttin' the hurt on field wire. And, folks, the wire is sick and tired of it! The wire has told PS that if you don't start treating it right, it ain't gonna work no more!

HERE'S HOW TO TREAT FIELD WIRE LIKE YOUR BEST FRIEND INSTEAD OF YOUR WORST ENEMY.



## Recovering It

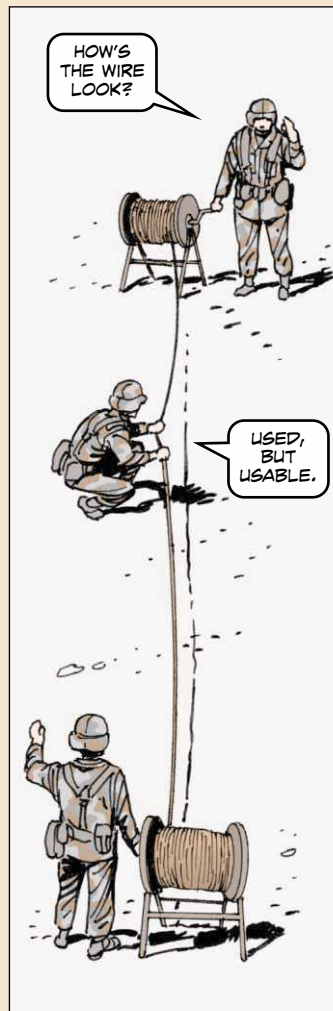
Start your recovery by removing all tags and untying the wire where necessary.

Skin protection—both yours and the wires—is your next consideration. Put on leather gloves to protect the skin on your hands. Now lay the wire out in as straight a path as possible.

Lift the cable off the ground as much as possible as you reel it in to protect its "skin."



As you slowly reel in the wire, look it over and get a feel for how much repair work you must do. You're looking for cuts, excessive splices, worn spots, jacket deterioration and other damage.



## Servicing It

When you're back from the field, set aside a day where your unit can gather and service all your wire. Make sure you have a couple of empty reels, tape, tools and your splicing equipment on hand.

HERE ARE SOME THINGS YOU MIGHT NEED...



Item	NSN
TL-636 black electrical tape	5970-00-685-9059
TL-600 white electrical tape	5970-01-262-3189
TL-83 friction tape	5970-00-644-3167
TL-29 pocket knife	5110-00-240-5943
TL-13 pliers	5120-00-239-8254
TL-13 pliers with skinners	5120-00-247-2063
CS-34 tool carrier	5140-00-498-8898
MK-356 splicing sleeve kit	5940-00-818-1774
U1R splice	5940-00-935-8262
Crimper	5120-01-421-3979

Start your wire check by putting an empty reel on one reel unit and the reel with the used wire on another reel unit. Slowly wind the wire onto the empty reel while thoroughly checking the wire. You can clean the wire while it moves from one reel to the other, too. Look for the same damage you did when you took the wire up in the field—cuts, excessive splices, worn spots, jacket deterioration and other damage.

If the wire has insulation skinned off for three inches or less, but the wire is not broken, cover the exposed wire with electrical tape.

If the insulation or wire damage is more than three inches, cut out the damaged wire and splice it. If the wire is broken, splice it.





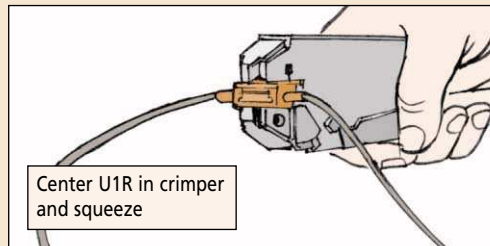
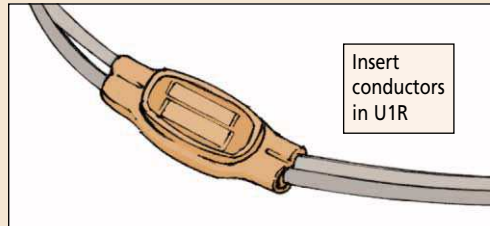
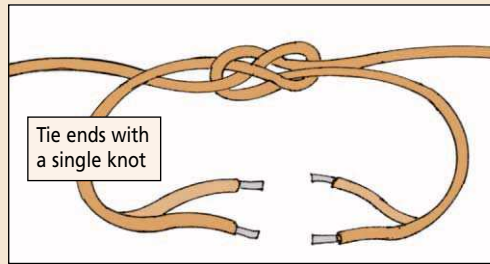
## Splicing It

Cut off, or out, the damaged wire and tie the two ends of the wire with a single knot leaving about six inches of wire on either end of the knot. The knot will take the strain off the line at the point you make the splice.

If you are using the splice kit, splice the ends and wrap the splice with insulation tape.

If you're using the U1R, split each pair of conductors and insert them into the splice. Make sure the conductors go through the metal prongs and all the way to the center of the U1R.

Center the U1R in the crimper. Press firmly until the red top part of the U1R is even with the clear bottom part. No tape is needed because the insulating grease in the splice protects against electrical leakage and corrosion. The insulating grease also makes the splice waterproof.

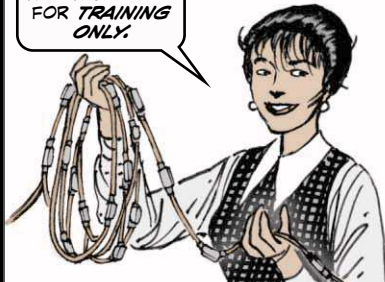


THE NUMBER OF THE SPLICES AND THE RESISTANCE OF THE WIRE TELLS YOU THE WIRE'S CONDITION.

Four or fewer splices in 1/2 mile of wire is OK for mission use as long as the electrical resistance checks out. If you're using WD-1 or -1A, the resistance should not exceed 241 ohms per loop mile at 70°F. If you're using WF-16, 282 ohms per loop mile should not be exceeded.

MORE THAN FOUR SPLICES IN ANY 1/2 MILE OF WIRE MEANS IT CAN BE USED FOR TRAINING ONLY.

IT'S READY FOR DISPOSAL IF YOU DON'T NEED IT FOR TRAINING.



When you turn in used wire, your DRMO will probably want it cut up and turned in by the pound. Check with them to make sure.

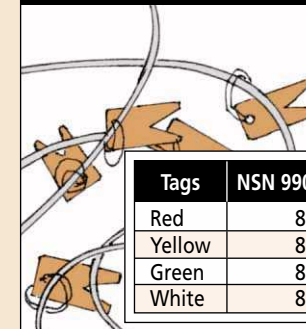
One mile of WD-1 wire weighs about 48 pounds. WD-1A is a little lighter at about 38 pounds. WF-16 is heavier at 62 pounds per mile of wire.



Wire	Length (Ft)	NSN 6145-
WD-1A in MX-306	2,640	01-155-4257
WD-1A on RL-159	5,280	01-155-4256
WD-1A on DR-5	5,280	00-220-9933
WD-1A on DR-8	1,640	01-155-4258
WD-15	1,000	00-284-1499
WF-16 on DR-5	5,280	00-910-8847
WF-16 on DR-8	1,000	01-259-9203

Reels	NSN 8130-00-
RL-159	174-0812
DR-5	253-0106
DR-8	407-7859

Put wire tags on the spool or reel to give you a quick condition check. NSNs for a bundle of 50 tags with tie-on wires are...



Tags	NSN 9905-00-537-
Red	8954
Yellow	8955
Green	8956
White	8957

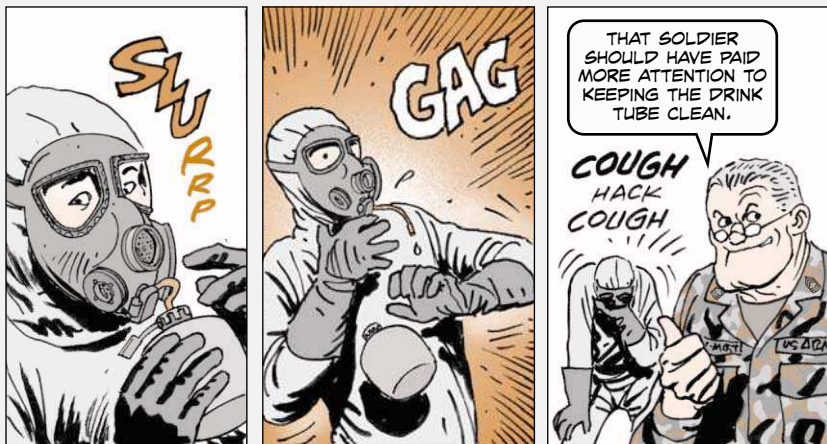
FINALLY, EVERY COMMO SOLDIER WORTH HIS BOOTS TAKES CARE OF HIS WIRE BY THE BOOK...

...AND THE BOOK FOR WIRE IS FM 24-20, FIELD WIRE AND FIELD CABLE TECHNIQUES.



PS  
END

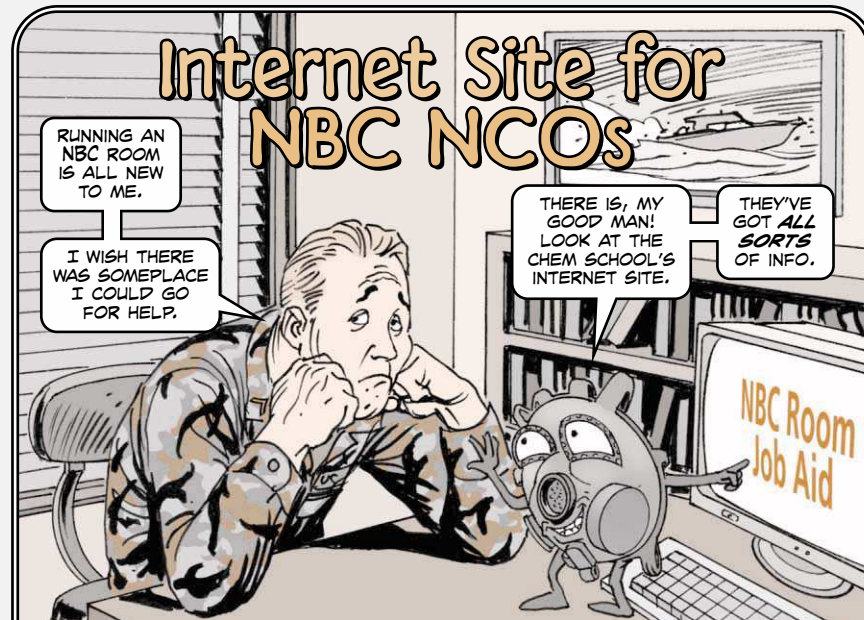
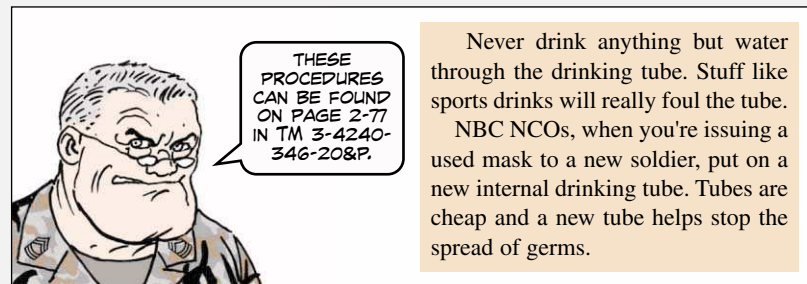
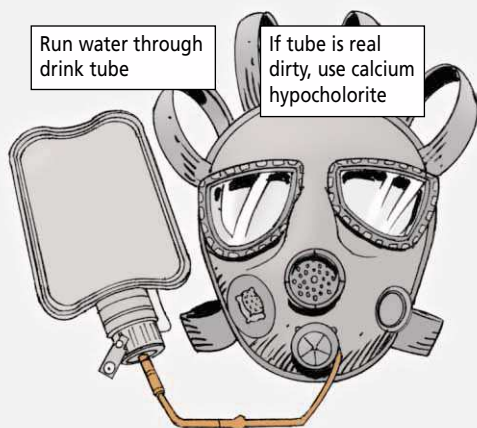
# A DRINK TUBE CLEAN ENOUGH TO DRINK FROM



Imagine how gross it would be to drink through the same straw day after day. It will be equally gross if you don't keep the drinking tube in your M40 or M42 mask clean. Lots of nasty stuff can form in the tube over time and you end up drinking it in. Keeping the tube sanitary doesn't take that much effort.

Simply flushing the tube with water will get rid of most gunk. Be sure to remove the filter canister before flushing. Fill your canteen with clean water and attach it to the external drinking tube. Turn the canteen upside down and squeeze it while holding the facepiece upside down with the internal drink tube facing away from the facepiece. Do this until all the water runs through the drinking tube. Do this twice.

But if you've been training with your mask quite a bit, the tube may need more serious cleaning. Get calcium hypochlorite, NSN 6840-00-242-4770, from your NBC NCO. It's part of the expendable supplies for the masks. Mix 1/2 teaspoon of the hypochlorite with a gallon of clean water and fill your canteen with the mixture. Make sure the hypochlorite is completely dissolved. Run the mixture through the drinking tube and then run 2 canteens of clean water through the drink tube.



If you're looking for good info on how to do your job, NBC NCOs, the US Army Chemical School's website is a good place to visit.

The NBC Room Job Aid is found at:

<http://www.wood.army.mil/cmdoc/NBC%20Room%20Aid/Room%20home.htm>  
It discusses topics like administration and evaluation of an NBC room, field operations, training, logistics, readiness, mini-lesson plans, NBC checklist and handbook, and shelf life and NSNs of NBC items.

The Chemical School also encourages your NBC suggestions, which can be sent to:  
**ATSNMMD@wood.army.mil**

Approved suggestions are posted on the site.



# NEW NOSECUP VALVE SEAT AND INLET VALVE



TIME TO GLUE IN A NEW NOSECUP VALVE SEAT ASSEMBLY!

WAIT!! I DON'T NEED GLUE ANYMORE!

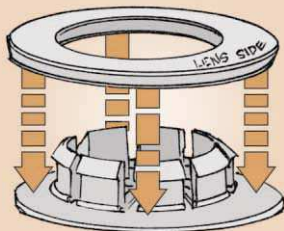
NOW YOU CAN JUST SNAP MY ASSEMBLY IN PLACE!



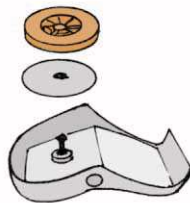
**G**ood news, NBC NCOs. You no longer have to fool with using RTV silicone to glue in a new nosecup valve seat assembly on the M40/M42-series masks. And there's a new NSN for the inlet valve body.

There is now a valve seat assembly that snaps into place. NSN 4240-01-496-2844 (P/N 5-1-2748) brings 10 top and bottom portions of the assembly and an instruction sheet showing how to do the task. See SBCCOM's supply advisory message 03-06-004 for more info.

New nosecup valve seat assembly just snaps into place



NSN 4820-01-509-5498 is new NSN for inlet valve body



If you have questions, contact SBCCOM's Kevin Joubert at DSN 584-6147/(410) 436-6147 or email:

[kevin.joubert@sbccom.apgea.army.mil](mailto:kevin.joubert@sbccom.apgea.army.mil)

The NSN for the inlet valve body is now NSN 4820-01-509-5498. Its part number remains 5-1-1054.

# KEEP YOUR M17 IN HOT WATER



Dear Editor,

For the past 18 months I've been traveling to Army posts to help soldiers get their M17 decons ready for duty. I've seen some M17s that were not close to being ready for action, mainly because their burners wouldn't work.

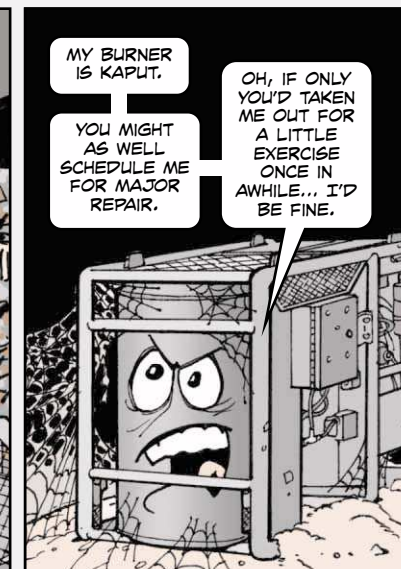
If the M17 can't produce hot water, it's deadlined. The cause for almost all burner problems is that M17s are left in storage for long periods. PMCS is ignored and the M17s aren't exercised. Fuel crystalizes or becomes sludge in fuel lines, carburetors, fuel pumps, solenoid valves, and check valves. You've got a real mess that's going to take real work to clear up.

All of those problems can be avoided just by giving M17s their monthly PMCS and by running them 1/2 hour in both the shower and wand modes. Besides keeping your M17s in shape, this will also provide training for the unit.

And commanders will know their M17s are ready to decon.

Jim Blackiston  
SBCCOM

Aberdeen Proving Grounds, MD



MY BURNER IS KAPUT.

YOU MIGHT AS WELL SCHEDULE ME FOR MAJOR REPAIR.

OH, IF ONLY YOU'D TAKEN ME OUT FOR A LITTLE EXERCISE ONCE IN AWHILE... I'D BE FINE.

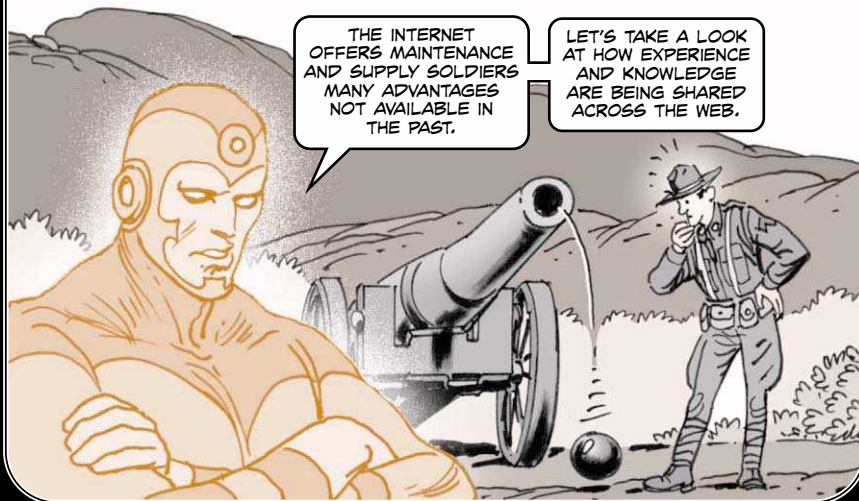
WELL IT'S ABOUT TIME!

From the desk  
of the *Editor*



Thanks for the benefit of your experience, Jim. If chemical companies follow your advice, most of their M17 problems will disappear.

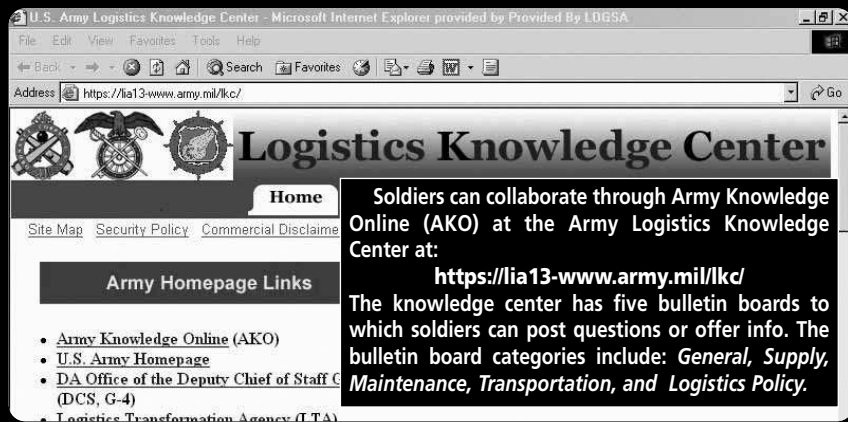
# MAKING USE OF ONLINE RESOURCES



One of the most obvious Web advantages is the ability of soldiers to ask questions about maintenance or supply and get rapid responses.

In addition to being able to ask MSG Half-Mast maintenance and supply questions at: [psmag@logsa.army.mil](mailto:psmag@logsa.army.mil), soldiers can submit logistics questions to the Logistics Support Activity's hotline, LOG 911 at: <http://weblog.logsa.army.mil/log911/index.cfm>

These are great places to go for info, but the Web also offers soldiers the ability to reach out to other maintenance and supply types and tap into the knowledge and experience of their peers. While military protocol still applies on these sites, knowledge is what counts. A captain will be just as pleased to get the right answer from a specialist as from a chief warrant officer.



You can post a question that any other soldier or DA civilian can read. Any of them can post a response that is tied directly to the original question. They may know the answer, or they may have an excellent suggestion about where to find info that will lead to a solution.

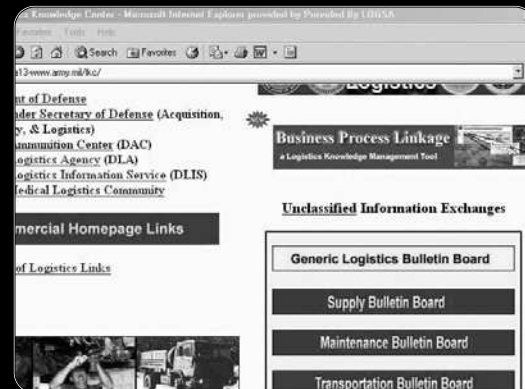
Some soldiers post valuable reference materials to the bulletin boards. And that's fine. But a better place to post both reference info and free user-developed Windows-based computer applications is through AKO Collaboration. For a full explanation of this website please see *Soldier Collaboration Encouraged on AKO*, PS Issue 614, JAN 04, pages 53-56.

However, soldiers should not blindly accept everything posted to the AKO Logistics Knowledge Center and AKO Collaboration as absolute truth. Use common sense, your training and background to assess the info. You are still responsible for doing things right.

There are also official sources of logistics info on the Web. One is FED LOG's Information Center at: <http://www.dlis.dla.mil/FedLog/>

Another website from the Software Engineering Center at Ft Lee, VA, contains info and links to Standard Army Management Information Systems such as AFMIS, SAMS and ULLS-G. It is located at: <http://www.sdcl.army.mil/>

The SEC-Lee offers a Customer Assistance Office. They can be reached at DSN 687-1051, Commercial (804) 734-1051, Fax DSN 687-2913, or by email at: [cao@SDCL.Lee.army.mil](mailto:cao@SDCL.Lee.army.mil)





# RF Tags Are Reusable

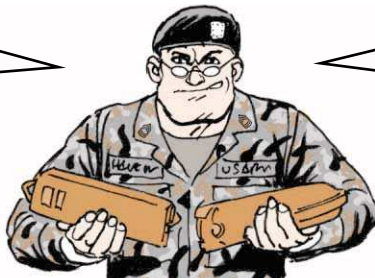
HEY, MSG HALF-MAST!  
THIS RADIO FREQUENCY  
TAG SURE HELPED US  
TRACK THIS PART  
DOWN. I DON'T NEED  
IT ANYMORE, DO I?

YOU SURE DO!  
RF TAGS ARE  
REUSABLE AND  
THEY ARE IN  
SHORT SUPPLY.

RF TAGS NEED TO BE  
RETURNED TO THE SUPPLY  
SYSTEM ONCE PARTS OR  
VEHICLES ARRIVE AT THEIR  
DESTINATION.

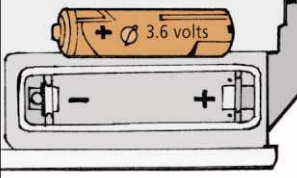


RETURN SAVI 410  
TAGS TO THE:  
Defense Distribution  
Depot Susquehanna  
ATTN: DDSP-OMP  
(Warehousing Branch)  
BLDG 203 (Door 12)  
Mechanicsburg, PA  
17055-0789



RETURN SAVI 412  
TAGS TO THE:  
Transportation Division  
Material Movement  
Branch  
4698 N 2nd St,  
BLDG 208 A  
(Fort Gillem)  
Forest Park, GA  
30297-5123

REMOVE AND INVERT  
BATTERIES BEFORE RETURNING  
SO THE RF TAG QUITS BROAD-  
CASTING ITS LOCATION.



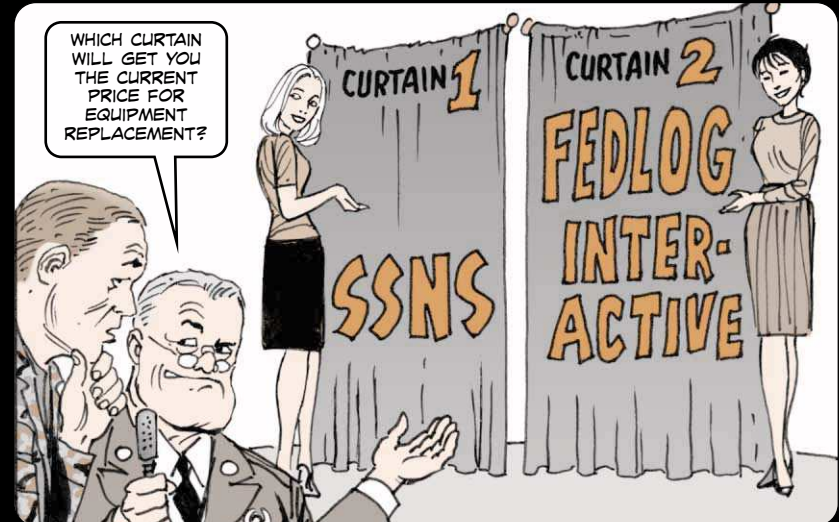
**DON'T USE BATTERIES  
IN YOUR WALKMAN OR  
GAMEBOY!**

THE HIGHER  
VOLTAGE WILL  
**FRY** THEM.

AR 710-2, Chap. 1, Sec. VII, addresses the accounting for and return of RF tags.



WHICH CURTAIN  
WILL GET YOU  
THE CURRENT  
PRICE FOR  
EQUIPMENT  
REPLACEMENT?



Are you trying to use the Standard Study Number System (SSNS) to get current price quotes for equipment replacement? The prices in SSNS aren't wrong, they're just not current. The SSNS is being updated, but to report price discrepancies call Katherine Daly at DSN 645-9148, or commercial (256) 955-9148.

To get up-to-date costs you need to access FED LOG Interactive. You can request access at [fedlog@logsa.redstone.army.mil](mailto:fedlog@logsa.redstone.army.mil)

Once you enter FED LOG, click OK at the CD Scanning Console. Click on the green tank icon (or, if you prefer the pull down menu bar, select SERVICE, then ARMY at the FLIS Interactive Query screen). At the Army Interactive Query screen enter your LIN, NIIN, or Part Number and select SEARCH.

The item's Army Master Data File will display the NSN, the current unit price, item name and nomenclature, and other info.

# RADIO REFRESHER TUTORIALS AVAILABLE ONLINE



Shoot, move, and communicate is a popular military axiom. Shooters have weapons ranges and simulators to keep their skills honed.

Commanders are always training soldiers on mounted and dismounted movement.

Communicators have a set of tutorials that will keep soldiers familiar with the equipment they use.

The U.S. Army Signal Center at Ft Gordon, GA, maintains a website full of links to tutorials. The site is dedicated to Signal Support Systems specialists. Tutorials are available on the following radio sets:

- AN/GRC-213
- AN/PRC-104
- AN/GRC-193
- SINCGARS
- MSRT
- CNR
- AN/PSC-5
- AN/VIC-3
- AN/VSQ-2

You can access the tutorials at:  
<http://www.gordon.army.mil/stt/31u/mmt1.htm>

## PLGR Battery Caps

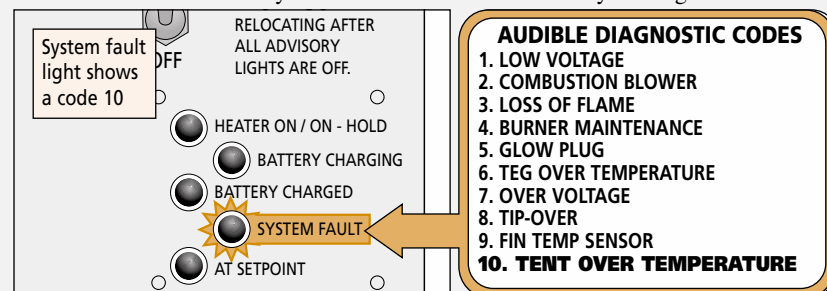
Order the primary battery cap for your AN/PSN-11 precision lightweight GPS receiver (PLGR) with NSN 5340-01-449-1029. Order the memory battery cap with NSN 5340-01-449-1033.

## CONVECTIVE SPACE HEATER



### Defeating Overheating

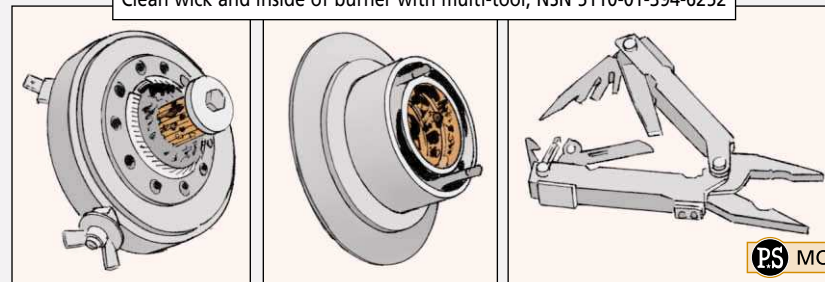
When you run the convective space heater, NSN 4520-01-431-8927, in moderate climates (like the southern U.S., for example), you're liable to overheat your tent. Once the temperature inside exceeds 90°F, the in-tent controller system fault light shows a code 10, TENT OVER TEMPERATURE. At that point, the heater will either shut off immediately or shut off as soon as the battery recharges.



After the tent cools, the heater cycles back on and eventually overheats the tent again. The heater continues cycling on and off until the outdoor temperature drops. This on/off cycling causes carbon to build up in the burner and around the glow plug. Too much carbon around the glow plug increases the chance that the plug will overheat and burn out.

So, if your heater's been cycling a lot, the first thing you'll need to do is give the burner a thorough cleaning.

Clean wick and inside of burner with multi-tool, NSN 5110-01-394-6252



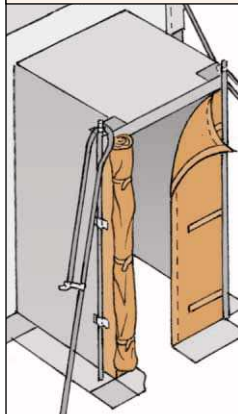


YOU'LL ALSO NEED TO REDUCE THE ON/OFF CYCLING.

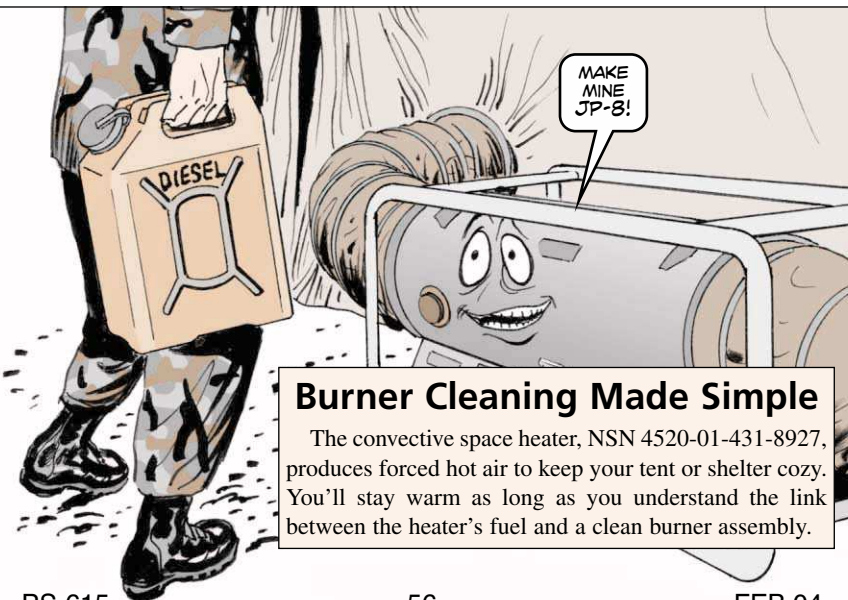
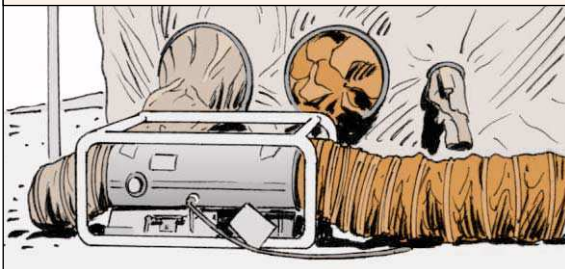
WORK PACKAGE 0009 OF TM 10-4520-262-12&P DESCRIBES TWO WAYS TO DO JUST THAT...



**1.** Open the tent door and cool the inside.



**2.** If the cycling continues after cooling off the inside, disconnect the air supply duct from the tent's air duct opening. Keep the air supply duct attached to the heater. That'll help keep rain and snow from getting inside the heater. Allow the heater to draw the cooler outside air until the cycling stops. Then reattach the air supply duct to the air duct opening.



MAKE MINE JP-8!

## Burner Cleaning Made Simple

The convective space heater, NSN 4520-01-431-8927, produces forced hot air to keep your tent or shelter cozy. You'll stay warm as long as you understand the link between the heater's fuel and a clean burner assembly.

## Facts About Fuels

JP-8 is the preferred fuel for the heater. It burns clean and extends the life of the burner assembly. That means fewer unscheduled maintenance tasks to worry with.

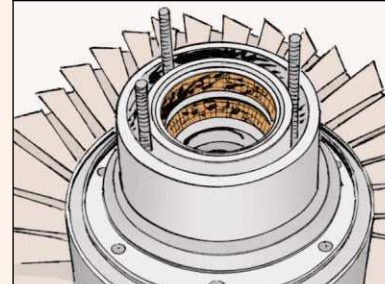
If you don't have JP-8, you can use diesel fuel in the heater. But you need to know a few things about diesel:

Diesel burns dirtier than JP-8. It leaves more carbon residue in the burner, especially on the wick, around the glow plug and in the burner chamber.

More carbon calls for more cleaning. If you use diesel fuel, expect to clean the burner every 250 hours (or about 10 days of continuous operation). Use JP-8 and you'll need to clean the burner only if the system fault light shows a code 4, burner maintenance.

Carbon building up around the glow plug increases the chance that the plug will overheat and burn out. So much for staying warm on a cold winter night.

Diesel fuel leaves more carbon in burner



## Cleaning

Whether you use JP-8 or diesel in your heater, sooner or later you may have to clean the burner assembly. That's why you need to get the new Simplified Burner Cleaning service bulletin (Instruction Sheet PN 5-13-5647). It's available online at <http://www.huntermfgco.com/military/bulletins.htm>

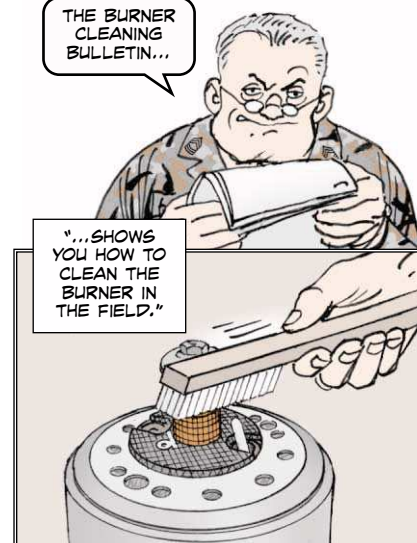
Once you reach the website, click on SHC, Simplified Burner Cleaning to download the bulletin. If you'd prefer a hard copy, phone (440) 248-6111, Ext 222, or DSN 256-5592.

Used along with the heater's technical manual, TM 10-4520-262-12&P, the bulletin offers a simple way to clean and inspect the burner in the field. This information will be included in the next change to the TM.

Besides needing the TM to clean the burner, you'll also need the wire brush, NSN 7920-00-291-5815, found in the general mechanic's tool kit, or a multi-tool, NSN 5110-01-394-6252.

THE BURNER CLEANING BULLETIN...

"...SHOWS YOU HOW TO CLEAN THE BURNER IN THE FIELD."



## Tent Mod Kit Lets Air Flow



The convective space heater, NSN 4520-01-431-8927, efficiently heats your modular command post shelter (MCPS) as long as there's a free flow of air. The heater draws cold air from the shelter through the air supply duct. The air's forced through the heat exchanger, where it's heated. The warm air then passes through the air return duct and into the shelter.

There's only one problem: The earliest versions of the MCPS were fielded without air duct openings. Without them, you have to insert both the supply and return ducts under the shelter wall. The weight of the wall squeezes the ducts and cuts down the airflow. Less air causes the heater to overheat or to constantly cycle on and off. As a result, carbon builds up in the burner. In the end, you have to clean the burner more often.

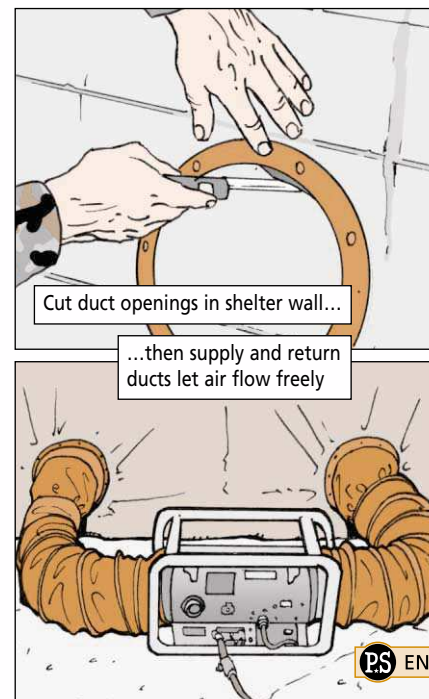


Avoid overheating, cycling, carbon buildup and extra cleaning. If your MCPS doesn't have air duct openings, install the tent wall modification kit, NSN 4520-01-493-3215. The kit allows you to cut openings in the shelter wall and to add a sleeve to seal around the ducts. Attaching the supply and return ducts to the openings lets air flow freely through the space heater.



YOU'LL FIND COMPLETE INSTRUCTIONS FOR INSTALLING THE KIT IN WORK PACKAGE 0005 OF TM 10-4520-262-12&P.

You can still use your space heater while you're waiting for the kit to arrive. Just make sure you prop up the shelter wall so it doesn't squeeze the supply and return ducts and restrict airflow.

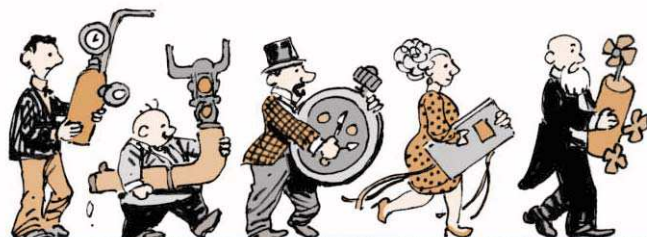


## Rope Lock NSN



**U**se a rope lock, NSN 4030-01-477-0524, to keep a tent rope, loose gear, flight line or canvas cover snug. The rope lock doesn't need continual adjustments once it's secured or fastened in place. This NSN gets a package of 12 rope locks.





## Online PS Articles By Email

You can now send individual articles from PS Magazine online to the people you know. PS Magazine's online Internet web page is at:

<http://www.logsa.army.mil/psmag/psonline.htm>

From PS 611 (Oct 03) on, each article has a link: "To get a copy of this article to send someone, click here." Click on the link and it loads just that article. In the PDF menu bar click on EMAIL and make a choice between sending just the URL link or a copy of the article. Fill in the email address, click SEND, and you're done.

## WINDSHIELD WASHER FLUID

To make windshield washer fluid, use NSN 6850-00-926-2275 to get a case of twelve 16-oz bottles of concentrated windshield cleaning compound. How you mix it depends on the temperature you expect:

**+40°F to -10°F**

1 bottle compound to  
2 bottles of water

**0° to -40°F**

1 bottle compound to  
1 bottle of water

**-30°F to -65°F**

2 bottles compound to  
1 bottle of water

## A LISTER BAG BY ANY OTHER NAME

Trying to find the lister bag NSN? It's also called bag, water, sterilizing and is the field version of a water fountain. The lister bag is part of the mobile field kitchen, 7360-01-313-2238. The water bag's NSN is 4610-00-268-9890.

## ZIPPER LUBRICANT

If your tent's zipper is hard to zip, apply zipper lubricant, NSN 9150-00-999-7548. Rub the lubricant on each side of the track and then slide the zipper up and down a few times.

## AOAP Sample Tubing

You can get a 1,000-ft roll of plastic tubing for your Army Oil Analysis Program sampling with NSN 4720-00-964-1433. The cost is approximately \$20.

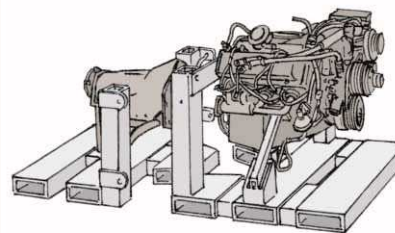
## M88A1 Circuit Breaker

Use NSN 5925-01-430-2318 to order a new 15-amp circuit breaker for your M88A1 recovery vehicle's main switch panel. The NSN shown for Item 18 in Fig 50 of TM 9-2350-256-24P-1 is no longer available.

## BATTERY TESTER CORRECTION

Don't order the battery tester on Page 41 of PS 613. It will not do the job. Instead order multi-battery tester, NSN 6625-01-494-9163. It can be used with the BA-5372/U, the BA-5123 battery (CR123A), the CR1/3N, the 576 or A76 button cells, 9-volt alkaline, and common AAA/AA/C/D alkaline or nickel-metal hydride batteries as well.

## HMMWV Engine/Transmission Stand



Prevent damage to the HMMWV powerpack during movement by using an engine/transmission transport stand. The stand—designed by Red River Army Depot engineer John Armstrong—secures the engine and transmission with bolts and can be lifted and transported by forklift. It also can be split into two separate stands—one for the engine and one for the transmission. Write Half-Mast for a copy of the plans.

## M1022 Dolly Set BII Changes

Use NSN 2530-01-084-6975 to get the dolly set's dust plug shown as Item 9, Page C-3 of TM 9-2330-379-14&P. NSN 5120-00-277-1253 gets the open-end hand wrench that's shown as Item 10. Make a note of these NSNs until they're added to the TM's next change or revision.

## SEE Electrical Chart

Use NSN 7610-01-475-7996 to get an easy-to-read laminated wall chart that details the SEE's electrical system. The chart is a simpler way to troubleshoot or track down an electrical short on your excavator.

## M35A2 Tire NSN

Use NSN 2610-00-262-8677 to get the 9.00 x 20 tire for the M35A2 2 1/2-ton truck. This NSN replaces the info shown for Item 1, Fig 112 of TM 9-2320-361-20P.

## M1172 WATER TRAILER BRAKE SHOES

NSN 2530-01-289-2365 gets the front brake shoe for the 400-gal water trailer. Use NSN 2530-01-287-4451 to get the back brake shoe. These NSNs are missing from Items 21 and 22, Fig 7 of TM 9-2330-397-14&P.

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?**

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**DON'T LEAVE THE AIRCRAFT  
WITHOUT IT EITHER! LEFT IN  
THE WRONG PLACE, IT CAN BRING  
DOWN A HELICOPTER!**