Issue 596

# PS

July 2002

# THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-596



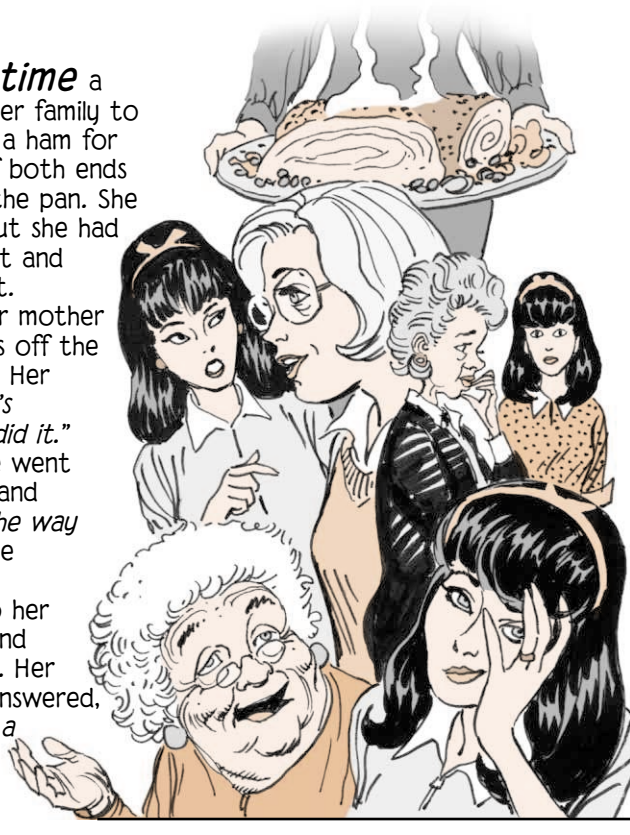

SEE PAGE 26

*Once upon a time* a young bride invited her family to dinner. She prepared a ham for baking by cutting off both ends before putting it in the pan. She did not know why, but she had seen her mother do it and knew it must be right.

Later, she asked her mother why she cut the ends off the ham before baking it. Her mother replied, *"That's the way **my** mother did it."*

So the young bride went to her grandmother and asked again. *"That's the way **my** mother did it,"* the grandmother replied.

Finally, she went to her great-grandmother and asked one more time. Her great-grandmother answered, *"Because I never had a pan big enough to hold an entire ham!"*



# Word-of-Mouth Maintenance

Do you ever do maintenance that you're not quite sure why it's required? Could be you're **not** doing maintenance "by-the-book," but by word-of-mouth.

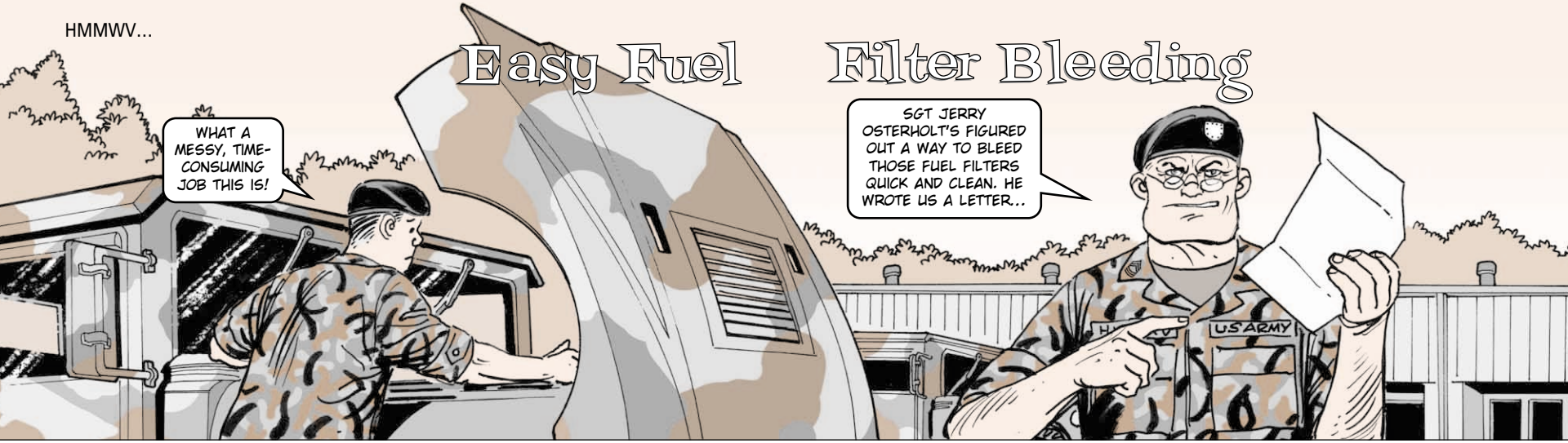
Word-of-mouth maintenance is not always bad. A lot of good info gets passed that way. But so does a lot of out-of-date info. And a lot of wrong info!

Don't do maintenance that is not covered in your TM unless the maintenance objective is clear and the special circumstances for doing it are well-defined.

Question all maintenance that seems to be word-of-mouth. Technology is constantly changing equipment, like gas engines to diesel or batteries requiring maintenance to batteries that are maintenance-free, but some of us stubbornly hold on to outdated maintenance techniques.

Understanding why a preventive maintenance task is required is an important motivator for doing that maintenance. If your TM does not tell you to do a specific preventive maintenance task and your objective is not clear, it could be that word-of-mouth has you doing work no longer needed.

# Easy Fuel Filter Bleeding

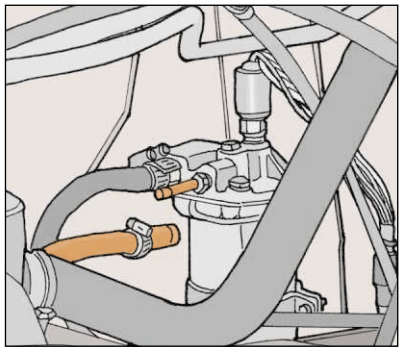



Dear Editor,

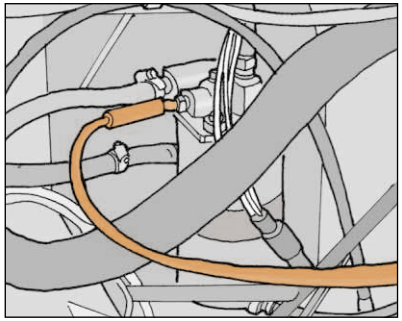
Bleeding the fuel filter on a HMMWV is a messy, time-consuming job. I've come up with a simple method that's clean and quick. It uses the AOAP vampire pump, plastic tubing and sample bottle and a 2-inch section of 1/4-in rubber hose.

Here's how to remove air from the system and not put any fuel on the ground:

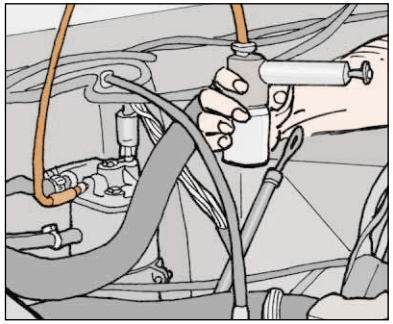
✪ Once the new filter element is installed, do not fill the canister with fuel. Instead, install the filter head and all hoses to the filter except the fuel outlet hose to the engine.



✪ Put together the vampire pump, NSN 4930-01-119-4030; tubing, NSN 4720-00-964-1433, and the piece of 1/4-in rubber hose. Attach the assembly to the filter outlet line by pushing the rubber hose over the outlet.



✪ Use the vampire pump to pull fuel from the vehicle tank into the filter. Once the filter is full, fuel will enter the sample bottle. Stop pumping when fuel enters the bottle.



✪ Remove the piece of rubber hose from the outlet line, replace the outlet line to the engine and tighten the clamp.

✪ Pour the fuel in the sample bottle back into the tank so that there's no hazardous material to dispose of—and no mess on the ground!

This method saves grinding on the starter to pump the air out of the system that is required in Para 3-32 of TM 9-2320-280-20-2. It also can be done by one mechanic!

SGT Jerry Osterholt
444th QM Co
Sioux City, IA

**From the desk of the *Editor***

M1070 HET...

# Route Hoses to Prevent Fires

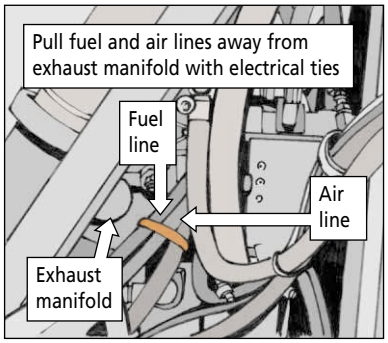

If fuel and air lines and hydraulic hoses lie too close to high heat sources like the engine turbocharger exhaust pipe or exhaust manifold, you need to move them now to prevent fires.

Look at the fuel and air lines that run near the exhaust manifold just to the left of the secondary fuel filter on the passenger side of the engine.

Those lines must not touch the exhaust manifold! Use an electrical tiedown strap to pull the lines away from the manifold by securing them to the water line running nearby.

Tiedown strap, NSN 5975-00-570-9598, will do the job. Use more than one strap if necessary.

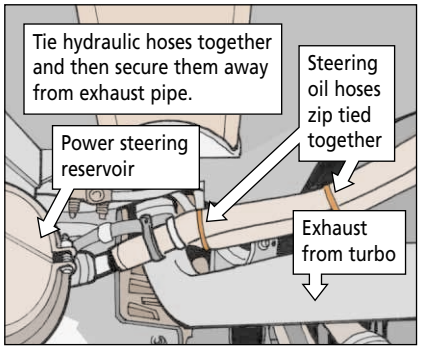
Next, look at the hydraulic lines coming from the power steering reservoir next to the firewall. Those lines cannot touch the turbocharger exhaust pipe.




Use tiedown strap, NSN 5975-00-156-3253, to secure the lines as close to the firewall as possible. This strap is longer to secure more lines, but you still may need to use more than one.

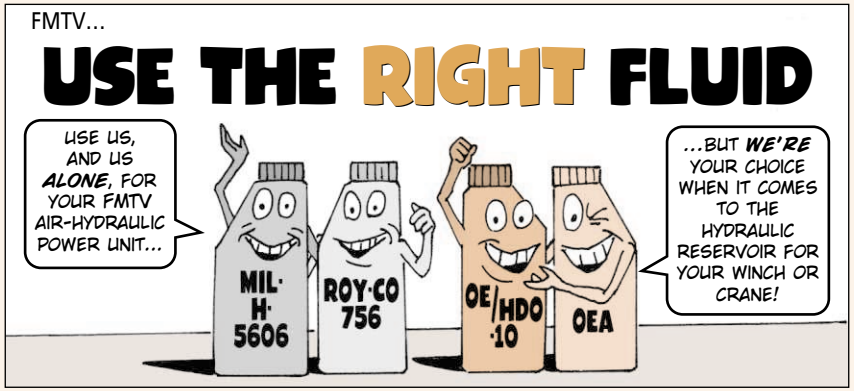
To get all the details, see TACOM Ground Precautionary Message (GPM) 02-005. The message and instructions on how to route the lines and hoses, with pictures, are available at the AEPS website,

**http://aeps.ria.army.mil**




FMTV...

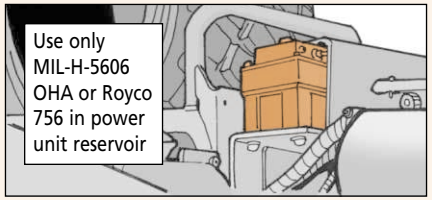
# USE THE RIGHT FLUID

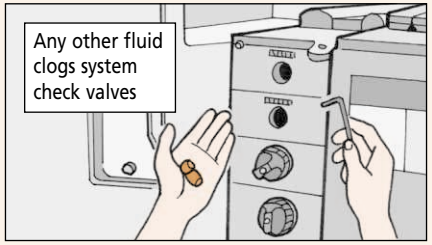



Never use the same hydraulic fluid in the FMTV's air-hydraulic power unit that you use in the hydraulic reservoir for the winch or crane.

Use only MIL-H-5606 OHA or Royco 756 in the air-hydraulic power unit. Anything else will plug the system check valves, making the unit useless until the fluid is changed and the valves are cleaned.

Use only OE/HDO-10 or OEA in the hydraulic reservoir for the winch or crane. Anything else will cause poor performance or damage to the components.



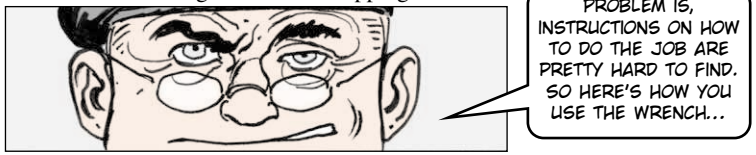



Dual-mounted Wheels...

# Loosening Lug Nuts

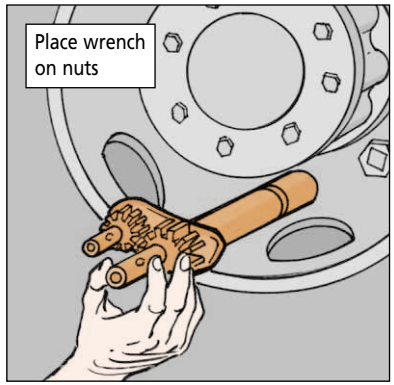

Wheel stud nut wrench, NSN 5120-00-378-4411, is just what you need to loosen a frozen outer lug nut from an inner wheel adapter spacer nut on duals like those used on various trucks and trailers.

The wrench, part of the No. 1 Common shop set, lets you break loose the outer nut without breaking the stud or stripping threads.



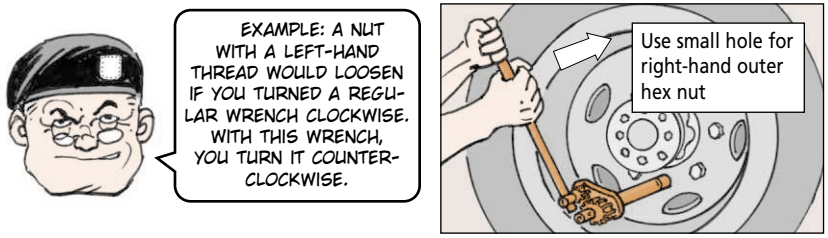

✪ Be sure the inner wrench is inside the outer wrench. Then slide both wrenches over the lug nuts. The inner wrench fits over the ¾-in square inner spacer nut, while the outer wrench fits the 1½-in outer nut.

✪ To loosen the outer nut, slip the bar handle through the smallest hole and heave. Remember that the nuts on the left side of the truck or trailer have left-hand threads (marked with an L on the stud end), while the right-side ones have right-hand threads (marked with an R).

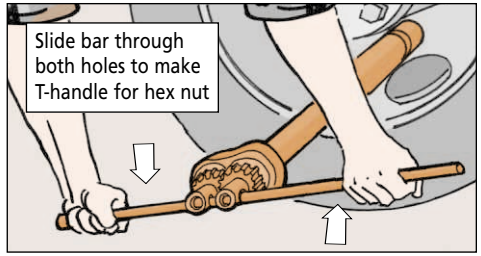









✪ After you've loosened the outer nuts, you can line up the two holes on the wrench and slide the bar handle through them. This makes a T-handle for re-moving the outer nut.




✪ After you have removed the outer nuts and wheel, you can loosen the square inner nut. Use the longer handle and slide it through the larger hole. Pull the normal way to loosen the nut.

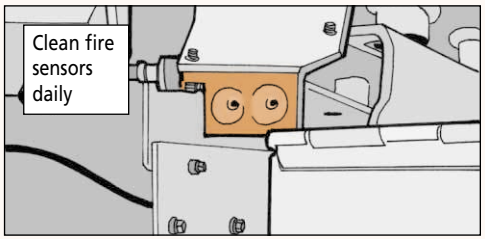
✪ Once the inner nut is loose, use just the inner wrench and the longer handle as a T-wrench.

# STOP TANK FIRES BEFORE THEY START



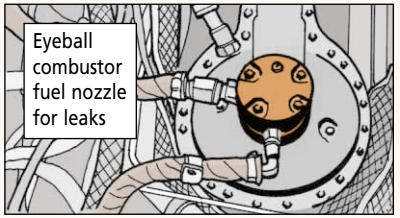
✪ Keep the hull floor clean. Dust, dirt, sand and debris can build up and hide fuel spills and leaks. Then you've got a fire just waiting for a spark.

✪ Clean the fire sensors daily in the field. They can't detect a fire if they're dirty. Use lens cleaner, NSN 6850-00-227-1887, and lens tissue, NSN 6640-00-436-5000, to prevent scratching the lens.

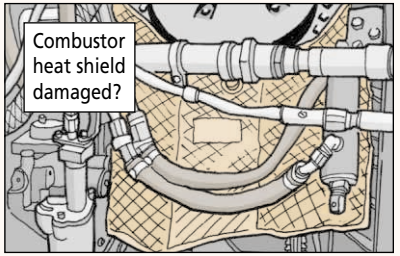



✪ Report all fuel leaks as soon as you spot them, no matter how small. Fuel filters, PTS actuator hoses, and smoke generator lines are good places to look for leaks.

Give the combustor fuel nozzle, line and fittings special attention when the pack is pulled. The nozzle should be securely mounted and torqued to 90-100 lb-in. Any less could allow a leak. Make sure you bend the tabs of key washers against the bolt heads, too.




✪ Look for damage to the combustor heat shield if your vehicle has one. Make sure the shield is securely mounted to the engine.




✪ Eyeball all electrical cables for wear and damage from rubbing on sharp metal edges. Sparks from arcing or shorting starts most fires. The most commonly damaged cables are:

—The cables routed through the opening between the battery box and the engine compartment.

—The cables routed along the top edge of the powerpack.

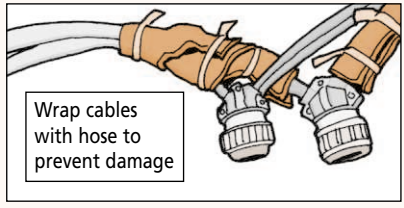
—The cables that run along the outside edge of the generator.

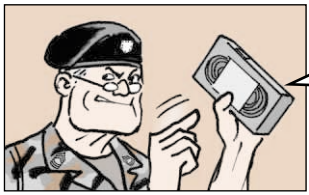
—The generator's cable harnesses and terminals.

Report any cables that show wear, chafing, melting or other damage. Cables with visible braiding or shielding should be replaced right away.

Prevent rubbing damage by wrapping cables, either individually or in a bundle, with a section of radiator hose. NSN 4720-00-150-5970 gets a 12-ft section of 2½-in ID hose.

Hold the hose in place with plastic ties. Use NSN 5975-00-074-2072 to get 6½-in ties or NSN 5975-00-570-9598 for 10¼-in ties.

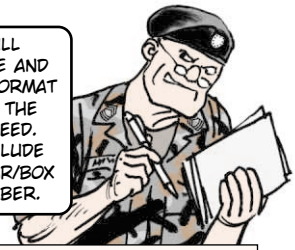



GET A COPY OF THE TRAINING FILM, *THE ABRAMS TANK FIRE PREVENTION*. THE PIN NUMBER IS 710571.

ORDER THE FILM FROM THE JOINT VISUAL INFORMATION SERVICES DISTRIBUTION ACTIVITY BY E-MAIL AT vibuddy@ptd.net

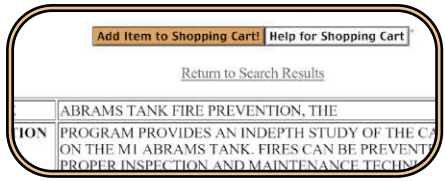
OR WRITE TO:
**JVISDA**
**Warehouse 3/Bay 3**
**11 Hap Arnold Blvd.**
**Tobyhanna, PA 18466-5120**

INCLUDE YOUR NAME, FULL MAILING ADDRESS, THE TITLE AND PIN NUMBER OF THE FILM, FORMAT (VHS, FOR EXAMPLE), AND THE QUANTITY OF TAPES YOU NEED. APO ADDRESSES ***MUST*** INCLUDE THEIR UNIT/BOX NUMBER, CMR/BOX NUMBER, OR PSC/BOX NUMBER.



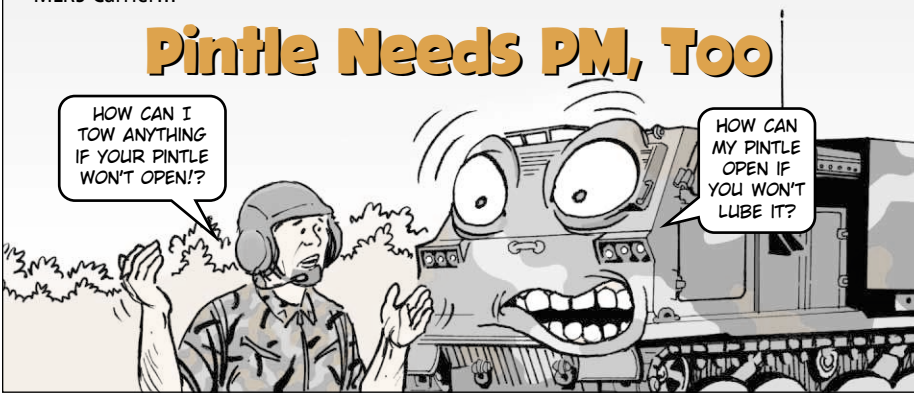
YOU CAN ALSO ORDER OVER THE INTERNET AT **http://dodimagery.afis.osd.mil/dodimagery/davis/**

ONCE THERE, TYPE ***THE ABRAMS TANK FIRE PREVENTION*** IN THE SEARCH BLOCK AND CLICK ON SEARCH. AT THE NEXT SCREEN, CLICK ON THE FILM TITLE. CLICK ON ***ADD ITEM TO SHOPPING CART!*** AT THE BOTTOM OF THE NEXT SCREEN AND FOLLOW THE INSTRUCTIONS.



MLRS Carrier...

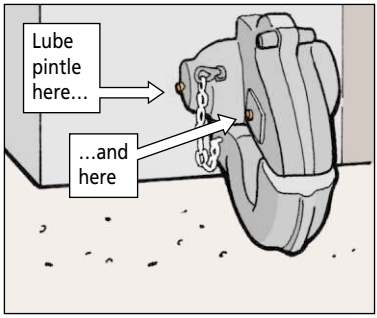
# Pintle Needs PM, Too




Drivers, just because you don't use the towing pintle on your MLRS very often doesn't mean you'll never need it. After all, it was put there for a reason.

That's why it's important to keep the tow pintle lubed regularly. If you neglect it, the pintle goes dry and won't open when you need it.

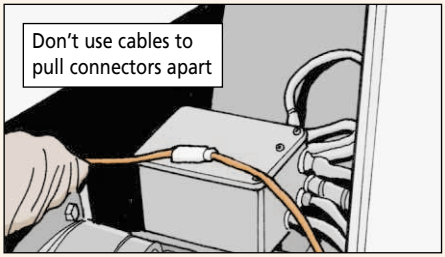
So lube the pintle semiannually with GAA. There are two lube points, so make sure you hit both with the grease gun.




# CHECK YOUR CONNECTIONS

A lot of MLRS mechanics try to save a few seconds when they disconnect the 1W36 cable on the second generator. They pull on the cable instead of the connectors.

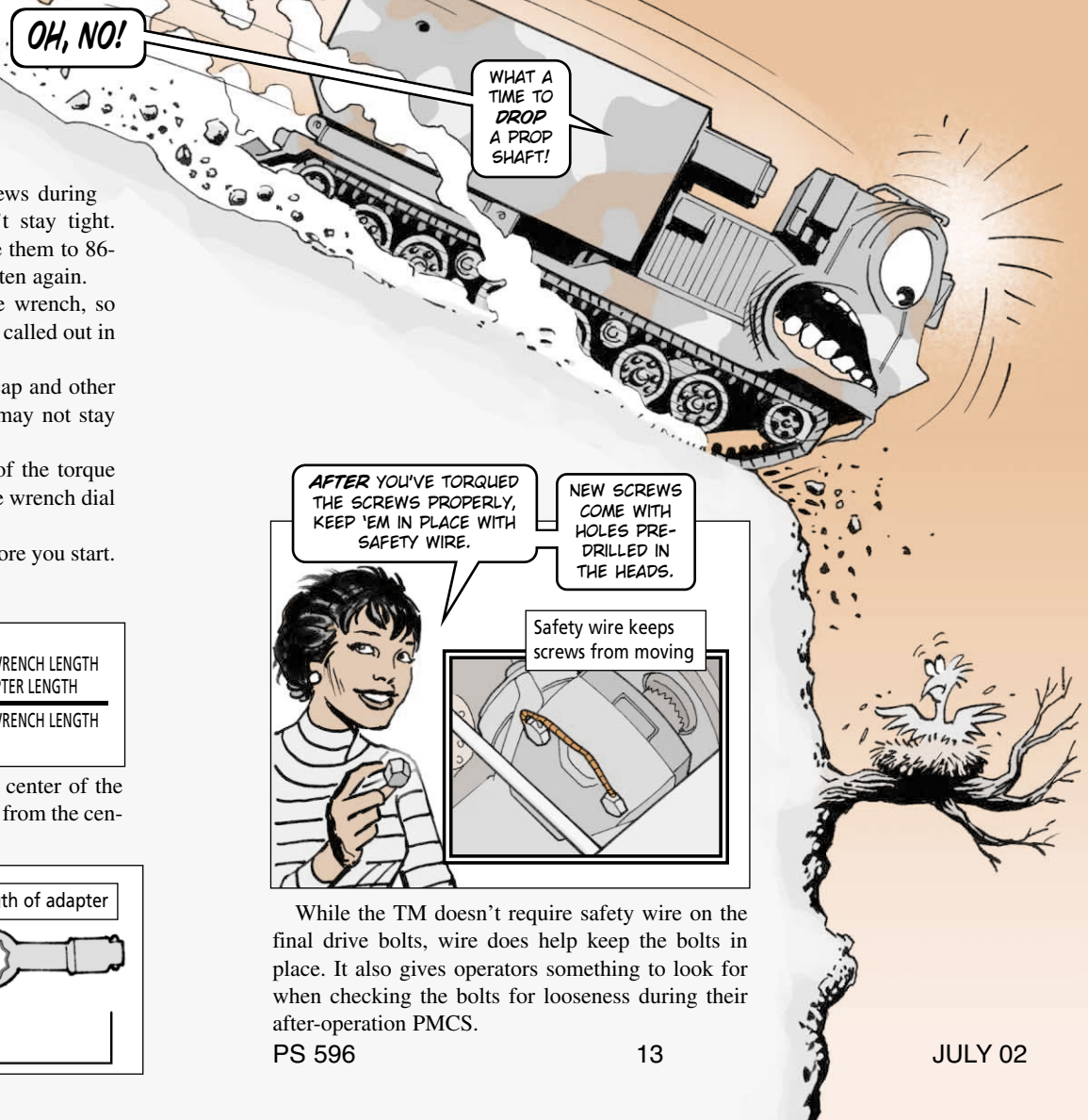
They end up wasting a lot more time troubleshooting a generator that doesn't work after being hooked back up.




That's because when you pull on the cables, the pins inside the connectors loosen and pull out, too. That stops the connection and puts a perfectly good generator out of commission.

Always disconnect the 1W36 cable by grasping and pulling the connectors, not the cable.

# CONTROL PROP SHAFT SCREWS




Sometimes it pays to be a control freak, mechanics. Like when you torque the eight prop shaft screws on a Bradley or MLRS.

If you don't do it right, those screws can vibrate loose. A loose shaft flails around, tearing up the transmission, brake linkage, and even the driver if it breaks through the firewall.

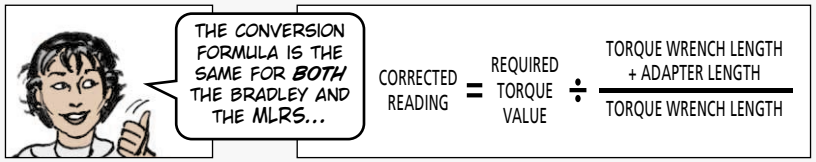
So take control of the situation. Check for loose prop shaft screws during semiannual services. Never reuse loose screws 'cause they won't stay tight. Replace them with new screws, NSN 5306-01-132-3369, and torque them to 86-94 lb-ft. Use the torque wrench to tighten once, loosen and then tighten again.

Some of the screws can't be reached with the end of the torque wrench, so you'll need the 4-in torque wrench adapter, NSN 5120-01-315-5708, called out in the Special Tools appendix in your -20-1-5 TMs.

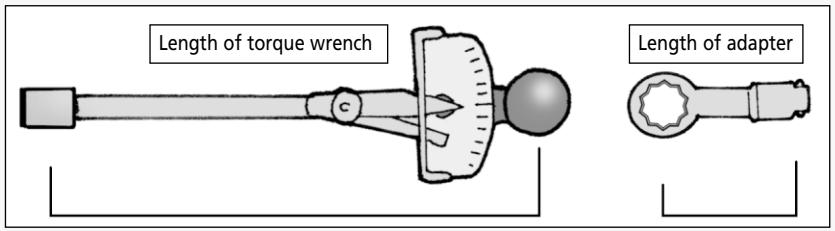
The adapter keeps the torque wrench from touching the bearing cap and other parts. If it touches, you'll get an incorrect reading and the screws may not stay in place.

When you use the adapter, remember that it adds to the length of the torque wrench. So the actual applied torque will be less than what the torque wrench dial or scale shows.

To use the adapter correctly, you must convert the torque value before you start. It'll keep you from under-torquing or over-torquing the screws.

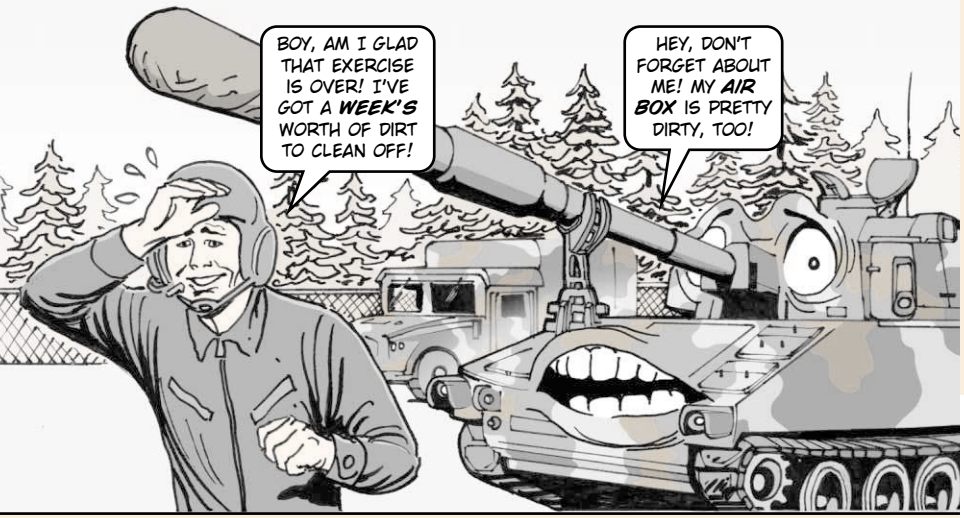



Remember, the length of the torque wrench is measured from the center of the handle to the center of the drive. The length of the adapter is measured from the center of the drive to the center of the wrench.




While the TM doesn't require safety wire on the final drive bolts, wire does help keep the bolts in place. It also gives operators something to look for when checking the bolts for looseness during their after-operation PMCS.

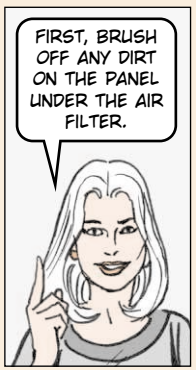
# AIR BOX NEEDS A BLOWOUT

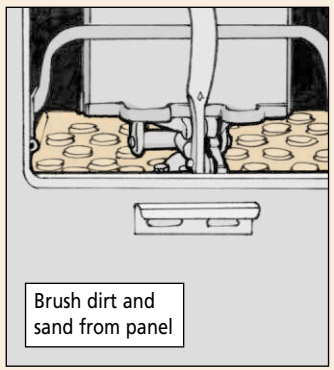


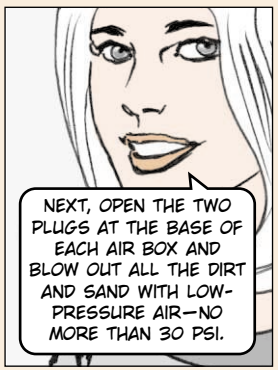

If it has been a while since you've cleaned the air cleaner boxes in your howitzer or ammo carrier, they need your attention now.

That's because dust and grit collect all over the boxes even under normal conditions. During the heat and dust of summer, things just get that much worse. The air induction system exhaust fans just can't remove all the dust and grit.

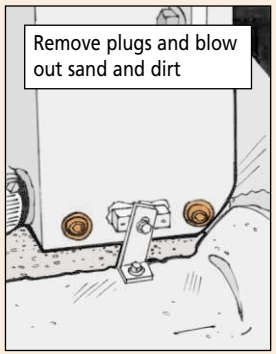
So, next time you pull the air filters for cleaning, clean the air boxes, too.

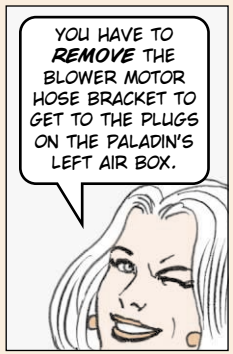


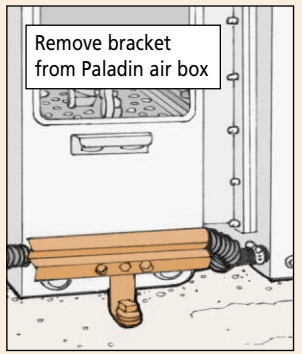





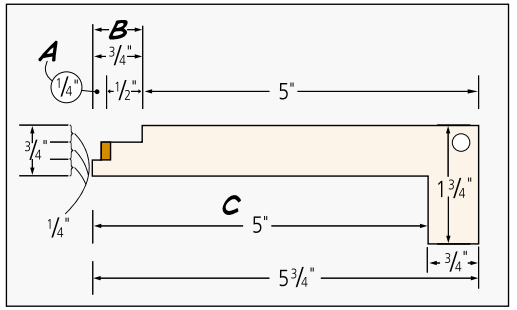




If the dirt and sand have hardened—which is what happens when water gets mixed in—you'll probably have to break up the mess with a knife or screwdriver before blowing it out.

**Never** clean the boxes by hosing them out with water. That leads to rust, which causes even more clogging problems.

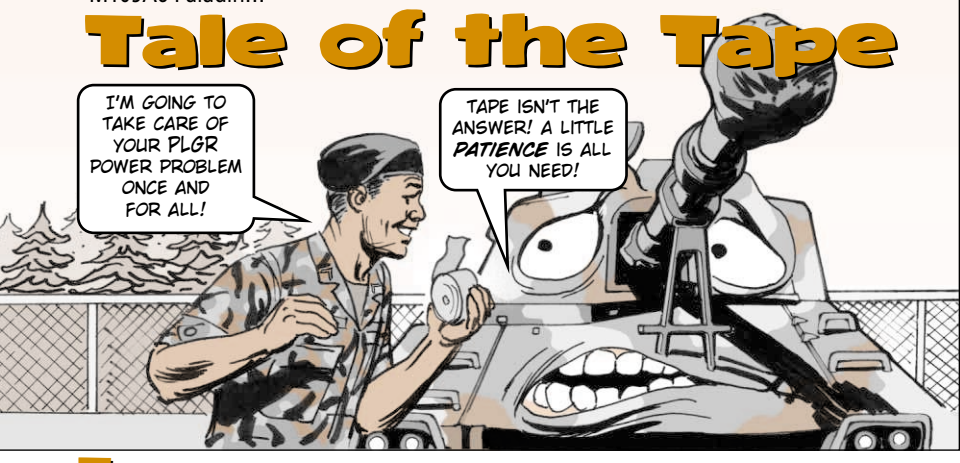
# M109 HOWITZER TOOL REVISITED


Take another look at the homemade tool on Pages 20-21 of PS 586 (Sep 01). The tool, which measures the recuperator guide pins on your M109-series SP howitzer, shows the minimum length of the guide pins as ⅛ inch. That's wrong. Change 3 (Jan 00) to TM 9-2350-311-10 and Change 1 (Apr 01) to TM 9-2350-314-10 modified the minimum length to ¼ inch. If you've already made the tool, just shave off another ⅛ inch.



M109A6 Paladin...

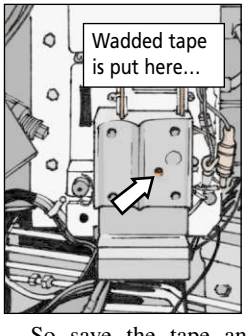
# Tale of the Tape

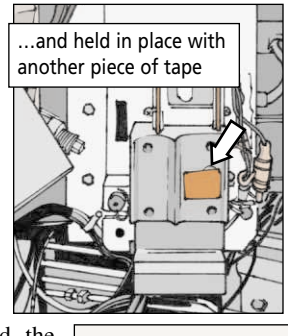



The power switch on the Paladin's precision lightweight global positioning receiver (PLGR) mount, NSN 5340-01-417-1874, is a source of inspiration—and trouble—for some soldiers.

The power switch on the mount is activated by the back of the PLGR when the PLGR is mounted. Thing is, the power switch doesn't always stick out far enough, so the PLGR may have to be reseated a few times to get power.

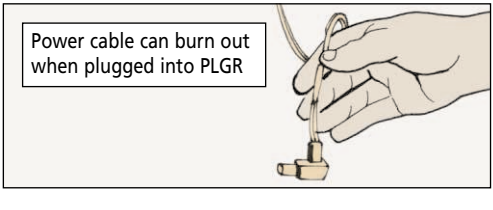
Some soldiers get around this by keeping the power switch pushed in all the time. They wad up a small ball of tape and press it against the power switch. A second piece of tape holds the first one in place and—voila!—constant power. That's where inspiration ends and trouble begins.



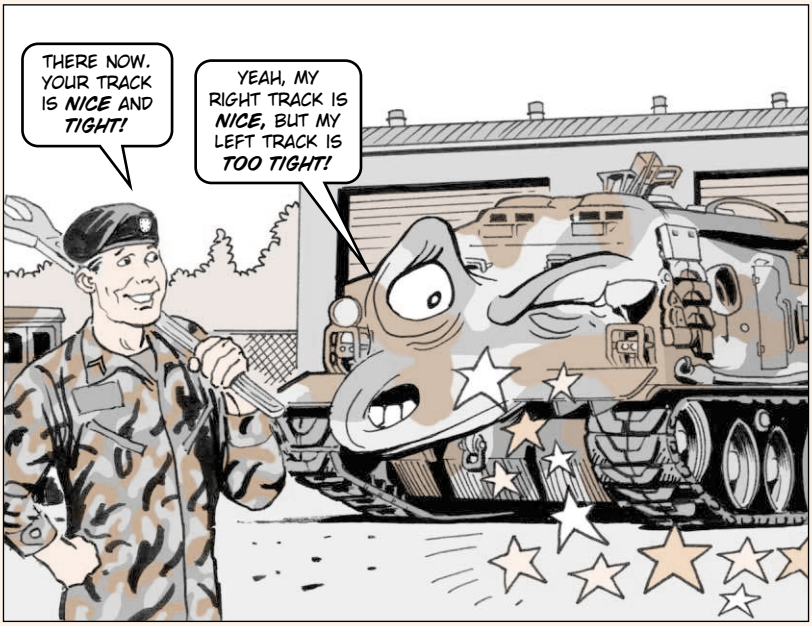




With the power on all the time, arcing occurs when the power cable is attached to the PLGR—or if it touches anything else made of metal. At best, you'll blow the in-line fuse on the power cable. At worst, you'll burn up the power cable.

So save the tape and the power cable. Let the PLGR activate the power switch and if it takes a few tries to get it seated properly, do it.



# TOO TIGHT'S *NOT* RIGHT

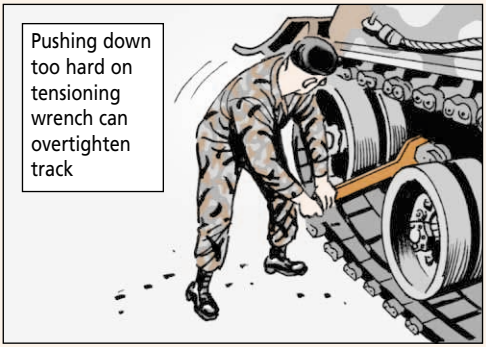



**E**asy does it when adjusting track tension on your M88A1 recovery vehicle, mechanics.

Tightening track on the right side of the vehicle means pulling up on the tensioning wrench. On the left side, however, you push down on the wrench.

Because you can put your whole body weight onto the wrench on the left side, that track tends to be over-tightened. Track that's too tight can burn up the idler assembly.

Play it safe and follow Item 41 of the after-operation PMCS table in TM 9-2350-256-10. It tells exactly how to make sure track tension is just right on both sides.



# Let Computer Track Verification



Dear Bonnie,

Missile units and their direct support can testify how difficult it is to stay on top of the verifications required semiannually or annually for components like the sights. In the press of other business, units let verifications slide—until it's time to deploy. Then support must play catch up, which means long hours.

Our support unit decided to let the computer track verifications. Using Microsoft Excel, we created a data base to track every missile system we support. This is for TOW, but the data base can be adapted for any missile system. Here is how we arranged it:

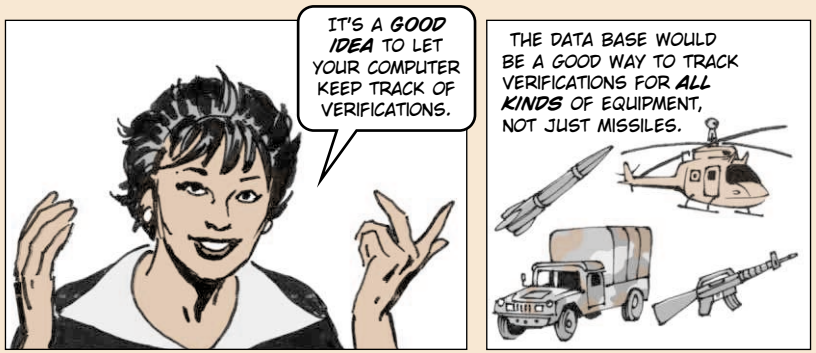
**TOW**

| | | | |
|---|---|---|---|
| OWNING UNIT | | COLLIMATOR (serial number) | |
| BUMPER NUMBER | | TUBE (serial number) | |
| STATUS | | SYSTEM VERIFICATION (last verification date) | |
| NIGHT SIGHT (serial number) | | | |
| MGS (serial number) | | SYSTEM DUE (date) | |
| TU (serial number) | | OP SIGHT VERIFICATION (last verification date) | |
| TRIPOD (serial number) | | | |
| OP SIGHT (serial number) | | OP SIGHT DUE (date) | |

Your local computer expert can set up a data base like this in no time. Once you have the information entered, you can quickly scroll through the data base at the beginning of each month and see which systems are due for verifications and then notify the unit.

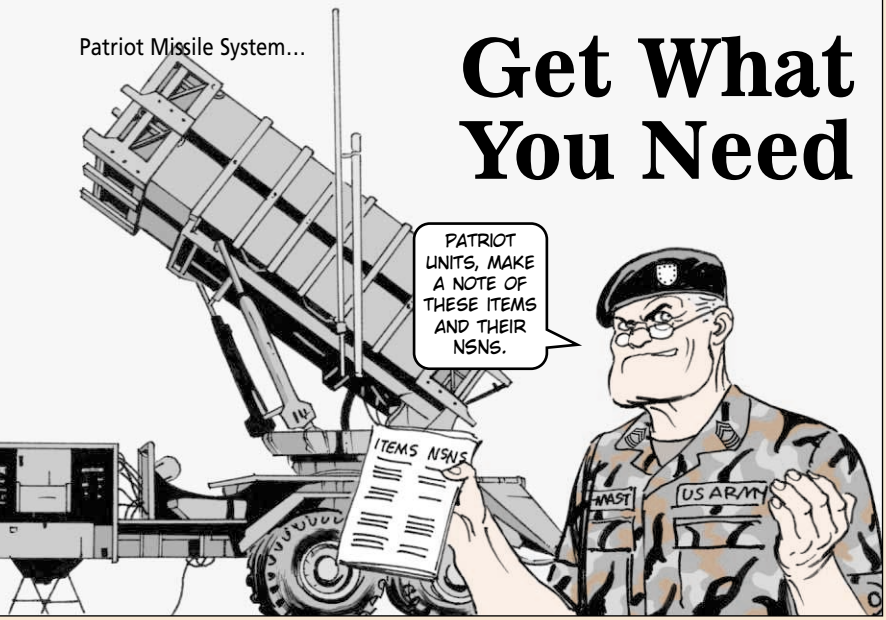
The data base also saves time if the verification stickers that go on the sights and system disappear. Instead of having to repeat the verifications, you can just check the data base for the date and fill out another sticker.

SPC Michael Porter, SSG Bryant Burdell
B Co, 526th FSB
SSG Brandon Burk, C Co, 801st MSB
Ft Campbell, KY



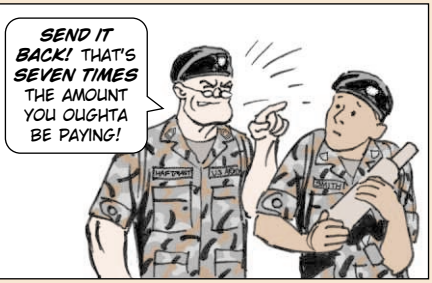
Patriot Missile System...

# Get What You Need



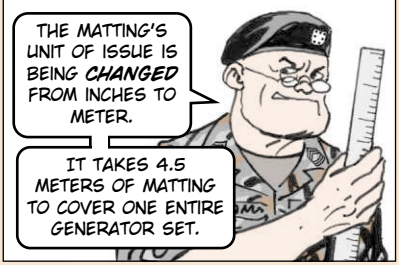

☞ ***DON'T*** ORDER A WHOLE NEW ANTENNA MAST GROUP FLUID FILTER ASSEMBLY WHEN THE FILTER'S INDICATOR CHANGES COLOR.

THE WHOLE ASSEMBLY, NSN 4330-01-182-7885, COSTS ***MORE*** THAN $90. INSTEAD, REPLACE JUST THE FILTER ELEMENT, NSN 4330-01-413-5257, FOR ABOUT $13.

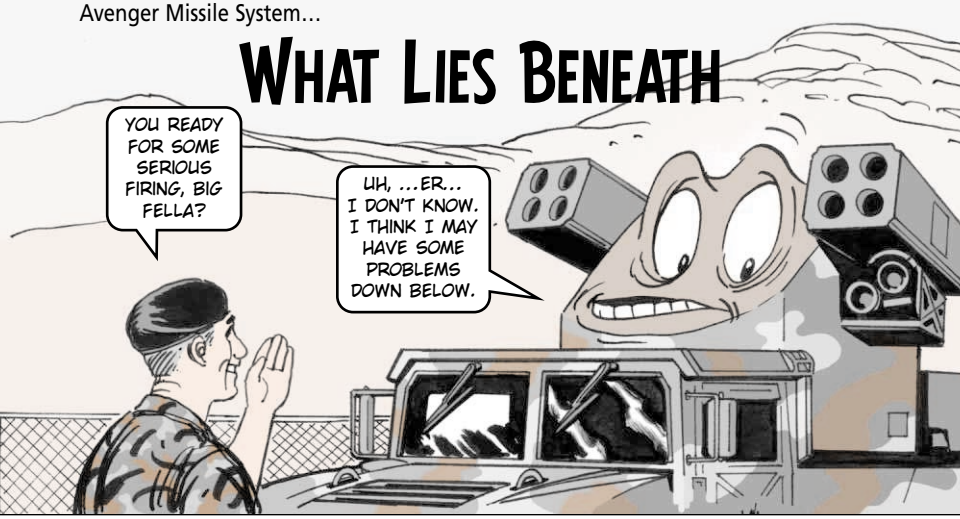



☞ TO CLEAN THE RADAR'S HIGH POWER CABLE, USE ISOPROPYL ALCOHOL WIPES MADE BY CRAWFORD TOOL. GET 100 WIPES FOR LESS THAN $14 BY CALLING CRAWFORD AT (800) 272-9373 OR ORDERING THEM OVER THE INTERNET AT www.crawfordtool.com/techspray.html

☞ ORDER ***RUBBER MATTING*** FOR THE ELECTRICAL POWER PLANT (EPP) III WITH NSN 9390-12-348-2726.



# What Lies Beneath

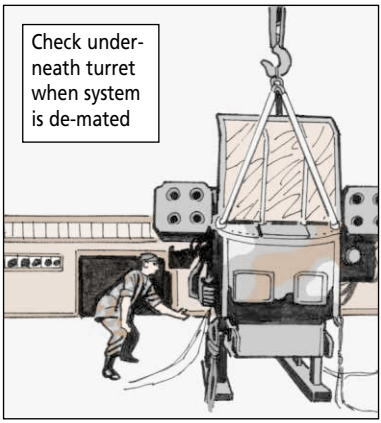


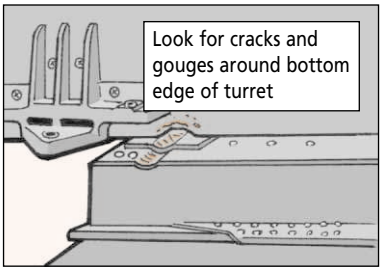

What you don't see can hurt your Avengers, repairmen. The Avenger swings every which way during operation. Anything sticking up in the cargo wells will gouge or crack the bottom of the turret. Same thing happens if the battery box lid is left up.

If those gouges or cracks aren't found and fixed, they can get worse and become unrepairable. That means a new turret.

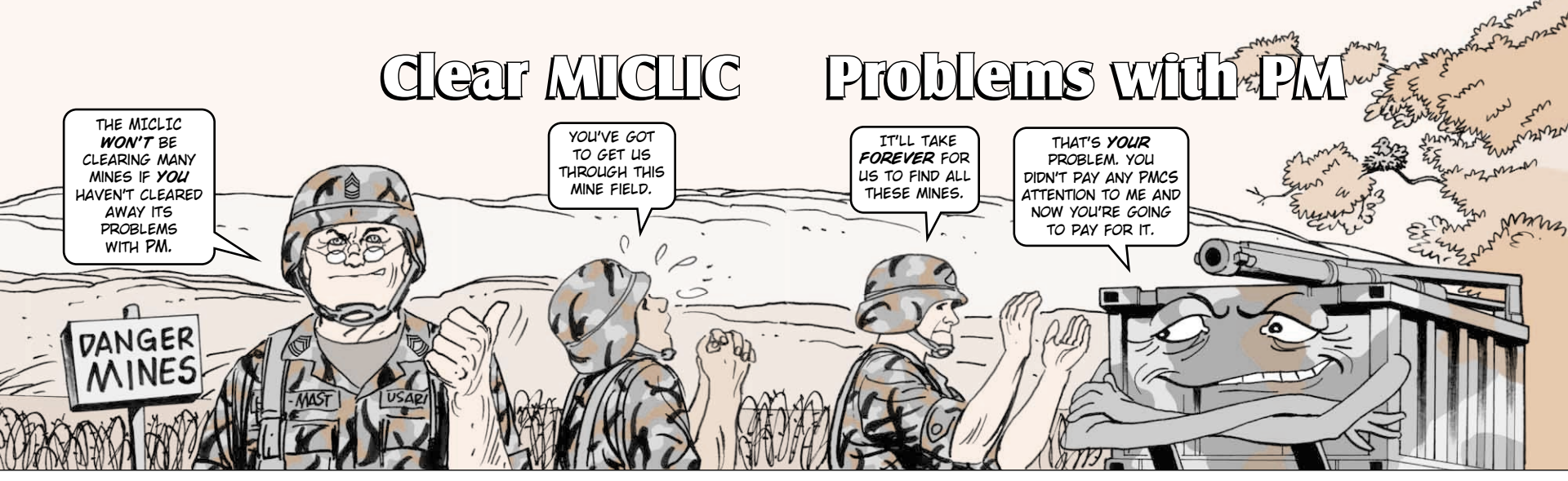
A great time to check the condition of the bottom of the turret is when support takes off the Avenger for services. While the turret is suspended, check underneath for cracks and gouges.

But even when the turret is installed, you can inspect the bottom perimeter of the turret for problems. That's where you find most gouges and cracks. It's a good check to make after every trip to the field.



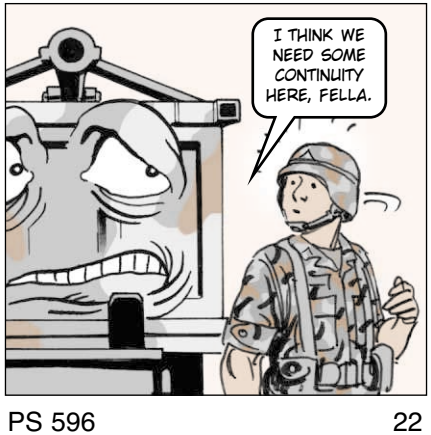




# Clear MICLIC Problems with PM

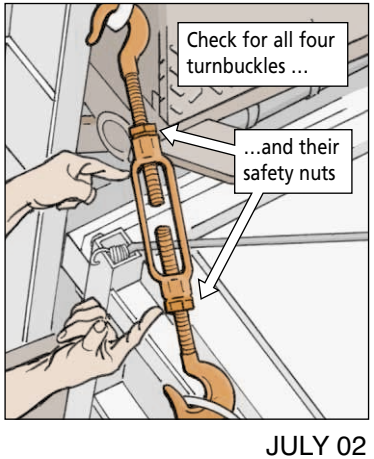



## Operators

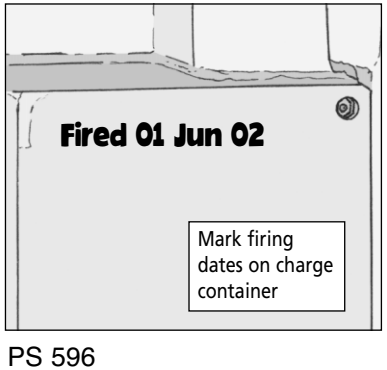
The time to do the continuity check called out in Item 22 in the PMCS in TM 9-1375-215-13&P is **before** you go to the field. That's the only way to pinpoint electrical problems like a bum cable and to fix them **before** your mission. You can't do much about replacing a bad cable once you leave the motor pool.




Make sure all four turnbuckles are installed and all four have safety nuts screwed on tightly. Without the turnbuckles and nuts, the charge container won't be secure on the trailer. In rough country, the container could be bucked loose.

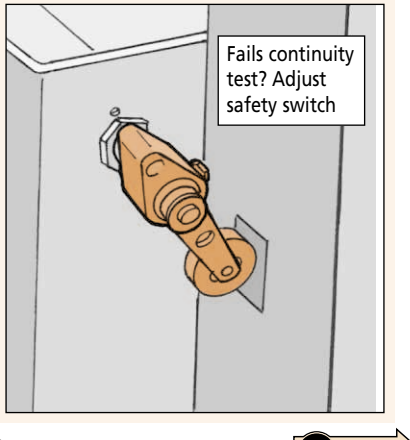



Keep track of how often you've fired the MICLIC. After three firings, an inert linear charge needs to go to your ammo supply point for replacement. Firing a charge more than three times can lead to the charge breaking apart during firing. Just mark the date of each firing on the charge container. Then you can tell at a glance if the charge needs replacing.




## Repairmen

If the MICLIC does fail the continuity check, don't automatically replace the control box. Often the problem is an out-of-adjustment safety switch. Adjust the switch like it says on Page 5-12 of the -13&P and do the continuity check again.



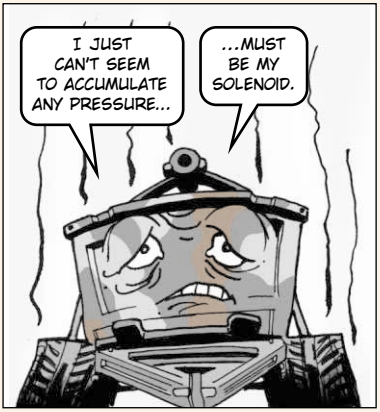




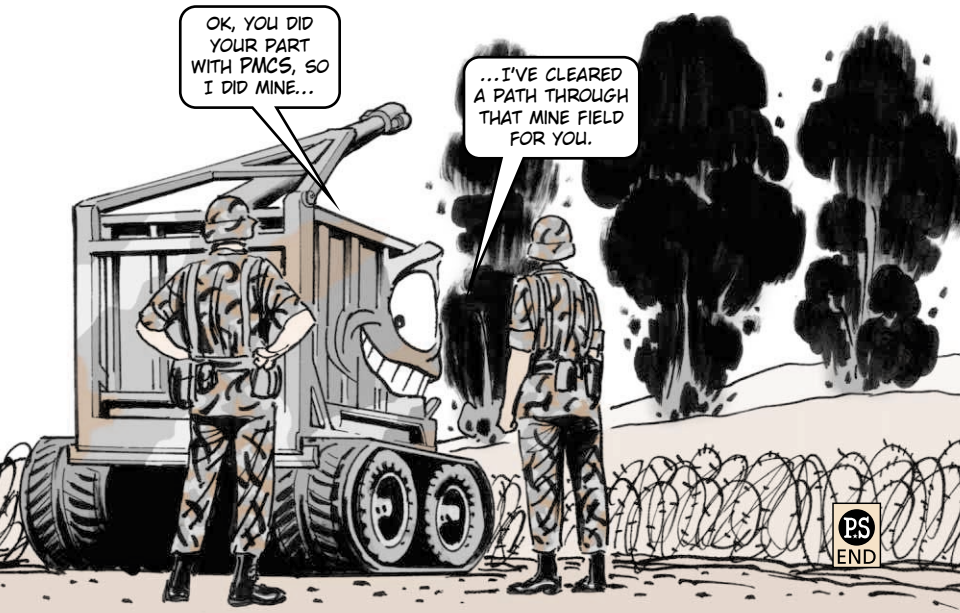

PS MORE

If you pump up the pressure and the pressure won't stay in the accumulator, it's probably a bad solenoid. If the solenoid sticks open even a crack, pressure leaks out of the accumulator.

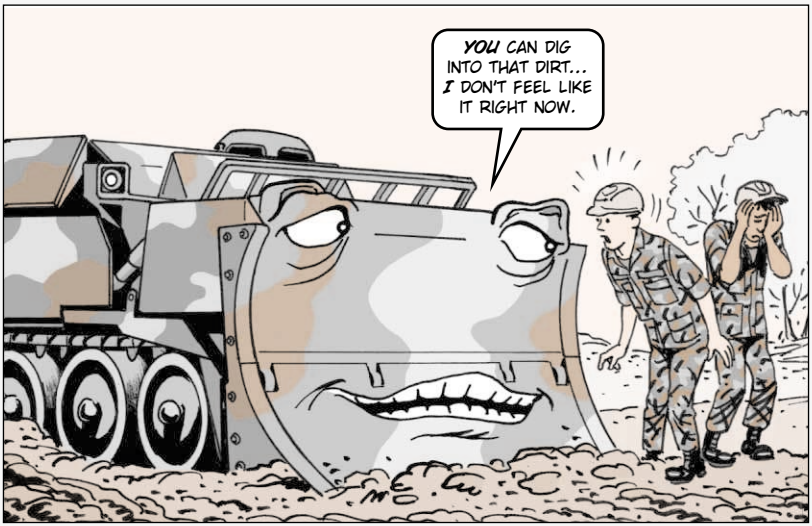
Replace the solenoid, NSN 4810-01-351-5845, and the accumulator should start pressuring again.




Cover the trailer brake handles with tape before you send the trailer to the paint shop. If the the handles are painted, they can become impossible to move. Sometimes the whole brake system must be replaced.

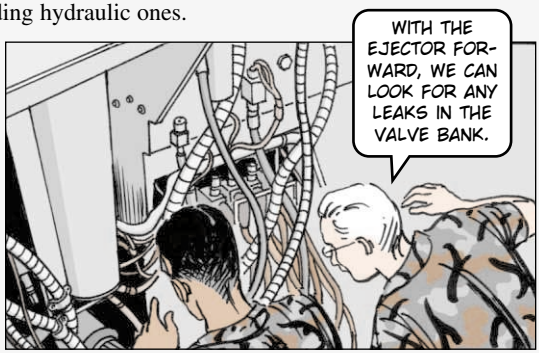
# Hydraulic Time-Out



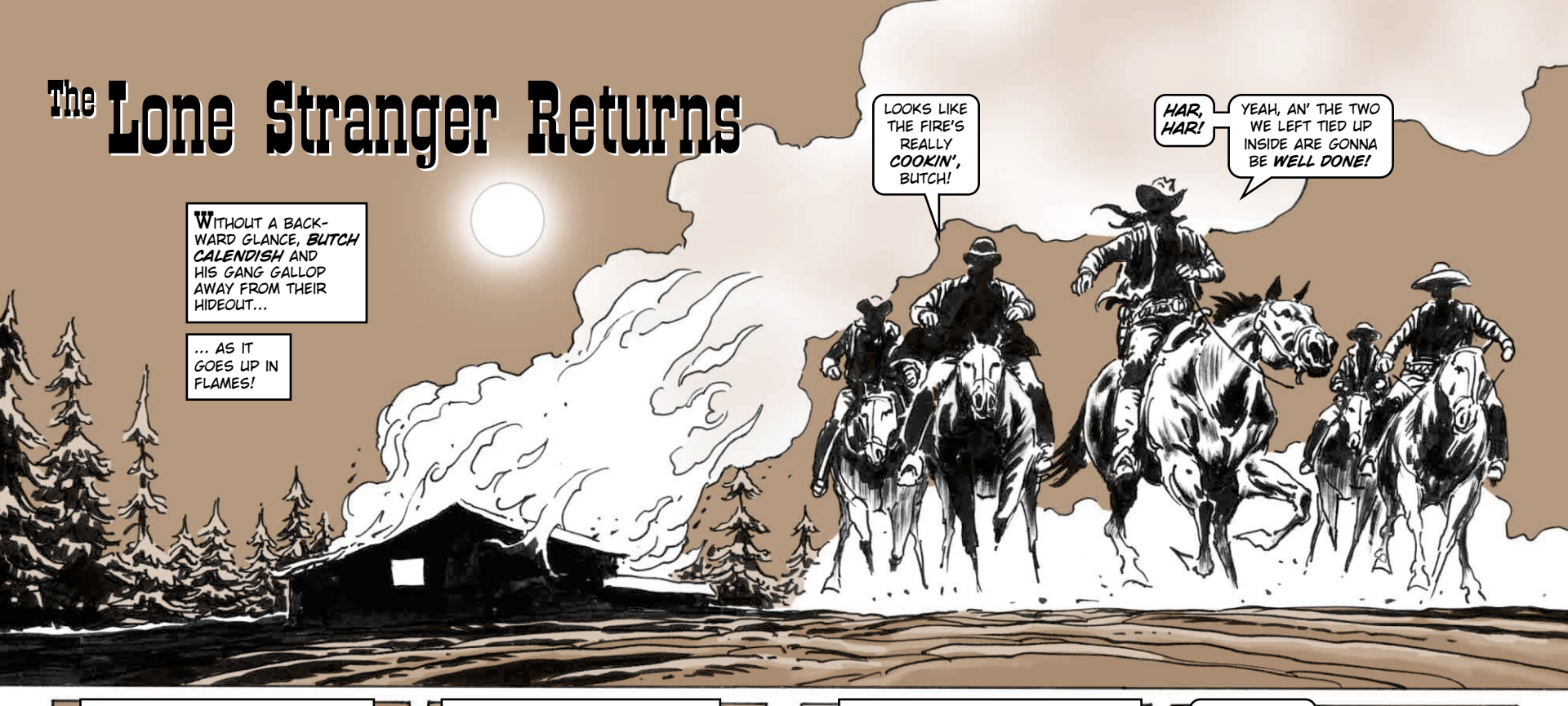

When it comes to a vehicle's hydraulics, the armored combat earthmover (ACE) is known for being temperamental—especially when digging in hard-packed dirt.

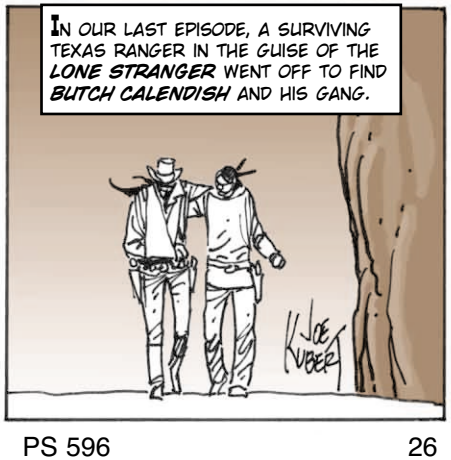
Experienced ACE operators have a rule about vehicle downtime: They take a break and shut down every two hours during operations. During that break, they check for problems—including hydraulic ones.

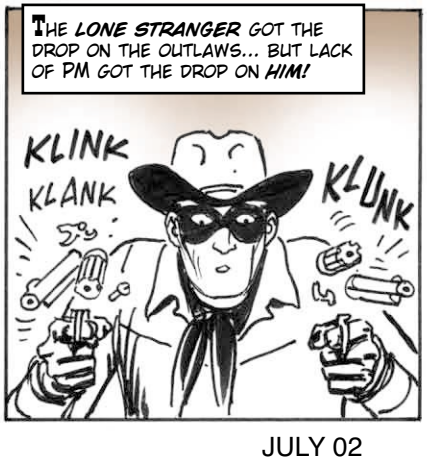
To make hydraulic checks easier before the day's run at the worksite, leave the earthmover's ejector out about two feet. With the ejector forward, there's enough room behind it to look for a busted compensation pump or a leak in the valve bank.

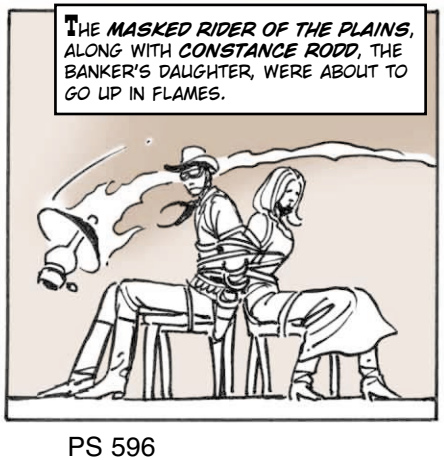


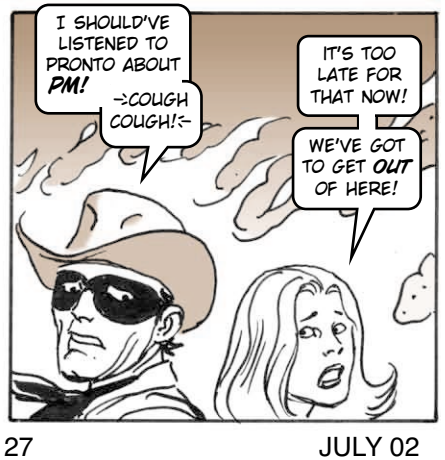
# The Lone Stranger Returns

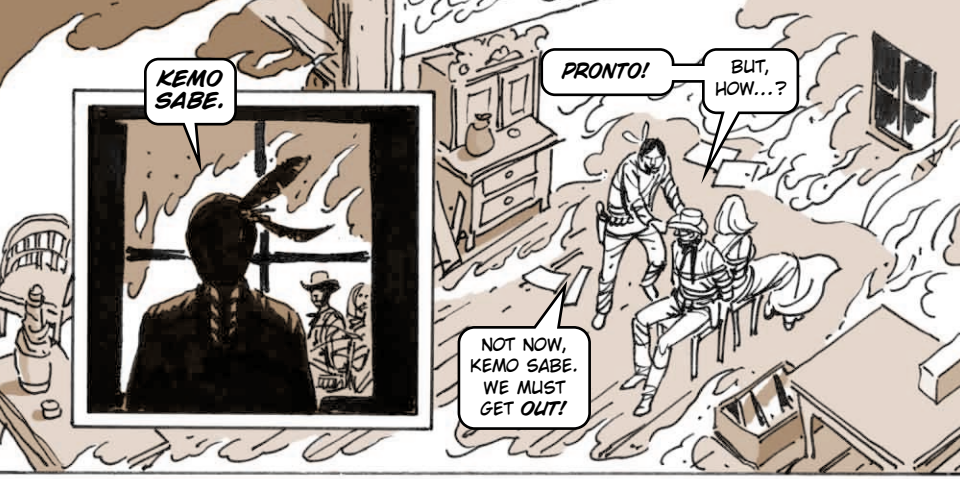


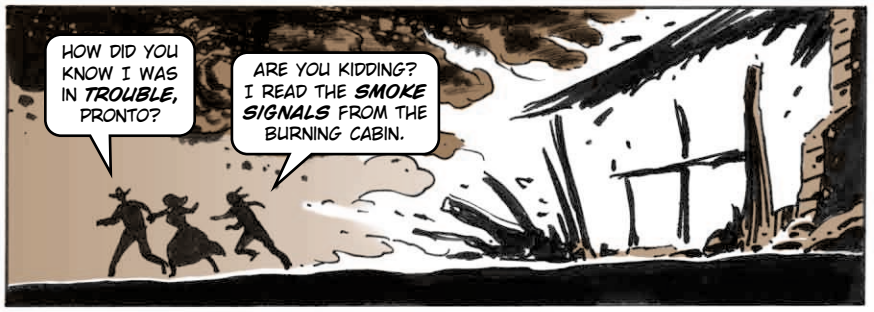



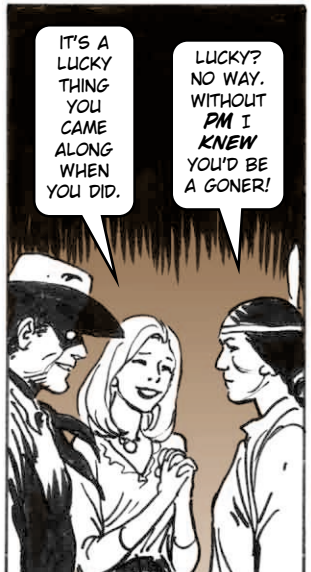



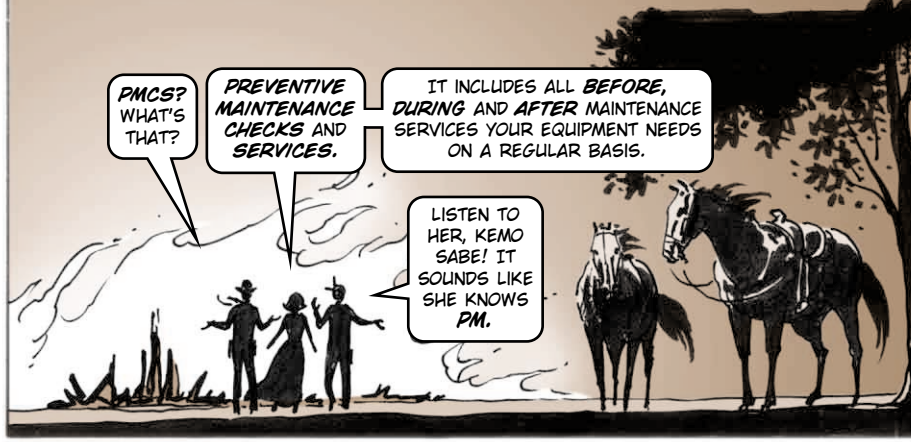

KEMO SABE.
PRONTO!
BUT, HOW...?
NOT NOW, KEMO SABE. WE MUST GET OUT!


HOW DID YOU KNOW I WAS IN TROUBLE, PRONTO?
ARE YOU KIDDING? I READ THE SMOKE SIGNALS FROM THE BURNING CABIN.

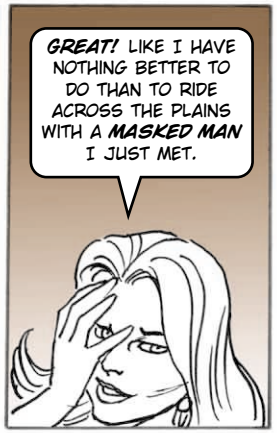

IT'S A LUCKY THING YOU CAME ALONG WHEN YOU DID.
LUCKY? NO WAY. WITHOUT PM I KNEW YOU'D BE A GONER!

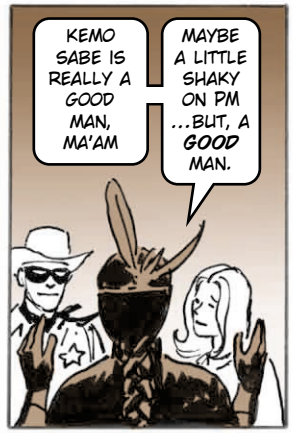

I'VE LEARNED MY LESSON, PRONTO. PM WILL BE MY TOP PRIORITY FROM NOW ON.


I FOUND THESE IN THE DIRT OUTSIDE THE CABIN, KEMO SABE. DO A COMPLETE PMCS SO CALENDISH WON'T CATCH YOU WITH YOUR GUNS DOWN... AGAIN.

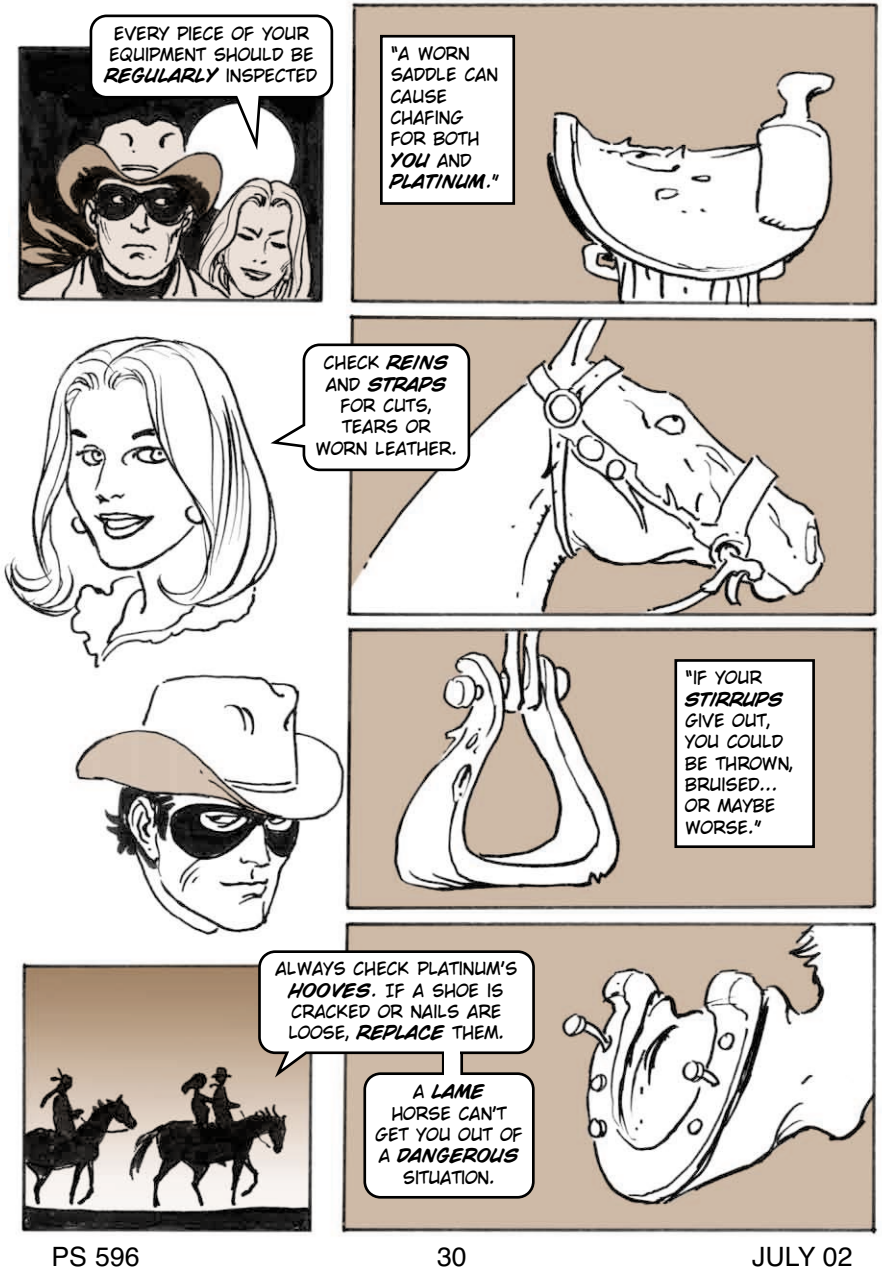

PMCS? WHAT'S THAT?
PREVENTIVE MAINTENANCE CHECKS AND SERVICES.
IT INCLUDES ALL BEFORE, DURING AND AFTER MAINTENANCE SERVICES YOUR EQUIPMENT NEEDS ON A REGULAR BASIS.
LISTEN TO HER, KEMO SABE! IT SOUNDS LIKE SHE KNOWS PM.


I GUESS I HAVE A LOT TO LEARN, CONSTANCE.
I'LL DEFINITELY LISTEN TO YOU AND PRONTO.

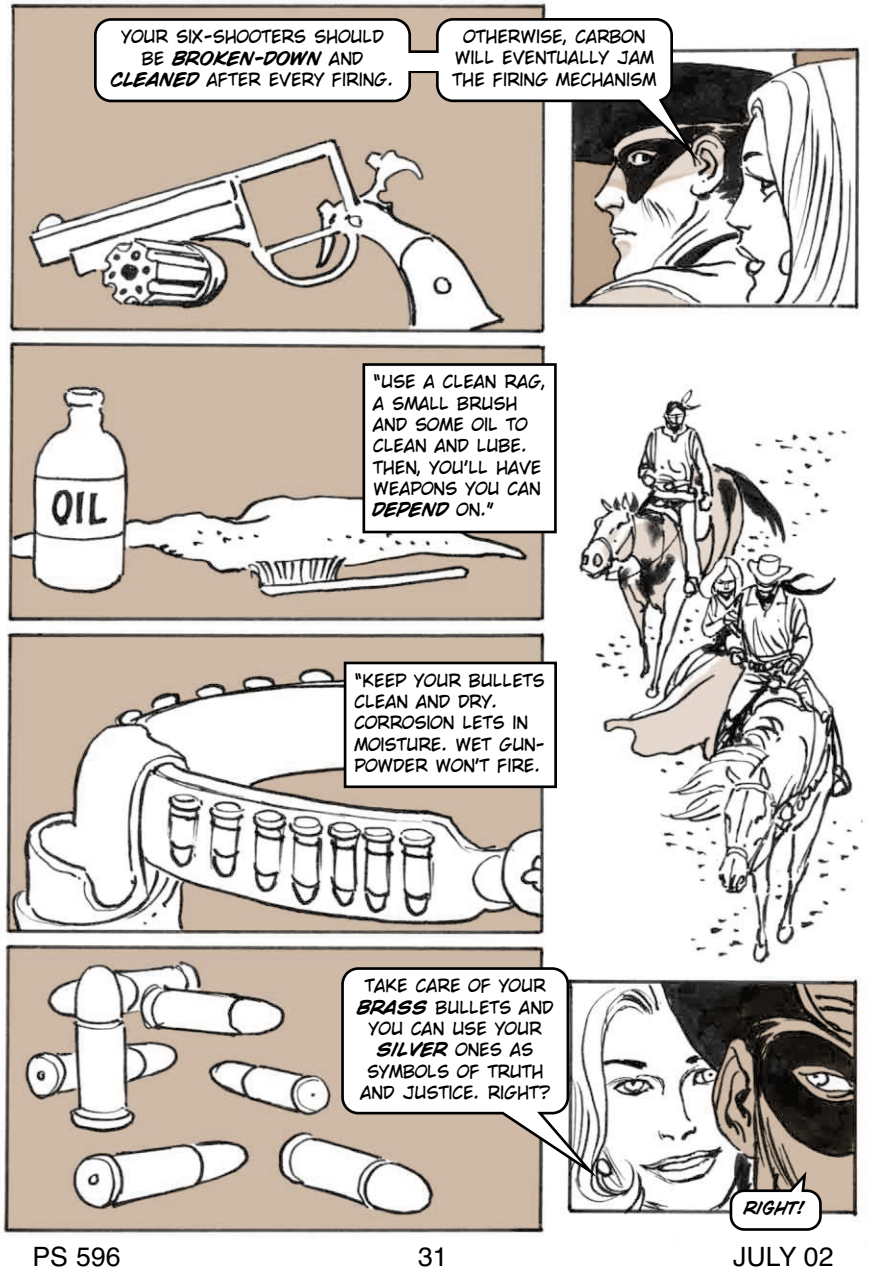

GREAT! LIKE I HAVE NOTHING BETTER TO DO THAN TO RIDE ACROSS THE PLAINS WITH A MASKED MAN I JUST MET.

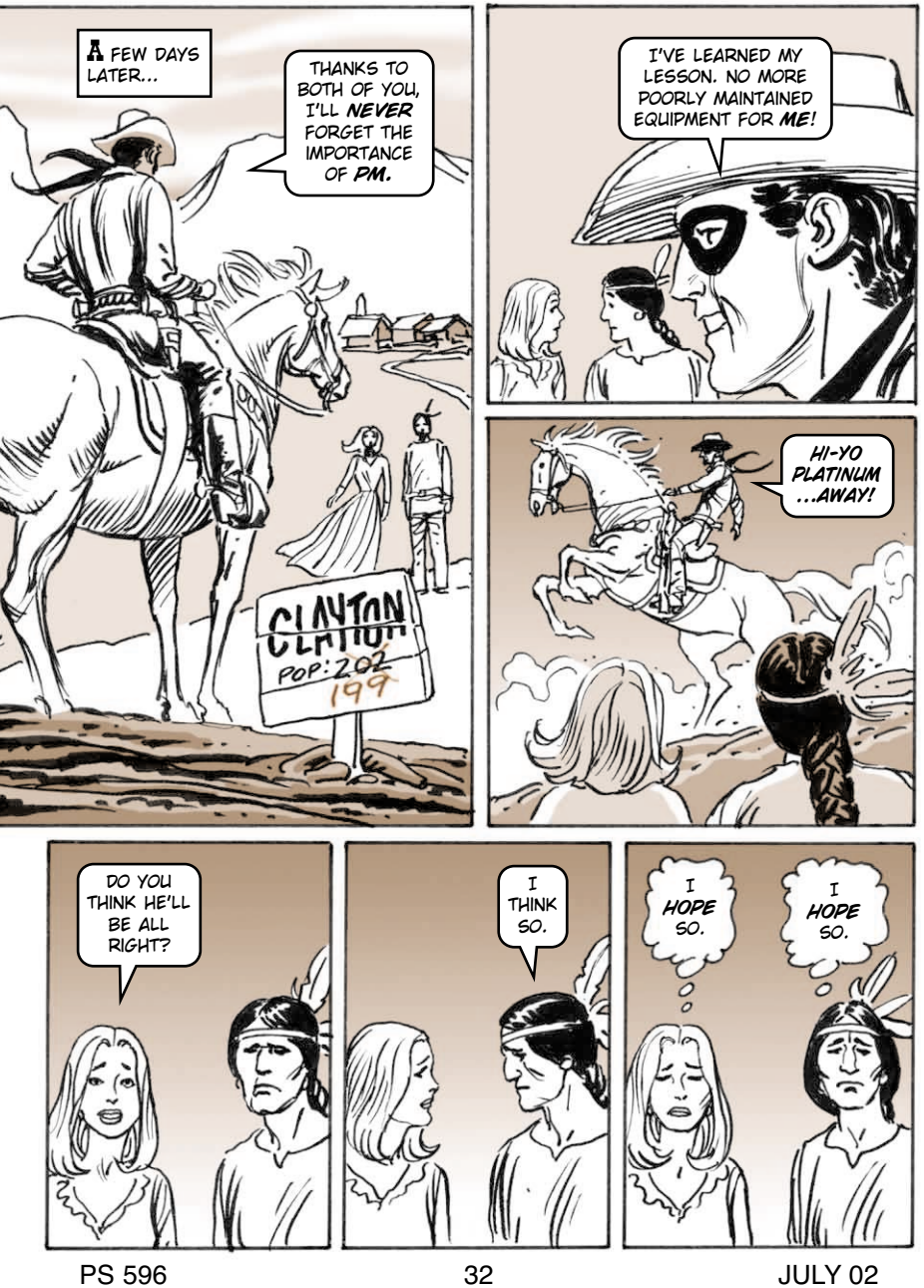

KEMO SABE IS REALLY A GOOD MAN, MA'AM
MAYBE A LITTLE SHAKY ON PM ...BUT, A GOOD MAN.


OH, WELL... I GUESS YOU SHOULD LEARN PM ...FOR YOUR OWN SURVIVAL!


EVERY PIECE OF YOUR EQUIPMENT SHOULD BE REGULARLY INSPECTED
"A WORN SADDLE CAN CAUSE CHAFING FOR BOTH YOU AND PLATINUM."
CHECK REINS AND STRAPS FOR CUTS, TEARS OR WORN LEATHER.
"IF YOUR STIRRUPS GIVE OUT, YOU COULD BE THROWN, BRUISED... OR MAYBE WORSE."
ALWAYS CHECK PLATINUM'S HOOVES. IF A SHOE IS CRACKED OR NAILS ARE LOOSE, REPLACE THEM.
A LAME HORSE CAN'T GET YOU OUT OF A DANGEROUS SITUATION.

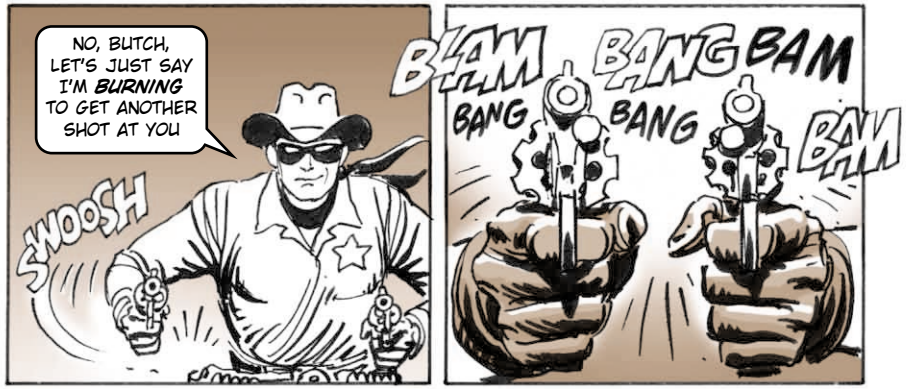


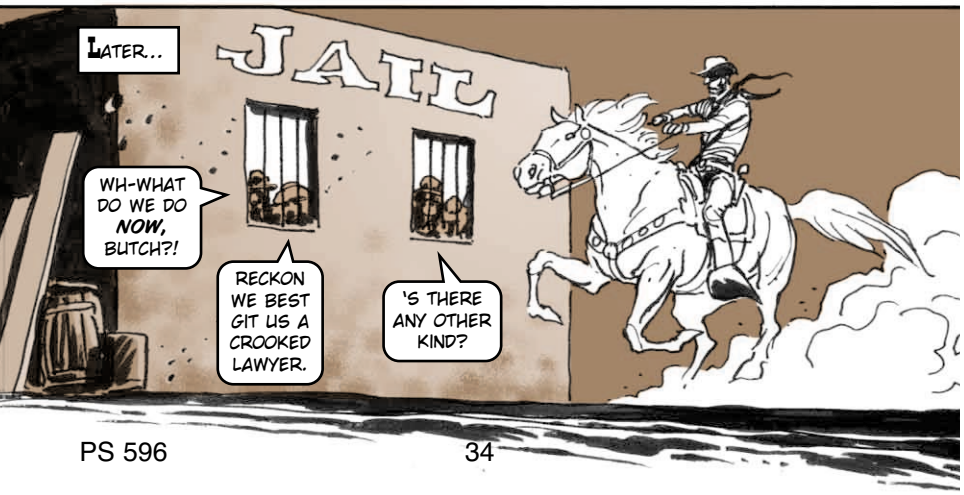

YOUR SIX-SHOOTERS SHOULD BE BROKEN-DOWN AND CLEANED AFTER EVERY FIRING.
OTHERWISE, CARBON WILL EVENTUALLY JAM THE FIRING MECHANISM
OIL
"USE A CLEAN RAG, A SMALL BRUSH AND SOME OIL TO CLEAN AND LUBE. THEN, YOU'LL HAVE WEAPONS YOU CAN DEPEND ON."
"KEEP YOUR BULLETS CLEAN AND DRY. CORROSION LETS IN MOISTURE. WET GUNPOWDER WON'T FIRE.
TAKE CARE OF YOUR BRASS BULLETS AND YOU CAN USE YOUR SILVER ONES AS SYMBOLS OF TRUTH AND JUSTICE. RIGHT?
RIGHT!


A FEW DAYS LATER...
THANKS TO BOTH OF YOU, I'LL NEVER FORGET THE IMPORTANCE OF PM.
CLAYTON
POP: 202
199
I'VE LEARNED MY LESSON. NO MORE POORLY MAINTAINED EQUIPMENT FOR ME!
HI-YO PLATINUM ...AWAY!
DO YOU THINK HE'LL BE ALL RIGHT?
I THINK SO.
I HOPE SO.
I HOPE SO.

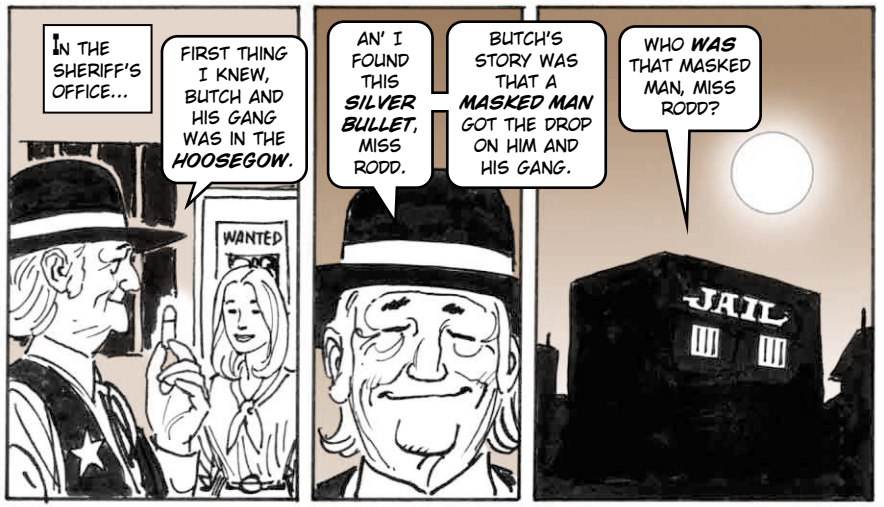


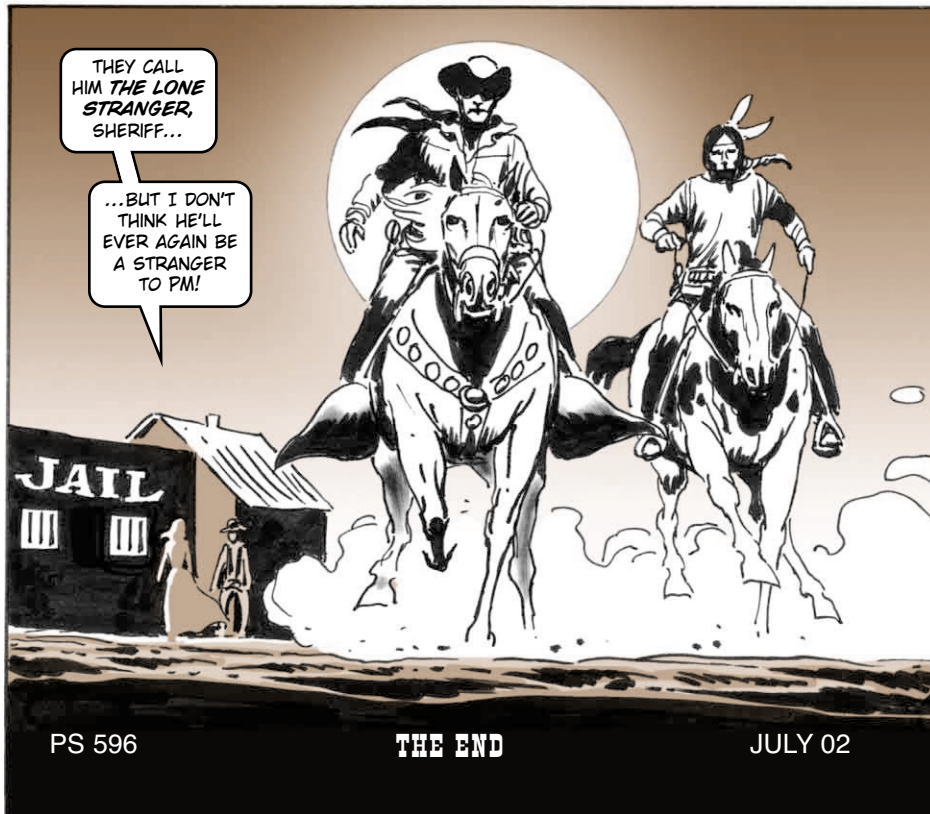

SEVERAL DAYS LATER...
DROP THEM MONEY BAGS! AN' DON'T MAKE NO FUNNY MOVES.
IT'S... BUTCH CALENDISH AN' HIS GANG!
OKAY... J-JUST DON'T SHOOT.
LOOKS LIKE A PRETTY GOOD HAUL, BOSS.
SURE DOES! MORE'N THE RANSOM WE GOT FER THE BANKER'S DAUGHTER!
WHO SAYS CRIME DON'T PAY?
HAR, HAR! WE'RE DOIN' OKAY... EVEN AFTER TAXES! LET'S GO!
HOLD IT, CALENDISH!
IT'S THE MASKED MAN!
HOW'D HE GIT AWAY?
MAKES NO NEVER-MIND, BOYS!
WHAT'RE Y'GONNA DO THIS TIME, MASKED MAN? SHOOT YER-SELF INNA FOOT?


NO, BUTCH, LET'S JUST SAY I'M *BURNING* TO GET ANOTHER SHOT AT YOU
SWOOSH
BLAM BANG BAM
BANG BANG BAM


LATER...
JAIL
WH-WHAT DO WE DO *NOW*, BUTCH?!
RECKON WE BEST GIT US A CROOKED LAWYER.
'S THERE ANY OTHER KIND?




IN THE SHERIFF'S OFFICE...
FIRST THING I KNEW, BUTCH AND HIS GANG WAS IN THE *HOOSEGOW*.
WANTED
AN' I FOUND THIS *SILVER BULLET*, MISS RODD.
BUTCH'S STORY WAS THAT A *MASKED MAN* GOT THE DROP ON HIM AND HIS GANG.
WHO *WAS* THAT MASKED MAN, MISS RODD?
JAIL


THEY CALL HIM *THE LONE STRANGER*, SHERIFF...
...BUT I DON'T THINK HE'LL EVER AGAIN BE A STRANGER TO PM!
JAIL

# FILTER SLEEVE REMOVAL MADE EASIER

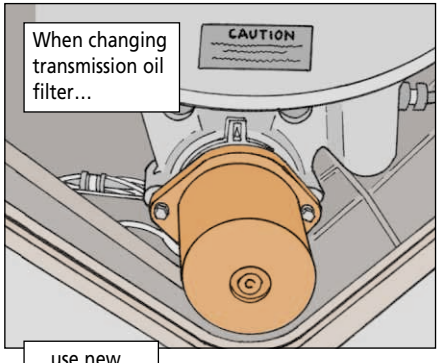

Dear Windy,

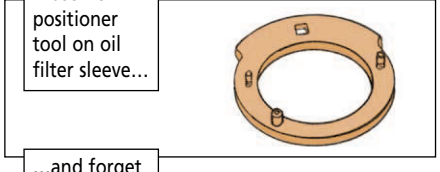
Our mechanics had a tough time repositioning the main transmission oil filter sleeve using the positioner tool called for in Para 6-4-18 of TM 1-1520-237-4.

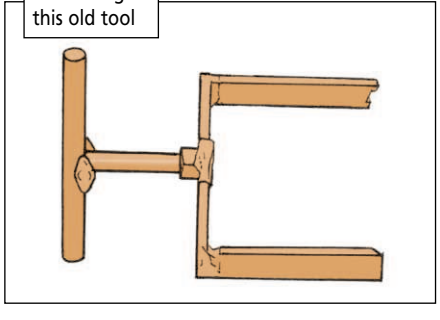
It takes a lot of muscle to turn the tool, so sometimes a hammer and punch is used to reposition the sleeve to shut off the flow before changing the filter. That can damage the filter sleeve tang area. If the sleeve was previously damaged, the positioner won't work at all.

Mechanics can end up with busted knuckles, cuts and abrasions using the tool. The punch and hammer can lead to depot level repairs to replace the filter sleeve and the transmission. The end result is costly downtime and reduced operational readiness.

We've come up with a new positioner tool that prevents damage to mechanics' hands, and safeguards the filter sleeve and the transmission sump case. It cuts the time needed to change the transmission oil filter by 50 percent. The tool even works on the sleeve if the tang area was damaged previously during a filter change.




Here are the materials and dimensions an AVIM shop can use to make the tool:

Once the tool is made and you've removed the bolts holding the filter assembly to the main gear box sump like the TM says, slide the new tool onto the filter bowl.

Make sure the positioner tool pins go through the bolt holes of the filter bowl and sleeve. Then insert a ½-in drive pull handle into the opening on the tool and rotate the sleeve assembly clockwise to the OFF position and remove the housing.

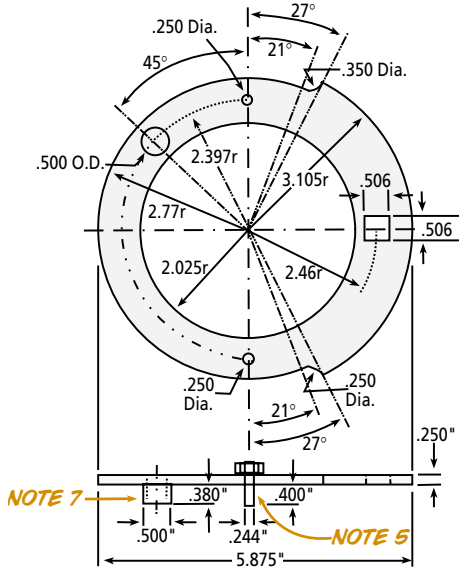
Follow the rest of the procedure in Para 6-4-18-1.

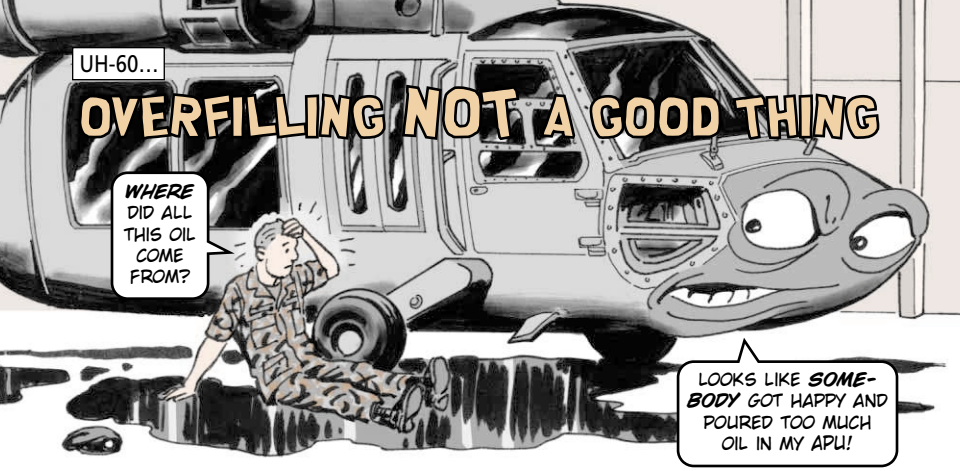
David Leak
Ft Rucker AL.

**From the desk of the *Editor***

*Great idea! Looks like this new tool will be more user friendly and easier to use.*

1. MAKE FROM TOOL STEEL, CONDITION N (MIL-S-18729)
2. BREAK ALL SHARP EDGES 0.005-0.015"
3. TOLERANCES UNLESS OTHERWISE NOTED ±0.005
4. TO ENHANCE HEAT DURABILITY, HEAT TREAT AFTER MACHINING TO ROCKWELL C26-33, per MIL-4-6875
5. MAKE TWO ¼"-28 UNF, GRADE 8, x 1.000" LONG BOLT OR EQUIVALENT
6. IDENTIFY TOOL, OIL FILTER FLOW VALVE POSITIONER, AS PER MIL-STD-130
7. MAKE FROM ½ TUBE STEEL 0.65" LONG PRESS FIT AND SEAL



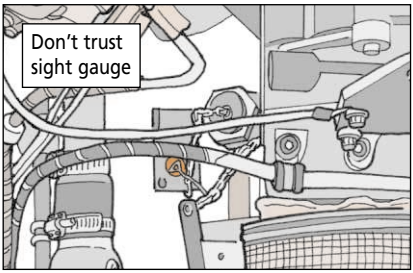


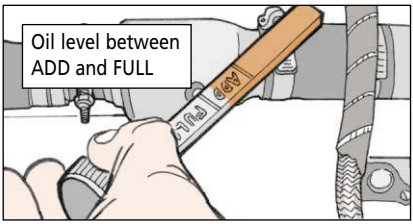

If your Black Hawk's auxiliary power unit (APU) APU OIL TEMP HI warning light comes on and oil starts spewing out of the exhaust and onto the ramp, you may be overservicing the APU.

Service the APU like it says in Para 1-3-9 of TM 1-1520-237-23. Add oil slowly until the level in the sump is between the ADD and FULL marks on the dipstick when the oil is cold. Don't use the sight gauge because it gives a slightly different reading. If the oil is between ADD and FULL, don't try to get it to the FULL mark.

Too much oil is almost as bad as not enough oil in the sump. Too much oil in the APU can blow out power turbine seals and cause a fire.

The APU is not level since it is installed with a nose-high attitude, so it's easy to overfill.





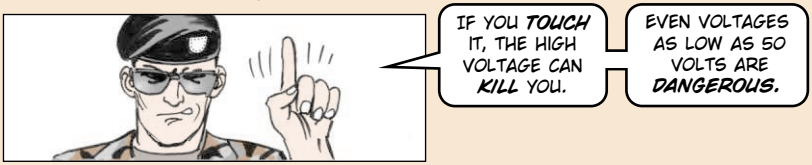
Keep in mind that the dipstick reading could be off a bit when servicing the APU. Play it safe and fill the APU to no more than ¼-in below the FULL mark. That prevents pouring more than you need.

'Course, if you're worried about not getting enough oil in the APU, don't. It won't start if a low oil pressure situation exists. Bottom line is, keep the oil between the lines.

# Radio Antenna Will Light You Up

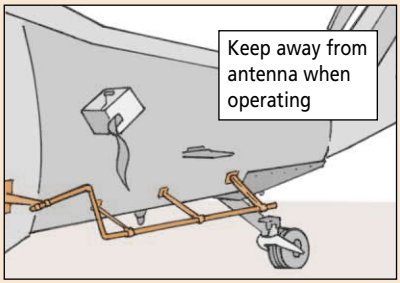

Crews, the last thing you want is to look like you've been zapped by lightning. That can happen if you stand too close to the AN/ARC-220 high frequency radio antenna when it's keyed up.

So make sure no one is within 3 feet of the high-powered antenna when the pilot or crew chief is self-testing the radio or transmitting. The farther away you are from the antenna, the better off you'll be.



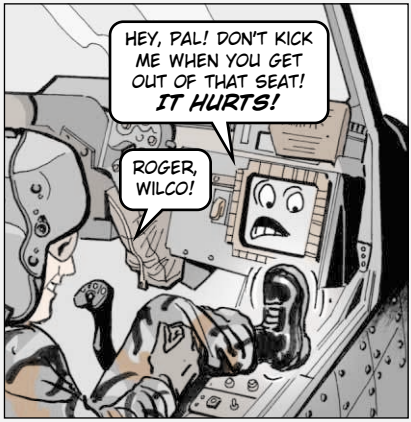

If that doesn't take you out, standing too close to the antenna will get you a dose of microwave radiation. You won't feel any heat, but you'll be cooking from the inside out, like a microwave.

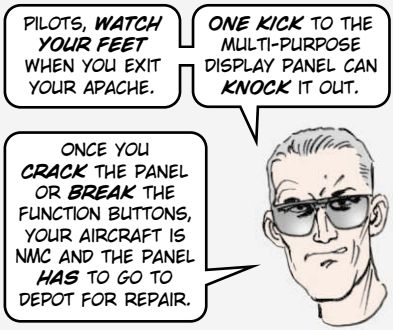
So when the radio is on and communicating long range or testing, be safe rather than sorry. Keep your distance and you won't get burned.

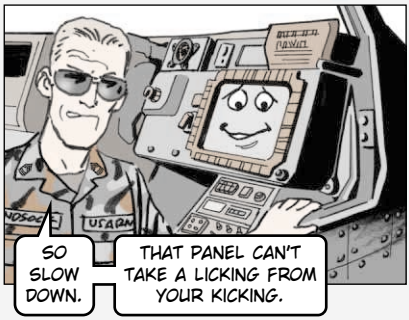


AH-64D...

# DISPLAY CAN'T TAKE A KICKING




ALSE...

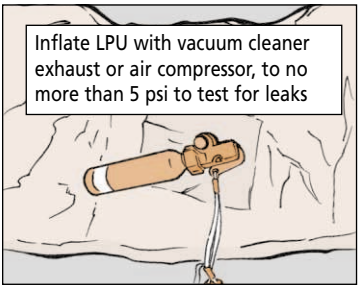

Crews, don't leave home without having your ALSE tech check your life preserver unit (LPU) for leaks.

To stop the leaks, your ALSE tech will inspect the LPU gaskets and replace them if they're worn out.

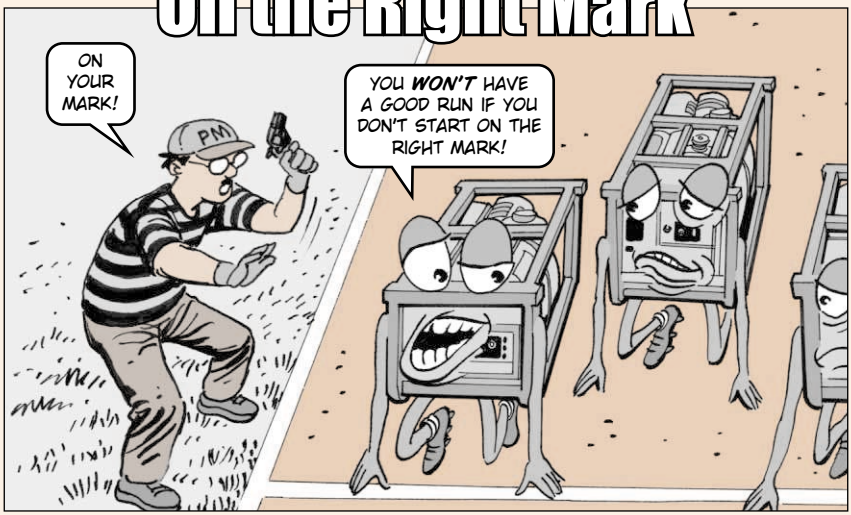
'Course, every 120 days, ALSE techs should do a leak test, like it says in Para 5-18(b) of TM 5-4220-202-14 on all LPUs to ensure the gasket in the $CO^2$ cartridge is good.

A bad gasket lets air leak out and that would further ruin an already bad day if you're down in the high seas.

For the LPU-34/P floatation collar, perform the leak test every 360 days like it says in NAVAIR 13-1-6.1-2, Para 5-33.



# On the Right Mark

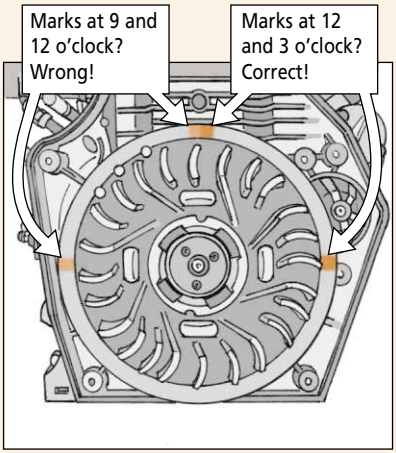



Timing is everything. Without the right fuel injector timing, the 4-cycle diesel engine on your 2-KW generator, NSN 6115-01-435-1565 or NSN 6115-01-435-1567, will fail to start, sputter to a quick stop, or knock like a salesman at your front door.

If you have the new MTG-L series engine on your generator, setting the timing just got a bit more confusing. Instead of one timing mark on the flywheel, there are two!

The second timing mark is actually an assembly mark used by the manufacturer. It should not be used for timing!

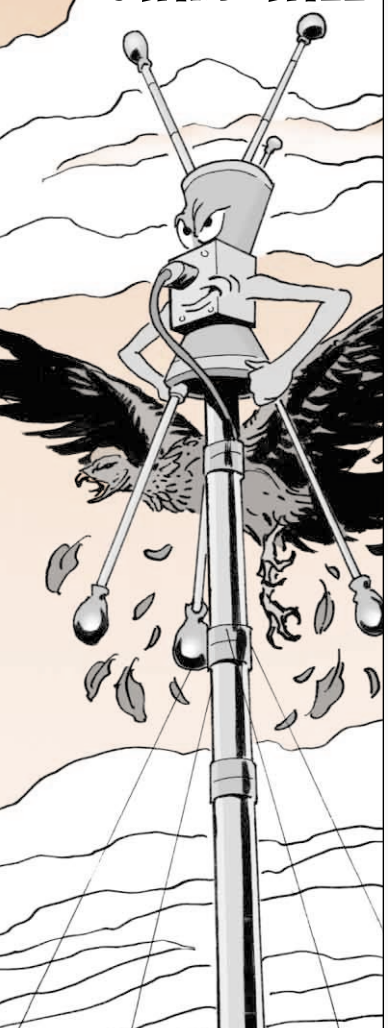
How do you make sure you're using the right mark? Find both marks. The timing mark should be at the 12 o'clock position and the "extra" mark at the 3 o'clock spot. If your marks are at the 12 o'clock and 9 o'clock positions, you're using the wrong mark!




If a poor running generator comes in your shop with a MTG series engine, follow Para 5-15 in TM 9-6115-673-13&P to check the timing and set it right.

OE-254 Antenna...

# MAINTAIN 'EM TO STAND TALL



Preventive maintenance on the OE-254 antenna is a must to keep the antenna standing tall. Here are a few things you should know to do PM right.

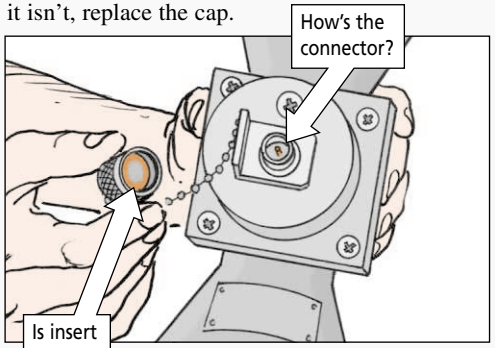
## AS-3166 Feedcone Assembly

The feedcone is the heart of your antenna. Start your "heart" PM by giving it a little shake. The magnetic core in feedcones can break loose. If you hear a rattle, that's probably what has happened to yours. Turn it in and get another feedcone.

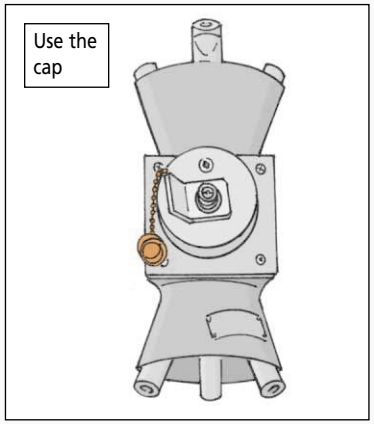

Once it passes the shake test, give the RF connector a close look. Wind whipping the RF cable can bend the copper receptacle pin out. A splayed receptacle won't make good contact with the cable pin.

If the receptacle is splayed, a pair of needle-nose pliers will squeeze it back together. GENTLY is the word when using the pliers. The receptacle is easily broken.

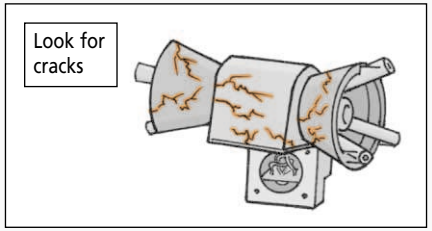
Look inside the RF connector cap, NSN 5935-01-184-7376. The rubber insert should be there. If it isn't, replace the cap.

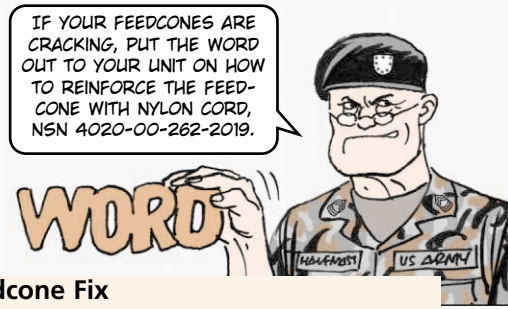



Use the cap any time the feedcone is not connected to the RF cable. Too many caps dangle down and flop around. All it takes is a few seconds to screw the cap on the connector, but it could save hours of maintenance.




Now turn the feedcone over and look at the opposite side. This is a prime area for stress cracks.

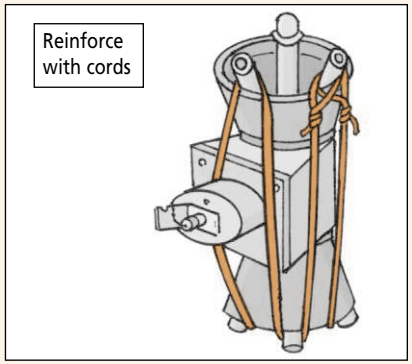



## Feedcone Fix

Cut about three feet of cord. Tie one end to an upper cone antenna feed using two half-hitches. Cinch the knot tight.

Loop the cord around an antenna feed on the lower cone. Then loop it around a feed on the upper cone.

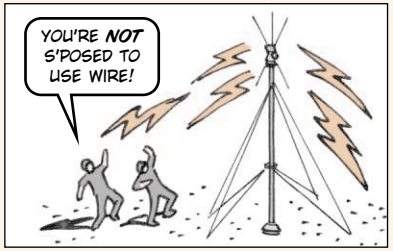



Weave the cord up, down and around until you get back to where you started.

Pull it tight and tie it with two more half-hitches.

Trim any extra cord and melt the edges to prevent fraying.

Do not use wire to do this job! You may short out the antenna and damage its transmitter or reduce its output.



Your six antenna feed sockets catch dirt and moisture that lead to corrosion. Keep them clean with isopropyl alcohol, NSN 6810-00-753-4993, and a foam swab, NSN 7045-01-154-1317. Once the swabs are no longer available, (they're AAC Y), use local purchase sources.

For stubborn corrosion, try using a small-arms bore brush, NSN 1005-00-903-1296. Use handle, NSN 1005-01-113-0321, for a better grip and more twisting force.

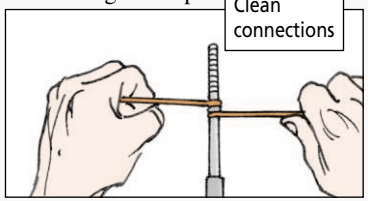
Just twist the bore brush down into the socket and turn it several times. The stiff fibers loosen corrosion and clean out the grooves.


Finally, treat the feedcone like the fragile piece of equipment it is. Make the feedcones one of the last things you store. Stencil the OE-254 storage bag to warn folks not to toss things on top of it.

## MS-116, MS-117, AB-24 Elements

You must keep the antenna elements free from corrosion. To do that, use water displacing compound, NSN 6850-00-142-9409, and silicone, NSN 6850-00-880-7616.

First, though, clean the connecting area of each element with your antenna's guide rope.




Loop the rope around the element. Pull back and forth from both ends of the rope.

The friction created by the rope cleans the connecting area.

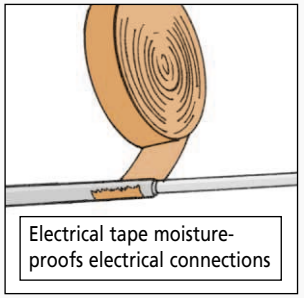
**Don't** use a scouring pad to do this cleaning! Scouring pads wear down the metal and strip the element.




Once the contact areas are clean, spray them with water-displacing compound. Then give them a light coat of silicone compound.

Your element PM will be easier if, when the antenna is erected, the elements are attached hand-tight. Elements that have been muscled together get damaged when they're muscled apart.

Also, a wrapped layer of electrical tape, NSN 5970-00-419-4291, around each connection will help keep moisture out and corrosion away.

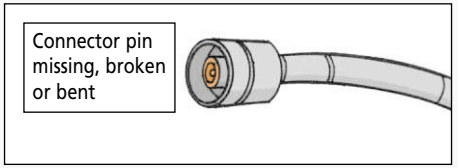



## CG-1889 RF Cable

Take your RF cable in hand and look it over from end to end.

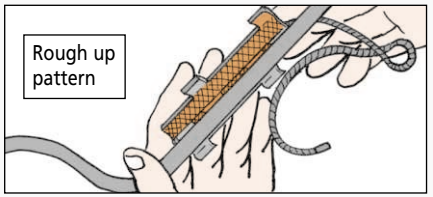
The connector that mates your cable to the feedcone might be your OE-254's number one problem area.

Make sure the pin is not bent or broken. You can straighten a bent pin with needle-nosed pliers, but do it carefully or you'll be turning the cable in with a broken pin.



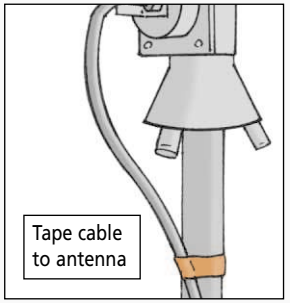

A bent or broken pin is often the result of too much strain on the cable. To prevent this, every time the antenna is raised, use the strain relief clamp, NSN 5975-00-563-0229. Attach it to the upper guy plate of the mast like it says in Para 2-4 of TM 11-5895-357-13. Be careful not to bend the clamp when you use it. A bent clamp will not hold the cable.

The diamond pattern inside the clamp does not quite do the holding job it was intended to do. Help it out by roughing it up a bit with a file. Just scuff it. If you overdo it, the clamp will cut into the cable.

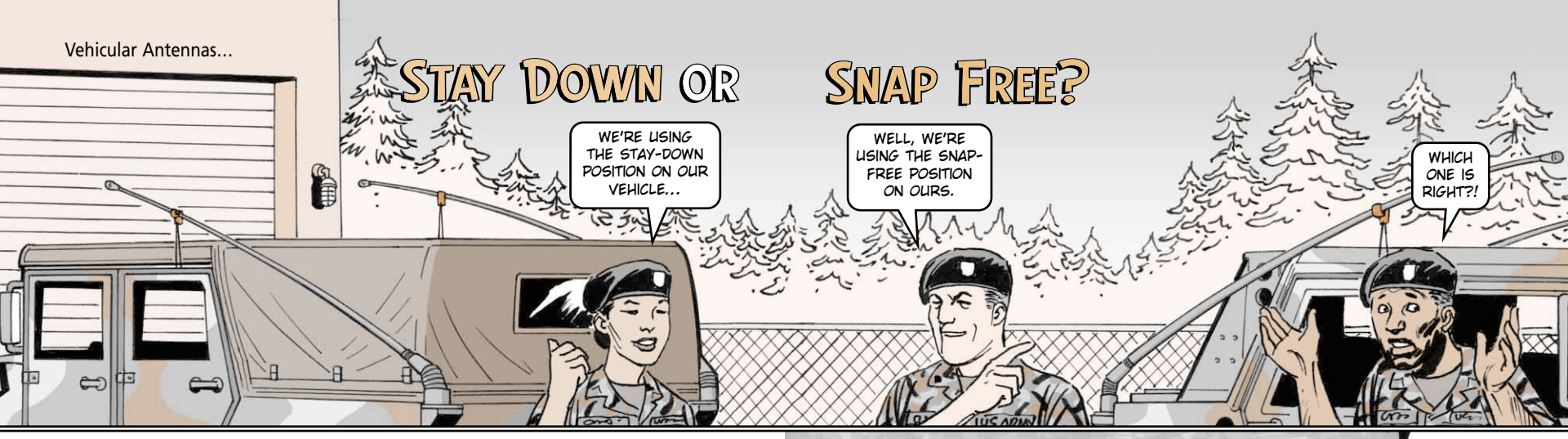




Put a small bow or loop in the cable just below the feedcone. Tape the cable to the uppermost section of the mast. Now tape the cable down the mast about every five feet to give slack and keep the pressure off the cable.



# Stay Down or Snap Free?



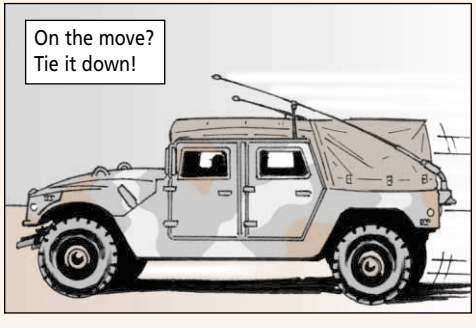

Dear Half-Mast,

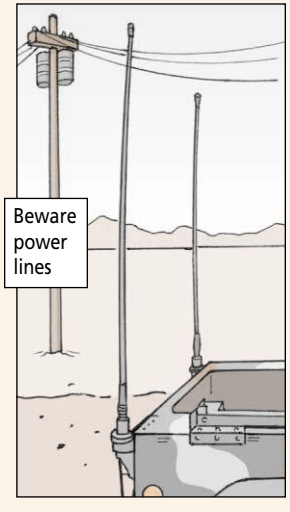
We use both the clamp and the clip to hold down our AS-3900 and AS-1729 antennas. My question is, when do we use the stay-down position and when do we use the snap-free position on the clamp and the clip?

Pvt D.L.A.

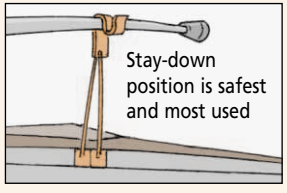
*Dear Private D.L.A.,*

*Even though it decreases your radio's range with the antenna tied down, you should keep a vehicular antenna tied down when you are on the move. Having the antenna waving in the air greatly increases your risk of hitting a power line or an overpass.*




*The majority of time (and always in garrison) the antenna should be in the stay-down slot of the clip or clamp. You do not want the antenna bouncing free and striking a power line or other overhead obstruction.*




*However, the stay-down position does have its own safety problems. If you hit an obstruction with the antenna locked down, the antenna will shatter and could cause serious injury from flying parts.*

*So, if you are operating in the field away from all overhead obstructions except trees, you can put the antenna in the snap-free position. That way, if you hit a tree limb, the antenna will spring up and not break.*

*Additional information can be found in TB 43-0129,* Safety Requirements for Use of Antenna and Mast Equipment. *Read it on the web at:* http://www.monmouth.army.mil/cecom/safety/spub/tb430129.pdf

*As a rule of thumb, though, the safest and by far the most used position should be the stay-down one.* Half-Mast

Small Arms...

# Reserve/Guard Weapons Need PM


Dear Editor,

As a maintenance technician, I run into National Guard and Army Reserve units who believe their rifles, machine guns, and pistols don't require maintenance if they're not fired for long periods of time. They support their position by pointing to Para 3-3e in DA Pam 738-750, which discusses weapons not removed from storage.

I believe this regulation does not apply to Reserve and National Guard arms rooms and that ignoring weapons' PMCS requirements will result in their not being ready for action.

CW4 Anthony Cardenas
90th Regional Support Group
Ft Sam Houston, TX

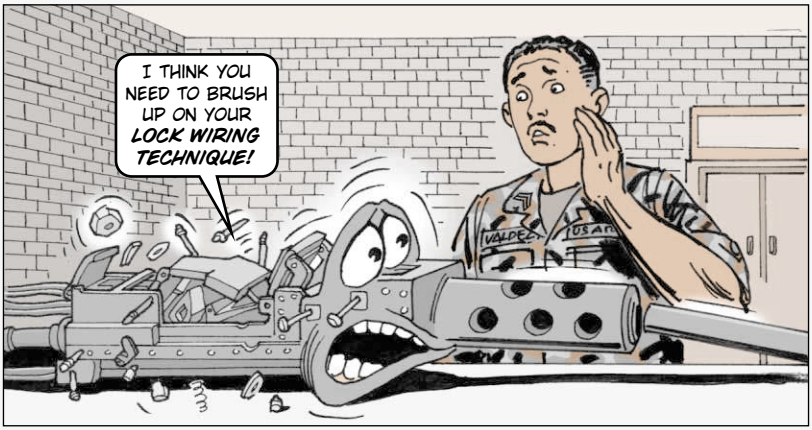
## From the desk of the *Editor*

*You're absolutely right, Chief. Every weapon should have the PMCS that is spelled out in its -10 TM performed at least quarterly.*

*The only exception for the Reserves and National Guard is that the annual gauging required for each active Army weapon can be done every other year as long as no problems show up during quarterly PMCS.*

*This is spelled out in each weapon's -20 TM at the beginning of the PMCS for the armorer and at the beginning of the gauging requirements for direct support. Ignoring these requirements means weapons can develop corrosion and malfunctions that go undetected until the weapon is needed.*

# LOCKED TO STAY LOCKED




Dear Editor,

As contractors who work exclusively with small arms, we notice some common mistakes armorers make when lock-wiring parts. Of course, if a screw or nut isn't lock wired correctly, a weapon can come apart during firing.

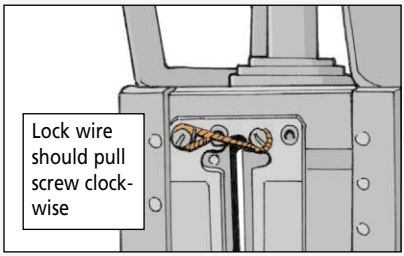
A major problem is using the wrong wire. The lock wire you find around most motor pools isn't strong enough. Use the wire called out in the expendable supplies at the back of each weapon's TM. If none is called out, NSN 9505-00-293-4208 brings wire that is good for most lock wiring chores.

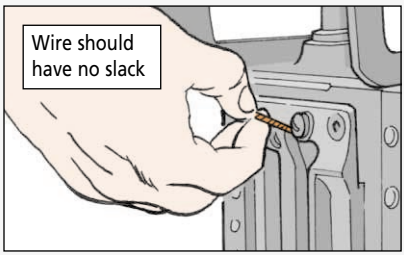
Another mistake is not using lacing pliers. Trying to lock wire a screw with needle nose pliers won't work. Armorers must use the lacing pliers in the small arms tool kit.

Another problem is not routing the wire in the correct direction. The wire should pull the screw clockwise so that the screw can't work loose.

Finally, a common mistake is leaving slack in the wire. The wire should be pulled as tight as possible. If you leave slack, the screw can loosen.

Robert Henson
Brant Ratliff
Ft Campbell, KY

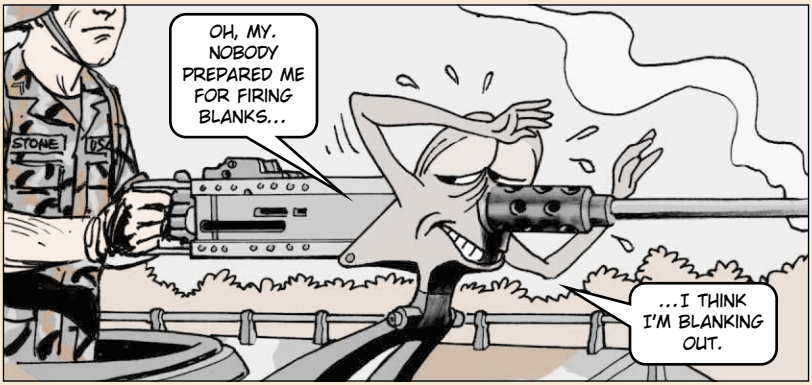



**From the desk of the *Editor***

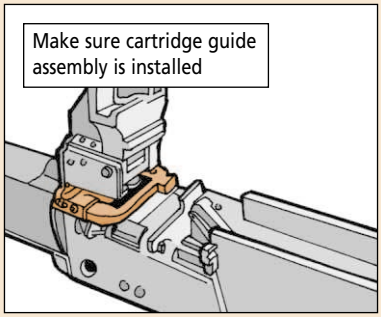
*Your tips will be the key to locking up locking wire problems. Good job!*

# Don't Blank Out



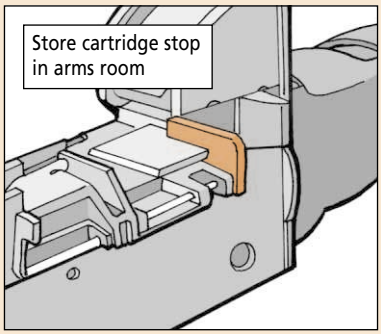

Armorers, firing blanks from your M2 machine guns requires a bit of extra care if you don't want to cause yourself grief later.

You must install all of the blank firing attachment (BFA), including the cartridge guide assembly. The guide, which goes in the feed tracer, compensates for the shorter blank round. Without it, the M2 jams and gunners start hollering for you. If the guide is missing, order one with NSN 1005-01-092-9537.




Remember, you won't find anything on the BFA in the M2 TMs. It's covered by its own manual, TM 9-1005-314-12&P.

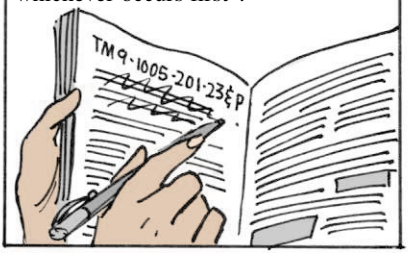
The cartridge stop must be removed to install the BFA. If the stop's removed in the field, you can bet your paycheck it won't make it back to the arms room. And without the stop, the M2 can't fire real ammo.



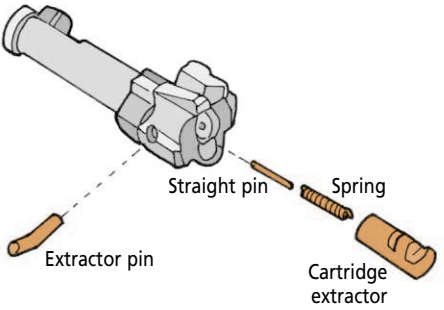

So stop disappearing stops by removing them in the arms room and keeping them there. Then they don't have a chance to disappear. When the M2 comes back to the arms room, remember to replace the cartridge stop.

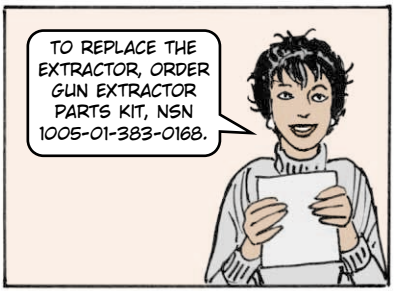
# PMCS FOR EXTRACTOR CHANGED


On Page 2-10.1 of TM 9-1005-201-23&P, scratch out the sentence on the extractor that says "mandatory replacement after 20,000 rounds or, as a minimum, every three years, whichever occurs first".

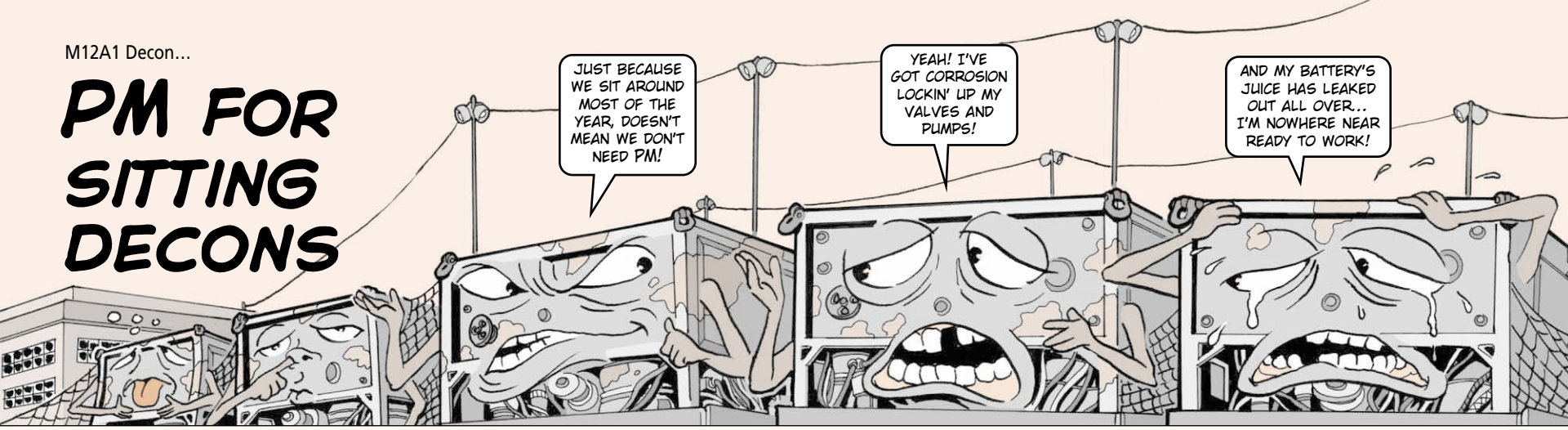



Write in its place: "There is a mandatory replacement for the four components of the extractor group, listed below. If any one of the four component parts fail, you must replace all four components: the cartridge extractor, extractor pin, spring, and straight pin."




# PM FOR SITTING DECONS

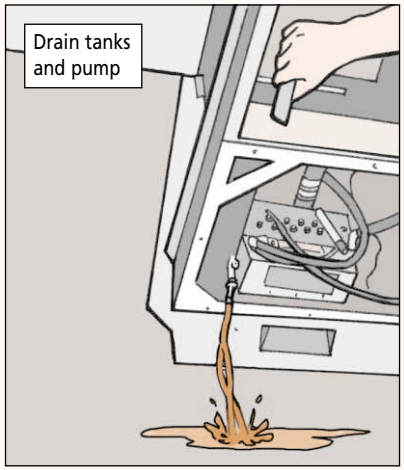


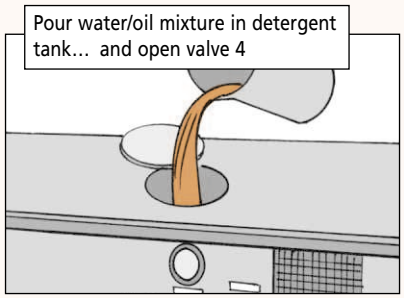

Most M12A1 decons sit for much of the year. But that doesn't mean they don't need PM. Without PM, corrosion locks up their valves and pump, the battery's juice leaks out and you're up the decon creek when it's time to operate.

To prepare your M12A1 for a long period of sitting, first drain all the water. Park it on level ground and drain the main tank, prime detergent tank and pump. If water's left in the tanks and pump, corrosion starts and your M12A1 soon leaks.

It's almost impossible to drain all the water and even a cup of water can cause corrosion and damage the pump.

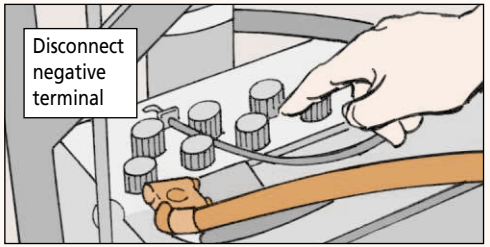
The answer is general purpose lubricating oil (PL-S), NSN 9150-00-231-6689. If your decon will be sitting for a while, mix 3 pints of PL-S with 3 gallons of water. Pour the mixture into the detergent tank and open Valve 4. Run the pump 30 seconds, then drain the pump. Close Valve 4, but leave the pump drain valve open. Now the pump won't corrode.

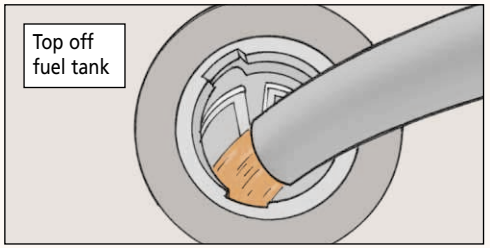



To save the battery while the M12A1's sitting, disconnect the ground cable from the negative battery terminal to keep the battery from draining. Better yet, remove the battery and store it inside on a wood pallet.

Top off the fuel tank. That keeps condensation from building up in the tank and starting corrosion. Then, before you start the M12A1 for the first time, drain the fuel sediment bowl so that water from condensation doesn't get in the carburetor.

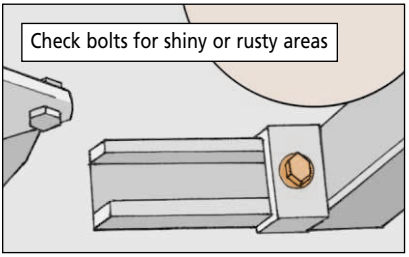


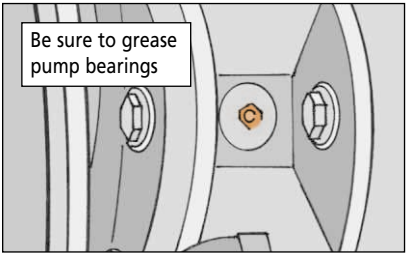



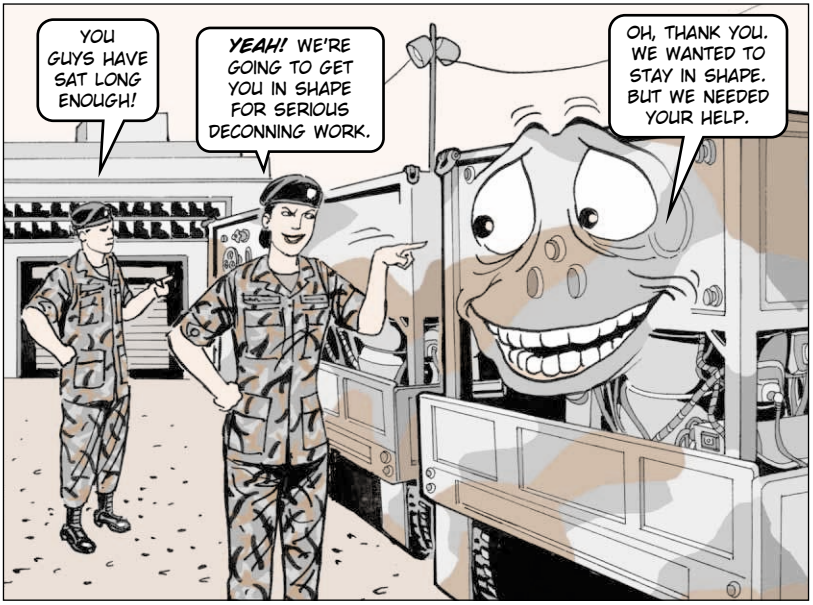

## Before Operating

When you're ready to operate your M12A1 again, eyeball the bolts for the motor mount, the starter, and the alternator for shiny or rusty areas that mean loose bolts. The M12A1 shakes like crazy during operation and causes bolts to work loose and maybe out. Tighten loose bolts.

Last but not least, check DD Form 314 or ULLS DA Form 5986-E to see when your M12A1 was last lubed. If it's been more than 3 months, get out LO 3-4230-209-10 and go to work. Be sure to catch the two grease fittings for the pump bearings. If they're forgotten, the pump can lock up. Make the job easier by using the flexible grease gun adapter that's part of your BII.



# Fitting Care for Beret

HERE'S HOW TO KEEP YOUR BERET ON YOUR HEAD.

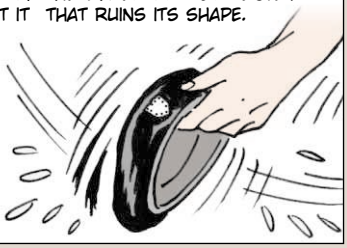
A BERET THAT'S TOO BIG AND IS CONSTANTLY FLYING OFF YOUR HEAD IS A PAIN.

BUT JUST SOME HOT WATER AND A LITTLE CARE CAN SHRINK YOUR NEW BERET DOWN TO SIZE.

SOAK THE BERET IN WATER NO HOTTER THAN WHAT COMES OUT OF THE HOT WATER FAUCET UNTIL IT'S COMPLETELY WET—1-2 MINUTES IS PLENTY OF TIME.

***KEEP THE FLASH OUT OF THE WATER!***

SHAKE THE BERET UNTIL YOU'VE GOT MOST OF THE WATER OUT. BUT ***DON'T*** TWIST IT THAT RUINS ITS SHAPE.

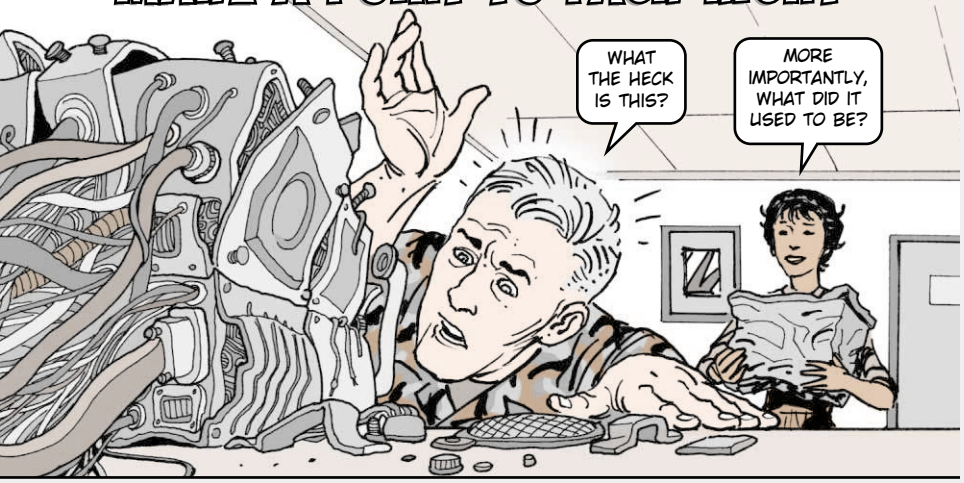


PUT THE BERET ON SO THAT ITS FLASH IS OVER YOUR LEFT EYE. FOLD IT TO THE RIGHT ABOVE YOUR RIGHT EAR. IF THE BERET IS NOT TIGHT ENOUGH, PULL ON ITS RIBBONS, ONE SIDE AT A TIME, UNTIL THE BERET'S SNUG. KNOT THE RIBBON AND CLIP OFF ITS ENDS.

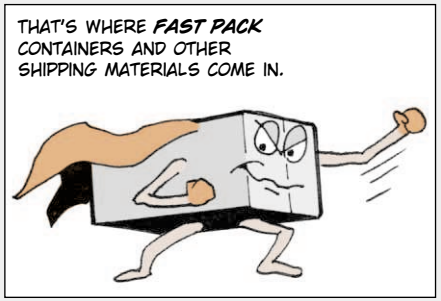
LET THE BERET AIR DRY. NEVER PUT IT IN A DRYER. HEAT CAN CAUSE THE BERET TO SHRINK AND CRACK ITS RIM. WHEN THE BERET NEEDS CLEANING, TAKE IT TO THE DRY CLEANERS. IT'S WOOL AND CAN'T BE CLEANED IN A WASHING MACHINE OR HAND WASHED. THAT CAUSES IT TO SHRINK AND THEN IT WILL BE TOO SMALL.

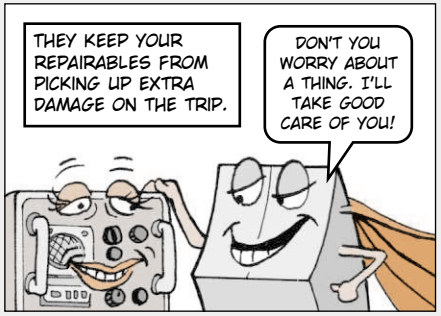
Shipping Materials...

# MAKE A POINT TO PACK RIGHT



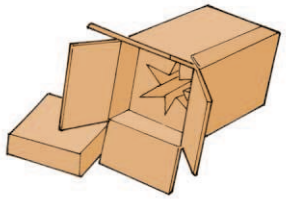





## FAST PACK Containers

### Vertical star, Style A, Type I
(for delicate items like meter gauges and instruments)



| Size (inches) | NSN 8115-00- |
|---|---|
| 6x6x10 | 192-1603 |
| 8x8x12 | 192-1604 |
| 10x10x12 | 192-1605 |
| 12x12x14 | 134-3655 |
| 12x12x18 | 050-5237 |
| 14x14x16 | 134-3656 |

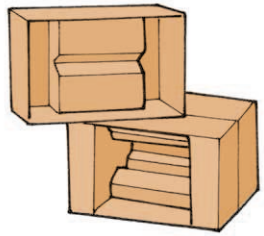
### Folding convoluted, Style D, Type II
(protects flat items like circuit boards, modules and tubes)

| Size (inches) | NSN 8115- |
|---|---|
| 6x5x2½ | 00-787-2142 |
| 6x5x3½ | 00-787-2147 |
| 9x6x2½ | 00-101-7647 |
| 9x6x3½ | 00-101-7638 |
| 10x10x3½ | 01-057-1244 |
| 12x8x2½ | 00-787-2146 |
| 12x8x3½ | 00-787-2148 |
| 13x13x3½ | 01-057-1243 |
| 16x16x3½ | 01-057-1245 |
| 18x12x2½ | 01-019-4085 |
| 18x12x3½ | 01-019-4084 |
| 24x16x3½ | 01-093-3730 |

### Telescoping encapsulated, Style G, Type III
(for bigger items like receiver-transmitters, amplifiers, power supplies, and electronic indicators)

| Size (inches) | NSN 8115- |
|---|---|
| 20x14x9 | 00-516-0251 |
| 24x14x14 | 00-550-3558 |
| 24x18x16 | 01-015-1312 |
| 25x14x14 | 00-550-3574 |
| 26x9x9 | 01-015-1313 |
| 30x16x14 | 00-516-0242 |
| 30x27x14 | 01-094-6520 |
| 32x12x14 | 00-519-1825 |
| 32x18x16 | 01-015-1315 |
| 34x24x18 | 01-015-1314 |

### Horizontal star, Style B, Type IV
(for shipping electronic items with a small cross-section relative to length, such as control generators, transmitters and amplifiers)



A 20x14x14-in FAST PACK comes with NSN 8115-01-010-8956.
Get a 22x16x16-in FAST PACK with NSN 8115-01-006-7257.

PS MORE


# Packing Materials

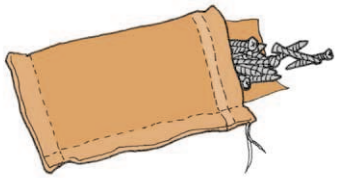
## Fiberboard boxes
(corrugated fiberboard with four flaps on top and bottom)

| Size (inches) | NSN 8115- | Qty |
|---|---|---|
| 8x8x10 | 00-183-9499 | 25 |
| 10x8x6 | 00-183-9497 | 25 |
| 12x8x8 | 00-183-9493 | 25 |
| 16x12x8 | 00-183-9487 | 25 |
| 24x24x10 | 00-428-4124 | 10 |
| 26x21x21 | 01-015-4994 | 10 |
| 58x43x35¼ | 00-935-6510 | 1 |

## Shipping bags
(padded with bubble film liner for small items

| Size (inches) | NSN 8105-00-117- | Qty |
|---|---|---|
| 5¾x8¼ | 9860 | 500 |
| 7x10 | 9866 | 500 |
| 8¼x10 | 9869 | 250 |
| 8¼x12¼ | 9870 | 250 |
| 9¼x12¼ | 9872 | 250 |
| 10¼x13¾ | 9879 | 250 |
| 12¼x16¾ | 9881 | 100 |
| 14x17¾ | 9886 | 100 |

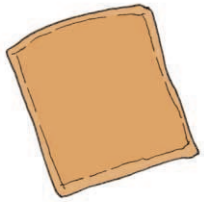
## Hardware bags
(for shipping small, unbreakable items such as nuts, bolts and screws)



The bags are made of cotton sheeting and close at one end with a drawstring.

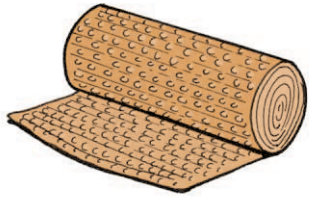
| Size (inches) | NSN 8105-00- | Qty |
|---|---|---|
| 3x4 | 183-6981 | 100 |
| 3x5 | 281-3924 | 100 |
| 4x9 | 183-6982 | 100 |
| 4½x8 | 179-0089 | 100 |
| 5½x14 | 183-6985 | 50 |
| 6x4 | 586-5630 | 100 |
| 6x9 | 271-1511 | 100 |
| 6½x10 | 174-0836 | 50 |
| 7½x18 | 183-6989 | 50 |
| 8x10 | 290-3360 | 50 |
| 8½x16½ | 543-7837 | 1 |

## Electrostatic-free flexible cushion pouches
(for circuit cards)



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


## Bubble pack material
(for wrapping, cushioning, and immobilizing)



A 3/16-in x 24-in x 500-ft roll comes with NSN 8135-00-142-9016. Get a ½-in x 24-in x 250-ft roll with NSN 8135-00-926-8991.

## Barrier material, grease/waterproof
(for wrapping items covered by corrosion preventive compound)

Get a 36-in x 200-yd roll with NSN 8135-00-282-0565. NSN 8135-01-015-2810 also brings a 36-in x 200-yd roll but with woven backing for additional strength.



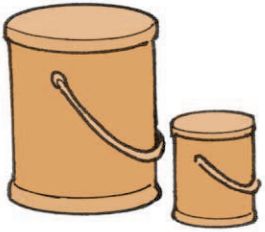
PS MORE

**Shrouding material, plastic**
(for skid-mounted and palletized items)

| Size (in x in x ft) | Color | NSN 8135-00- |
|---|---|---|
| 100 x .002 x 200 | Natural* | 584-0619 |
| 96 x .004 x 100 | Natural* | 584-0610 |
| 120 x .006 x 100 | Black | 579-6491 |
| 144 x .006 x 100 | Natural* | 579-6489 |
| 192 x .006 x 100 | Natural* | 618-1783 |
| 240 x .006 x 100 | Black | 579-6487 |
| 576 x .004 x 50 | Clear | 282-5635 |
| 648 x .020 x 50 | Clear | 050-7698 |

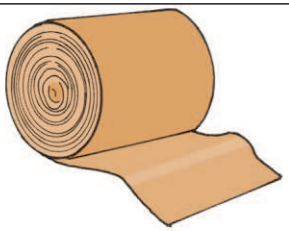
*Opaque

**Corrosion preventive compound**
(for protecting machined metal surfaces)



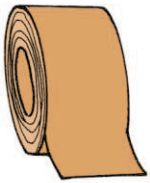
Get a 1-gal can with NSN 8030-00-244-1297 or a 5-gal can with NSN 8030-00-244-1298.

**Paperboard**
(single-faced, corrugated paperboard for extra protection against breakage, abrasion, tearing, dirt and dust)



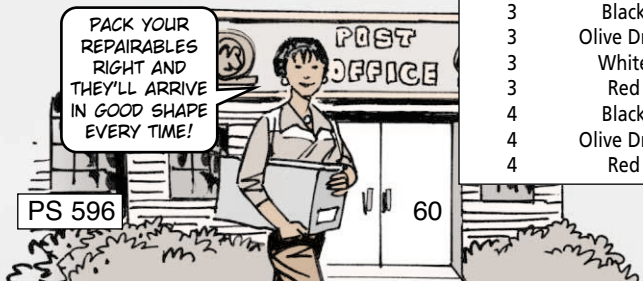
A 36-in x 250-ft roll comes with NSN 8135-00-242-5610. Get a 48-in x 250-ft roll with NSN 8135-00-290-3400.

**Tape, pressure-sensitive**
(for sealing and waterproofing)



Tape comes in 60-yd rolls.

| Width (inches) | Color | NSN 7510-00- |
|---|---|---|
| 1 | Olive Drab | 890-9872 |
| 2 | Black | 074-4961 |
| 2 | Olive Drab | 266-5016 |
| 2 | White | 074-4952 |
| 2½ | Black | 074-4962 |
| 2½ | Olive Drab | 074-5100 |
| 2½ | Red | 074-4978 |
| 3 | Black | 074-4963 |
| 3 | Olive Drab | 890-9874 |
| 3 | White | 074-4954 |
| 3 | Red | 074-4996 |
| 4 | Black | 074-4964 |
| 4 | Olive Drab | 890-9875 |
| 4 | Red | 074-5029 |




## MORE CARGO NETS

NSN 3990-01-491-4714 gets a cargo net for the M1077 PLS flatrack. This net is also used on the M3 and M3A1 flatracks. Use NSN 3990-01-491-4725 for a cargo net for use on all M923 and M925 model long-bed 5-ton trucks.These nets are like the ones shown on Page 10 of PS 591 (Feb 02). Make a note until these NSNs are added to the AAL for the flatracks and the trucks.

## Bradley Tarp

Crewmen, using the green tarp listed in the Basic Issue Items section of your operator's manuals is like painting a bull's-eye on your tan-colored vehicle. Keep your camouflage intact by ordering a tan-colored tarp with NSN 2540-01-330-8062.

## WINDSHIELD WIPER BUSHING

You can't make wiper arms work on M44-, M39- and M809-series trucks without the bushing that fits between the motor and the arm. Get the bushing with NSN 3120-00-293-5041.

## ARMY WATERCRAFT WEB SITE

Info on logistics support, program manager points of contact, and fielding of Army watercraft can be found at:
**http://www.tacom.army.mil/dsa/pm_force/aws.htm**
If you have questions about the Army's watercraft, write to: **armywatercraft@tacom.army.mil**

## TIRE CATALOG AVAILABLE

TACOM's Team Tire has a catalog that lists all the tires (except solid rubber tires) used on Army equipment. To get a copy, call DSN 786-4293 or (586) 574-4293 weekdays from 7 A.M. to 6 P.M. (Eastern time). You can also order the catalog by e-mail at: **teamtire@tacom.army.mil**

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

***Would You Stake Your Life right now on the Condition of Your Equipment?***


LEARN TO LIVE
WITH SEAT BELTS...
...BECAUSE YOU MIGHT
NOT LIVE WITHOUT THEM!