



**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

TB 43-PS-619, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.

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

Just write to:

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

Or e-mail to:

psmag@logsa.redstone.army.mil or
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By order of the Secretary of the Army:

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Issue 619

PS

June
2004

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-619

Approved for
Public Release;
Distribution is
Unlimited

YOU'VE GOT
HIM, CLIVE!
JUST
HOLD ON!



Follow the
STRYKER,
pgs 2-9

LIFE IS A CROC! PAGE 27

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PS MAGAZINE IS ONLINE

I JUST DON'T UNDERSTAND IT, HALF-MAST...

...THERE ARE STILL PEOPLE OUT THERE WHO DON'T KNOW PS IS ONLINE!

THAT'S OK, ONLINE WARRIOR. MORE PEOPLE DISCOVER IT EVERY DAY!

Early returns from our 2004 PS Magazine Readership Survey surprised us. A lot of our readers, nearly 15 percent, didn't know that PS Magazine has a web page.

Our Internet presence began in 1997 when we began putting the magazine on our web page. It supplements the printed version and makes searching past issues easier.

Since then we have put all articles since 1990 on the web. Annual indexes are available to help readers look for information. Setting up highly searchable indexes with Boolean capabilities are beyond the time available to the current staff.

Beginning with the October 2003 issue, readers can select individual articles from the complete issue to copy or email.

THE PS MAGAZINE WEB PAGE IS AVAILABLE AT...

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



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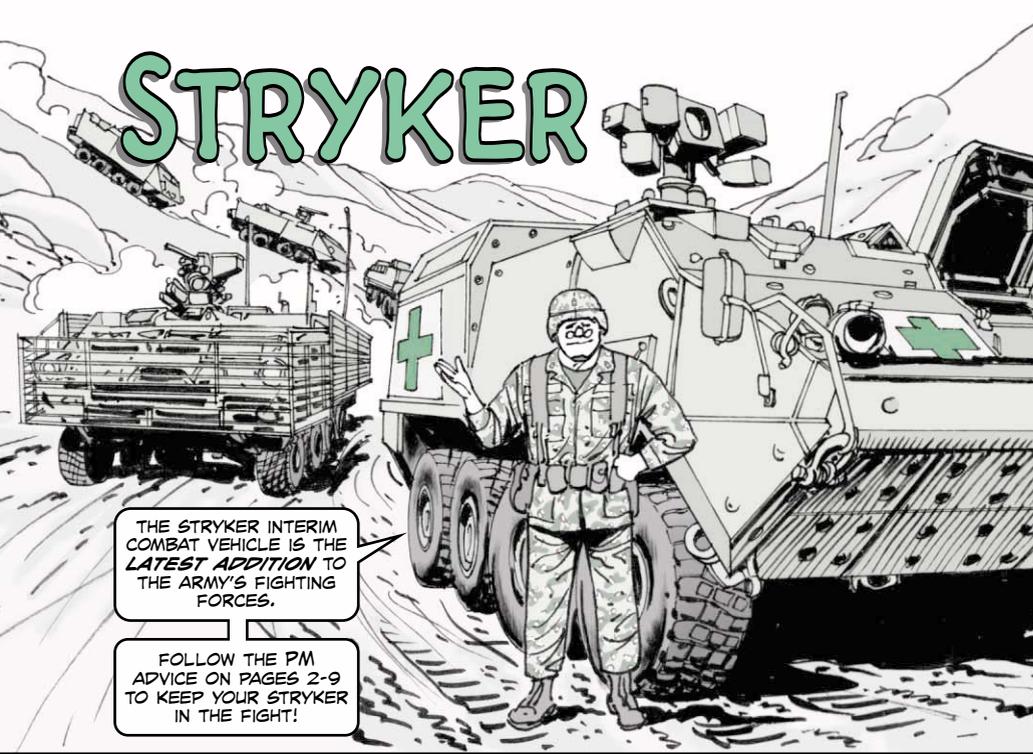
By order of the Secretary of the Army:
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STRYKER



THE STRYKER INTERIM COMBAT VEHICLE IS THE LATEST ADDITION TO THE ARMY'S FIGHTING FORCES.

FOLLOW THE PM ADVICE ON PAGES 2-9 TO KEEP YOUR STRYKER IN THE FIGHT!

Keep Oil on the Level

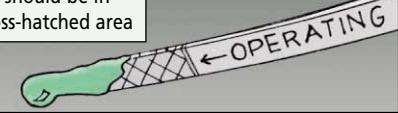
How important is it to keep up with the oil levels in your Stryker? Just ask that Stryker driver on the side of the road. That's him over there. The one with his thumb stuck out.



Engine Oil

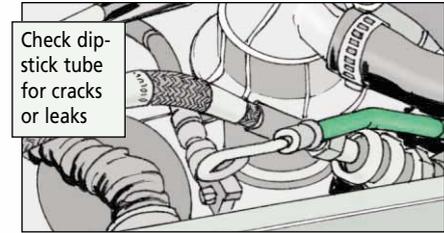
Always make sure your Stryker is on level ground before checking the engine oil level after operation. Also, the engine must be shut down at least 20 minutes before you pull the dipstick. The oil level should be in the cross-hatched area of the dipstick.

Oil should be in cross-hatched area



While you're checking the oil level, take a close look at the dipstick tube for cracks or leaks. Oil overfill, discolored oil, or a cracked dipstick tube deadlines the vehicle.

Check dipstick tube for cracks or leaks



On Board Oil Exchanger

Don't stop with just the engine oil dipstick. You'll also need to check the oil level in the on board oil exchanger (OBOE) after operation.

The Stryker's engine burns about 3 drops of oil for every hour of operation. That oil comes from the OBOE. If the oil in the OBOE runs out, you start burning engine oil. The Stryker automatically shuts down when too much engine oil is burned.

Look at both sight glasses on OBOE



There are two sight glasses on the side of the OBOE. If you see oil in the top sight glass, you're good to go. If you can't see oil in the bottom sight glass, the OBOE is well overdue for a fill-up.

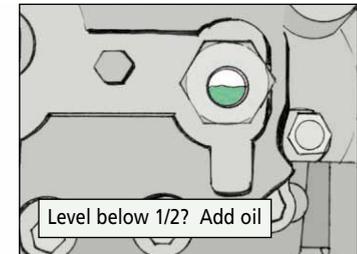
Differential

It's easy to forget to check the oil level in the differentials. After all, you have to crawl under the vehicle to do it.

Take a close look at the sight glass. The oil level should be at 3/4 full. If the level gets to 1/2 or below, fill the differential to 3/4 with gear oil, NSN 9150-01-035-5393.

Don't worry about overfilling. The bottom of the fill plug is just below the top of the sight glass, so you can't overfill the differential.

Level below 1/2? Add oil



Transmission

The transmission dipstick has a HOT and COLD range check. There's a good reason for that.

Transmission dipstick has HOT and COLD range



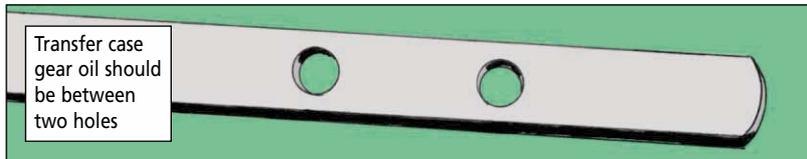
Do a COLD range check a couple of minutes after startup to make sure there's enough oil in the transmission for operation. After the engine has reached operating temperatures, do another check using the HOT range on the dipstick.

In both cases, the level should be between their respective ADD and FULL marks.

Check the dipstick tube for cracks or leaks, too. An overfill, discolored fluid or a leaking dipstick tube makes your Stryker NMC.

Transfer Case

Check the transfer case gear oil after operation. The oil level should be between the two holes at the end of the dipstick.



When removing the dipstick, make sure the gasket in the dipstick cap stays in place. It has a tendency to come loose and stay on top of the transfer case. The gasket is easily knocked off and lost in the vehicle's hull.

Without the gasket, the dipstick doesn't seal properly and dirt and other contaminants get inside the transfer case. Replace a missing gasket with NSN 5330-12-124-0982.

Wheel Hubs

Oil levels in the wheel hubs should be checked after operation—but not immediately after. You need to allow about an hour for the oil to run back from the planetary gears into the hub to get an accurate reading.

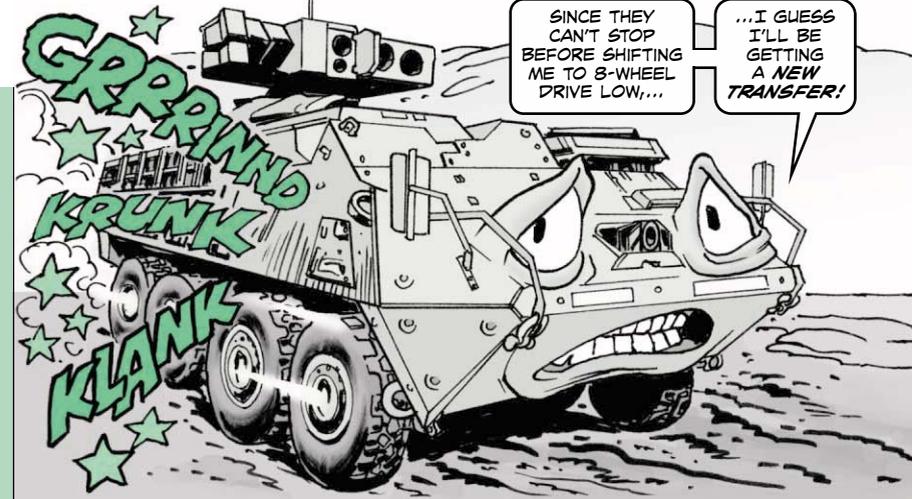
The correct oil level should be between 3/4 and 7/8 full in the sight glass.

Oil level between 3/4 and 7/8 full?



Stryker...

Shift on the Fly?

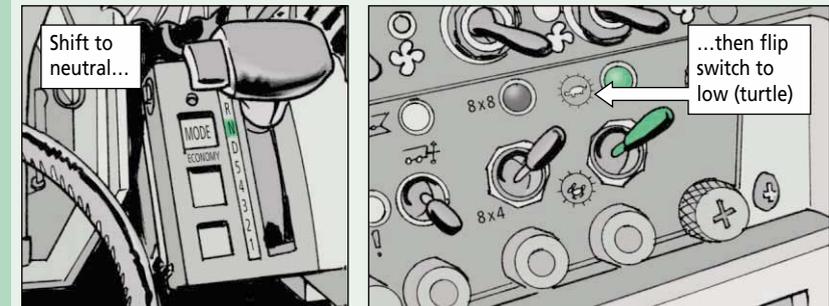


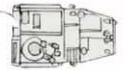
The transfer on your Stryker takes some getting used to, drivers. If you don't get used to it fast, though, you **will** be quickly buying a new one.

The transfer has three settings: 4-wheel drive, 8-wheel drive high, and 8-wheel drive low. If your Stryker is moving slow, you can shift from 4-wheel drive to 8-wheel drive high (and back again) while on the fly.

However, you should **never** shift from either 4-wheel drive or 8-wheel drive high to 8-wheel drive low while the vehicle is moving. That rips up the transfer case.

When shifting into 8-wheel drive low, stop the vehicle, put it in neutral and then flip the transfer case speed switch to take it to 8-wheel drive low.



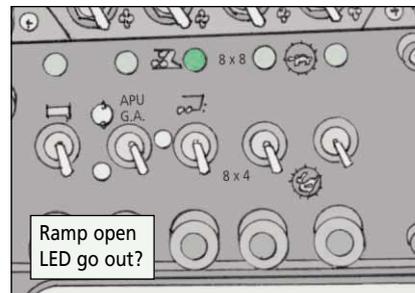
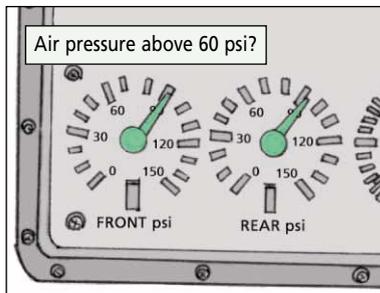


Ramp Basics Are Vital



Drivers, ramp PM and safety on your Stryker is mighty important. So follow these tips to keep your ramp—and everyone around it—functioning properly.

- Sound the horn twice before raising or lowering the ramp. That gives others a warning so they can get out of the way.
- Before closing the ramp, make sure the vehicle has enough air pressure built up—above 60 psi. Otherwise, the ramp may not close completely. Check to make sure the ramp open LED goes out.



If you're closing the ramp from the squad compartment, make sure the cam locks rotate all the way to the closed position.

A Stryker on a downslope of more than 15° may need a push from inside the vehicle to open the ramp.

- You cannot lower the ramp fully if the tow pintle is installed. The ramp will hit and bend the pintle shaft. Your best bet is to remove and stow the pintle until it's needed.

When removing the tow pintle, make sure you install the pintle plug. That keeps dirt and moisture out of the vehicle.

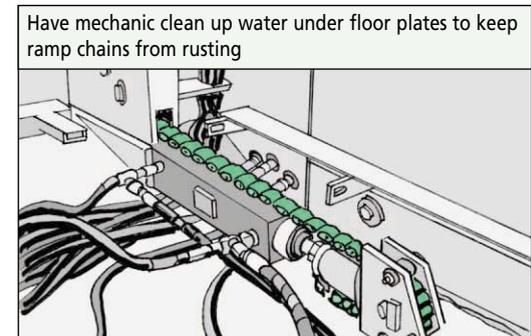
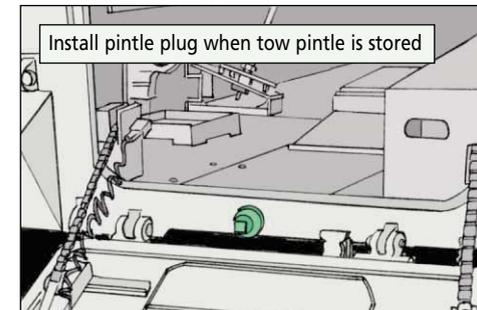
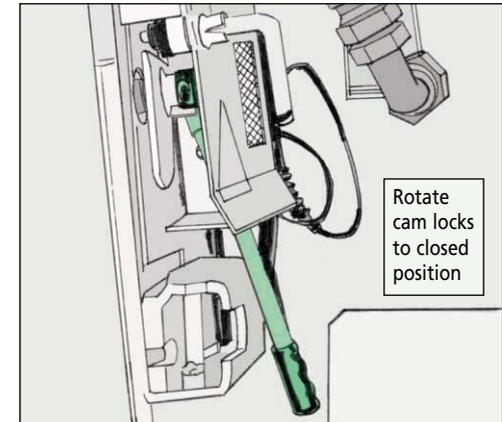
- Never exceed the load capacity for the ramp and ramp door. The ramp chains may stretch or break and you can ruin the hydraulics.

The ramp's load capacity is 1,000 lbs. The door's load capacity is 500 lbs.

Always raise or lower the ramp completely. Don't lower the ramp partially to give soldiers a seat or to carry equipment.

- Have your mechanic give the ramp chains a light coat of GAA semiannually to prevent rust. If your vehicle is going to be unused for some time, he'll need to clean out any water buildup from condensation under the floor plates periodically. If the chains sit in water, they'll rust no matter how well lubed they are.

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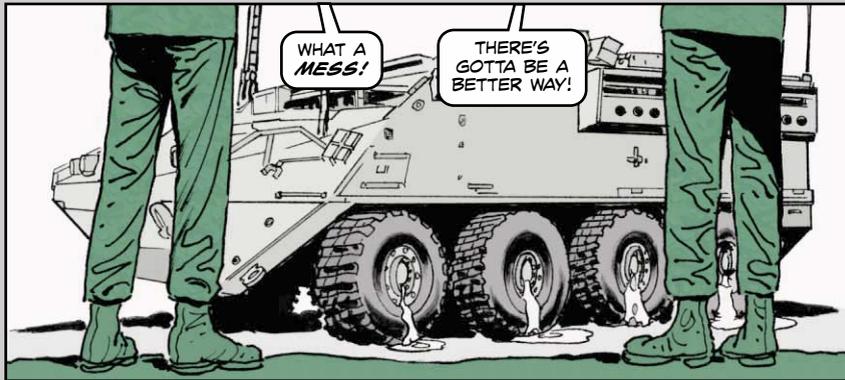


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JUN 04

Stryker...

Drain Hub Oil *Safely*



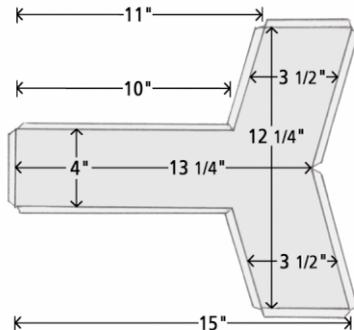
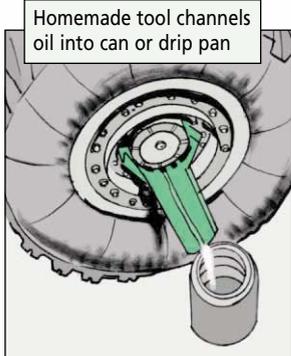
Dear Editor,

No mechanic looks forward to draining the Stryker's wheel hubs. As soon as you remove the drain plug, oil gets all over the hub, tire and ground.

It's not only a big mess, but an environmental problem as well if you don't clean it up properly.

I've come up with a homemade tool that puts a stop to that problem. It's a special trough made of 24 gauge steel that hooks onto the hub and channels the oil straight into a can or drip pan with no mess.

Here's how to make it:



All tabs are 3/8" and bent towards back of tool

When the tool is finished, curl it slightly to fit under the hub. Then follow the instructions in IETM 9-2320-311-13&P for draining the wheel hubs.

William Camacho
General Dynamics
Ft Lewis, WA

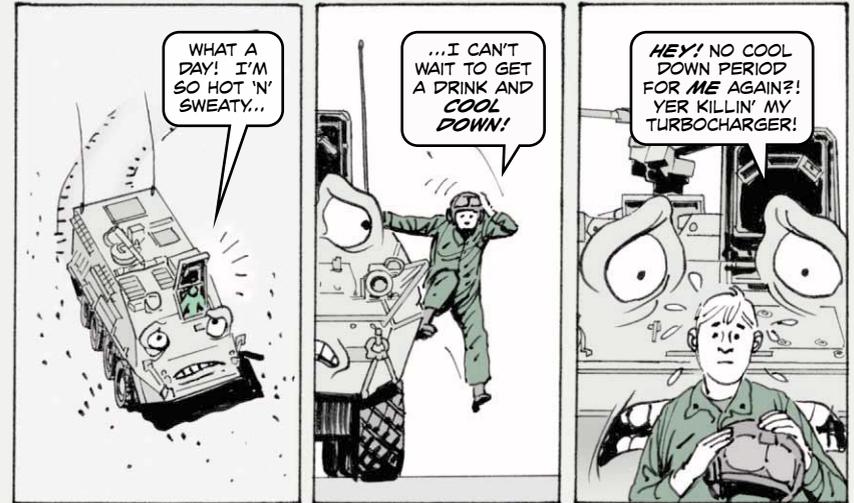
From the desk of the *Editor*

It's always a pleasure to recognize someone who knows how to channel problems into solutions. Great job!

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Stryker...

Patience Keeps Turbocharger Happy



Drivers, just because your Stryker has wheels doesn't mean you can start it or shut it down like your POV. If you try, you'll probably be asking your mechanic to replace the turbocharger real soon.

Startup

Gravity drains oil out of the turbocharger when the Stryker's been sitting for a while. So make sure you idle the vehicle for 30 seconds or so before moving out. And don't rev the engine while you're waiting!

Idling lets enough oil circulate to the turbocharger's bearings to prevent any damage.

Shutdown

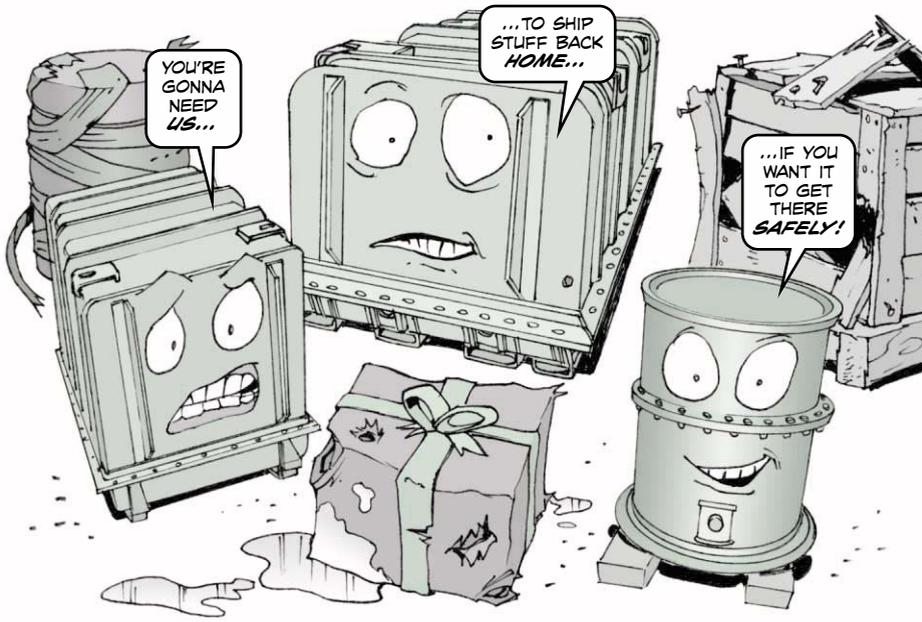
The turbocharger continues to spin for a short time after shutdown. Of course the oil stops circulating as soon as you shut off the engine. That means you need to cool down the turbocharger before shutting down the engine.

Run the engine at low idle for at least 3 minutes before shutdown.

The circulating oil cools the turbocharger so that it doesn't overheat after the engine is shut down.

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Send It Back Right



Need to ship a TACOM-managed major assembly back for repair from Southwest Asia? You can't just shove it in a box and slap on a shipping label.

Most major assemblies have specialized containers that must be used to prevent further damage during shipping. If you don't already have the container on hand, order it from the chart on the next page.



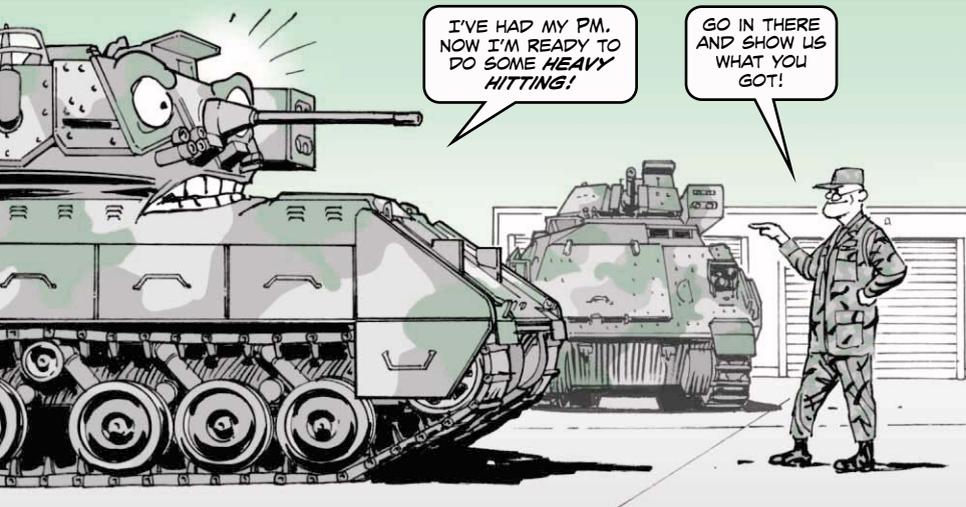
THE MAJOR COMPONENTS FOR THE M2/M3-SERIES BRADLEY (ENGINE AND TRANSMISSION) AND THE M109-SERIES SP HOWITZER (ENGINE, FINAL DRIVE, AND TRANSFER) COME WITH A CONTAINER UNDER ONE NSN. CHECK YOUR VEHICLE'S PARTS TM.

THE ACQUISITION ADVICE CODES (AAC) ON THESE CONTAINERS CAN CHANGE, SO CHECK THEM OUT ON FED LOG BEFORE ORDERING.

End Item	Major Assembly	Assembly NSN	Container NSN
M1-series tank	Accessory gear box		8145-01-113-1181
M1-series tank	Engine		8145-01-112-6574
M1-series tank	Final drive		8145-01-125-9717
M1-series tank	Forward engine module		8145-01-112-6575
M1A1 tank	Full up power pack		8145-01-251-1903
M1-series tank	GPS body		8145-01-134-7112
M1-series tank	Transmission		8145-01-112-6582
M1-series tank	Transmission hydraulic pump unit	4320-01-394-0257	8145-01-342-2875
M1-series tank	Rear engine module		8145-01-113-1180
M1-series tank	Reduction gear box		8145-01-112-6573
M113 APC	Engine	2815-01-295-7458	2815-01-232-9447
M113 APC	Engine	2815-01-246-0903*	2815-01-232-9447
M113 APC	Engine	2815-01-248-7644*	2815-01-232-9447
M113 APC	Engine	2815-01-412-2715	2815-01-232-9447
M113 APC	Engine	2815-00-124-5390*	8145-00-138-7809
M113 APC	-4 Transmission	2520-01-201-4784*	2520-01-235-9591
M113 APC	-4A Transmission	2520-01-397-1074	2520-01-235-9591
M113 APC	TX 100-1 Transmission	2520-01-133-9227*	8145-01-133-9380
M88A1	Engine		8145-00-856-8147
M88A1	Final drive (left)	2520-00-896-9020	8145-00-858-5655
M88A1	Final drive (right)	2520-00-896-9021	8145-00-858-5654
M88A1	Transmission		8145-00-858-5656
AVLB	Engine		8145-00-856-8147
AVLB	Transmission		8145-00-695-9008
HMMWV	Engine		8145-01-231-3747
HEMTT	Engine		8145-01-375-7046
HEMTT	Transmission	2520-01-257-3880	8145-01-242-2573
HEMTT	A2/A2RI Transmission	2520-01-479-8832	8145-01-503-7315
HEMTT	Transfer case		8145-01-242-2584
M939/A1-series 5-ton truck	NHC 250 Engine	2815-01-111-2262*	8145-00-134-3691
M939/A2-series 5-ton truck	CTA 8.3 Engine	2815-01-374-7539*	8145-01-372-0568
M939-series 5-ton truck	MT654 Transmission		8145-01-117-4978
M939-series 5-ton truck	Transfer	* with container	8145-01-134-6538
M809-series 5-ton truck	Engine		8145-00-134-3691
M809-series 5-ton truck	Transfer		8145-00-907-0695
M35A3-series 2 1/2-ton truck	Engine		8145-00-027-6439
M35A3-series 2 1/2-ton truck	Transfer		8145-01-422-7742
M35A3-series 2 1/2-ton truck	Engine		8145-01-422-4197
M35A3-series 2 1/2-ton truck	Transmission		8145-01-422-7744
M35A3-series 2 1/2-ton truck	Transfer		8145-01-422-7742
M9 ACE	Engine		2815-01-385-3635 (upper half) 2815-01-385-3683 (bottom half)
M9 ACE	Transmission		2540-01-347-8898

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Hit Hard with Linebacker PM

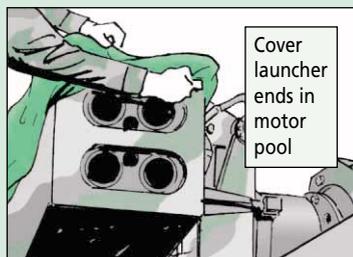


• **Don't forget the spare hull and turret emergency batteries during weekly PMCS.** Some Bradley units report the spare batteries actually have more trouble with corrosion than the regular system batteries. If you're not checking the spares for corrosion, you won't discover until you're ready to fire on silent watch that your weak spares silence firing.

Check spare hull batteries during PMCS



• **Do everything possible to keep dirt out of the launcher.** Dirt clogs electrical connections and cryogenics, which means firing problems. And it really doesn't take much dirt to cause problems. If your Bradley is just going to sit in the motorpool, cover the ends of the launcher with garbage bags. Before a mission, vacuum out any dirt in the launcher with a shop vac.



Cover launcher ends in motor pool

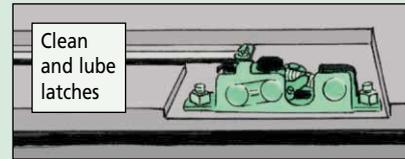
• **Check the bolts that hold the launcher on the Bradley.** They do crack or work loose. If they get in too bad a shape, you could launch the launcher! Shiny areas around a bolt usually mean it's loose. Get it tightened. Cracked bolts need to be replaced.

Look for cracked bolts and shiny spots around bolts



• **Keep the launcher door latches clean and lubed.** If the latches are jammed with dirt or corrosion, they won't latch and you can easily break them if you force them shut. Using an air hose is the easiest way to clean them. A soft-bristle brush also works. Lube the latches with any lightweight oil--except if you're in the desert. Don't lube latches in the desert. Just keep them clean.

Clean and lube latches



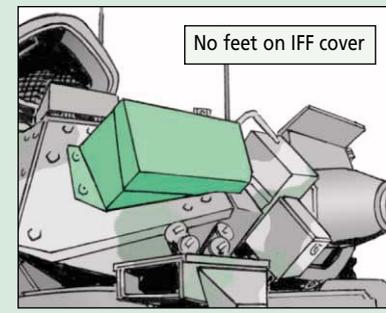
• **Keep the launcher and SVML latches closed.** If they stick out, they eventually catch on something and break. Don't jerk on the latches. If you force them, they snap and you're out of business.

DON'T LEAVE LATCHES STICKING OUT!



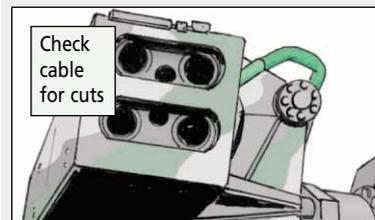
• **Don't step on the IFF cover.** Your weight breaks the cover and deadlines the Bradley.

No feet on IFF cover



• **Eyeball the cable that runs to the launcher for cuts.** If cuts get too bad, water gets in the cable and causes electrical problems. Cover small cuts with electrical tape. If the cuts are deep, the cable may need to be replaced. Tell your repairman.

Check cable for cuts



OF COURSE, ALWAYS DO ALL THE PMCS LISTED IN YOUR TM. THAT KEEPS THE LINEBACKER READY TO HIT THE ENEMY HARD.



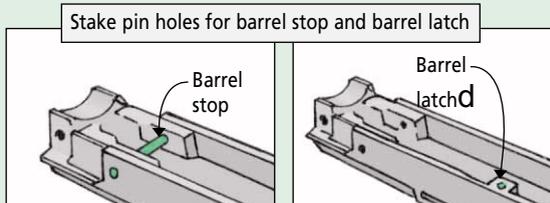
What Armorers Need to Know

WHY DO WE HAVE SO MUCH TROUBLE WITH THESE QUICK RELEASE BRACKETS?

CHANGE 4 TO THE TM IS JUST OUT AND IT GIVES THE LOWDOWN ON INSTALLING BRACKETS.

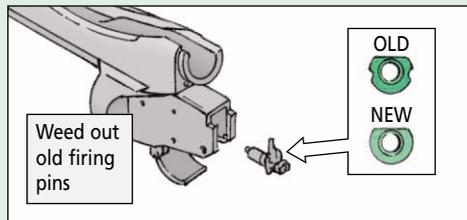


For the M203A1 or -A2, stake the headless pin holes that hold the barrel latch and barrel stop. If a pin hole is not staked, the pin could fall out.



Old Firing Pin

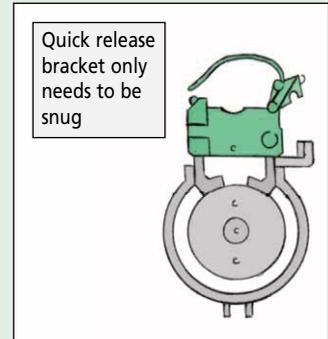
Some old style M203 firing pins are still in the field and they shouldn't be. They can damage the M203 and anybody firing it. Check the firing pins for all your M203s and any pins you have in bench stock. Get rid of any old pins.



Quick Release Bracket

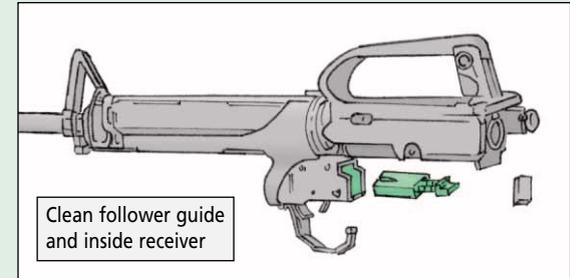
When you install the quick release bracket, there's no need to tighten it down until beads of sweat pop out on your forehead. If you overtighten the bracket, you can actually damage the bracket or barrel. Snug is tight enough for the bracket. Para 2-17 in Change 4 to TM 9-1010-221-23&P updates the procedure for installing the quick release bracket. Unfortunately, the only place you can find Change 4 is on the Electronic Technical Manual website at:

<http://www.logsa.army.mil/etms/online.htm>
You will need a password to access the TM.



Clean Insides

You'll save yourself and your unit lots of trouble if you regularly clean out the inside of the M203. That's where crud collects and operators aren't allowed to clean. If the insides get too clogged, firing problems start.



Take off the backplate and remove the follower guide. Clean the follower guide with CLP and wipe out the inside of the receiver with dry cleaning solvent. Let it air dry before putting the launcher back together. Do that every month or so, depending on how much the M203 is fired.

M16-Series Rifle...

How Do You Store M16A4s?

Dear Half-Mast,

Do you store the M16A4 rifle in the M12 rack?

SGT M.H.

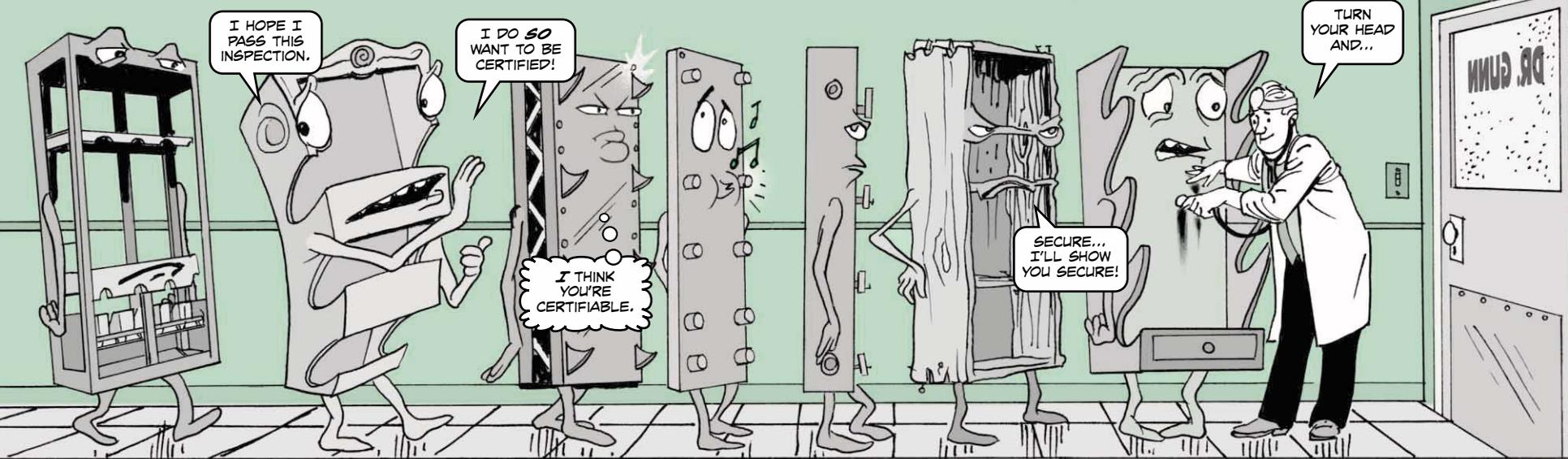
Dear Sergeant M.H.,

Yes, the M16A4 goes in the M12. But the M16A4, like the M4/M4A1 carbine, has a removeable carrying handle that needs to be moved back one slot on the receiver so that the locking bar fits over the M16A4. When the rifle is to go back to the field, the carrying handle should be returned to its original slot so that the rifle doesn't need to be zeroed again.

Half-Mast

Fabricated Racks

OK If Certified



YOU CAN FABRICATE RACKS... AS LONG AS THEY'RE CHECKED FOR SECURITY.

Units can still fabricate and legally use racks as long as the fabricated racks are certified as secure by a TACOM-RI logistics assistance representative (LAR)—or an authorized Reserve Component representative—along with a battalion-level command representative. Once the racks are certified as secure, they are authorized for use indefinitely. Units simply need to place the serial number provided by TACOM or Reserves on the rack and keep the certification document on file.

- be secure enough to prevent weapons, receivers, or barrels from being disassembled and removed while locked in the rack without using tools.
- use at least 3/8-in diameter bolts or machine screws. Bolts and nuts must be tack welded, brazed, or peened. Any modifications to standard-issue racks, including adding an adapter bar to the M12 rack to store M4 carbines, must also be approved by TACOM. Send requests for rack certification or modification to:

**TACOM
EA-SALD
ATTN: AMSTA-LC-CSL-D
Rock Island, IL 61299-6000**

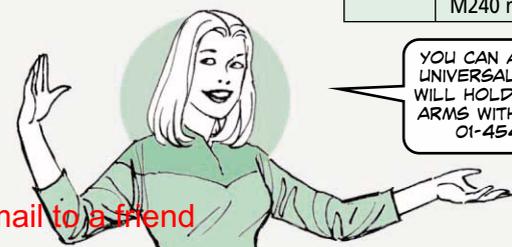
Questions? Contact James Rollins at (309) 782-1797/DSN 793-1797 or email:

rollinsj@ria.army.mil

The NSNs for the standard-issue racks are:		
Rack	Weapon	NSN 1095-
M11	M1 and M14 rifle	00-897-8755
M12	M16 rifle/M4 carbine	00-407-0674
M13	M249 machine gun	01-197-7902
M14	M9/M11 pistol	01-236-2203
M15	MK 19 machine gun	01-216-9295
	M240 machine gun	01-466-2065



- have hinged locking bars with hinge pins welded or otherwise secured to the rack frame.

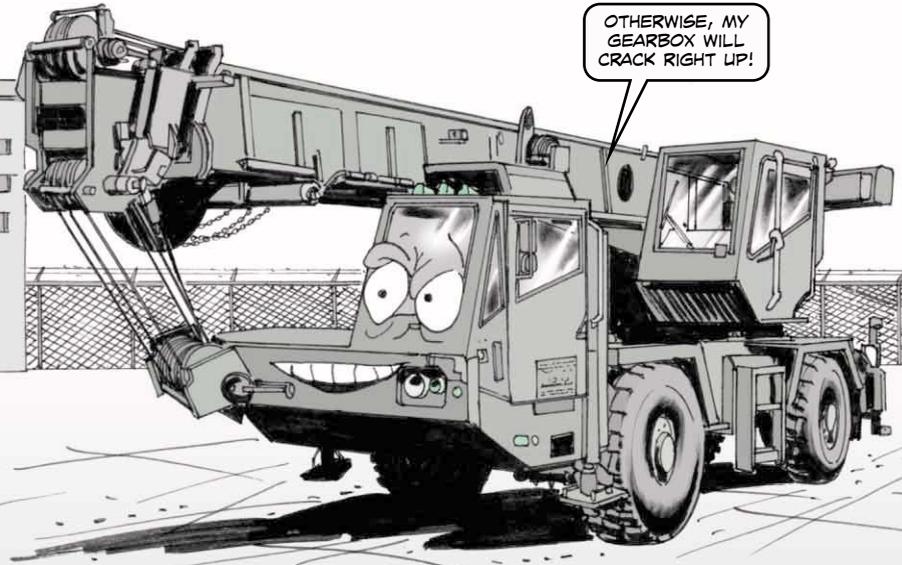


YOU CAN ALSO GET A UNIVERSAL RACK THAT WILL HOLD ALL SMALL ARMS WITH NSN 1095-01-454-6320.

STEERING GEARBOX CRACK-UP



LET'S GET THAT CHAIN OFF YOUR STEERING WHEEL AND GET TO WORK!



OTHERWISE, MY GEARBOX WILL CRACK RIGHT UP!

"One thing leads to another." Keep those words in mind before you start up the 22-ton crane.

That's because several gearboxes on these cranes have bit the dust. A cracked gearbox means your crane isn't going anywhere until help arrives.

At \$8,400 a pop, that's a lot of greenbacks, so listen up.

Here are two ways to stop the crack-up:

1. When you drive the crane from the superstructure, *make sure the cab carrier's steering wheel isn't locked in place by a security chain or cable.*

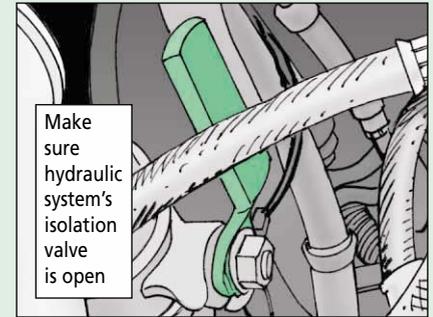
A carrier steering wheel that's locked in place means it can't move (turn) while you're driving the crane from the superstructure/crane cab. This causes instant destruction of the gearbox, not to mention a Class III leak. That's because the gearbox is mechanically linked to the vehicle's hydraulic steering system. In a nutshell, the hydraulic pressure can be catastrophic!



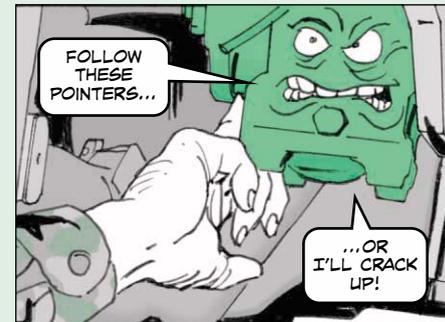
Make sure cab carrier's steering wheel isn't locked in place by a security chain or cable

2. After your mechanic changes the vehicle's steering filter element, *make sure the hydraulic system's isolation valve is reopened.*

The isolation valve is located directly underneath the middle of the crane. If it's left in a "closed" position, hydraulic fluid can't flow through the gearbox after vehicle start up. The end result is your crane has a gearbox that just went south.



Make sure hydraulic system's isolation valve is open



FOLLOW THESE POINTERS...

...OR I'LL CRACK UP!



KEEP THESE PM POINTERS IN MIND BEFORE THE DAY'S RUN.

IT MAKES THE DIFFERENCE BETWEEN A COMPLETED MISSION AND WONDERING "WHAT WENT WRONG?"

CAB LINERS LIMIT NOISE



THAT'S THE LAST TIME I USE YOU! EVEN WITH EAR PROTECTION, MY HEAD IS RINGING!

DON'T BLAME ME! YOU GUYS NEED TO REPLACE MY CAB INSULATION LINER!

Dear Half-Mast,
What criteria do we use to replace the insulation liners in the 621B scraper's cab?

SFC M.S.F

ANOTHER GOOD QUESTION! KEEP 'EM COMIN' IN!



Dear Sergeant M.S.F.,
You'll come up empty-handed trying to find the criteria in the scraper's TM 5-3805-248-14&P-1 thru P-4. That's because it's not there!
Your best bet is to grab or touch the insulation liner to see if it falls apart from dry-rot. Most scrapers have original liners dating from when the vehicles were fielded back in the mid-80s.



Do not replace a liner just because it's dirty or shows some wear or tear. But if the liner is falling apart, it's probably a safe bet to replace it.

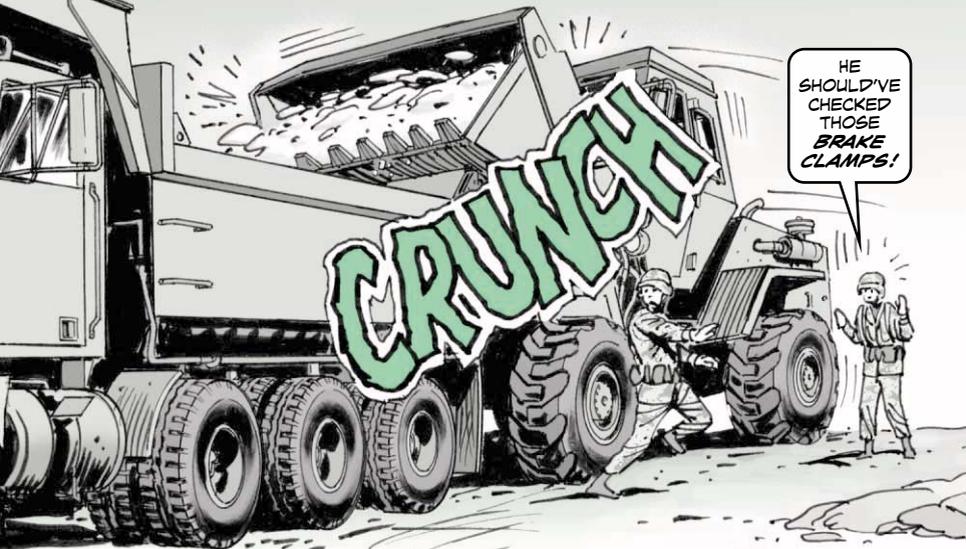
Here's a list of the insulation liners that fit inside the scraper's cab. By the way, you won't find these NSNs in the technical manuals.

Liner	NSN
Front of the cab floor	2510-01-178-8863
Rear of the cab floor	2590-01-187-2235
Floor mat	2540-01-184-4688
Side panel	2510-01-182-9272
Insulator plate	5970-01-176-0128

Use adhesive primer, *Half-Mast* NSN 8040-00-826-3535, to keep a liner in place.



The PM Scoop



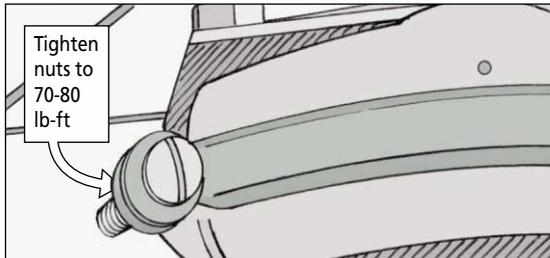
GOOD PM WILL KEEP YOUR SCOOP LOADER SCOOPIN' DIRT FOR YEARS TO COME.



Air Chamber Clamp

Vibration loosens nuts and bolts that hold the brake actuator air chamber clamp together. When that happens, air leaks from the chamber. No air means no brakes.

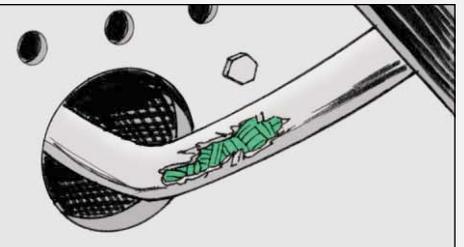
So grab the clamp and see if it's loose. If it is, get your mechanic to torque the nuts to 70-80 lb-ft. Between scheduled 250-hr services, look for loose nuts, shiny spots or rust around the bolt heads and nuts on both the front and rear air brake chambers. If you spot any, report them to your mechanic.



Hydraulic Hose Rub

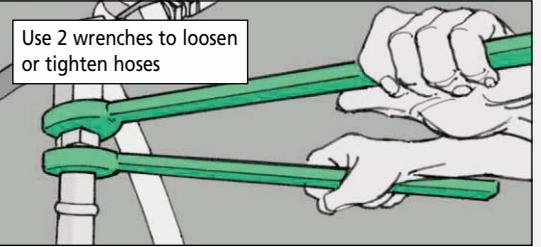
Lift cylinder hydraulic hoses rub against the steel lines to the bucket clam cylinders. As the hoses wear through, they weaken and burst.

Hose worn through to steel braid can rust and burst



TO PREVENT HOSE DAMAGE, REPOSITION EACH HOSE SO IT'S ABOUT AN INCH AWAY FROM THE STEEL LINE. HERE'S HOW...

- Use two wrenches to keep from twisting the hose when loosening the connection on the upper hose for each forward lift cylinder. It takes a 1 1/4-in and a 1 3/16-in open-end wrench to loosen the connection.



- Get a buddy to hold the hose about an inch from the steel line while you tighten the connections.
- If a hose is worn through its outer cover, replace it.
- Paint any bare spots on the steel lines.

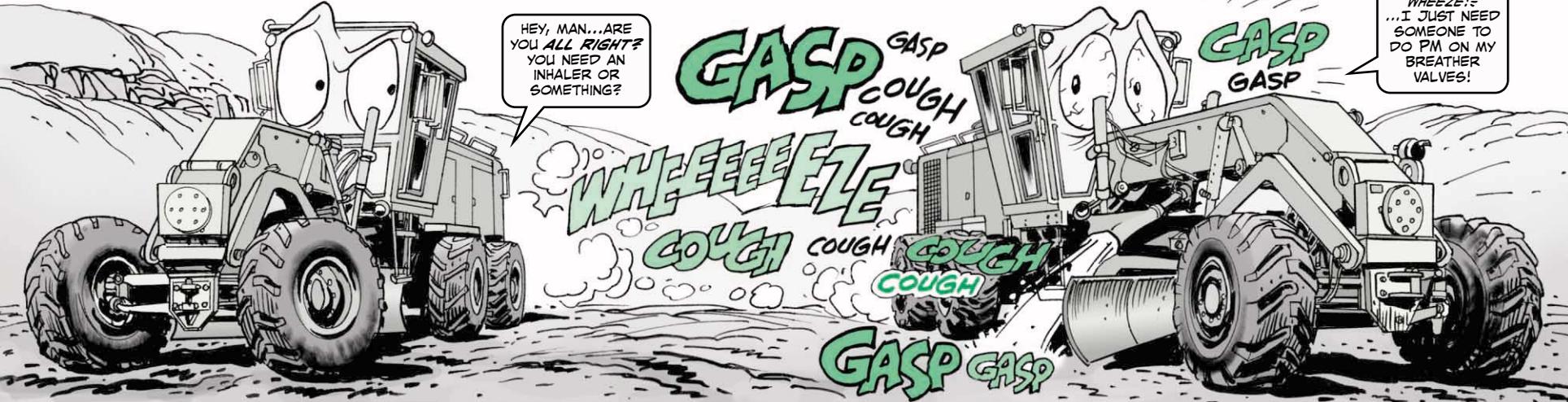
MW24C Scoop Loader Bushing

Use NSN 3120-00-165-5947 to get the mounting bushing for the scoop loader's hydraulic lifting cylinder. This NSN replaces the parts info shown as Item 30, Fig 145 of TM 5-3805-262-24P.

621B Fuel Shutoff Cable

NSN 3040-01-214-9215 gets the 621B scraper's emergency fuel shutoff cable and handle assembly. The NSN is missing from TM 5-3805-248-14&P-4.

Let the Valves Breathe



YOU'VE GOT TO LET YOUR GRADER'S BREATHER VALVES BREATHE, OPERATORS...

...OR YOU'LL BE LOOKING AT DOWNTIME TO GET SEALS REPLACED.



Circle Drive

The breather valve on the grader's circle drive gear case gets caked with mud during operations. A clogged valve lets pressure build. Eventually, something has to give, and it's usually the gear case's seal. When the seal goes, the lube is bound to follow. End result: component failure, namely the circle drive.

Use a clean rag to wipe off the breather valve. Then twist the valve's cap to loosen any dirt stuck inside. Tap the cap to knock dirt out. Inside the cap is a spring, so the cap should bounce when you tap it. If the cap won't turn or bounce, get a new breather valve with NSN 4820-00-994-3015.



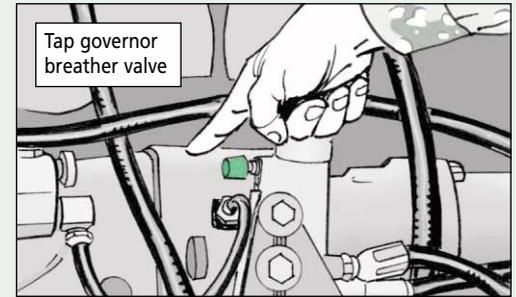
Air Governor

Another breather valve to keep an eye on is the one that mounts into the engine's air governor.

Engine vibration loosens and wears out the cap. Some caps vibrate completely out of the governor. When that happens, dirt gets into the air governor causing it to stick open. That lets air pressure build up and blow the seals in the air relief valves on the brake system's air tanks. Then your grader's air brake system can't build up air pressure.

So during your PMCS checks with the engine access door open, eyeball the breather valve. Grab it to make sure it's not loose. Then tap it a few times to make sure it bounces back.

If the cap won't turn or bounce, get a new breather valve with the same NSN.



MKII Bridge Boat Dipstick

Use NSN 6680-01-232-0102 to get the engine oil dipstick. This NSN replaces the parts info shown as Item 1, Fig 63 of TM 5-1940-277-20P.

[Click here for a copy of this article to email to a friend](#)

WHERE'S THE GROMMET?

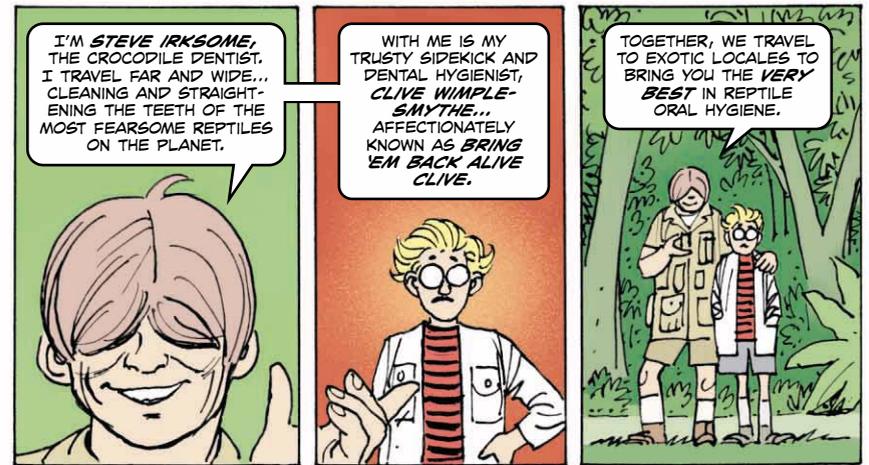
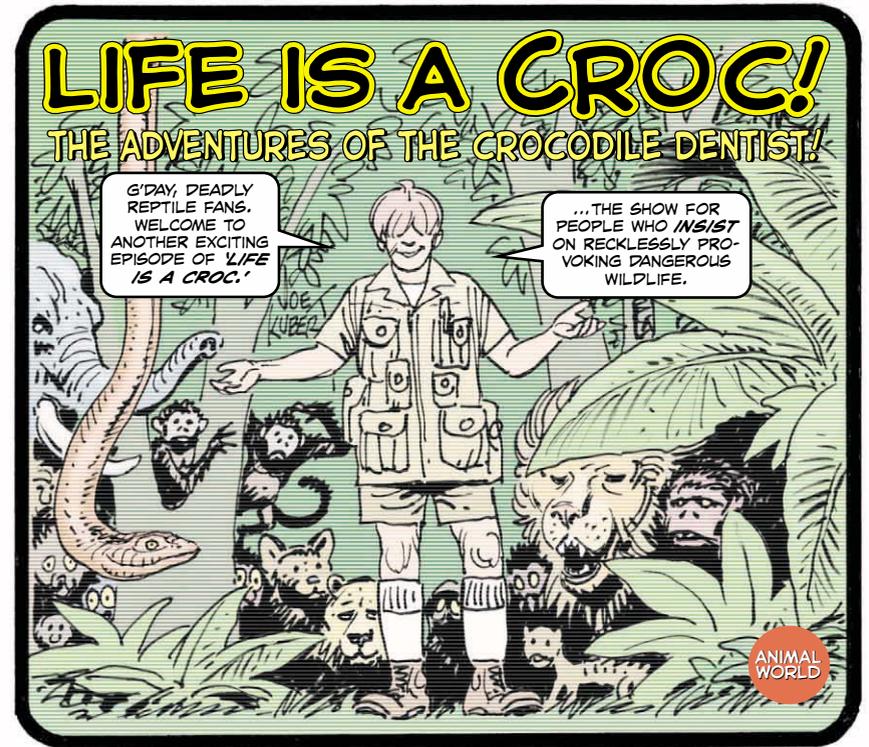


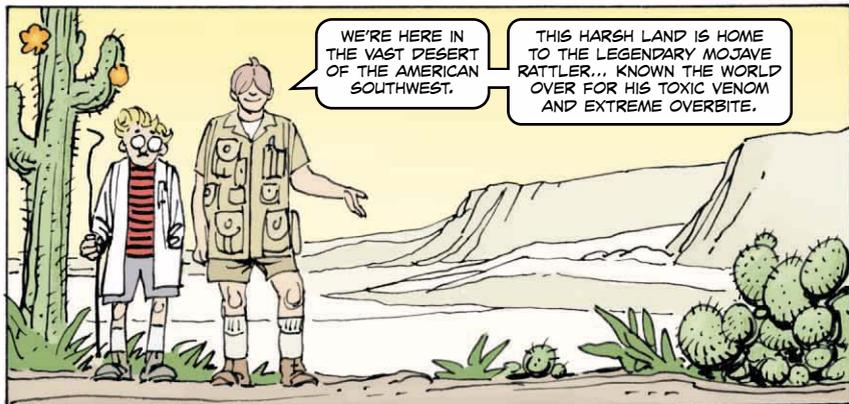
Sand, vehicle vibration and weather cause the grader's battery cable grommets to come loose and deteriorate.

The grommets protect the battery cables that pass through the engine's left and right access covers. Without grommets, the cables rub against the access cover, cutting through the insulation. Then the battery grounds out, causing the vehicle to shut down. Worse, you could be burned or shocked while operating the vehicle!

eyeball the grommets to see if they're loose, dry-rotted or missing.

Make sure the grommets fit in their access holes tight and snug. Replace 'em using NSN 5325-01-176-8163 if they're damaged or missing. The grommets are shown as Item 28, Fig 218 of TM 5-3805-261-24P.





WE'RE HERE IN THE VAST DESERT OF THE AMERICAN SOUTHWEST.

THIS HARSH LAND IS HOME TO THE LEGENDARY MOJAVE RATTLER... KNOWN THE WORLD OVER FOR HIS TOXIC VENOM AND EXTREME OVERBITE.



WORKING WITH ONLY A SNAKE HOOK AND A BAG, WE SHALL **CAPTURE** THIS BAD BOY OF THE DESERT AND FIT HIM WITH **BRACES**.



AS ALWAYS, MY EVER-RELIABLE ASSISTANT, CLIVE, HAS DONE **THOROUGH** PREVENTIVE MAINTENANCE ON THE CANVAS SNAKE BAG.



"HE'S WASHED IT WITH SOAP AND A BRUSH TO REMOVE DIRT AND GRIME."



"HE'S RINSED IT WITH CLEAN WATER AND HUNG IT TO DRY TO PREVENT MILDEW."



"HE'S PATCHED THE HOLES AND TRIPLE-STITCHED WEAK SEAMS."



HE'S CLOSELY INSPECTED THE BAG. NO **FLAW** OR **DEFECT** HAS GONE UNNOTICED. FOR CLIVE, PM IS NOT A **CHORE**... IT'S A **PASSION!**



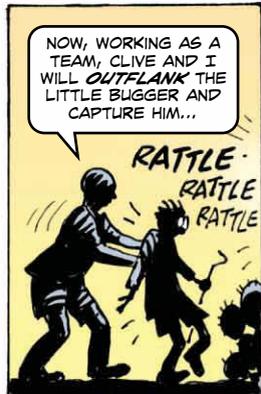
CRIQUEY!



RATTLE RATTLE

HARK! THE TELL-TALE WARNING OF A FEISTY **MOJAVE RATTLER!**

RATTLE



NOW, WORKING AS A TEAM, CLIVE AND I WILL **OUTFLANK** THE LITTLE BUGGER AND CAPTURE HIM...

RATTLE RATTLE RATTLE

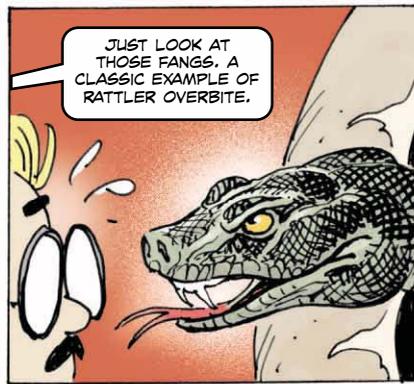


...IN THIS SNAKE BAG.

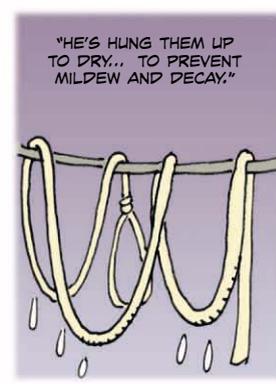
GO TO IT, CLIVE!

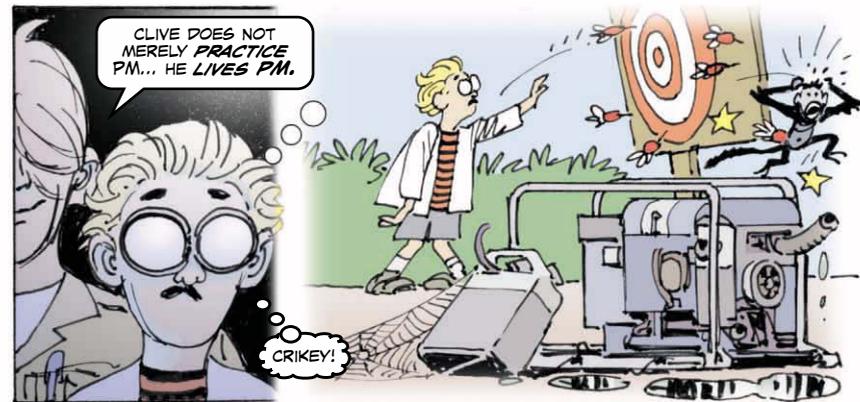
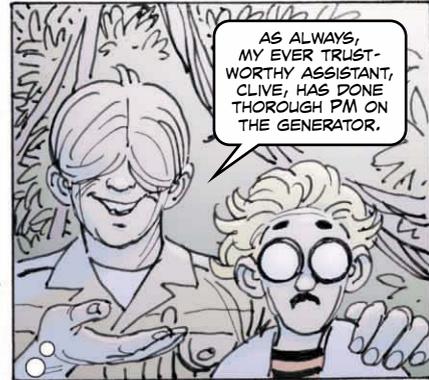
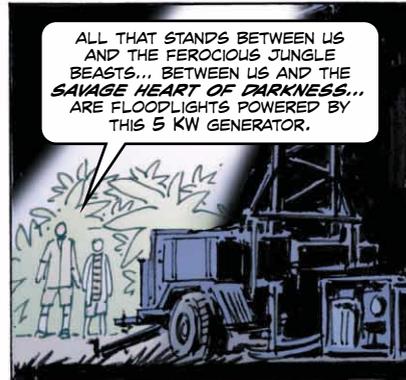
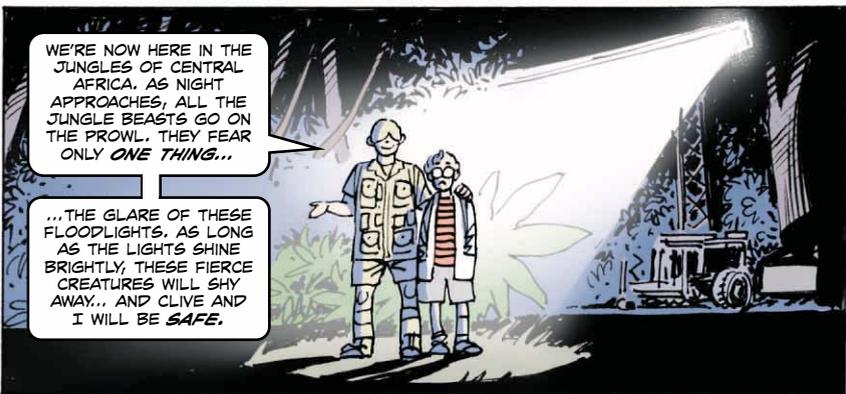


HE'S A **GNARLY** LITTLE BEGGAR... AND SO'S THE **RATTLER**. WHAT A **BEAUTY!**



JUST LOOK AT THOSE **FANGS**. A CLASSIC EXAMPLE OF **RATTLER OVERBITE**.





HH-60L/UH-60A/L...



NO TAIL ROTOR HARDWARE MIX-UP THIS TIME!

USE COLOR FOR BALANCE, TOO

Dear Sergeant Blade,
After reading the story on page 38 of PS 611 (Oct 03), we think there might be a potential problem.

The instructions to make the tail rotor hardware display board do not allow for the rotation of the tail rotor which may happen while it is disassembled.

If the tail rotor blades being removed are to be installed in the same gear box, and the color bands have worn off, use a grease pencil and put index marks on blades, retention plates, pitch control rods, and pitch beam so they are reinstalled in the same clockwise and inboard/outboard positions to minimize rebalancing of the tail rotor.

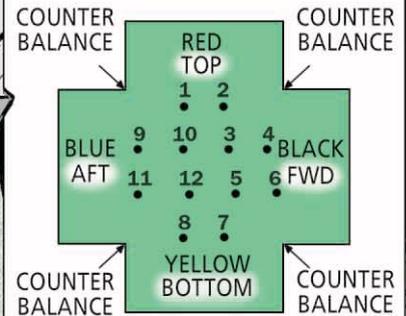
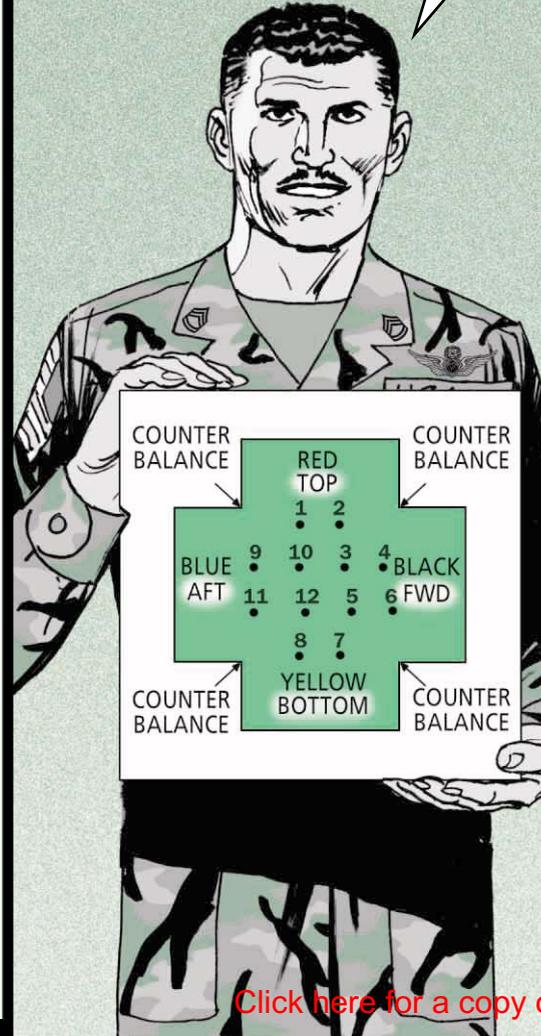
To maintain proper tail rotor balance, it's also important to mark the board with red, yellow, blue and black labels as shown on the retention plate. This will further reduce hardware mixup because if the rotor turns, it ensures the hardware will be installed in the same position from which it was removed.

It's also important that the pitch beam, inboard retention plate and outboard retention plate and each pitch control rod are marked with the correct color, too.

Andrew Harrison
Michigan AASF

THE POTENTIAL FOR TAIL ROTOR ERROR BY NOT SHOWING THE COLORS COINCIDING WITH THE TOP, BOTTOM, AFT, AND FWD ON THE BOARD IS IMPORTANT.

YOUR REMEDY IS RIGHT ON THE MONEY.



LOOKING FOR A UH-60 GASKET?



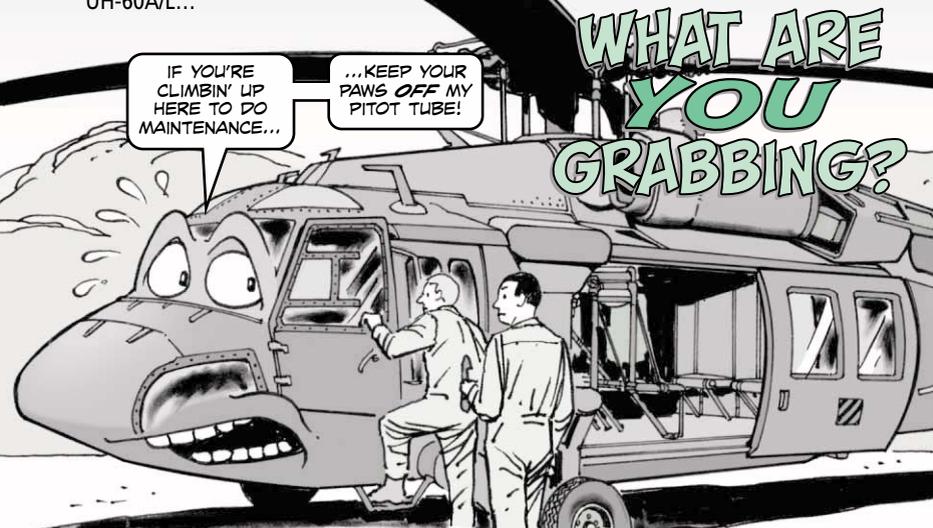
YES!

Mechanics, over time the gasket on the filter indicator light dries out. It's used in the Black Hawk's control communication system, C-6533/ARC. To get a replacement rubber gasket for the light without buying a new assembly, order NSN 6220-01-465-9267.

ALSE Training Course Address

ALSE shops, the current mailing address for the Army Aviation Life Support course at Ft Rucker is:

Department of the Army
ATTN: ATZQ-BDE-EM
BLDG 6005
Ft Rucker AL, 36362



IF YOU'RE CLIMBIN' UP HERE TO DO MAINTENANCE...

...KEEP YOUR PAWS OFF MY PITOT TUBE!

WHAT ARE YOU GRABBING?

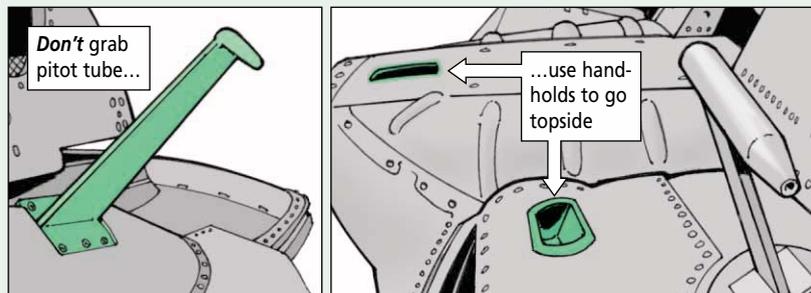
Mechanics, when heading topside to do Black Hawk rotor head maintenance, don't grab a pitot tube because it's convenient.

Get in the habit of grabbing your bird's handholds if you're going topside. Or grab a maintenance stand instead. That always does the trick.

The pitot tubes are not strong enough for handholds. They are thin sheet metal and fiberglass, and grabbing them can break the tube and its internal lines at the base. If broken, they cannot monitor air speed. This is a major problem with Black Hawks that have external stores support system (ESSS) installed.

Breaking pitot tubes means aircraft down-time and work for the sheet metal and airframe shops.

So hands off the tubes, or you'll hear snap, crackle and pop and maybe some yelling from the repairers who have to drill out the rivets and fix the damage.



ELSE...

WHAT DO YOU HAVE IN YOUR BIRD?

BY THE TIME I GET THROUGH SHRINKING YOU SOLDIERS, ALL OF YOUR GEAR WILL FIT IN ONE CONTAINER!!

CREWS, THERE'S NO REASON TO GO TO THESE EXTREMES.

JUST READ THIS ARTICLE TO SEE WHICH AM66 CONTAINERS YOU NEED.

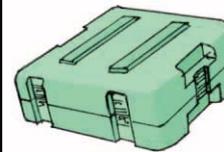


Most folks use and pack separate suitcases with specific items depending on the type of trip they take. The same goes for you Chinook and Black Hawk crews when you have a specific mission.

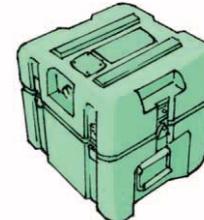
Depending on whether you have a two—three— or four or more—member crew complement and the type of mission, make sure you check out the right size Aircraft Modular Survival System (AMSS) from the ALSE shop. TM 1-1680-354-23&P gives you all the info you need.

It's a little too late in the game when you're out in the boonies training or in a serious situation—like a downed bird—to discover you didn't take the right module for the crew's survival in an emergency.

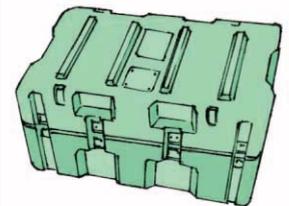
Use the small container for crew of 2



Use medium container for crews of 3 or 4



Use large container for crews of more than 4



KEEPING YOUR COOL

WHAT'S WRONG WITH HIM? I THOUGHT YOU SAID HE'D BE COOLER.



NOTHING BURNS ME UP LIKE OPEN DOORS!



Dear MSG Half-Mast,

Could you verify something I know, but can't get some guys to believe?

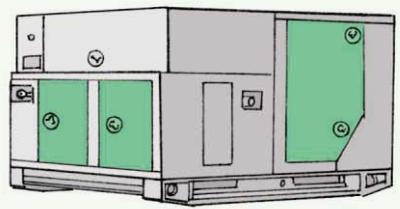
On the 5-KW and 10-KW generators used as part of the MEP-802A and -803A, I believe that keeping the access doors closed keeps the generators cooler. I think the generators were designed to have air flow pass over them and help cool them when the doors are closed.

Some guys want to keep the doors open. They think that keeps the engine cooler. They also say that the only thing in the TM about keeping the doors closed is to keep the noise down.

So, who's right?

SSG Matthew J. Zweibohmer
234th Sig Bn
Iraq

Keep doors closed!



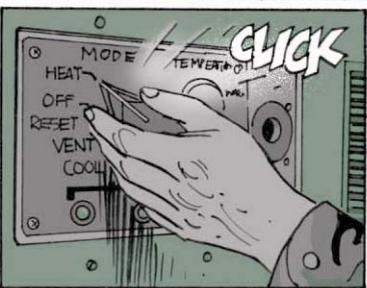
Dear Sergeant Zweibohmer,
You are right!

Keep the access doors on your generators closed. This keeps the generator cooler, keeps down the noise, and keeps the interior of the generator cleaner.

Half-Mast

You Gotta' Know When to Stop

HMMM... LESSEE, "OFF" IS PROBABLY THE UPPER SETTING...



WHY WAS THIS AC UNIT TURNED TO HEAT!?

NO ONE'S GETTING COOL TODAY-THE DADBLAMED THING IS NMC!

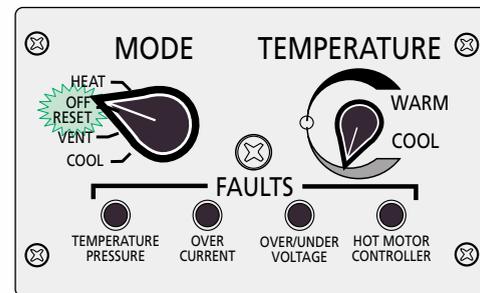


It's dark and it's your job to shut off the 18,000 BTU horizontal air conditioner, F18H-MPI, NSN 4120-01-327-1316. You turn the MODE switch all the way clockwise to the end position and head for some serious sack time.

The next morning, your AC unit is NMC because the heater blower that was running all night has gone kaput!

What went wrong?

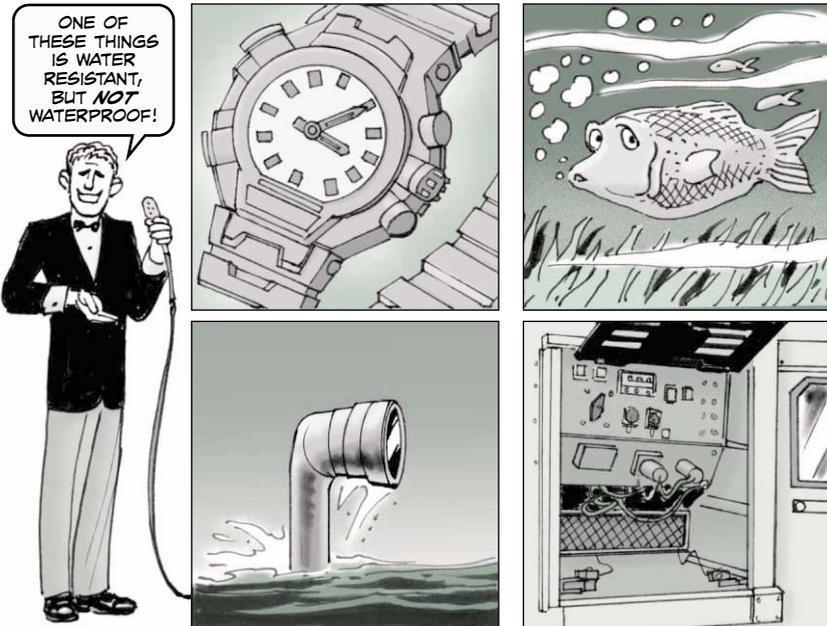
Well, the switch fooled you as it has a lot of folks. Turning the switch all the way to the end position should turn it off. That's how most switches work. But not this one. The end position turns on the heater blower. The OFF position is the stop before the last stop.



There's only one way to prevent this from happening and that's by educating your operators. Show 'em the switch in the light of day and let 'em know about the problem.

One more tip: Tell them when they shut down the AC to listen. If they hear something running—like a blower motor—chances are they stopped too late!

Wash Day Blues



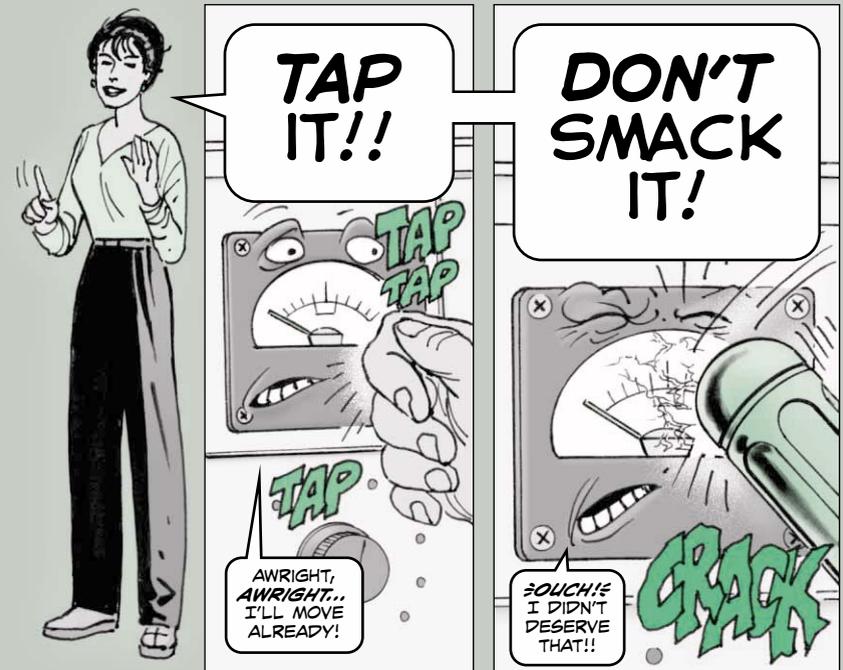
Do you know the difference between waterproof and water resistant? Waterproof means an item can battle water intrusion and always win. Water resistance puts up a good fight against water intrusion, but sometimes loses the battle.

The power entrance box on digital group multiplexer shelters is water **resistant**, not waterproof! If you hit the power entrance box with high-pressure water, water will get in the box. You do not want water in the box!

Once the water is in, it can't get out. That means internal circuits and other electronic components will soon corrode or short out.

So, if you're cleaning a shelter with high-pressure water, do not aim at the power entrance box. Spray away from it and clean it by hand with non-pressurized water like that from a garden hose.

Keep in mind that this problem has been most noticeable with the power entrance box, but most seals are water resistant and not waterproof. If you absolutely must use high-pressure water to clean your shelter, try to avoid any areas that are depending on a seal to keep out water.



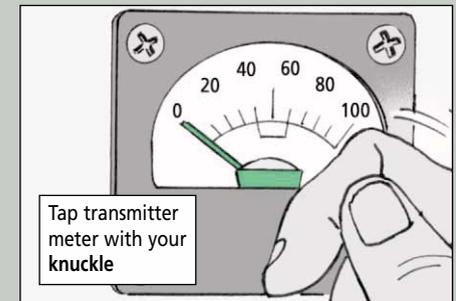
We know it's not unheard of for the indicator in the receiver meter of your AN/GRC-103 radio to stick. You know that, too.

We also know that when it sticks, one way to unstick it is to tap the meter glass. You know that, too.

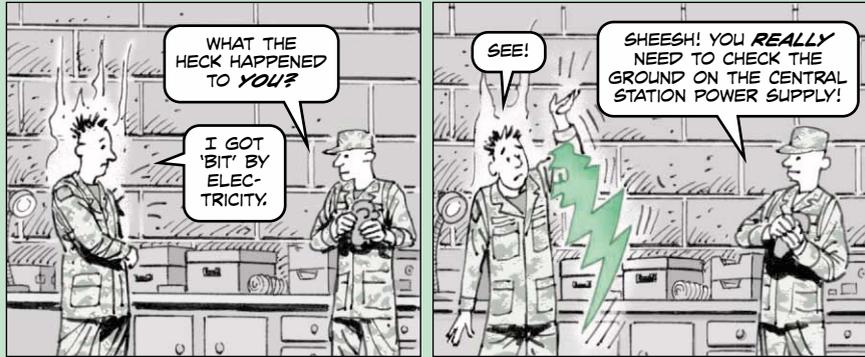
We also know that a light tap with the knuckle of a finger is all that is needed to unstick the indicator. That you don't seem to know!

We know you don't know because the meter glass is getting broken. We've heard through the grapevine that the handle of a screwdriver or another tool is doing the damage. You're smackin', not tappin'!

Just use a knuckle to tap on the meter glass. If the knuckle doesn't do the trick, a harder rap with a tool won't do it either. The only thing you'll accomplish is breaking the meter glass and turning one problem into two.



KEEP SHOP VOLTAGE UNDER CONTROL



Dear Editor,

C & E shops need to make sure the source of DC voltage in their shop is correctly grounded. Many of them aren't.

If you're working on commo equipment and have noticed sparks between your work bench or other grounded objects or have been "bitten" by electricity, you need to check the ground on the central station power supply that provides 28 DC volts.

Many of these supplies are capable of producing 200 or more amperes of current. That's enough to cause serious injury!

Almost all these power supplies have two output terminals—positive and negative. **Neither of these terminals are connected to the power supply's chassis!**

Here's what you need to do: Connect the negative terminal of the power supply to the station ground buss with a cable of sufficient size to handle the entire output capacity of the power supply.

Now check the voltage between the positive terminal to the ground. If you get 28 DC volts, you're okay.

Don't be fooled by a "no voltage reading" on your meter when you check for voltage between the ground and the negative side of the power source. Verify the connection both visually and with a continuity check with an ohm meter.

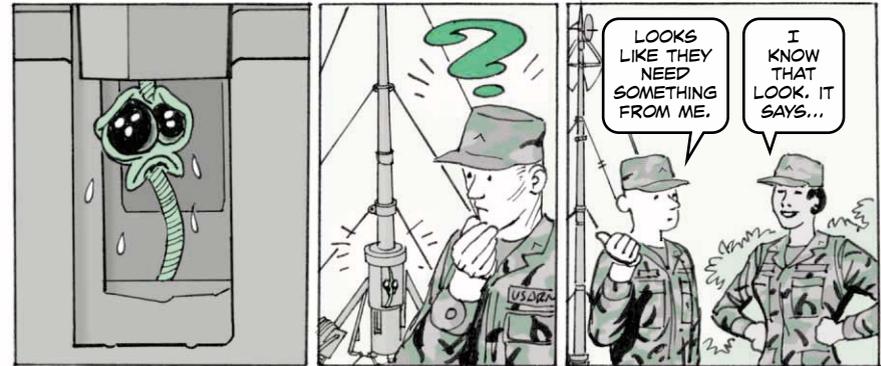
Edward Butorajac
Ft Gordon, GA

From the desk of the Editor



Shop power supplies are often installed by folks who are not aware of the need to have the chassis and the negative terminal of the voltage source bonded together and connected to the station ground for proper grounding. This could lead to a shock hazard, arcing of the chassis to the work bench or other grounded item, or RF burns. Take Ed's advice and check out your shop's power supply for the right grounds. Also, check the power supply TM or manufacturer to make sure that the power supply is installed properly and that tying the secondary to ground is okay.

AB-1339/G Antenna...

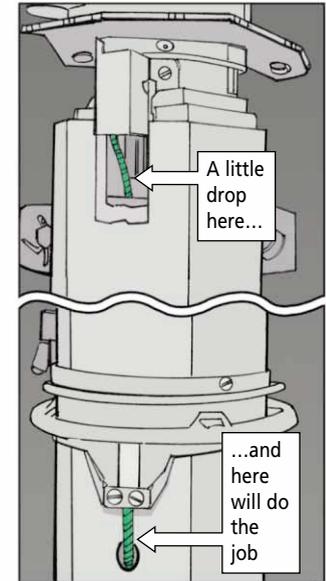


... WOULD A LITTLE OIL KILL YA?

That's what the A5 and A7 cables on your AB-1339/G antenna mast would ask you, if they could talk.

Those cables run through your mast and extend your antenna. That makes them pretty important fellas. But some of you are letting those fellas gather a lot of rust.

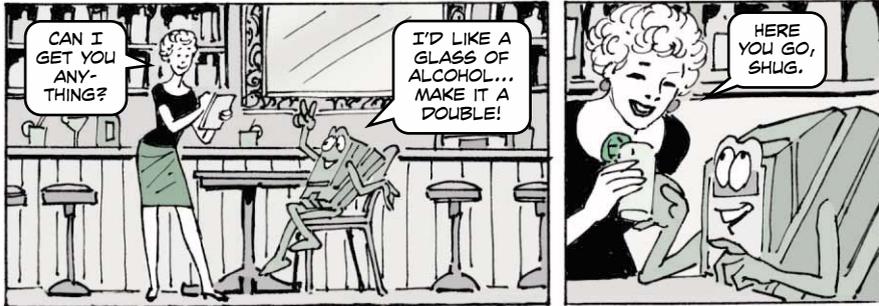
So, when you're raising the antenna, put a couple of drops of OE-10 on the cables. And, eyeball the cables whenever you handle the mast. If you see rust start to bloom, well, doing a little oiling won't kill ya!



AN/PVS-14 NVD LIF Advice

If you overtighten the light interference filter (LIF), NSN 5855-01-379-1410, you can crack the objective lens on your AN/PVS-14 night vision device. Even though you're given a wrench to use, the LIF should be tightened only hand tight. When the filter is in place and secure, stop tightening. Use the wrench to **remove** an overtightened LIF.

FOR THINE OWN SAKE, BE PURE



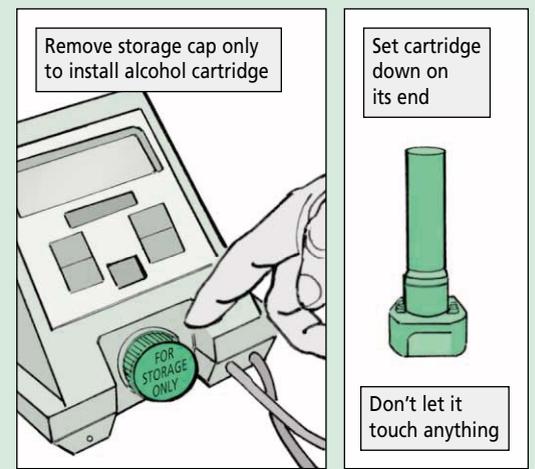
The M41 protection assessment test system (PATS) won't give you NBC NCOs pure results when you test masks if you don't stress purity (and cleanliness).



The **only** alcohol used in PATS is **pure** reagent grade isopropyl alcohol, NSN 6810-01-382-2904.

That's the purest alcohol available. If you use the kind you get for \$1 for a bottle, the PATS optical system will clog. That means a trip to Alabama to repair it.

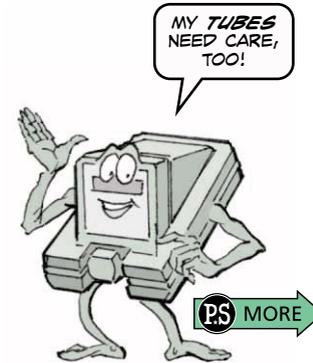
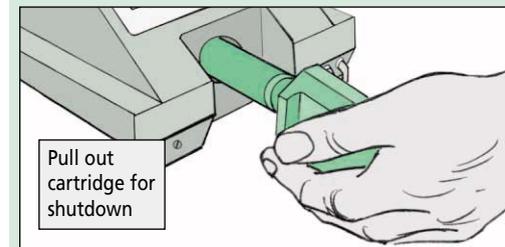
Take off the storage cap only to install the alcohol cartridge. That keeps dirt out of the PATS that can cause contamination and bad readings. Don't let the cartridge touch anything before you screw it into PATS. If you must set the cartridge down, set it upright on its end so it won't get dirty. While the cartridge is in the PATS, put the storage cap on the alcohol fill capsule to keep dirt out of the capsule.



Make sure the soldier doesn't eat, drink, use mouthwash or smoke at least 30 minutes before testing. He or she should also wash off all colognes and lotions. There should be no gum chewing or talking during testing. All of these ruin the tests.



When you're through testing, remove the alcohol cartridge. Otherwise, alcohol saturates the counting mechanism. Put the storage cap back on to seal out dirt and moisture while the PATS sits.



Don't let moisture that's built up in the tube assembly during testing get in the PATS. When you take off the tubes, pull the tubes off without lifting them. Otherwise, moisture drains down the tubes. To dry the tubes, hang them up in the middle so both ends point down until the assembly is completely dry. Never use a tube assembly that's damp.

Questions? Call the PATS helpline at (800) 926-8378. Outside of CONUS, call (651) 490-3849 or email nbc@tsi.com

or go to <http://nbc.tsi.com/>.

If your PATS isn't working, send it to:

CDR
US Army TMDE Activity
AMSAM-TMD-SS
Bldg 5435
Redstone Arsenal, AL 35898

For more info, contact Greg Boggs at DSN 645-8138/(256) 955-8138.



All masks...

Mask Canisters Still Good?



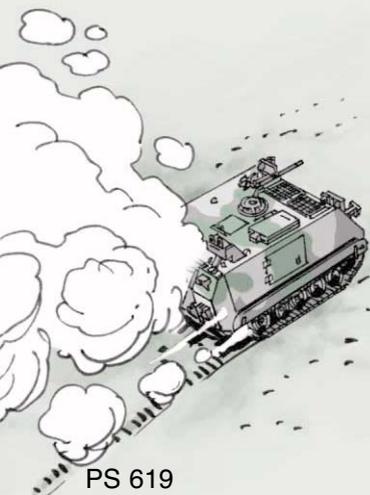
Unsure if the canisters or filter elements for your chemical protective masks are still good? Then you need to check out Supply Bulletin 3-30-2, *Chemical-Biological Canisters and Filter Elements: Serviceability Lists*. The SB, which is updated quarterly, will tell you which canisters and filter elements are no longer usable.

You can find the SB at the Army Electronic Product Support (AEPS) webpage at <http://aeprs.ria.army.mil>. You will need a password to use AEPS. Go to the TACOM-SBC homepage, then to Product Information, then to CDE Shelf Life Information System. You can search there by NSN, lot number, contract number, and condition code. Definitions of the condition codes can be found in the Quick Links under Condition Code Report. Related Links takes you to the current SB 3-30-2 worldwide messa

M58 Smoke Generator...

UNPLUG FUEL

PURGE VALVE



PS 619

48

JUN 04

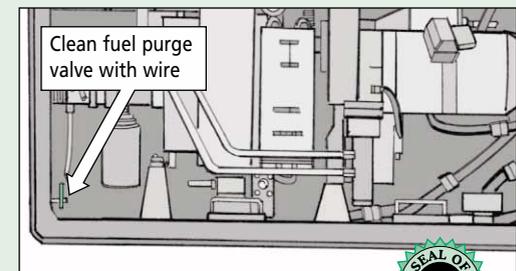
Dear Editor,

We found at NTC that when the M58 smoke generator's fuel purge valve plugged up the OVER/UNDER SPEED light would kick on and the turbine would shut down.

We used a wire to clear the purge valve and then drain the excess fuel. That put us back in smoking business.

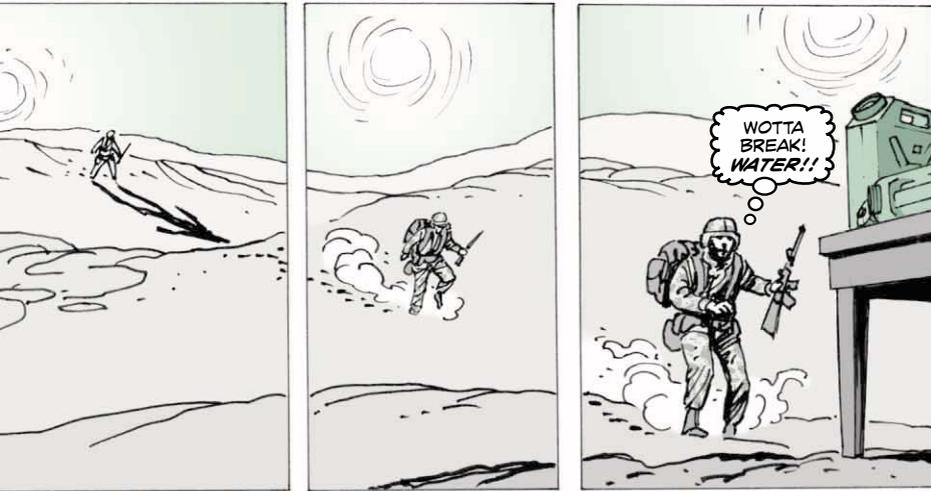
To prevent that problem, drain the turbine after operations. If nothing comes out, clear the purge valve with a wire.

SGT Steven Stein
181st Chemical Bn
Ft Hood, TX



CAN CARE LETS

WATER FLOW



Water is vital when you're soldiering in the summer heat. You need to drink long and often when the sun is scorching and the land's baked dry and dusty.

Give your water cans some basic care so you won't go thirsty.

The first step is to get acquainted with TM 10-7200-200-13. It'll give you the full story on your can. Then follow this PM plan:

- **Inspect.** Look over the can and its cap often while in use. After you come in from the field, go over them again. Look for leaks, scratches or other damage. Check inside the can and cap to make sure they're clean.

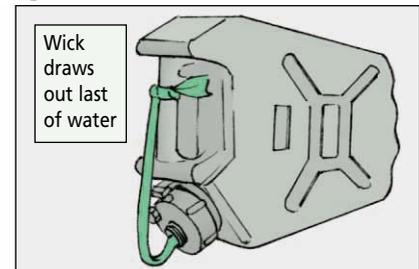
- **Clean.** If they're dirty, wash the can and cap inside and out. Use one ounce of detergent, NSN 7930-00-281-4731, for each gallon of hot water. Keep the water temperature below 180°F. (212°F is boiling.) Hotter water will warp the plastic can.

Wash with a clean cloth, sponge or fiber brush. Steer clear of abrasives like scouring powder, steel wool and metal sponges. They'll scratch the can's surface and make it harder to clean next time.



Rinse the can and cap in clear, hot water. Then turn the can upside down to drain and air dry. A little water left sitting in a can could be a breeding ground for contaminants, so remove as much moisture as possible.

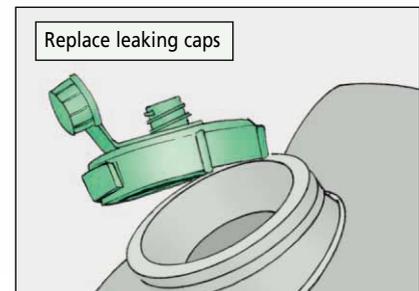
Some units have devised a wicking system to get the last bit of moisture out of the cans as they sit in storage. They tie a strip of clean, cotton cloth or fabric tape, NSN 8315-00-255-7662, to the can's handle and then run it into the can. The fabric acts as a wick and draws out the last of the water.



- **Replace.** If the cap leaks or is damaged, get a new one with NSN 7240-00-089-7312.

If the can has even a small puncture, replace it with one of these five-gallon plastic cans:

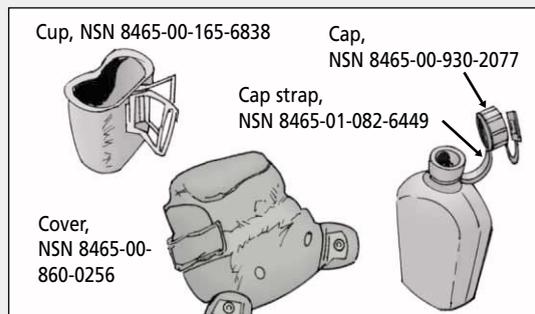
NSN	Color
7240-00-089-3827	Lusterless sand
7240-01-365-5317	Green
7240-01-337-5269	Olive drab



CANTEEN CARE & PARTS

You won't find a parts list for the 1-qt plastic canteen in any TM. So we've listed them for you. Now you have no excuse for ditching a canteen just because it's missing a cap or a cover.

NSN 8465-01-115-0026 brings you a canteen with the M1 chemical protective cap. And here are the replacement parts:

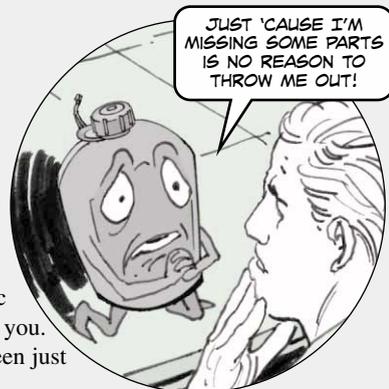
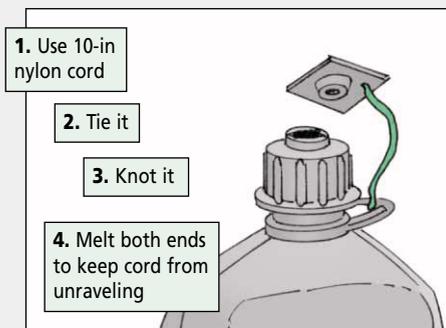


Take a Stand
One other item you might find useful is a canteen cup stand, NSN 8465-01-250-3632. The stand lets you use your cup to heat water for coffee or MREs. It fits inside the canteen cover, with the cup and canteen.

Strap the Cover

If the strap holding the flip-up cover on the chemical protective cap breaks off, you could lose the cover and spring a leak. But you can make a stronger strap out of 10 inches of nylon cord, NSN 4020-00-262-2019. Here's how:

- Cut off the broken plastic strap.
- Drill a 1/8-in hole 1/4 inch from the edge of the cover.
- Run the cord through the hole and knot it.
- Tie the other end around the cap strap.
- Melt both knots with a match or lighter. Smash them flat with a flat tip screwdriver or your knife blade. That'll keep them from unraveling.



Ice Storage Chest...

NSNS ON ICE

HOT WEATHER MEANS THIRSTY SOLDIERS.

GET AN ICE STORAGE CHEST SO YOU CAN ENJOY COLD DRINKS THIS SUMMER.

HERE ARE SOME OF THE CHESTS AVAILABLE...



NSN 4110-	Type	Color	Width x Length x Height	Weight
-01-452-5756	two fixed and two swivel casters	desert sand	23 x 34 x 38 inches	89 lbs
-01-452-7311	two fixed and two swivel casters	olive drab	23 x 34 x 38 inches	89 lbs
-01-452-7315	no casters	desert sand	23 x 34 x 34 inches	66 lbs
-01-452-7317	no casters	olive drab	23 x 34 x 34 inches	66 lbs

These chests replace the 200-lb ice chests in the mobile kitchen trailer and the company-level field feeding kitchen. They're made of high impact plastic and can store 175 lbs of ice or ice with limited A rations for several days in temperatures up to 120°F. All of them feature a hinged lid for filling and dispensing and a recessed faucet for draining.



A Bit of Home



YOU REALLY NEED TO CONSIDER A HEALTH AND COMFORT PACK, JACK.

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

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

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

- The Army (G-4) will issue HCPs to your unit free of charge only when your unit deploys for more than 15 days to a place where there's no support for personal items.
- The Army expects your unit to supply its own personal items to cover the first 15 to 30 days of deployment.
- Unit commanders may purchase HCPs from their own unit funds at the time that they determine the need..



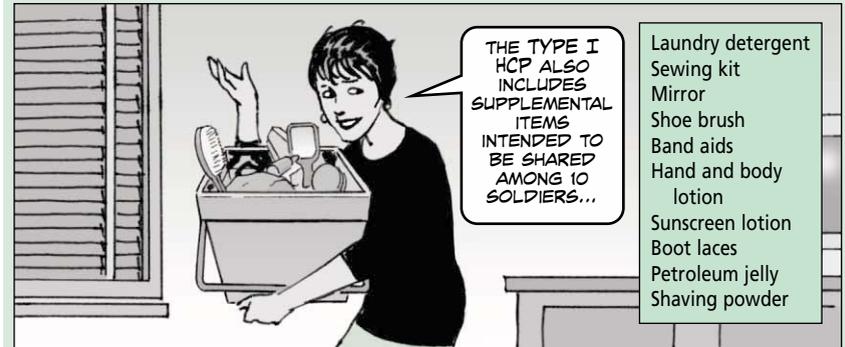
THERE ARE THREE TYPES OF HEALTH AND COMFORT PACKS AVAILABLE...

Type I HCP, NSN 8970-01-368-9154, contains items used by both men and women. You get 10 plastic drawstring bags, each packed with a 30-day supply of necessities for an individual soldier.



HERE'S WHAT YOU GET IN EACH BAG...

- | | |
|------------------------------|-----------------------------|
| Toothbrush | Tissues |
| Tube of toothpaste | Bottle of shampoo |
| Dental floss | Deodorant stick |
| 10 disposable shaving razors | Petroleum jelly |
| Bar soap | Self-sealing plastic bag |
| Foot powder | Personal hygiene body wipes |



THE TYPE I HCP ALSO INCLUDES SUPPLEMENTAL ITEMS INTENDED TO BE SHARED AMONG 10 SOLDIERS...

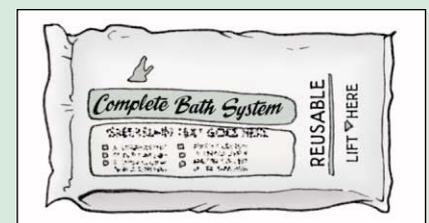
- Laundry detergent
- Sewing kit
- Mirror
- Shoe brush
- Band aids
- Hand and body lotion
- Sunscreen lotion
- Boot laces
- Petroleum jelly
- Shaving powder

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

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

Type III HCP, NSN 8970-01-487-7488, contains washcloth-sized personal hygiene body wipes. You get 44 packets with 8 body wipes in each packet. This HCP is intended to supply 10 soldiers.

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



TRACKING YOUR PMCS WITH THE DA FORM 5988-E

THE DA FORM 5988-E, EQUIPMENT MAINTENANCE AND INSPECTION WORKSHEET, PUMPS LIFE INTO UNIT LEVEL MAINTENANCE OPERATIONS.

HERE'S SOME TIPS ON HOW TO USE THE FORM.



The DA Form 5988-E, is an ULLS-G form that replaces the manual DA Form 2404, PMCS Worksheet.

The 5988-E has three sections:

- **Equipment Data** identifies the unit, vehicle, type of inspection, and the technical manuals needed for the inspection
- **Parts Requested** IDs the requisition document number, part NIIN and name, quantity, status, and priority.
- **Maintenance Faults** describe faults, applies fault status codes, and details corrective action.

DATE: 26-APR-93 EQUIPMENT MAINTENANCE AND INSPECTION WORKSHEET
WK4WRC 8 CO, 703 INF BN

ADMIN NUM: 812 EQUIP MODEL: M998
EQUIP NOUN: TRK UTL CGO 1.25T 4X4
EQUIP NSN: 2320011077155

NUMBER
PUBLICATION: TM 9-2320-280-10
PUBLICATION: TM 9-2320-280-10-HR

THE EQUIPMENT DATA IS MAINLY FILLED IN BY THE ULLS-G COMPUTER, BUT OPERATORS MUST VERIFY IT.

ITEM NUM	FAULT DATE	FAULT STATUS	FAULT DESCRIPTION	CORRECTIVE ACTION	OPER HRS	LIC
			30 OCT 03			4678
			31 OCT 03			4678
7	3 NOV 03	/	headlamp inop	replace	1	5243
10	3 NOV 03	X	extinguisher low	recharge	1	5243
12	3 NOV 03	X	won't start	electrical		

DATE: 26-APR-93 EQUIPMENT MAINTENANCE AND INSPECTION WORKSHEET DA FORM 5988-E
WK4WRC 8 CO, 703 INF BN

ADMIN NUM: 812 EQUIP SERIAL NO: M998
EQUIP MODEL: M998 REGISTRATION NO: TRK UTL CGO 1.25T 4X4
EQUIP NOUN: TRK UTL CGO 1.25T 4X4 TYPE INSPECTIO: 2320011077155
EQUIP NSN: 2320011077155 CURRENT READING: 018987

PUBLICATION: TM 9-2320-280-10 DATE: 06/91 CHANGE NUMBER: 82
PUBLICATION: TM 9-2320-280-10-HR DATE: 05/88 #2

THIS 5988-E HAS BEEN USED FOR SEVERAL DAYS UNTIL FAULTS WERE FOUND.

After doing Before Ops PMCS enter the date if there are no faults.

Enter license number following After Ops PMCS if no faults found.

ITEM NUM	FAULT DATE	FAULT STATUS	FAULT DESCRIPTION	CORRECTIVE ACTION	OPER HRS	LIC
			30 OCT 03			4678
			31 OCT 03			4678
7	3 NOV 03	/	headlamp inop	replace	1	5243
10	3 NOV 03	X	extinguisher low	recharge	1	5243
12	3 NOV 03	X	won't start	electrical		



On 30 and 31 OCT 03 the operator pulled before, during and after PMCS but found no faults. On 3 NOV 03 the operator found three faults he could not fix. He lists the faults, showing the PMCS sequence number from the TM, the date, fault status, and fault. He enters his license number in the Equipment Data section and takes the form to his supervisor who signs it and returns it to the motor sergeant.

ITEM NUM	FAULT DATE	FAULT STATUS	FAULT DESCRIPTION	CORRECTIVE ACTION	OPER HRS	LIC
			30 OCT 03			4678
			31 OCT 03			4678
7	3 NOV 03	/	headlamp inop	replace	1	5243
10	3 NOV 03	X	extinguisher low	recharge	1	5243
12	3 NOV 03	X	won't start	electrical		

A mechanic checks the faults, determines corrective action and the parts needed to complete repair. The mechanic was able to replace the headlamp. It took him one hour and he was able to get the extinguisher recharged in an hour. He entered his license number to show items 7 and 10 were completed. He looked up the part he needed for item 12 in the -24&P TM and passed the NIIN, name, and 5988-E to the ULLS-G clerk. The clerk orders the part and updates the 5988-E. The commander authorizes the funding for the repair part on a separate report. The actual parts order isn't a requisition until the commander obligates the funds.





THE ULLS-G CLERK UPDATES THE 5988-E.

NOTE THE ITEM NUMBER CHANGES FROM PMCS SEQUENCE NUMBER TO FAULT NUMBER MATCHING THE PARTS REQUESTED FAULT NUMBER.

By looking in the Parts Requested section the operator can tell that two sensitive switches are needed to repair his vehicle. He can tell the parts have been ordered by the requisition document number that is shown. It is important to check the status of the parts request often. The parts request must be matched by the commander's releasing of the funds. If a status code does not appear in three to four days, the supervisor should ensure the part was ordered and funded.

EQUIPMENT MAINTENANCE AND INSPECTION WORKSHEET

DATE: 26-APR-93

EQUIP NSN: 2320011077155

PUBLICATION: TM 9-2320-280-10

SIGNATURE: *[Signature]* TIME: _____

FAULT	DOC	NUM	NIIN	NOUN	QTY DUE/REC	STATUS DATE	DATE COMP	PRI	DLG
0001	3116	0001	000785961	SWITCH SEN	002			13	N

ITEM NUM	FAULT DATE	FAULT STATUS	FAULT DESCRIPTION	CORRECTIVE ACTION	OPER HRS	LIC
0001	3 NOV 03	/	won't start	electrical		

EQUIPMENT MAINTENANCE AND INSPECTION WORKSHEET

DATE: 26-APR-93

EQUIP NSN: 2320011077155

PUBLICATION: TM 9-2320-280-10

SIGNATURE: _____ TIME: _____

FAULT	DOC	NUM	NIIN	NOUN	QTY DUE/REC	STATUS DATE	DATE COMP	PRI	DLG
0001	3116	0001	000785961	SWITCH SEN	002/002	03321		13	N

ITEM NUM	FAULT DATE	FAULT STATUS	FAULT DESCRIPTION	CORRECTIVE ACTION	OPER HRS	LIC
0001	3 NOV 03	/	won't start	electrical		

WHEN THE PARTS ARRIVE THE ULLS-G CLERK CHANGES THE QUANTITY AND STATUS OF THE 5988-E.

As parts come in the QTY REC reflects their availability. Unit SOPs tell mechanics how long they have to install the new parts. Operators should be available to assist mechanics as needed. Once the mechanic completes the repairs and the 5988-E, the ULLS-G clerk will print a new 5988-E for the vehicle. The operator completes a new daily Before Ops PMCS and the cycle starts over again.

THERE ARE FIVE FAULT STATUS CODES OPERATORS AND MECHANICS SHOULD KNOW.

Fault Status Codes

1. The horizontal dash (—) shows an inspection, part replacement, MWO or maintenance operation check is due, but hasn't been done. The vehicle remains in operational status until it reaches overdue status.
2. The diagonal slash (/) means there is a materiel defect that does not inhibit mission accomplishment but should be corrected. The vehicle remains in operational status.
3. The "X" marks a fault that the TM identifies as "Not Fully Mission Capable (NMC)" The vehicle is in an inoperable condition until the fault is corrected.
4. The "circled X" requires the commander's authorization and can only be used for limited purposes such as transferring the vehicle to higher echelon maintenance. The "circled X" returns to "X" status when the commander's authorization expires.
5. The "E" symbol is related to the "X". E status means a safety deadline fault exists. The vehicle is in an inoperable condition until the unsafe fault is corrected.

A FEW DAYS LATER THE STATUS CODE BA IS APPLIED, MEANING THE PART IS BEING SHIPPED, FOLLOWED BY THE JULIAN DATE FOR THE STATUS ACTION.

EQUIPMENT MAINTENANCE AND INSPECTION WORKSHEET

DATE: 26-APR-93

EQUIP NSN: 2320011077155

PUBLICATION: TM 9-2320-280-10

SIGNATURE: *[Signature]* TIME: _____

FAULT	DOC	NUM	NIIN	NOUN	QTY DUE/REC	STATUS DATE	DATE COMP	PRI	DLG
0001	3116	0001	000785961	SWITCH SEN	002	BA-0331			

ITEM NUM	FAULT DATE	FAULT STATUS	FAULT DESCRIPTION	CORRECTIVE ACTION	OPER HRS	LIC
0001	3 NOV 03	/	won't start	electrical		



Know your 5988-E. Use it to maintain your equipment and keep yourself and your equipment in the fight.

Maintenance Management...

MAINTENANCE ALLOCATION CHARTS CHANGING



UNIT

DIRECT
SUPPORT

GENERAL
SUPPORT

DEPOT

F
I
E
L
D

S
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A
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M
E
N
T

Most mechanics know about the four levels of maintenance: unit, direct support, general support, and depot.

Life will be easier in the future if soldiers who maintain equipment understand the changes that are coming. Changes to future maintenance allocation charts reflect a changing philosophy in Army maintenance operations.

A new system of maintenance will use field and sustainment as the two levels of maintenance.

Field maintenance will include operator/crew and unit maintenance and selected direct support tasks. Maintenance at this level will generally be "on-system" replacement of defective components and preventive maintenance. Repaired equipment remains with the unit.

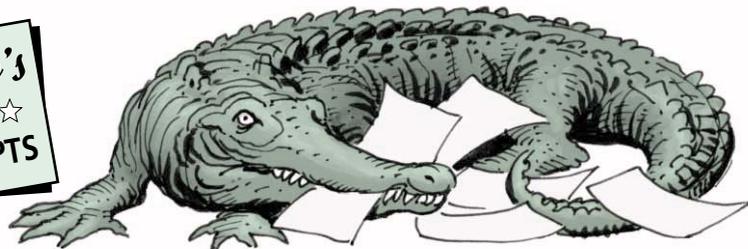
Sustainment maintenance covers selected DS, general support, and depot "off-system" repairs of defective equipment/components. Repaired equipment/components are returned to the Army supply distribution system.

Under these two levels, C, O and F level maintenance will be field categories on new and revised maintenance allocation charts. Categories H, L and D will be sustainment tasks.

PS 619

60

JUNE 04



GETTING PS IN THE DESERT

Units which are deployed to Iraq and have APO AE addresses use the Army in Europe Publications System (AEPUBS) for their publication accounts.

To get PS Magazine delivered to their units, Pubs clerks should follow AEPUBS instructions for *How Do I Establish a Deployed Publications Account?* on their website at:

<https://aepubs.army.mil>

While waiting for AEPUBS to start delivery of PS, units should have their stateside rear detachments repackage and forward the PS Magazines that are still being delivered there.

HMMWV Precleaner NSN Correction

The NSN on Page 13 of PS 617, April 2004, for the HMMWV's air cleaner precleaner for the air filter is wrong. Use NSN 2940-00-875-9574 to get the precleaner.

Plan Your 2005 SEA Nominations

The Army Chief of Staff Supply Excellence Awards (SEA) boost logistics readiness and supply effectiveness. Units interested in competing for an award should contact their MACOM representatives for guidance. MACOMs will submit nominations no later than Dec. 10. More info is available on AKO's Knowledge Collaboration Center (KCC) by clicking on these links in order:

[KCC>ArmyCommunities>TRADOC>Quartermaster School>Supply Excellence.](#)

Weed Out Defective Mask CHQDs

Defective coupling half quick disconnects (CHQD) for the M40A1, M42A2, and M45 masks are in the field. They could cause the masks to leak so they must be weeded out immediately. NBC NCOs, do the bubble test for all your unit's masks. The test is part of the checks for the drinking system in each mask's TM. If you see bubbles, the mask shouldn't be used.

Get a replacement CHQD by emailing Chem/Bio-MWO@ria.army.mil. Provide your unit name, unit UIC, location, POC, POC's DSN/commercial phone numbers, mask NSNs, and number of CHQDs required for each type of mask. Replace and dispose of the defective CHQDs according to the directions in MWO 3-4240-346-20-3 (M40A1 and M42A2) and MWO 3-4240-300-20-1 (M45).

Questions? Contact TACOM's Mary Wischoff at DSN 793-1936/Com (309) 782-1936 or email

wischoffm@ria.army.mil

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Would You Stake Your Life ^{right now} on
the Condition of Your Equipment?

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**PM IS NOT
JUST FOR
EQUIPMENT**

**IT'S FOR
YOU,
TOO**



**HARD WORK IN THE SANDBOX
DRIES YOU OUT.**

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