PS THE PREVENTIVE MAINTENANCE MONTHLY

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ISSUE 608 JULY 2003

COMBAT VEHICLES 2

M1-Series Tank Turret Seal Protection 2-3
M1A1 Tank Sponson Warning Lights 3
M2/M3-Series Bradley Interior Painting 4
M2A2/M3A3, ODS Bradley Turret Drive 5
M577-Series CP Carrier Generator 6
M113A3 FOV Transmission Oil Dipstick 7
M88A1 RV, M60 AVLB Torsion Bars 8
Combat Vehicle FRH Precautions 9
NATO Slave Cable Parts and Care 10-11

WHEELED VEHICLES 12

FMTV Overheating Prevention 12-13
FMTV Desert Maintenance Tips 14-16
HEMTT Ether Cartridge Removal 16
HEMTT Radiator Filling 17
M978 HEMTT Fuel Tanker Hoses 18-19

MISSILES 20

Patriot Missile System Maintenance 20-21
Avenger Missile System M3P Gun Info 22-24
MLRS Launcher Cleaning Precautions 25
MLRS Launcher Jury Struts 26

EDITORIAL 1
CONTINUITY 27

CONNIE'S POST SCRIPTS 61

AVIATION 35

UH-60A/L Tail Rotor Pylon Chafing 35
AH-60A/D, UH-60A/L Stabilator Covers 36-38
UH-60A/L Blade Safety 39
UH-60A/L Bird Nest Blocker 40
Maintenance Stand Parts NSNs 41
Air Traffic Control AN/TSC-61B Cables 42-43
Aviation Ground Support Flags 44

SMALL ARMS 45

MK 19 Machine Gun Barrel Safety 45
M16-Series Rifle, M4A1 Carbine PM 46-48
Small Arms Sight Adjustment Tools 49

NBC 50

M157 Smoke Generator Info 50-53
M17-Series Decon Flow Switch Tool 54

COMBAT ENGINEERING 55

M139 Mine Dispenser FMTV Mounting 55
CCE Desert PM 56-57

SOLDIER SUPPORT 58

NSNs for Knee and Elbow Pads 58
Packaging Assistance 59
Army Maintenance Excellence Awards 60

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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
Internet address:
http://www.logsa.army.mil/psmag/pshome.html

By order of the Secretary of the Army:

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JOEL B. HUDSON
Administrative Assistant to
the Secretary of the Army

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Issue 608

PS

July 2003

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-608

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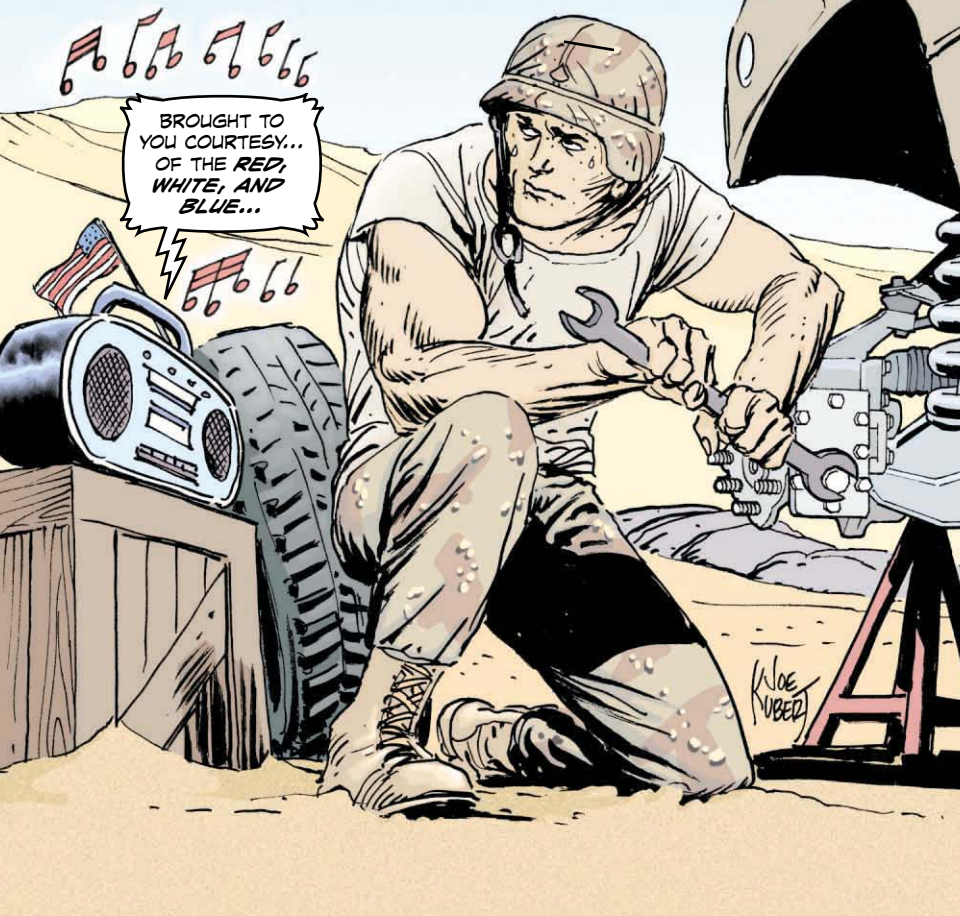


Napoleon said, "An army marches on its stomach." But Napoleon said that before there was power generation equipment.

The Army you serve in not only moves but does hundreds of things because of generated power.

It is generated power that launches missiles.

It is generated power that sees missiles coming your way.

It is generated power that keeps commo shelters humming.

It is generated power that directs your fire to silence the enemy.

It is generated power that lights your tent and lets you write that letter home to your sweetheart.

It is generated power that lets you read late at night that letter from your sweetheart so you can finally fall asleep.

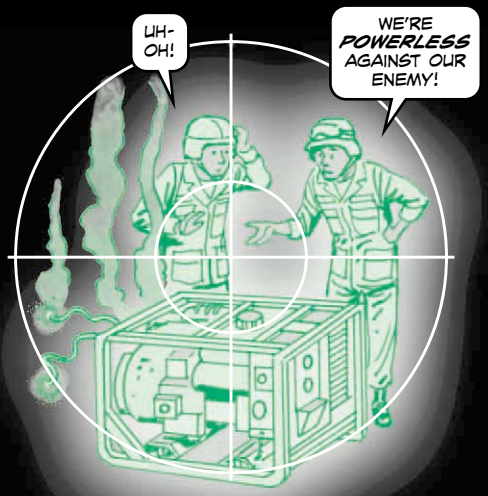
It is generated power that lets you use electrical equipment on the battlefield.

The question, "Where were you when the lights went out?" is really the question "Where were you when your power generation equipment failed?"

The answer: in the sights of the enemy.

Preventive maintenance on generators is not optional. A generator that has not had PM is a generator that is doomed to fail.

A failed generator makes you a Napoleonic soldier fighting a 21st Century enemy.



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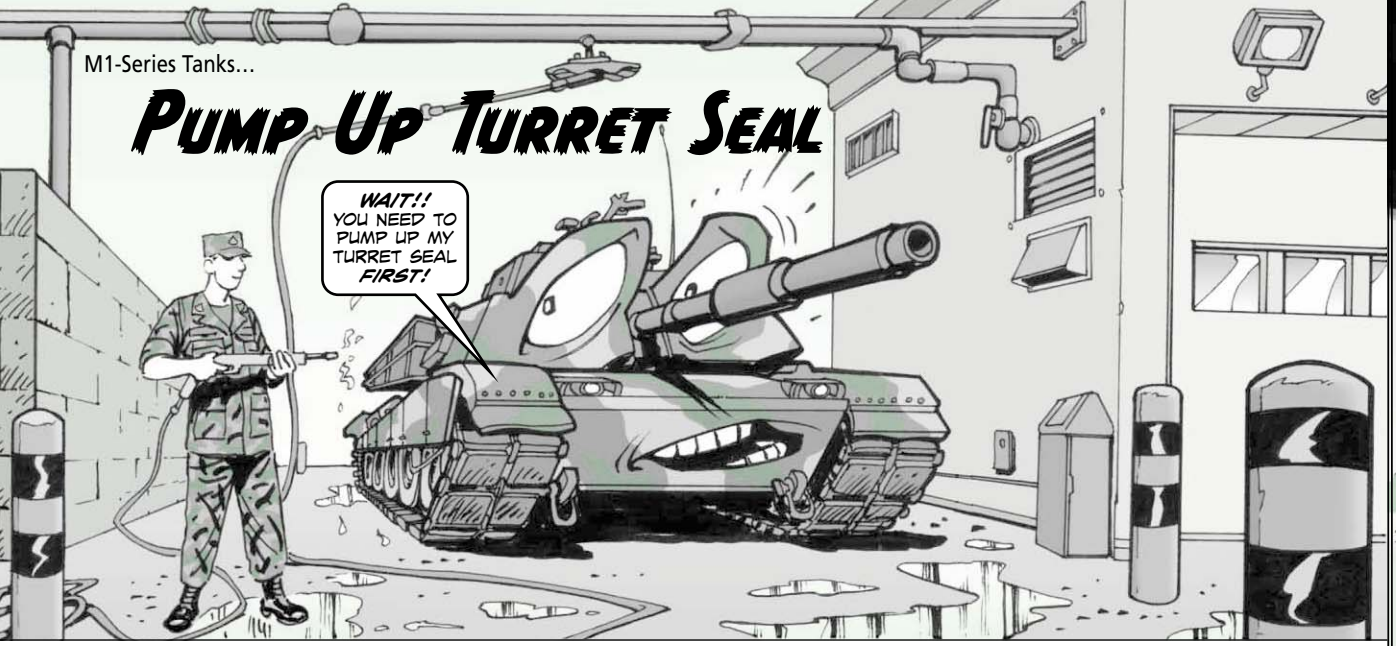
M1-Series Tanks...

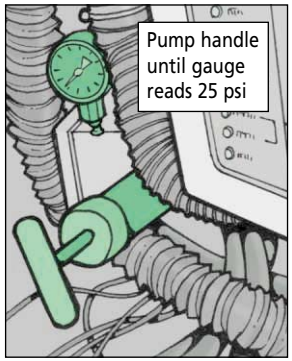
Pump Up Turret Seal



When water is forced inside the race ring, grease is washed away. Dirt gets inside and corrosion starts. That leads to damage to the springs, ball bearings, and the race itself. Eventually the turret will lock up and no longer traverse.

Fixing the damage is difficult and costly, so avoid it by using the turret's inflatable seal to keep wash water out. You'll find the inflatable seal on all M1, M1A1 and some M1A2 tanks.

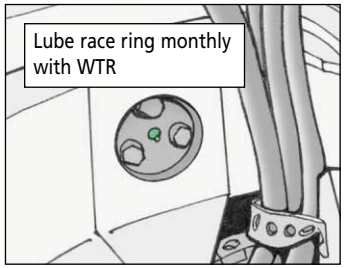
Engage the turret traverse lock mechanism, close the bleed cock below the inflatable seal's pressure gauge and pump the handle until the gauge reads 25 psi. If the seal won't inflate to 25 psi, let your mechanic know. The seal could be damaged.



Do not try to traverse the turret with the seal inflated. That damages the seal.

After washing the tank, deflate the seal by opening the bleed cock under the gauge and allowing the pressure to drop to 0 psi. Then disengage the turret lock mechanism.

Don't forget to grease the turret race ring monthly with WTR, too. That keeps corrosion away and the race ring turning smoothly.



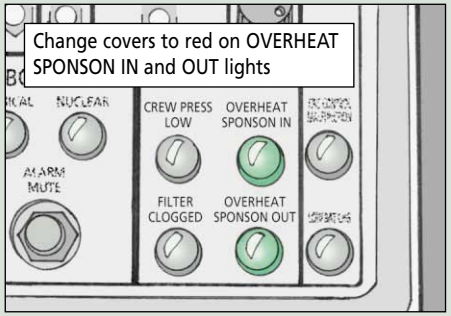
M1A1 Tanks...

Shedding a Little Light

Both the OVERHEAT SPONSON IN and OVERHEAT SPONSON OUT warning lights on the tank commander's panel are yellow.

They should be red. They're supposed to be warning lights, not caution lights. Ignoring the lights could result in an NBC filter fire.

If you've not yet made the switch, get your mechanic to replace those yellow covers with red ones, NSN 6210-00-176-4954.



M2/M3-Series Bradleys...

USE CARC ON THE INSIDE

Dear Half-Mast,

My soldiers want to improve the appearance inside their Bradleys. The paint inside is old, scratched, and generally pretty bad-looking.

I've been unable to find anything on what kind of paint to use. Do we use regular enamel or CARC? Should the paint be fire retardant or rust-resistant?

SSG J.A.C.

Dear Sergeant J.A.C.,

Since you need the same chemical agent protection inside as you do outside your vehicle, green CARC is the paint to use. Get a 2-qt kit with NSN 8010-01-419-1162 and a 1-gal kit with NSN 8010-01-419-1147. NSN 8010-01-193-0516 brings a quart of white epoxy primer.

Both kits bring a two-component CARC paint that consists of a polymer resin and a curing agent that must be mixed in a four-to-one ratio. That allows you to mix up only as much paint as you need and save the rest for later.

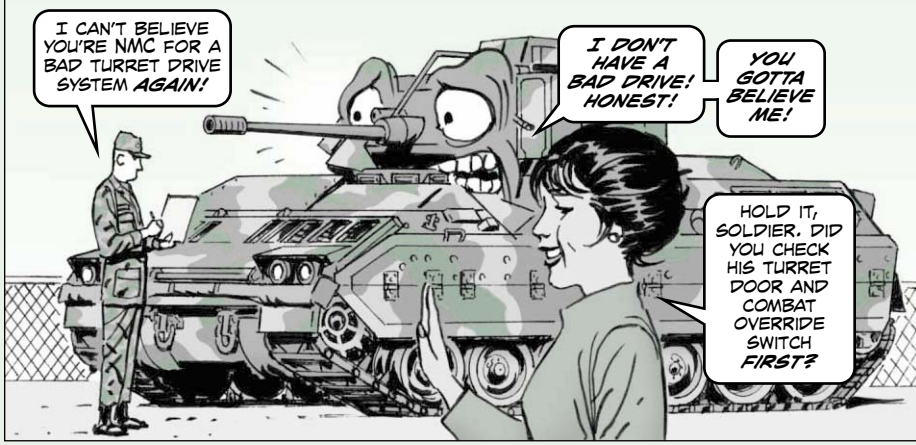
Remember that touch-up painting is done to prevent corrosion, not for purely cosmetic reasons.

Check out TB 43-0209, Color, Marking and Camouflage Painting of Military Vehicles, Construction Equipment and Materials Handling Equipment, *and TB 43-0242,* CARC Spot Painting, *for safety information when spot painting with CARC.*

Half-Mast

M2A2/M3A2, ODS Bradleys...

NMC? NOT NECESSARILY!



Dear Editor,

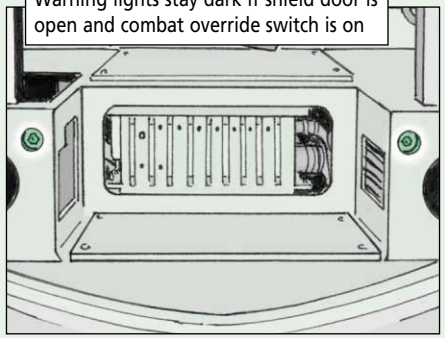
A lot of our crewmen report their Bradleys as NMC because the warning lights don't come on during PMCS of the turret drive system. When we investigate, however, everything checks out.

I think the problem may be due to some confusion with the PMCS tables, specifically Check 23 on Page 0069 00-67 of TM 9-2350-284-10-2 (A2 Bradley) and Check 24 on Page 0079 00-65 of TM 9-2350-284-10-2-1 (ODS Bradley).

With the TURRET DRIVE SYSTEM switch set to ON, the two turret drive warning lights should come on. However, if the turret shield door is open and the combat override switch is on, the warning lights will stay dark, even if the turret drive system is working.

Can you let Bradley crewmen know that the turret shield door should be closed and the combat override switch off when doing this check?

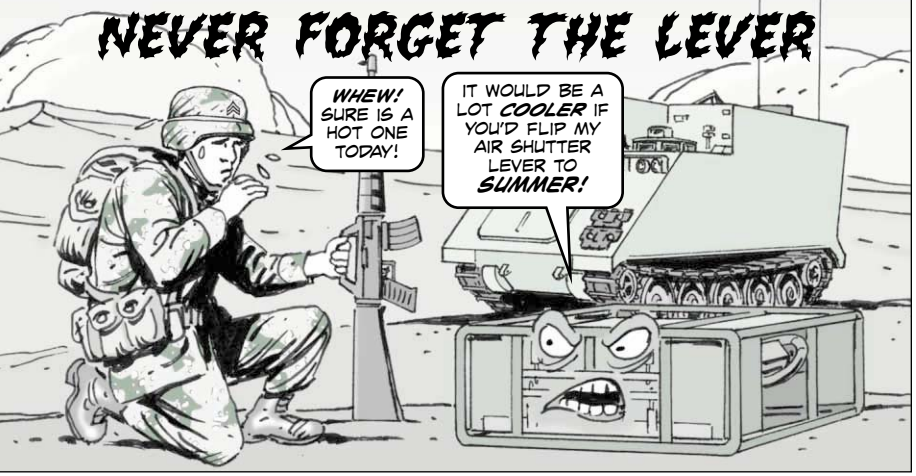
SGT Joseph M. Skaggs, Jr.
B Trp, 1/1st Cav
Buedingen, Germany



From the desk of the *Editor*

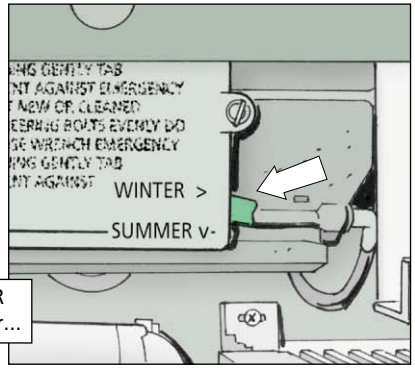
Consider it done, Sergeant.

NEVER FORGET THE LEVER



You want your M577's 4.2-KW generator to be full of hot air during the winter, not the summer, crewmen. That's why the engine air shutter has a SUMMER/WINTER lever.

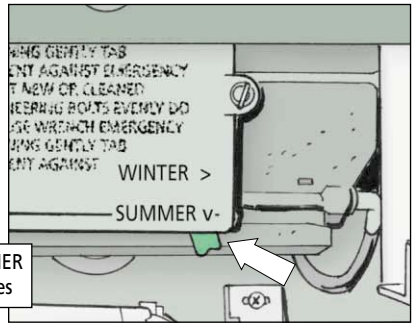
During cold weather, setting the lever to WINTER deflects cold incoming air past the exhaust manifold. The preheated air makes for easier restarts and a smoother run.



Flip lever to WINTER during cold weather...

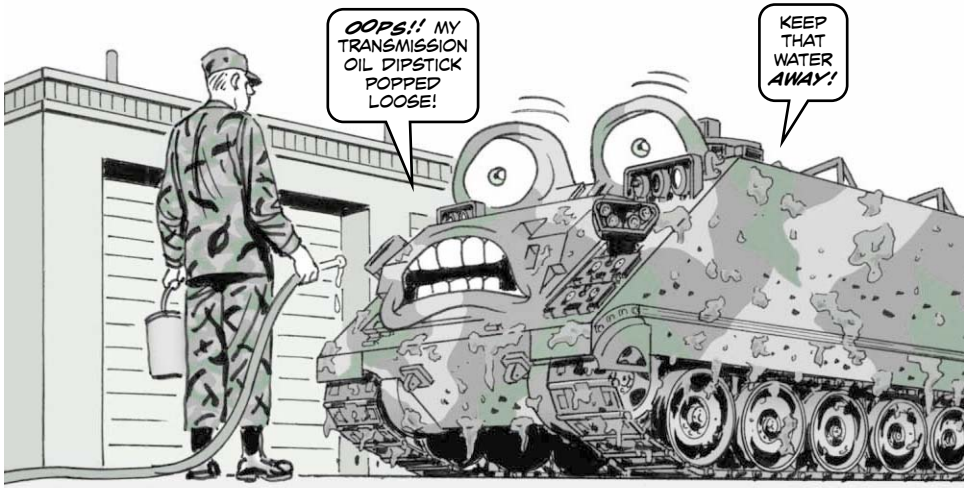
Unfortunately, some crewmen forget to move the switch back to SUMMER when the temperatures go back up. Already hot air becomes scorching. The generator's air filter is toast.

So do your 4.2-KW a favor. Flip the engine air shutter lever to WINTER when it's cold and to SUMMER all the rest of the time.



...and SUMMER all other times

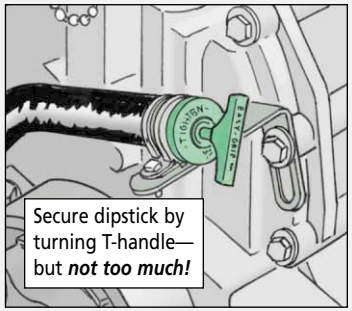
POP! GOES THE DIPSTICK



If tight is good, then tighter must be better. Right, crewmen?

Not when it comes to the transmission oil dipstick. After checking the oil level before and after operation, you have to turn the T-handle on the dipstick to lock it in place. Turning the T-handle makes the gasket under the top of the dipstick expand to completely seal the opening.

But if you turn the T-handle too far, the dipstick can pop loose like a cork, especially after a few road bumps during operation. With a loose dipstick, it's easy for water from cleaning or low-water fording to get splashed into the neck and contaminate the transmission.



Secure dipstick by turning T-handle—but ***not too much!***

No Tape Needed!

Dear Half-Mast,

Some of the torsion bars on our M60 bridge launchers have black tape wrapped around them. In most cases, that tape is frayed and coming loose.

Can you tell me what the tape is for and how to get new tape to replace the old stuff?

SFC J.B.

Dear Sergeant J.B.,

Yes and no! The old tape was designed to cushion the torsion bars during transport and handling. It prevented dings and cuts that could weaken the torsion bars and allow them to snap.

There is no requirement for replacing the tape. In fact, tests have shown that the tape can trap moisture, allowing corrosion to get a foothold.

Your best bet is to remove the old tape. If you receive any more torsion bars with tape already applied, remove it before installation.

Half-Mast

The fire resistant hydraulic (FRH) fluid, MIL-H-46170, and turboshaft oil, MIL-L-23699, used in your combat vehicles are safe—as long as you take the right personal protective measures.

FRH and turboshaft oil both contain tricresyl phosphate (TCP) that, when taken internally, can cause physical paralysis. Of course, no one would purposely drink hydraulic fluid, but TCP can also be absorbed through contact with the skin.

And the effects of TCP are cumulative. A little exposure today, a little tomorrow, and some more next week all add together and build up in your system. Enough exposure over a long enough period can result in paralysis.

TCP is in such a low concentration that the proper protective equipment and good hygiene practices make FRH and turboshaft oil safe to use.

Gloves, long sleeves, an apron, goggles and a face shield provide good protection. Just make sure you wash up with soap and water after using FRH and turboshaft oil. Never eat, smoke, or rub your eyes before cleaning up.

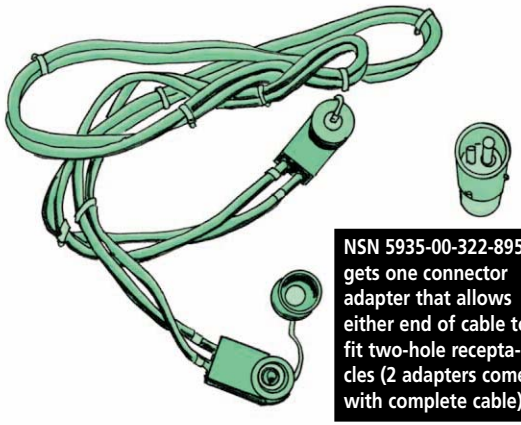
Always wash your clothing before wearing it again, too. Normal washing with detergent removes all traces of TCP.

Your Slave Cable Connection

NSN 6150-00-398-6527 gets a cable *without* end connectors

NSN 6150-01-022-6004 gets a cable *with* end connectors

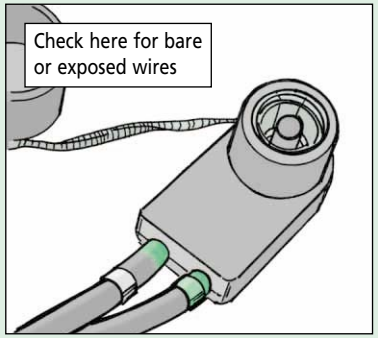
NSN 5935-00-567-0128 gets one end connector



NSN 5935-00-322-8959 gets one connector adapter that allows either end of cable to fit two-hole receptacles (2 adapters come with complete cable)

Shock Stopper

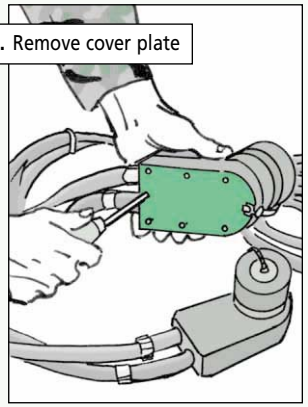
Before slaving your vehicle, eyeball where the wiring goes into the end connector. Look for bare or exposed wires where insulation has pulled back from the connector housing.



1. Remove the connector's back plate, then disconnect the cable from the connector.
2. Cut off the terminal lugs. Strip back just enough insulation to put on new terminal lugs, NSN 5940-00-115-5004.
3. Reconnect the cables to the connector. Make sure the positive lead (+) is reconnected to the center post and the negative lead (-) is reconnected to the negative cup of the connector.
4. Reassemble the connector.

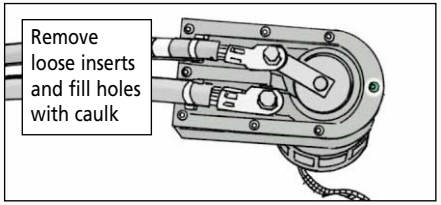
Connector Cover Fix

If the connector inserts pull out, the cover won't seal tight. Water gets inside and corrodes the cables. Fix loose insert problems like this:



2. Remove the inserts by threading in a screw and gently wiggling the insert until it comes out the body of the connector.

3. Fill each hole about halfway with silicone adhesive caulk, NSN 8040-00-865-8991.



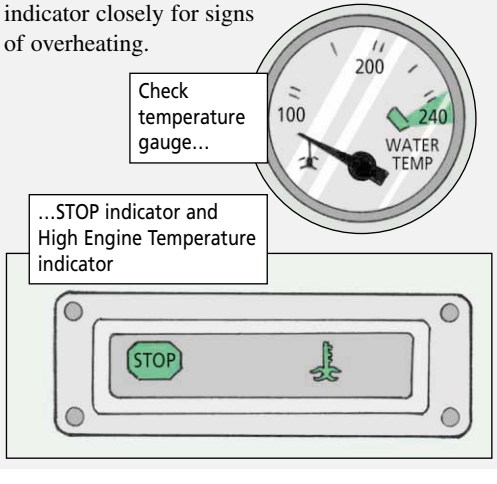
4. Press the insert back into the hole, making sure it's flush with the surface of the connector. Let the caulk cure for an hour or two so the inserts stay in place.
5. Run a thin bead of silicone adhesive caulk around the connector lip and screw down the cover. Wipe off any caulk that oozes out. Again, let the caulk cure for an hour or two before using the cable.

To get back into the connector the next time, remove the screws and use a sharp knife to cut the caulk.

BEAT THE HEAT

When operating in temperatures above 100°F (38°C), you operators must take extra care to prevent overheating the vehicle. Overheating starts when the engine temperature exceeds 230°F (110°C).

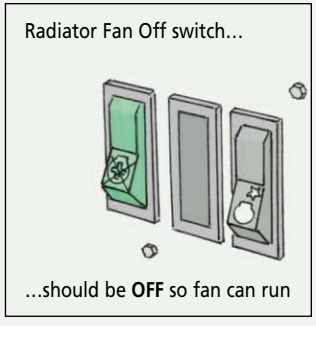
- Watch the water temperature gauge, STOP engine indicator and High Engine Temperature indicator closely for signs of overheating.



- Check oil levels often and keep operating strains as low as possible. Since the cooling and lubrication systems support each other, failure of one system will quickly lead to the failure of the other.

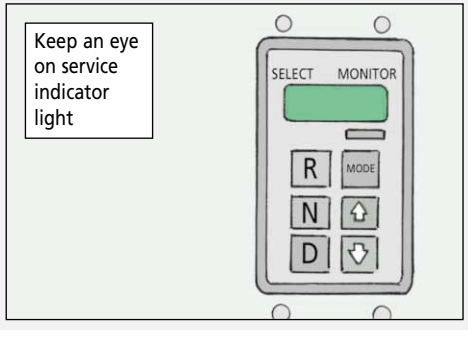
- Check the battery fluid level often in extreme heat. Batteries do not hold their charge well in extreme heat, so the specific gravity must be adjusted. See TM 9-6140-200-14 for details.

- Never operate the vehicle with the Radiator Fan Off switch in the ON position. That means double-check that the engine fan OFF indicator is **not** lit.

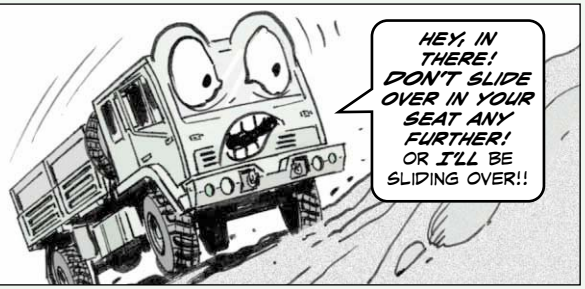


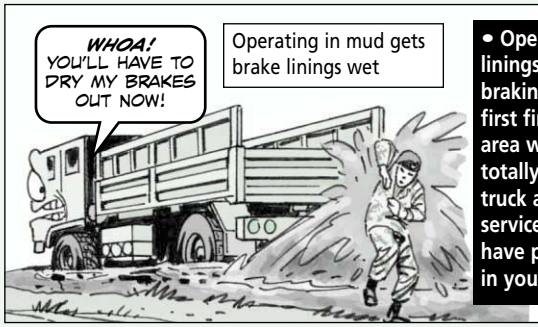
- Always idle the engine before shutdown. That cools the engine and prevents damage.

- Never operate the engine longer than 30 seconds at full throttle if the vehicle is not moving. (For example, while operating the self-recovery winch or other auxillary equipment.) That quickly raises transmission oil temperature and can damage the transmission. Watch the service indicator light in the shift window. If it lights up, or if the water temp gauge gets near 230°F (110°C), the transmission oil is overheating.



• Avoid driving diagonally up or down a hillside. You can lose control and roll the vehicle.



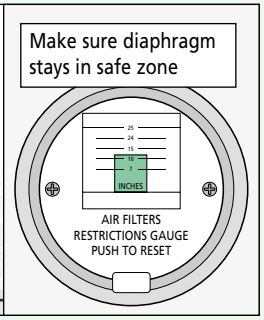


• Operating in mud gets the brake linings wet. That greatly reduces braking power. To dry the brakes, first find a dry area, or at least an area where the brake drums will be totally out of the mud. Drive the truck about 500 feet, applying the service brakes frequently. If you still have problems with the brakes, call in your unit mechanic.

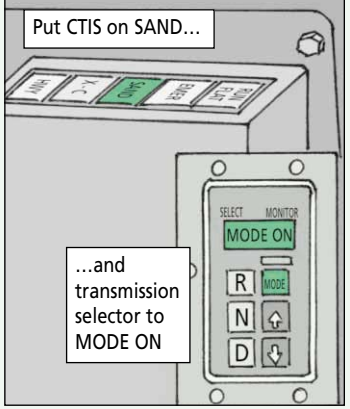
• Keep high-pressure water, steam and air away from glass surfaces, seals, air intake, exhaust outlet, and any other component that might be damaged.

• Keep glass surfaces covered whenever possible to prevent scratching by dust and sand.

• Check the air filter restriction gauge frequently. Shut down the engine immediately and clean the air filter if the yellow diaphragm enters the red zone.

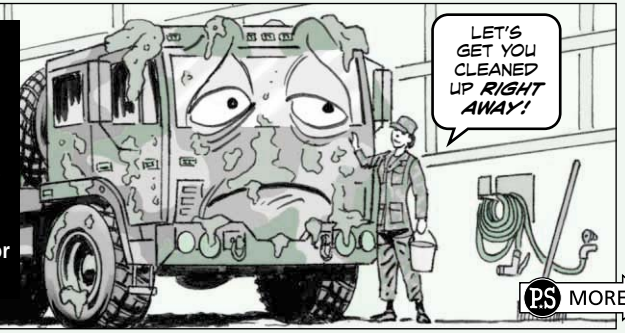


• When operating in sand or mud, set the CTIS system to SAND mode, the transmission shift selector to MODE ON, and select a lower gear range for added traction.



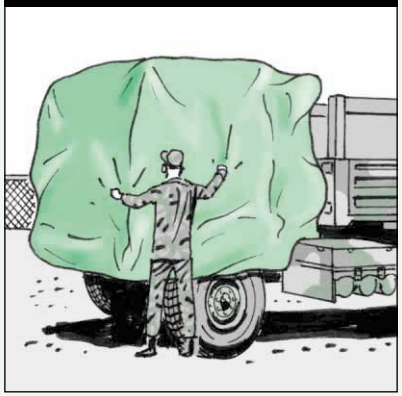
• Watch for sand and dust accumulation on the radiator. Too much accumulation can cause the engine to overheat. Use low-pressure water or air to clean away dust and sand.

• Clean mud off the vehicle as soon as possible. Pay special attention when cleaning to the wheels, brakes, axles, universal joints, steering mechanism, radiator and oil cooler.

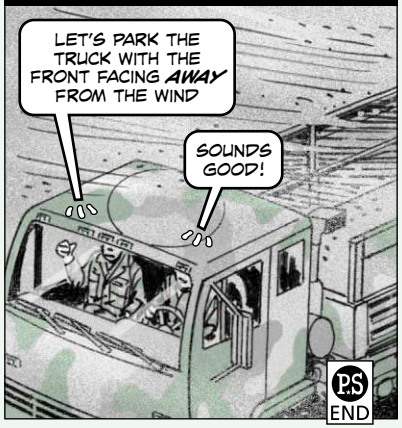


P.S MORE

- Cover the air intake, radiator and cab with a tarpaulin when the vehicle will not be used for a while.



- Park the vehicle with the front facing ***away*** from the wind.



HEMTT...

Remove Ether Cartridge

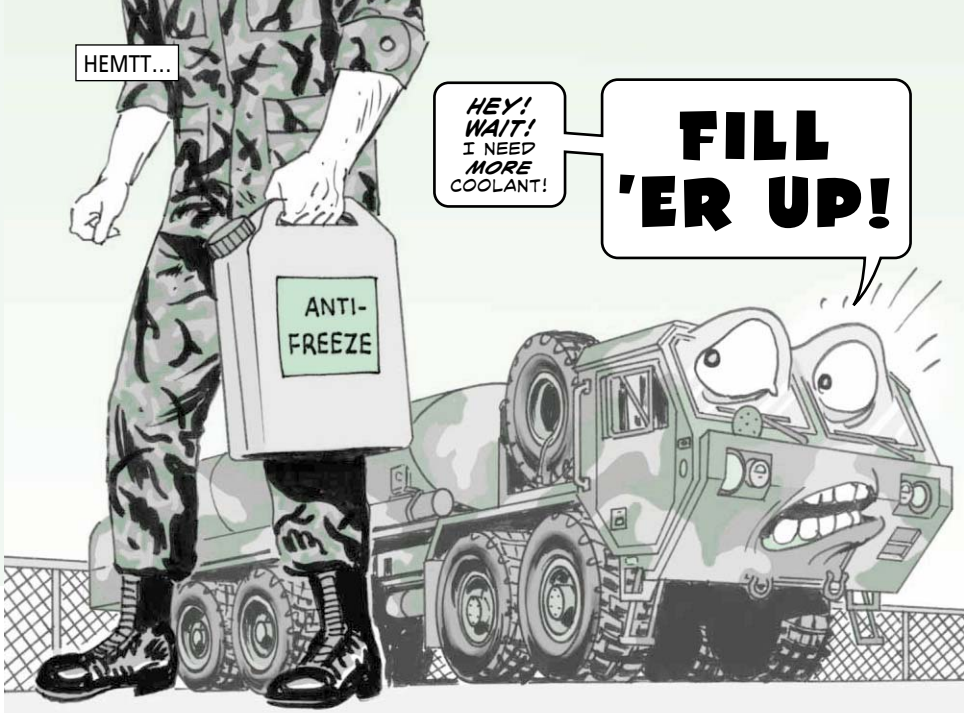
The hot and humid days of summer means it's time to remove the HEMTT's ether cartridge.

Summer weather causes the cartridge to rust and leak. Then the vehicle's ether start won't kick in when you need it for those winter months down the road.

So do your HEMTT a favor. Remove the cartridge in the summer or in places where it's warm all year around. The cartridge is there only to help the truck start in cold temps.

Just unscrew the cartridge from the solenoid valve and plug the hole with the cap that is chained to the solenoid.

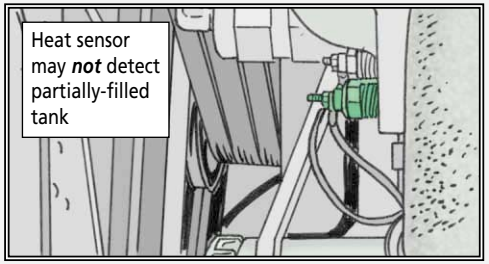
Be sure to store the ether cartridge in a cool, dry place so it can be put back on when you need it—in cold weather.

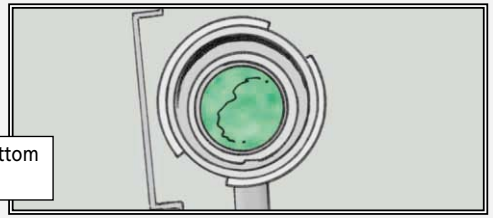


When filling a new HEMTT radiator, don't be fooled into thinking it's full when it's not, mechanics.

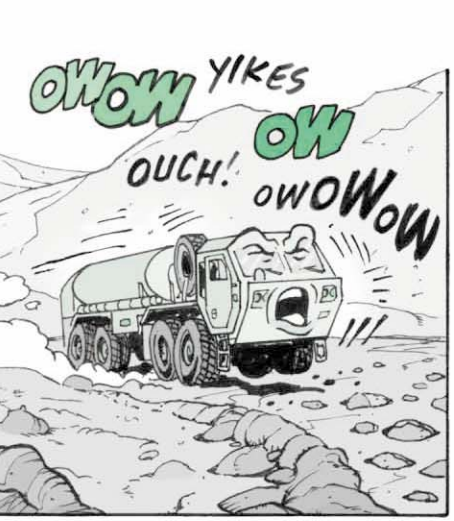
There's a lip just inside the radiator opening that can hold some fluid and make it appear to be full when it's not. What's worse, the heat sensors are located near the top of the radiator, so they don't get tripped by the overheated fluid in a partially-full tank.

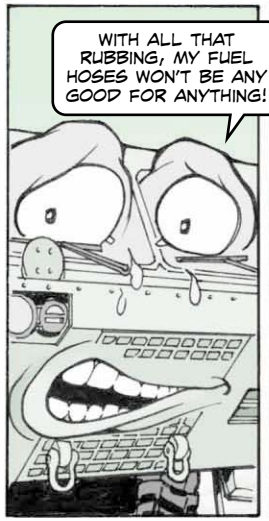
The end result is an overheated engine. So keep putting coolant into the radiator until it reaches the bottom of the filler neck.





STEP UP AFTER REFUELING

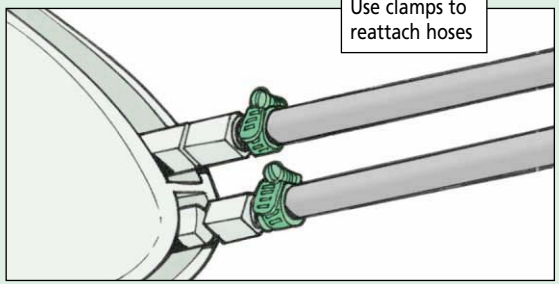


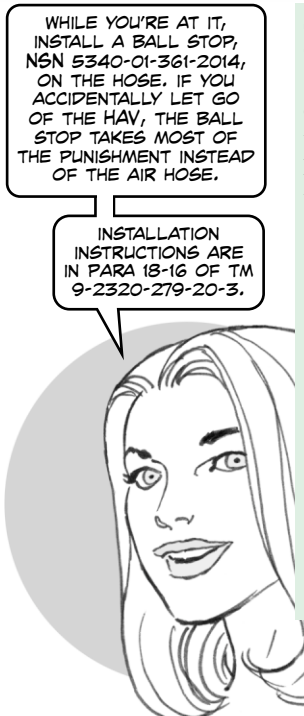


Step 1: Always walk the hand-activated valve (HAV) back to its reel when you've finished pumping. If you let it fly, the rough landing damages the air hoses.

If the HAV is lucky enough to make it through the reel window on the fly, it still takes a beating. The jolts on the air lines can be bad enough to pull the hoses away from the control.

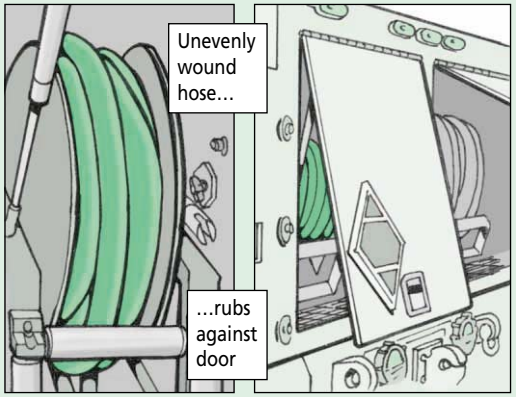
If that happens, fix the HAV yourself. Just cut off a couple of inches of hose and push it back over the fitting. Then, secure the hose in place with a screw-type hose clamp, NSN 4730-00-363-4102.



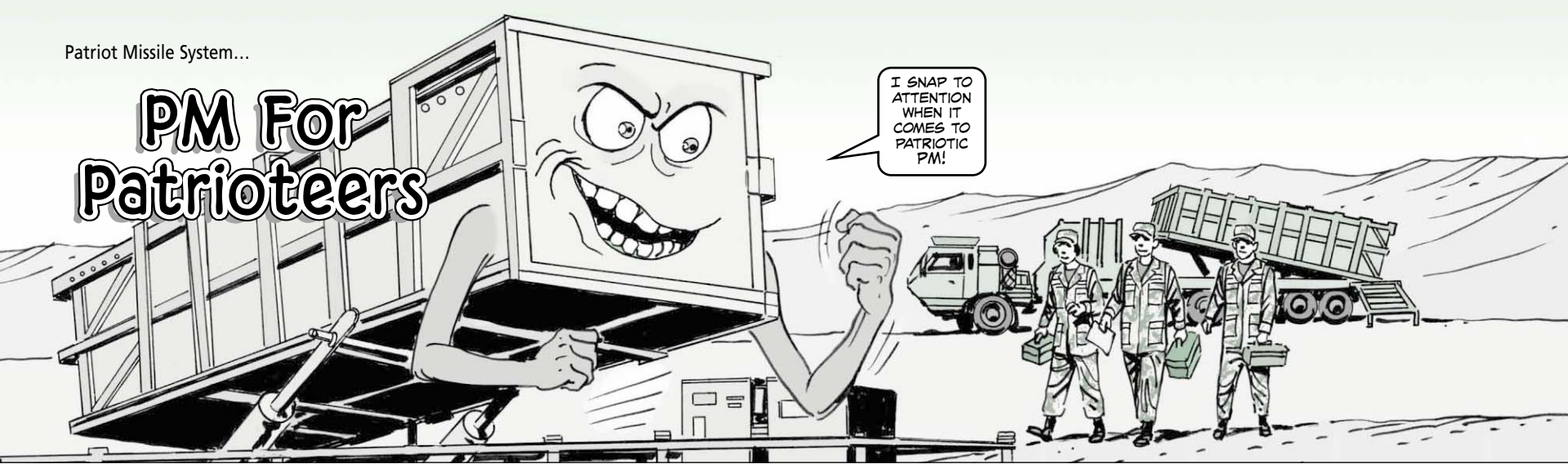


Step 2: Take your time when reeling in the fuel hose. Go too fast and the hose won't wind in evenly.

A poorly stacked hose sticks out past the reel far enough to touch the rear door. As you drive the tanker, the hose rubs against the door and wears a hole. The tanker is NMC for fueling operations until the hose is replaced.



PM For Patrioteers



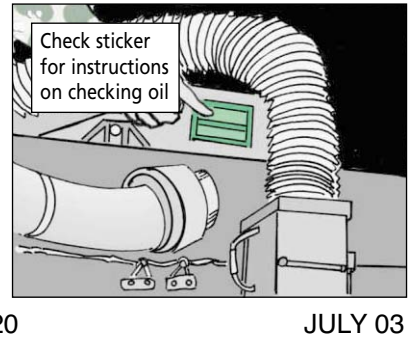
There's nothing better than powerful PM for the Patriot system. For instance:

Antenna Mast Group

When operating the two pneumatic pumps on the AMG, take the pumps' cover completely off. Otherwise, heat becomes so intense that it melts the plastic guard over the fan. Then the motor overheats.

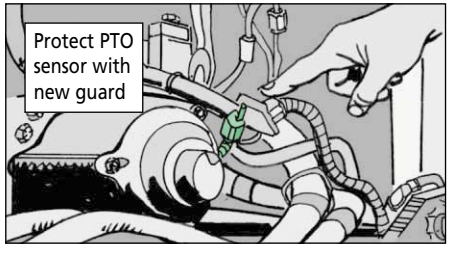
EPP3

Remember the oil levels will be different depending on whether the EPP3 is shut down or running. If you check the oil while the generator is running, the level will be lower. Then you mistakenly overfill with oil and pop the seals. See the sticker above the EPP3 dipstick for the proper way to check the oil. The generator normally uses oil, so check the oil level daily in the field.



M983 Truck

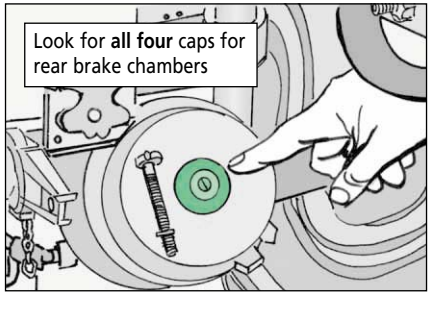
Watch your feet around the M983's sensor for the power take-off (PTO). It is often snapped off by a misplaced boot, especially when crews are putting up camouflage or doing PMCS. No sensor deadlines the truck.



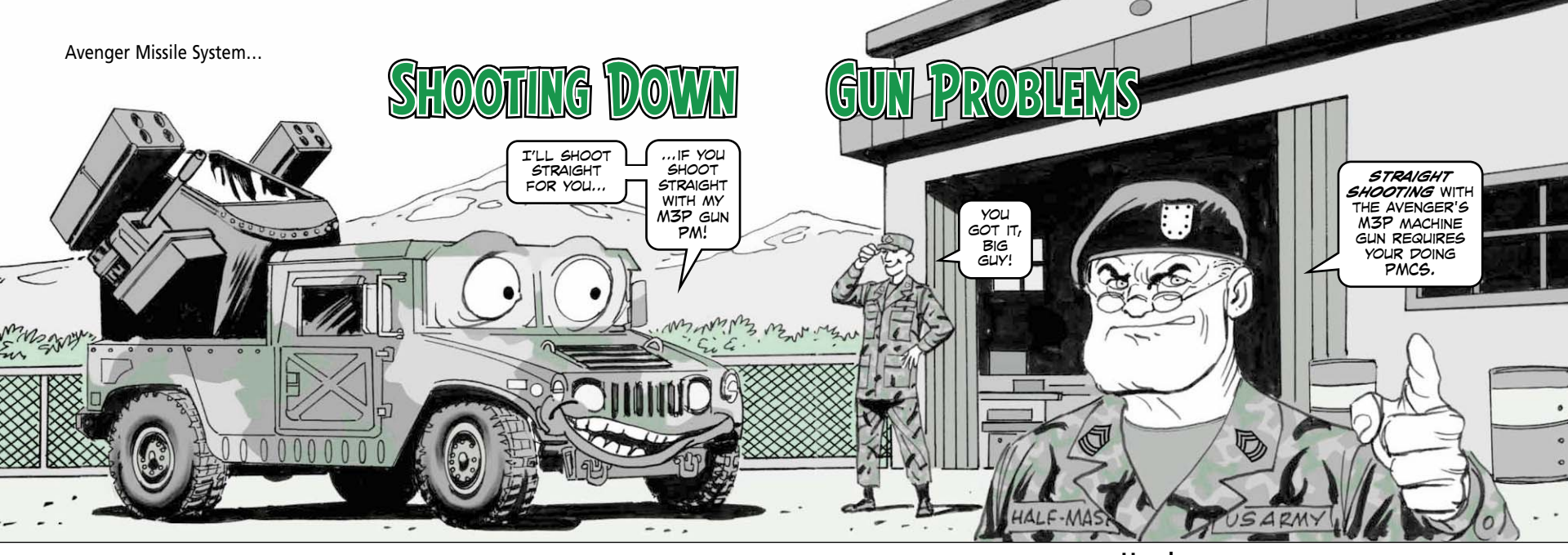
You can now order a PTO guard with NSN 3020-01-426-4824.

Don't check the M983's transmission fluid without letting the engine warm up to operating temperature. Crews are checking the fluid with the engine cold and that gives a low reading. Too much fluid is added to the transmission and that blows transmission seals. The engine temp should 160°F for the check. Add just enough fluid to reach the HOT RUN on the dipstick.

During weekly PMCS, check for the dust caps for the four rear brake chambers. The old-style caps often disappear and without them dirt gets in the brakes and weakens their stopping power. It's a good idea for your repairman to keep extra caps on hand. He can order them with NSN 5340-01-163-2073. Newer dust caps are held in place with a screw.



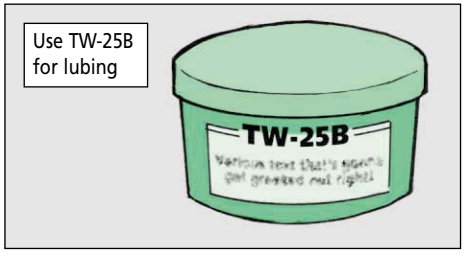
Shooting Down Gun Problems

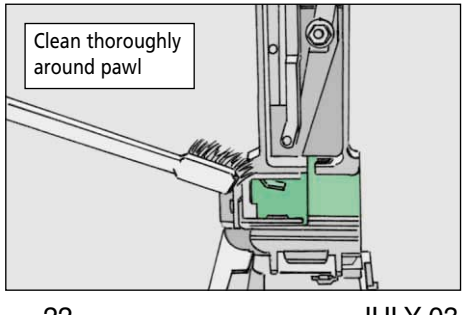


Cleaning

The M3P is not your rifle—you don't clean and lube it with CLP. Instead, clean it with RBC (rifle bore cleaner) and lube it with TW-25B, NSN 9150-01-439-0859. But keep TW-25B away from the inside of the barrel. It damages the barrel liner.

While you're cleaning, pay particular attention to the pawl on the feed cover. Dirt, carbon, and brass shavings build up behind the pawl and cause it to bind. That leads to poor feeding. Use the small brush in your tool kit to clean around the pawl. If the pawl still binds, your repairman needs to take the feed cover apart and clean it.

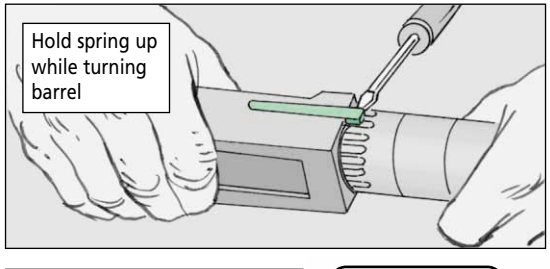


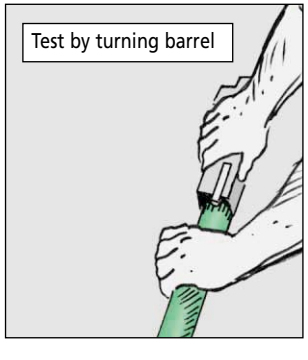


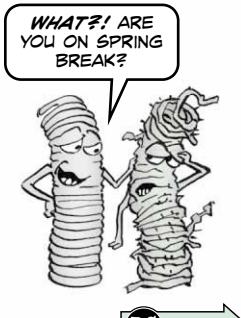
Headspace

If the M3P loses headspace, it will jam and the bolt and barrel may be damaged. A weak barrel locking spring is the usual cause for bad headspace. Letting the spring ride on the barrel when you turn the barrel weakens the spring.

Prevent that by holding the spring up a hair with a screwdriver as you screw the barrel in or out. Once the barrel is locked in, try to turn it. If you can turn it at all, don't fire! The spring needs to be replaced.



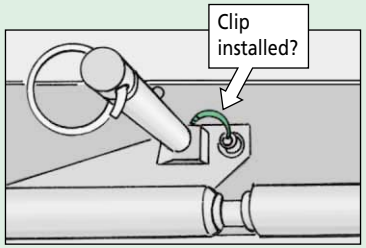




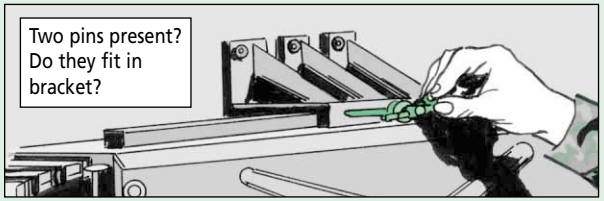
PS MORE

PMCS

- The clip for the pin that locks the M3P to the mount. Without the clip, the pin can come out and then the gun bounces around on the mount.



- The two pins that hold the ammo box in place. Make sure they're both in place and can be installed. The ammo box bracket is often knocked out of alignment and the pins won't go in their holes. Then the ammo box can't be locked in place.

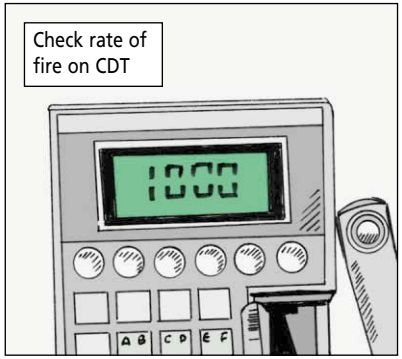


Installation

Unless you have long, skinny fingers, you'll find it difficult to tighten the cable for the M3P. Once you have the cable connected, use needle-nosed pliers to tighten the connector.

Rate of Fire

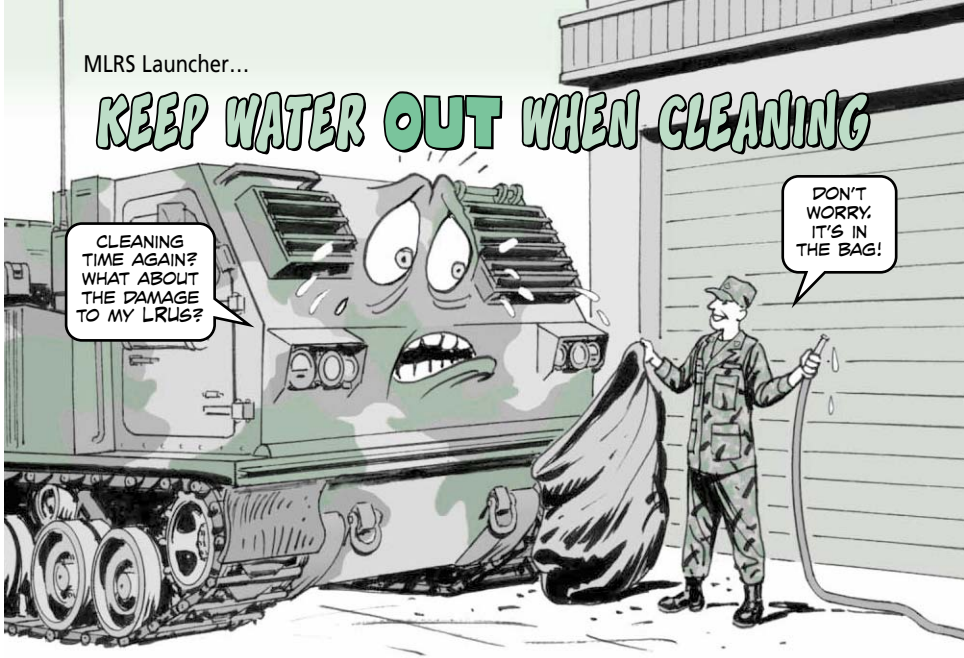
The wrong rate of fire will cause feeding problems. Check the rate of fire on the CDT (control display terminal). It should be 950 to 1,100 rounds per minute. If it's off, reset it like it says on Page 4-31 in TM 9-1425-433-10.



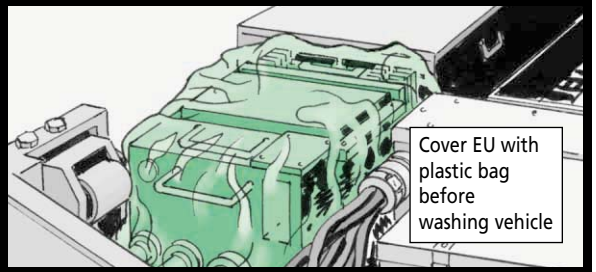
P.S END

MLRS Launcher...

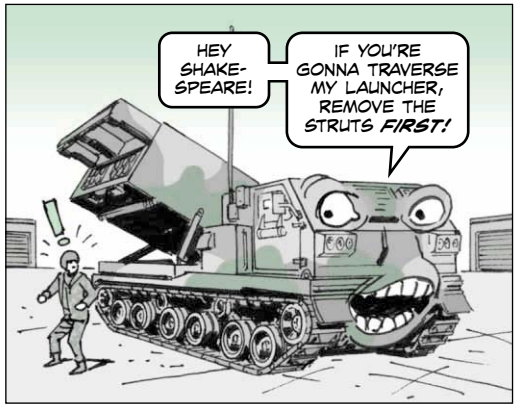
KEEP WATER OUT WHEN CLEANING



- Tighten all LRU cables and cannon plugs before washing. Loose connectors will let in water that can cause short circuits.
- Cover the electronics unit (EU) and electronics box with a plastic bag before washing. Both boxes have a gasket to protect against water, but you never know when the gasket will go bad. The bag provides an extra line of defense. Don't forget to remove bag after washing it.



- Park the vehicle so water can drain freely from the hull. Make sure all drain plugs are unclogged.
- Never use high pressure water for cleaning. That will force water past any protection.

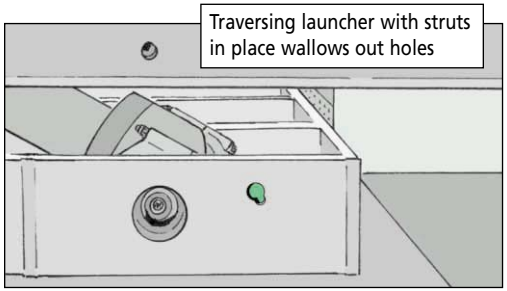


There's a time and a place for everything—including the jury struts on your MLRS launcher.

You **need** the struts when working under the launcher. That protects you from a collapsing launcher in case of a hydraulic failure.

You **don't need** the struts when traversing the launcher.

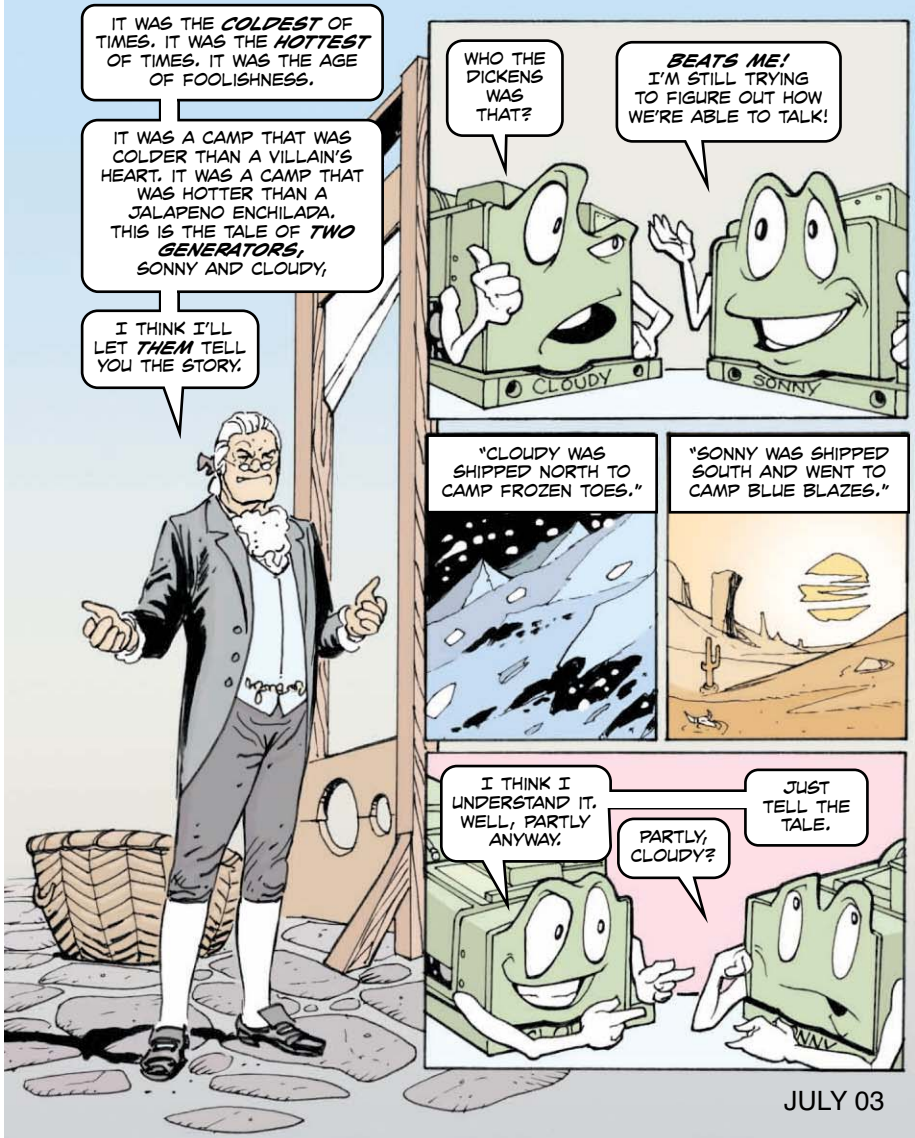
Sure, it may seem like a waste of time to remove the struts, traverse the launcher a few feet, and then install 'em again to continue your work. But if jury struts are left in while traversing, it's easy to hit the UP, DOWN, or STOW button. That puts extra stress on the cage and elevation actuator supports and can wallow out the holes where the jury struts are attached.

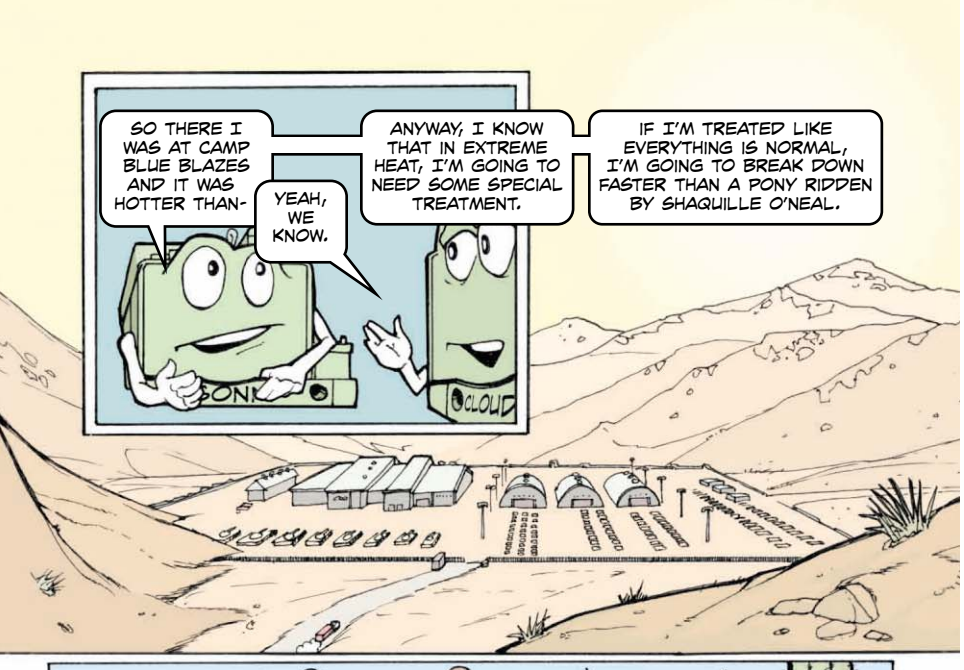

Traversing launcher with struts in place wallows out holes

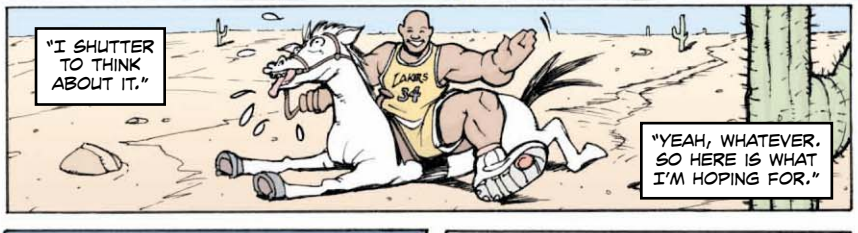
So do yourself and your launcher a favor. Know when and when not to use the struts.

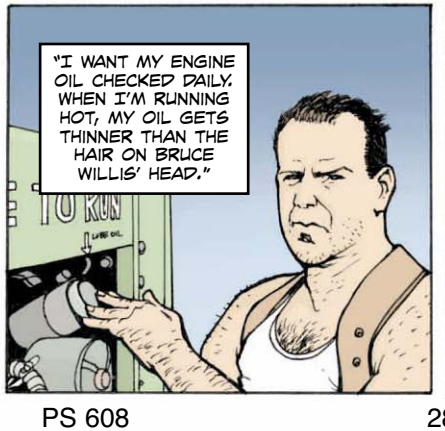
A TALE OF TWO CAMPS

(and the generators that powered them)

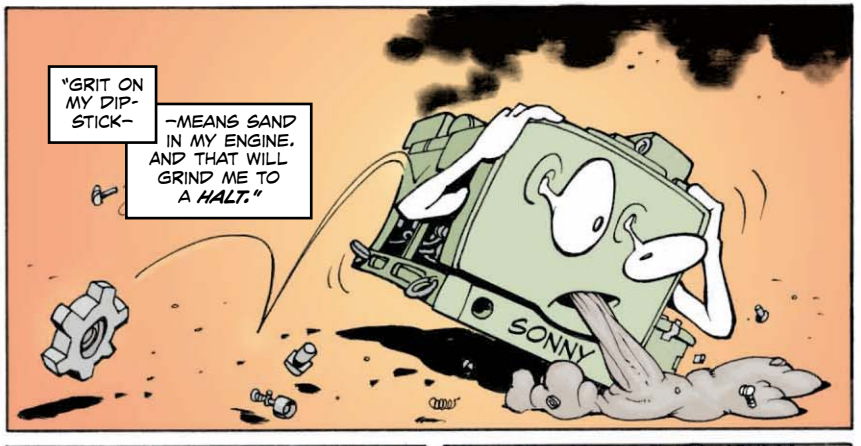


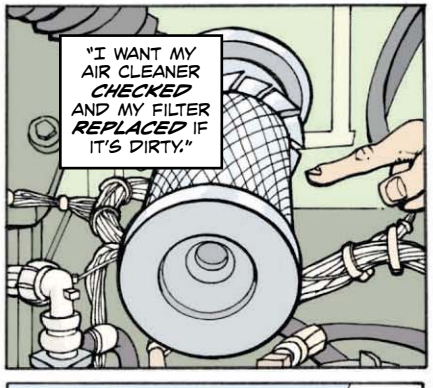

SO THERE I WAS AT CAMP BLUE BLAZES AND IT WAS HOTTER THAN-
YEAH, WE KNOW.
ANYWAY, I KNOW THAT IN EXTREME HEAT, I'M GOING TO NEED SOME SPECIAL TREATMENT.
IF I'M TREATED LIKE EVERYTHING IS NORMAL, I'M GOING TO BREAK DOWN FASTER THAN A PONY RIDDEN BY SHAQUILLE O'NEAL.
CLOUD

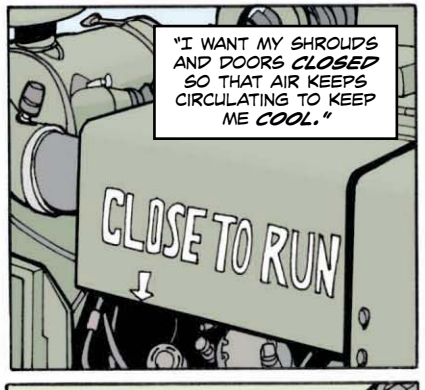

"I SHUTTER TO THINK ABOUT IT."
"YEAH, WHATEVER. SO HERE IS WHAT I'M HOPING FOR."


"I WANT MY ENGINE OIL CHECKED DAILY. WHEN I'M RUNNING HOT, MY OIL GETS THINNER THAN THE HAIR ON BRUCE WILLIS' HEAD."

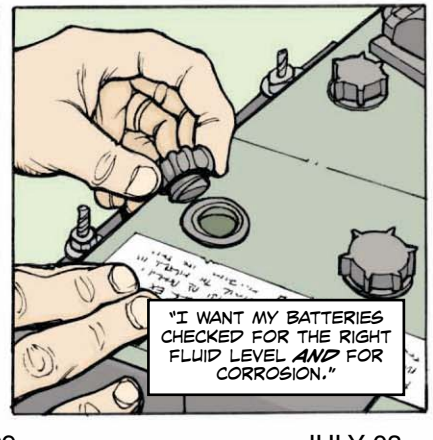
"I WANT MY OIL CHECKED FOR DIRT."
RUN
LUBE OIL

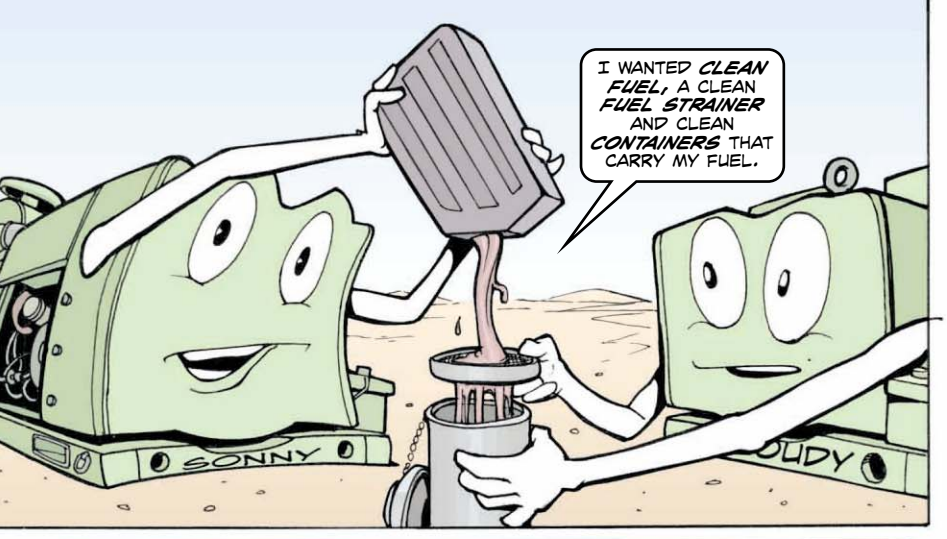

"GRIT ON MY DIP-STICK-
-MEANS SAND IN MY ENGINE. AND THAT WILL GRIND ME TO A HALT."
SONNY


"I WANT MY AIR CLEANER CHECKED AND MY FILTER REPLACED IF IT'S DIRTY."

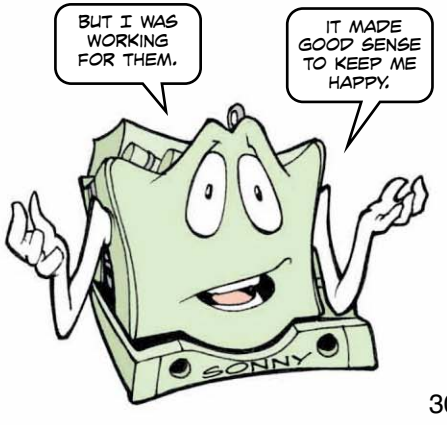

"I WANT MY SHROUDS AND DOORS CLOSED SO THAT AIR KEEPS CIRCULATING TO KEEP ME COOL."
CLOSE TO RUN

"I WANT ROOM TO BREATHE!"
SONNY

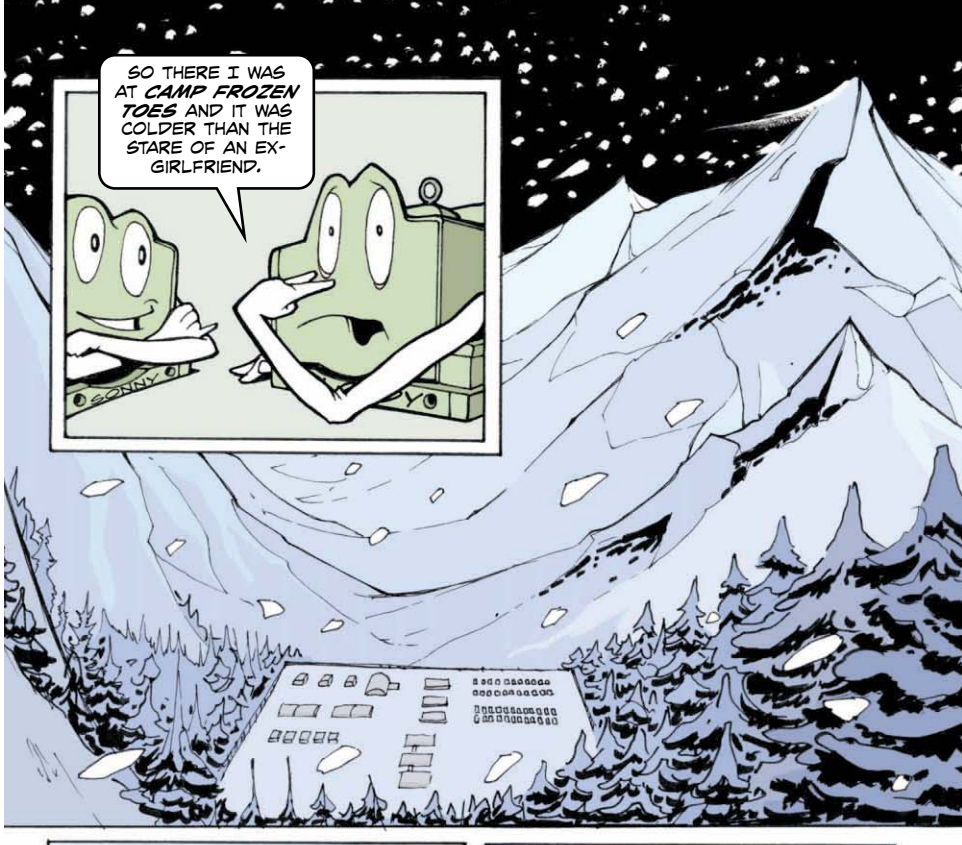

"I WANT MY BATTERIES CHECKED FOR THE RIGHT FLUID LEVEL AND FOR CORROSION."

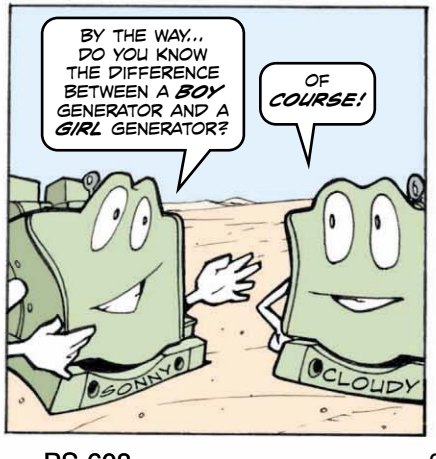

I WANTED CLEAN FUEL, A CLEAN FUEL STRAINER AND CLEAN CONTAINERS THAT CARRY MY FUEL.
SONNY

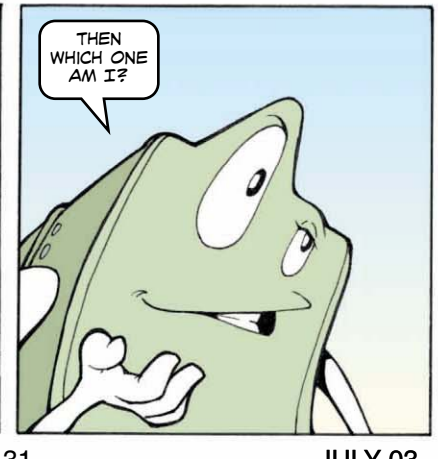
SOUNDS LIKE YOU WANTED A LOT!
CLOUDY

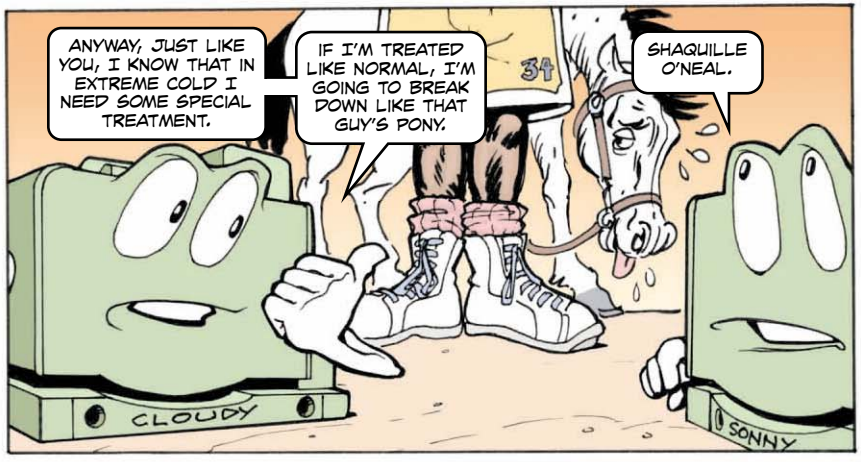

BUT I WAS WORKING FOR THEM.
IT MADE GOOD SENSE TO KEEP ME HAPPY.
SONNY

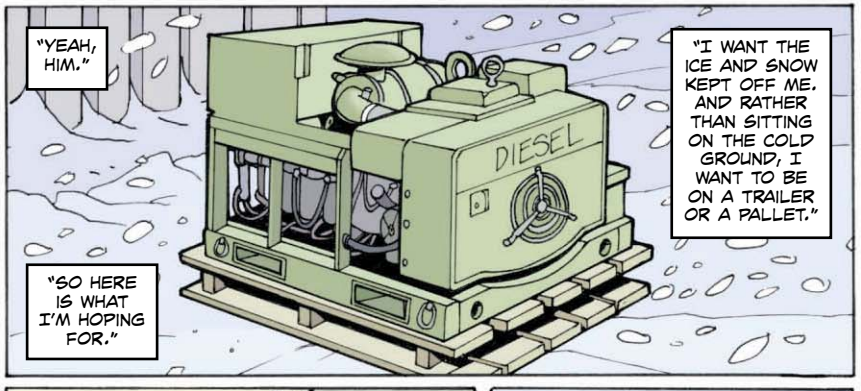
SO WHAT'S YOUR STORY?
WELL...


SO THERE I WAS AT CAMP FROZEN TOES AND IT WAS COLDER THAN THE STARE OF AN EX-GIRLFRIEND.

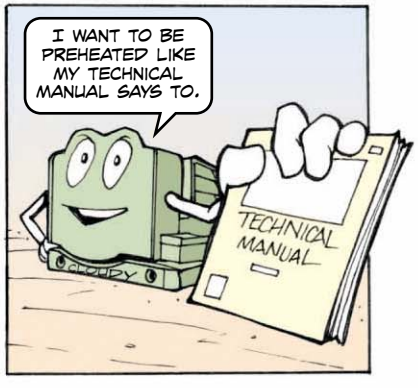

BY THE WAY... DO YOU KNOW THE DIFFERENCE BETWEEN A BOY GENERATOR AND A GIRL GENERATOR?
OF COURSE!
SONNY
CLOUDY

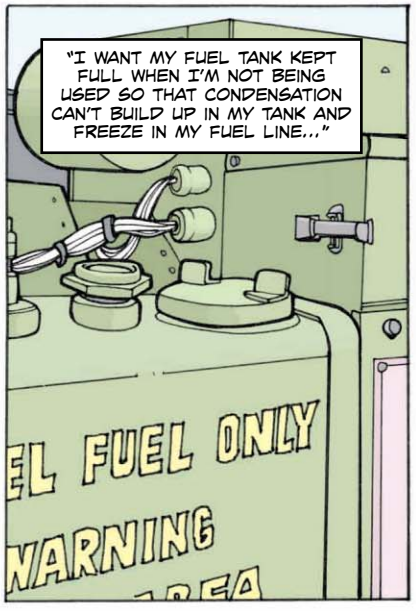

THEN WHICH ONE AM I?

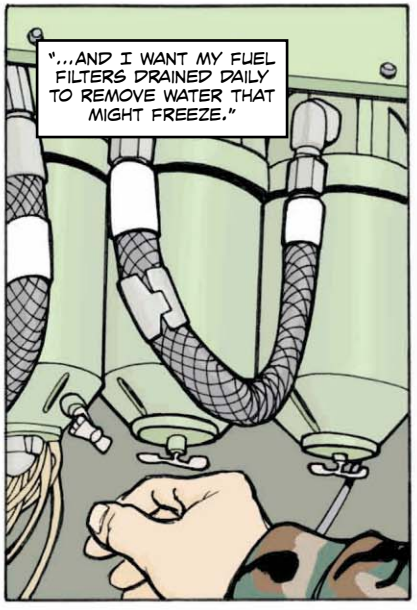

ANYWAY, JUST LIKE YOU, I KNOW THAT IN EXTREME COLD I NEED SOME SPECIAL TREATMENT.
IF I'M TREATED LIKE NORMAL, I'M GOING TO BREAK DOWN LIKE THAT GUY'S PONY.
SHAQUILLE O'NEAL.
34
CLOUDY
SONNY


"YEAH, HIM."
"I WANT THE ICE AND SNOW KEPT OFF ME. AND RATHER THAN SITTING ON THE COLD GROUND, I WANT TO BE ON A TRAILER OR A PALLET."
"SO HERE IS WHAT I'M HOPING FOR."
DIESEL

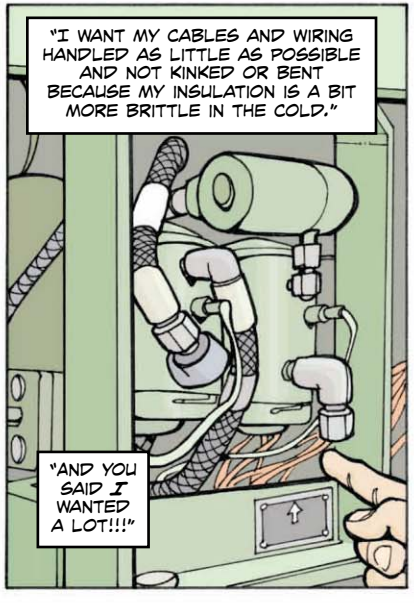
"I WANT MY BATTERY CAP VENT HOLES OPEN AND NOT PLUGGED UP AND MY BATTERY KEPT FULLY CHARGED."

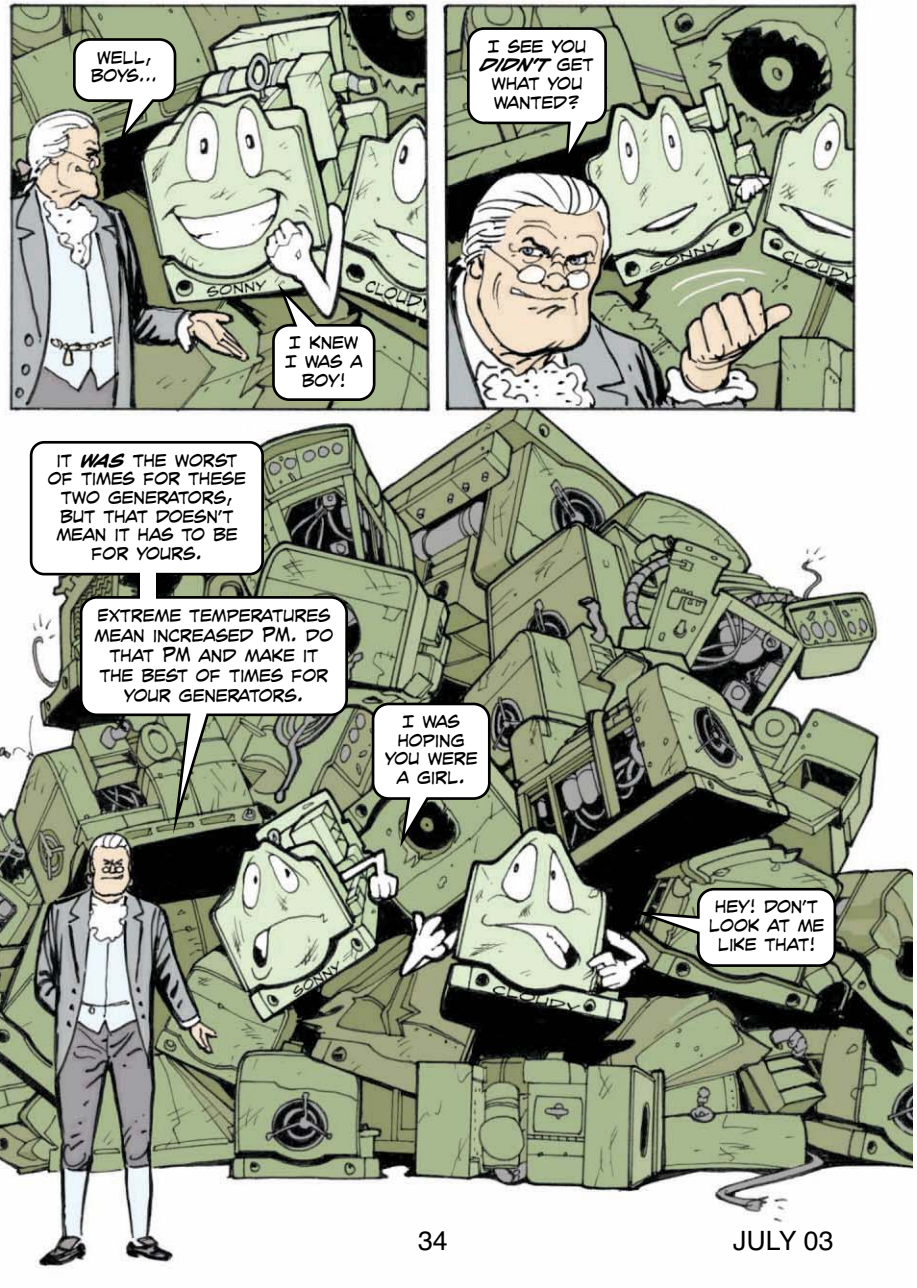

I WANT TO BE PREHEATED LIKE MY TECHNICAL MANUAL SAYS TO.
TECHNICAL MANUAL


"I WANT MY FUEL TANK KEPT FULL WHEN I'M NOT BEING USED SO THAT CONDENSATION CAN'T BUILD UP IN MY TANK AND FREEZE IN MY FUEL LINE..."
EL FUEL ONLY
NARNING


"...AND I WANT MY FUEL FILTERS DRAINED DAILY TO REMOVE WATER THAT MIGHT FREEZE."

I WANT ICING INHIBITOR IN MY FUEL IF MY FUEL NEEDS IT.
CLOUDY


"I WANT MY CABLES AND WIRING HANDLED AS LITTLE AS POSSIBLE AND NOT KINKED OR BENT BECAUSE MY INSULATION IS A BIT MORE BRITTLE IN THE COLD."
"AND YOU SAID I WANTED A LOT!!!"



Dear Editor,

Black Hawk aircraft vibration chafes the tail rotor pylon between the antenna cover and the right side attaching receptacles on the fairing assembly.

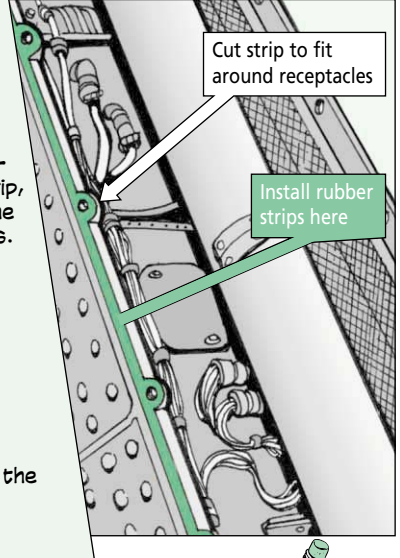
We remembered reading an article in PS 442 that solved this chafing problem. It suggested applying a rubber strip, NSN 9230-00-878-6507, along the chafed areas, including the receptacles.

Here's the fix:

- Clean the receptacles and the area between the receptacles where the antenna cover makes contact.
- Trim the rubber strips to fit and lay them aside.
- Apply a thin coat of adhesive, NSN 8040-00-097-6524, along the chafed area of the pylon.
- Firmly press the rubber strips onto the adhesive.
- Let the adhesive cure at room temperature for 24 hours.

Because the rubber strip is only 1/16 inch thick, it will *not* prevent you from latching the cover to the pylon.

SSG Jason White
AVCRAD (LAAASF) CA



From the desk of the *Editor*

That fix will put that nagging chafing problem to rest.

Cover Up

AH-64A/D and UH-60A/L...

I THINK YOU'D BETTER *COVER UP* THE STABILATOR BEFORE YOU GET TO WORK ON THE TAIL ROTOR.

GOOD IDEA! I DON'T HAVE TIME FOR DAMAGE!

To protect furniture from food spills, rips, damage, and busy kids, covers are worth their weight in preventing costly cleaning and repairs.

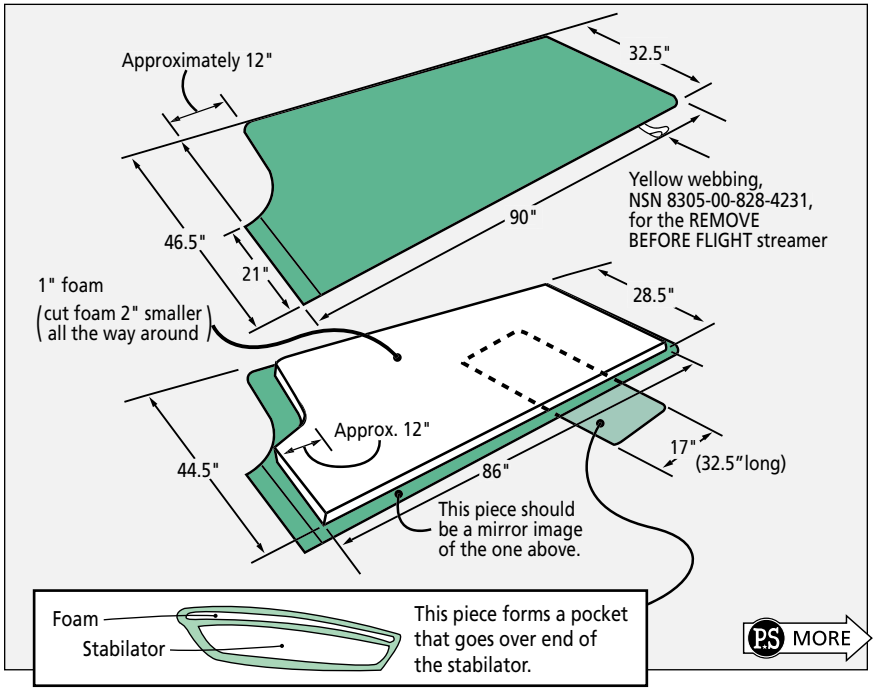
To protect a Blackhawk or a Apache stabilator from dropped tool damage, mechanics, a cover is worth its weight in gold in preventing unnecessary and costly maintenance repairs and aircraft downtime.

If you have any type of cover, use it on the stabilator or canvass to protect the skin from tools like wrenches, hammers and screw drivers that might puncture, dent or damage the stabilator.

If you drop tools on an uncovered stabilator while performing tail rotor maintenance, your bird is grounded until the AVIM shop repairs minor nicks or dings—or replaces it if the damage is severe enough and can't be fixed.

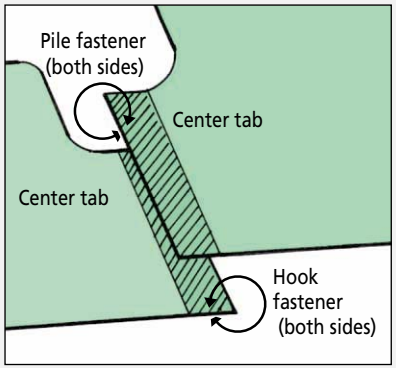
If you need a cover, have your upholstery shop make a right and left piece with the following instructions.

The cover is made from red vinyl, NSN 8305-00-273-8650, and uses fire retardant and flame resistant foam as insulation that you can purchase locally.



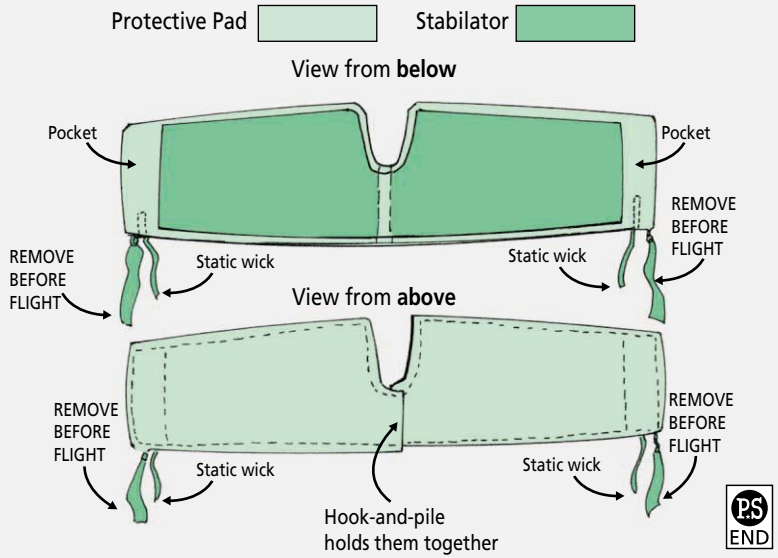
P.S MORE

- Begin sewing the top and bottom together, leaving one of the long sides open for inserting the foam.
- After inserting the foam, finish sewing the two pieces together.
- Before installing pocket panel, be sure to reinforce the opening edge by folding it over 1 inch and sewing or installing webbing on that edge for reinforcing the pocket. Sew in a web tab for the safety streamer.
- From the outer end of the trailing edge, leave a 7-in opening 5 inches from the corner to allow opening for the static wick.
- Once you've made the first piece, then make another one that's the mirror image of the first one. (You need two pads—one for the left half of the stabilator and another one for the right half.)
- The two pads will fasten together at the center of the stabilator with hook and pile fasteners as the diagram shows below.

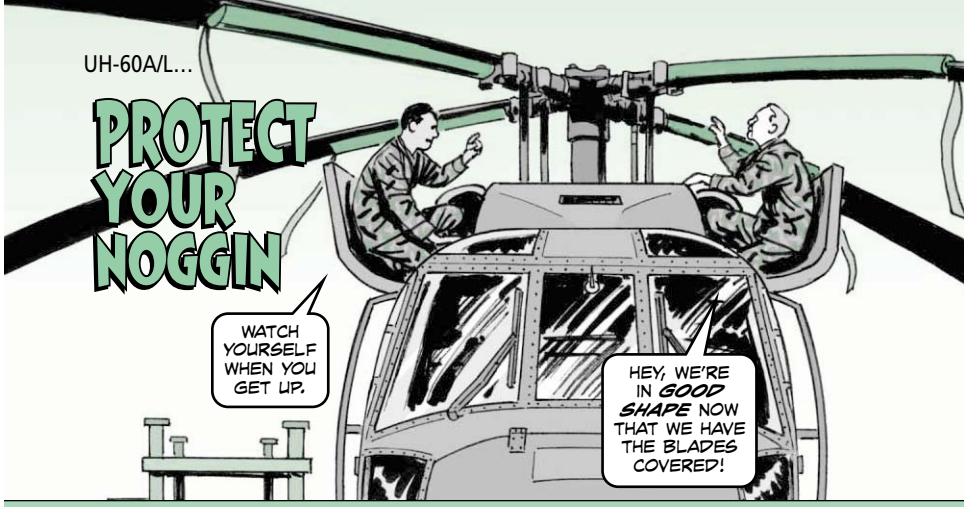


- Assemble REMOVE BEFORE FLIGHT streamer, NSN 8345-00-673-9992, and attach to sewn-in tabs. Use wire rope and swaging sleeve, NSN 4030-00-960-1654, to attach the streamer.

If your unit does not have a shop that can make the cover, contact Fred Reschman at the CA AVCRAD, (559) 347-5575.



P.S
END



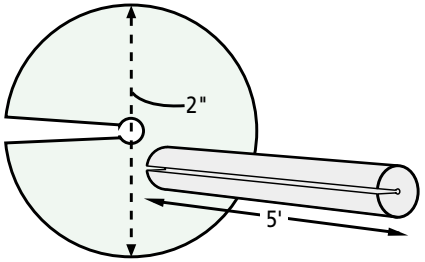
Dear Editor,

Even though we take extreme care when we work on the Black Hawk main rotor blades, mishaps still happen.

When mechanics perform main rotor head work, they sometimes bump their noggins on the blades as they maneuver on top of the bird. An occasional small bump on the head is OK, but in many cases, mechanics bang their heads pretty hard on the main rotor blade trailing edge. If that happens, the sharp edge can gouge out a piece and that may require an emergency room visit for stitches.

We've come up with a quick fix.

We local purchase a foam tube (swimming pool tube) with a hole in the center, 2 inches in diameter and 5 feet long for each blade. Then we cut the tube from the center out all the way through and install it on the trailing edge of all four blades to save our skulls. 'Course, we always attach a REMOVE BEFORE FLIGHT streamer to each foam tube.



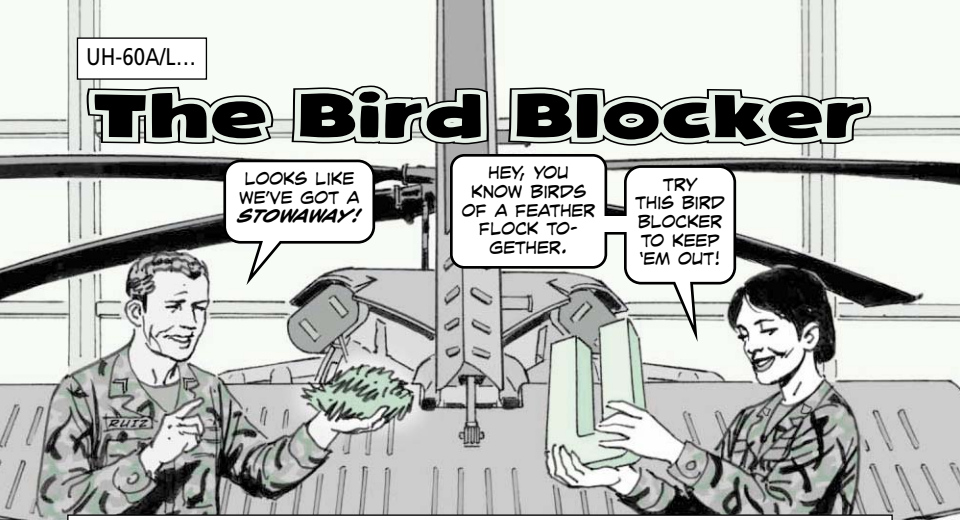
Pascual Arances Jr.
Moffett Field, CA

From the desk of the *Editor*

Good thinking! No more busted and stitched up heads.

UH-60A/L...

The Bird Blocker



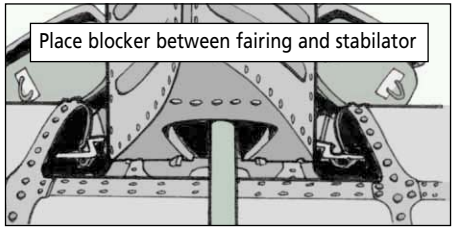
Dear Editor,

During our 10-hr/14-day Black Hawk inspection, we came across a bird's nest nestled in a hole underneath the cambered fairing of one of our helicopters.

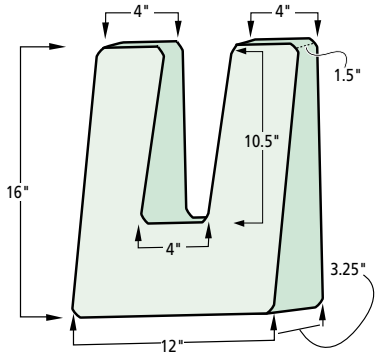
While our aircraft sit on the flight line, birds can squeeze through the opening where the stabilator and the stabilator actuator connect. Having found a great spot for a home, they build nests.

Bird nests can present a FOD problem. And because nests hold moisture, they can create corrosion. When the nest dries, the grass gets hot and creates a potential fire problem, too.

We removed the nest, and made a bird blocker out of rubber foam. We placed the blocker's thin front end between the stabilator and the fairing to cover the opening. We attached a REMOVE BEFORE FLIGHT streamer. That keeps those pesky birds from making *our* bird "home sweet home".



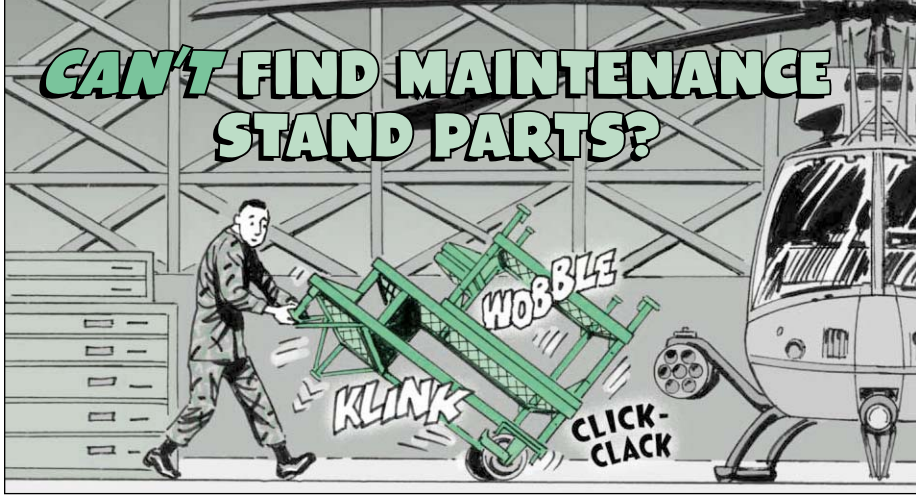
Here are the dimensions we use.

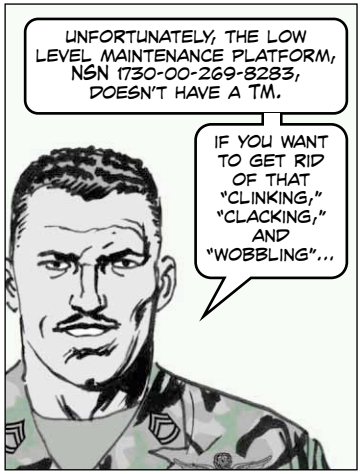


Darius Johnson
Camp Robinson AASF
North Little Rock, AR

SEAL OF Editor's APPROVAL

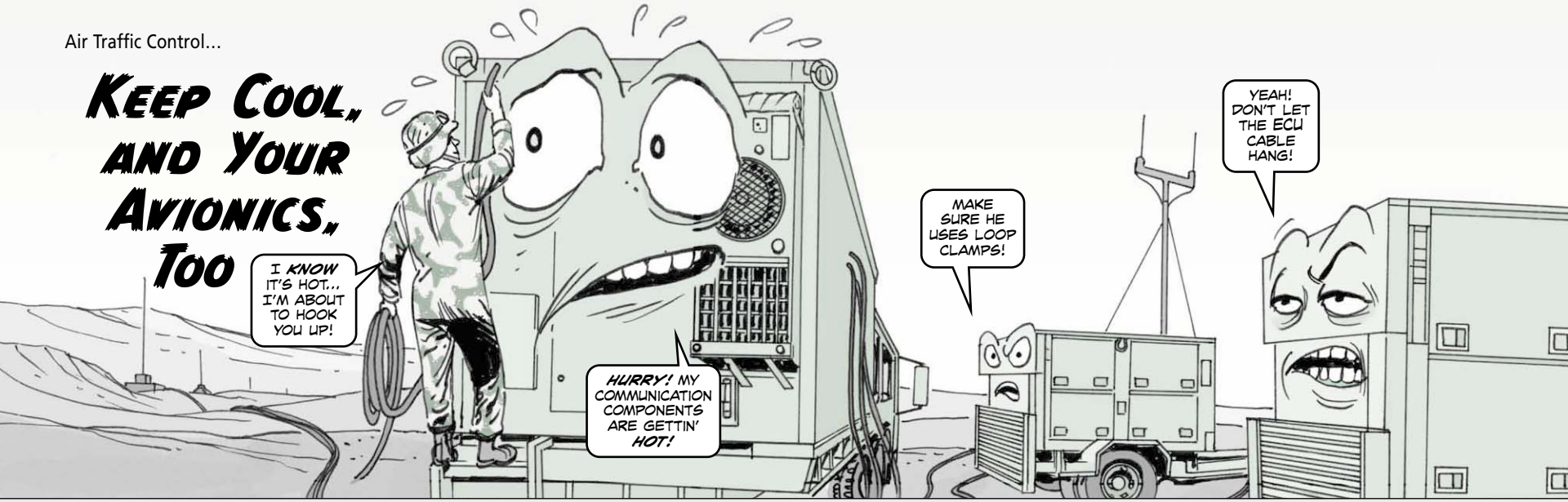
CAN'T FIND MAINTENANCE STAND PARTS?





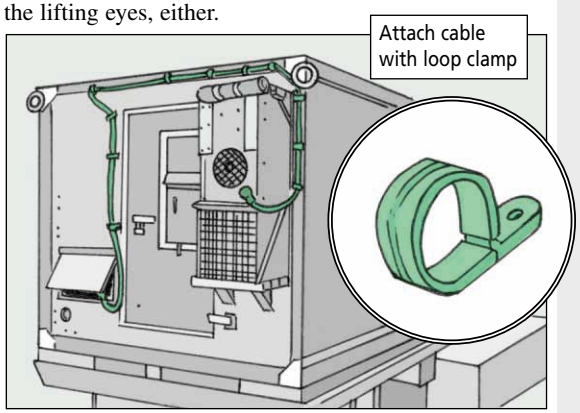
- Wheel assembly with universal brake, NSN 5340-01-340-8799
- Latch assembly-clamping catch, NSN 5340-00-787-3209
- Catch, clamping latch, spring-loaded, NSN 5340-00-760-9241
- Quick release pin, NSN 5340-00- 935-8804

Keep Cool, and Your Avionics, Too



The AN/TSC-61B operates best when you and the electronic communications equipment inside the shelter stay cool.

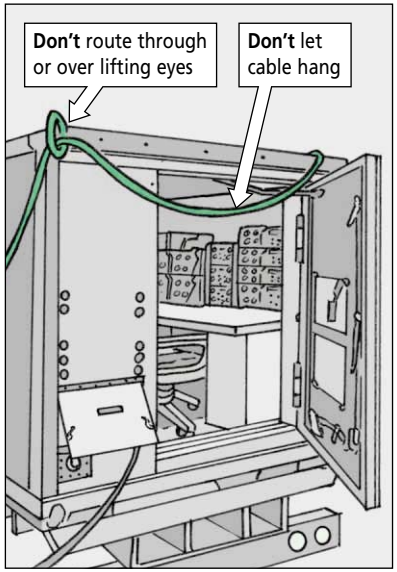
A good rule of thumb to keep cool and protect yourself and the ECU power cable is to secure it only across the doorway. Use loop clamps, NSN 5340-00-891-3412, to support the cable. And don't route the cable through the lifting eyes, either.



If you let the power cable hang in the doorway like a bat in a cave, the door can damage the power cable and knock out the ECU. If you route it through the shelter's lifting eyes, the lifting hooks can crush the cable while moving or lifting the shelter.

No power cable means you lose cool air, and the radios and other electronic components inside the shelter that control flight operations overheat and burn out. Then you won't be communicating or coordinating with aircraft in the air or on the ground.

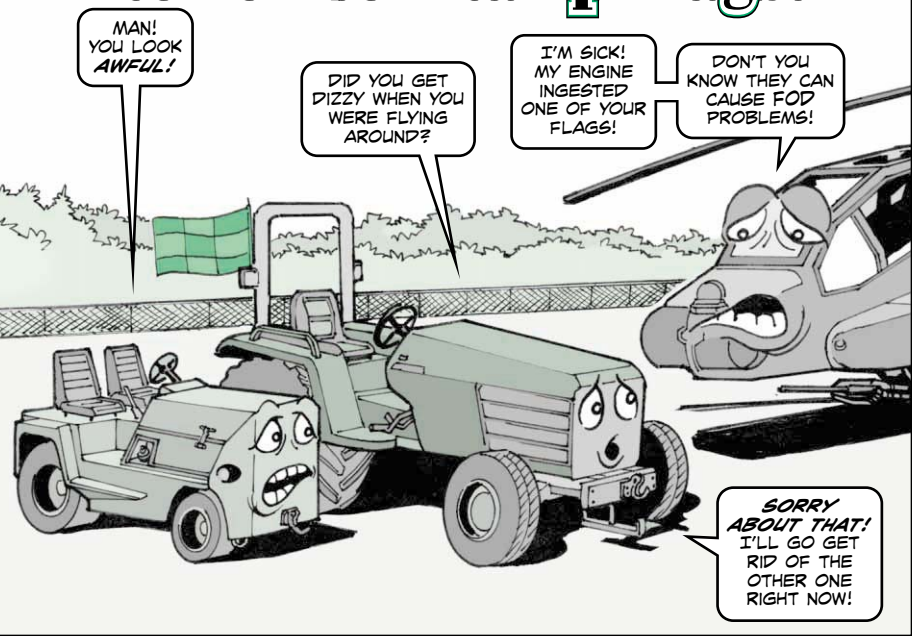
If you're tempted to run any power cable on the ground, forget it. That leaves the ECU power cable vulnerable. Foot and vehicle traffic can crush the cable or rip the cable loose from the connectors. It causes a tripping hazard, too.



Elevate and mark all cables with white cloth or tape to avoid damage.

Aviation Ground Support Equipment...

Remember Ramp Flags?



Ramp flags have been showing up lately—**again.** If you have ramp flags, NSN 8345-00-543-6914, attached to your airfield and flight line ground vehicles, you need to ask yourself a question: "should we still be flying those checkered flags?"

The latest word in FM 1-300, *Flight Operations Procedures,* says nothing about the use of ramp flags on flight line vehicles—such as tugs or tractors—while they tow aircraft. So forget ramp flags.

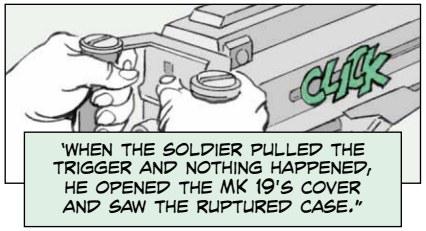
In the past ramp flags were used as a safety precaution on fixed wing aircraft runways. Still, ramp flags are considered a safety hazard in and around hovering helicopters.

Also, flags can become FOD material if they get caught in rotor blades or get ingested by an aircraft engine.

MK 19 Machine Gun...

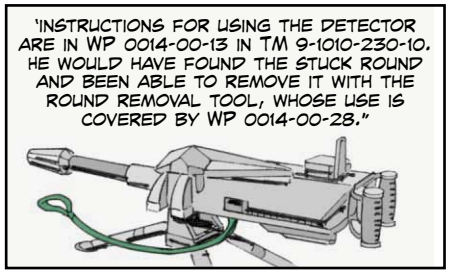
MAKE SURE BARREL IS CLEAR

"WHAT THE ARMY THINKS HAPPENED IS THAT HIS MK 19 FIRED THREE ROUNDS, BUT STOPPED ON THE FOURTH ROUND BECAUSE OF A SPLIT CARTRIDGE CASE."



"HE REMOVED THE CASE, BUT DIDN'T CHECK FOR A STUCK ROUND. HE TRIED TO FIRE AGAIN. THE FIFTH ROUND HIT THE FOURTH ROUND STUCK IN THE BARREL AND THE BARREL EXPLODED."

'INSTRUCTIONS FOR USING THE DETECTOR ARE IN WP 0014-00-13 IN TM 9-1010-230-10. HE WOULD HAVE FOUND THE STUCK ROUND AND BEEN ABLE TO REMOVE IT WITH THE ROUND REMOVAL TOOL, WHOSE USE IS COVERED BY WP 0014-00-28."

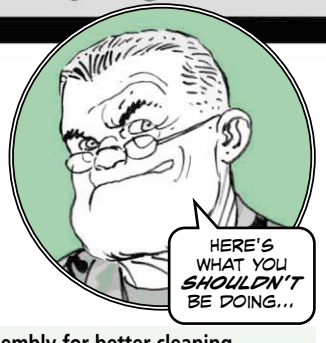


M16-Series Rifle, M4A1 Carbine...

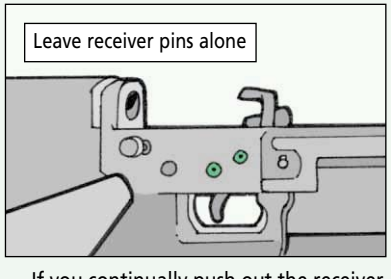
KNOW YOUR LIMITS

Your M16-series rifle or M4A1 carbine is the best friend you'll have in battle. That's why you need to give it all the PM attention it needs.

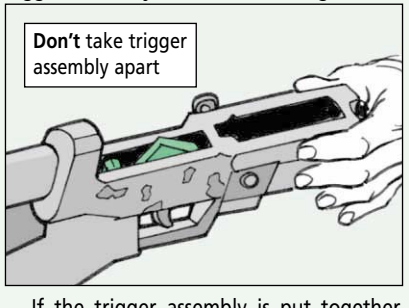
But there is a widespread problem in the Army. Some soldiers want to give their M16 or M4A1 too much attention. They want to do not only their job, but also the armorer's and maybe even direct support's. The results of doing more than you should can be disastrous for your weapon.



- **Don't disassemble the lower receiver and trigger assembly for better cleaning.**

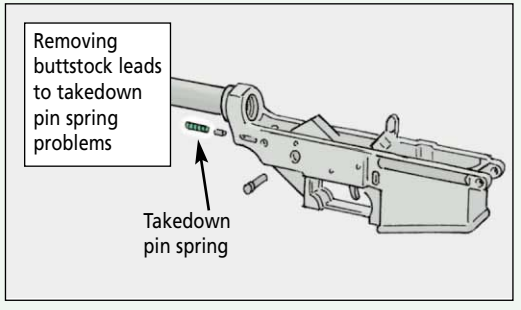


If you continually push out the receiver pins, you enlarge the receiver holes. The holes can't hold the pins and the receiver is ruined.



If the trigger assembly is put together wrong, the weapon fires automatic when it's not supposed to. That's dangerous.

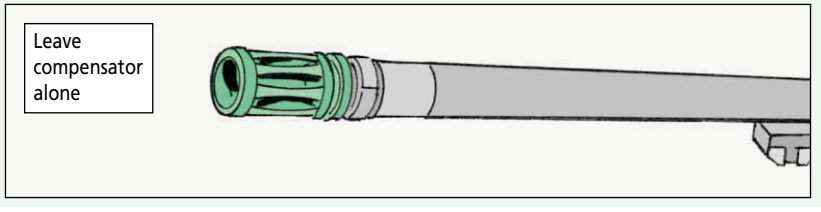
- **Don't remove the buttstock to clean the lower receiver extension.**



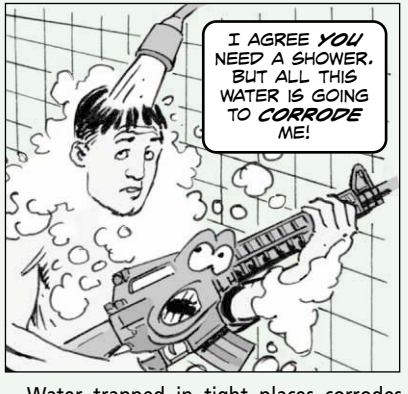
The takedown pin spring is easily damaged and difficult to install correctly. If the spring and detent are not put back in right, the takedown pin won't lock in and your rifle won't stay together. You could also loosen the lower receiver extension, which could let the buffer detent and spring pop free.

- **Don't remove the compensator to clean the barrel.**

The compensator must be torqued just right. If it's screwed on too tight, the barrel threads--and barrel--are ruined. If it's too loose, it can vibrate off.

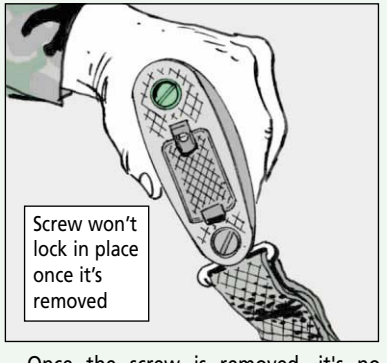


- **Don't give your M16 or M4 a bath.**



Water trapped in tight places corrodes metal parts like the carrier key, forward assist spring, trigger spring, and sear spring.

- **Don't remove the self-locking screw in the buttstock.**



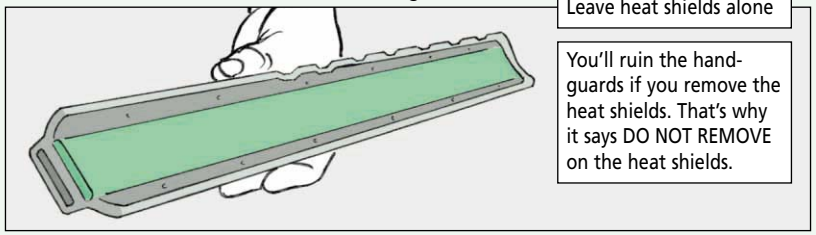
Once the screw is removed, it's no longer self-locking. It won't hold and the buttstock can turn while firing.

- **Don't use stuff like oven or toilet bowl cleaners or homemade cleaning tools on your rifle.**

- **Don't use the bore brush on the outside of the weapon.**

These things will get your rifle or carbine wonderfully clean, but they also take off its protective finish and ruin the barrel grooves. Soon your weapon is junk.

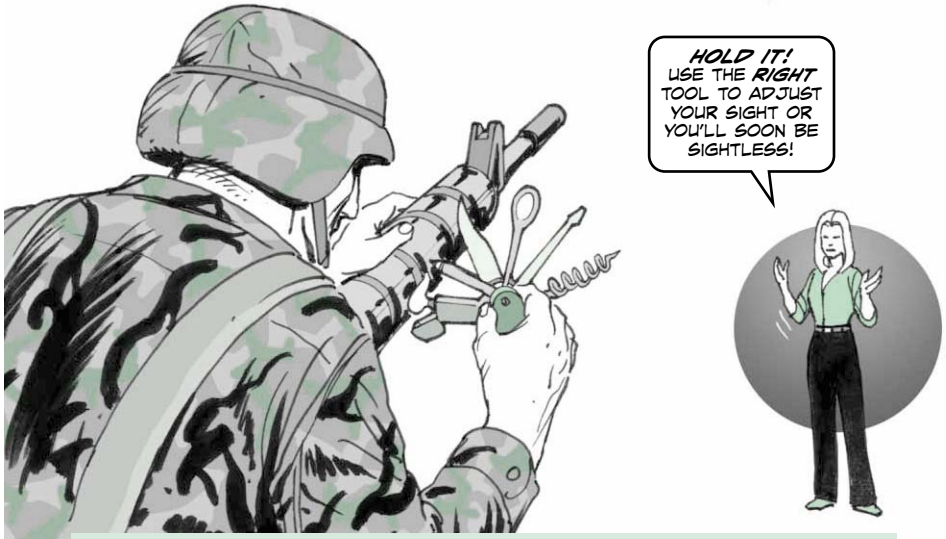
- **Don't take off the heat shields for cleaning.**



The bottom line is that if you want to do your M16 or M4 a favor, do everything TM 9-1005-319-10 says to do, then **stop.** If your weapon needs more attention, tell your armorer. He has the tools and training to either fix it or get it to support.

PS END

NOW SEE THIS: ADJUST SIGHTS RIGHT

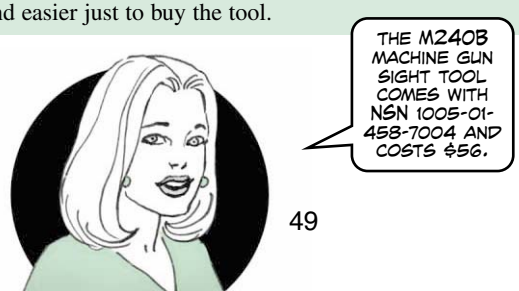


Rifles and machine guns spend too much time sitting in direct support shops because armorers and gunners don't use the right tool to adjust the front sights.

They grab what's handy—a bullet, a nail, or a multi-purpose tool—and start poking and turning the front sight detent or post. That's OK on the battlefield where you're concerned with life and death. But it's not OK in a training environment. Using the wrong tool to adjust the sight again and again on the range soon ruins the sight. Then the weapon has to go off to support for repairs.

All of this can be avoided if every armorer and squad leader carries and uses the correct sight adjustment tool.

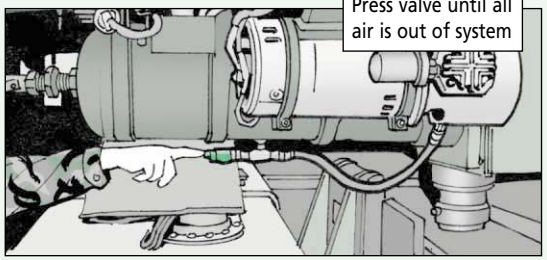
There is no NSN for the M16 rifle/M4 carbine front sight tool. You have two choices: have the tool made by support using the diagram on Page E-2 in TM 9-1005-319-23&P or go to your local gun shop and buy the tool. Most units have found it cheaper and easier just to buy the tool.



Fired Up with PM

Air Release Valve

Hit the valve at the end of every smoking mission and hold it in until all the air is out of the system. Otherwise, condensation forms in the air lines, corrosion sets in, and soon the air lines start to leak.



Hoses

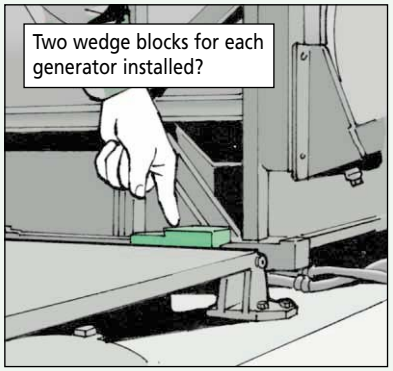
The air and fog oil hoses are virtually the same size and it's easy to confuse them. If the air tank won't build up pressure, make sure you have the tank hooked up to the air hose.

Fog Oil Strainers

Clean them at least weekly when you're smoking. Fog oil is often dirty and clogs the strainers quicker than other fuels clog filters. Clogged strainers make it difficult for the generators to draw fog oil and the generators can overheat. Rinsing the strainers in diesel fuel is an easy way to clean them.

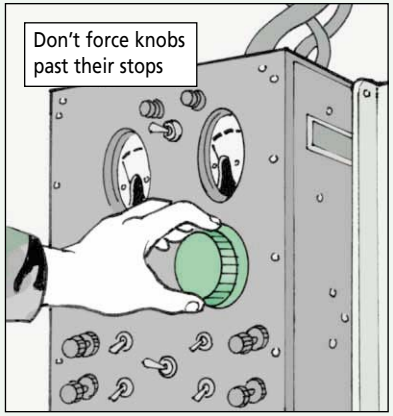
Wedge Blocks

Make sure each generator has two wedge blocks installed. The blocks are often missed when the generators are reinstalled. Without the blocks, the generators bounce around during travel and all sorts of components are damaged.



Control Panel Knobs

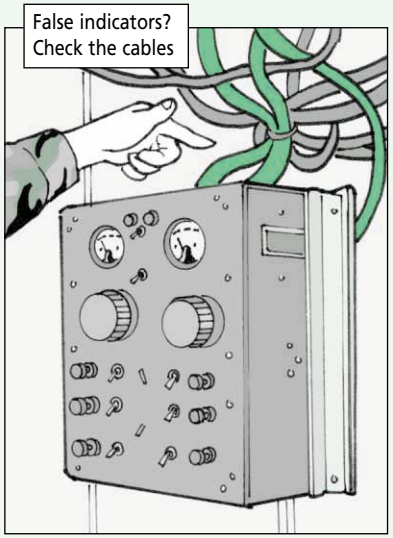
Don't force the knobs. If you muscle them past their stops, you break the knobs and then the control panel can't control smoking. Operators often break the knobs because they turn them fast and hard. That's not necessary. Slow and easy is fine for smoking.



Control Panel Cables

If any of the six cables to the control panel are loose or cross-threaded, you could get false indicators when you turn on the control panel—particularly the FIRE warning light. If you're getting false indicators, check that the cables are correctly installed.

You have to see the connectors to tell if they're cross-threaded. The easiest way to visually check them in the track version of the M157 is to remove the top screws holding the brackets to the control panel. Loosen the bottom two screws and swing the control panel toward you. You can just bend over and look at the cables in the truck version.



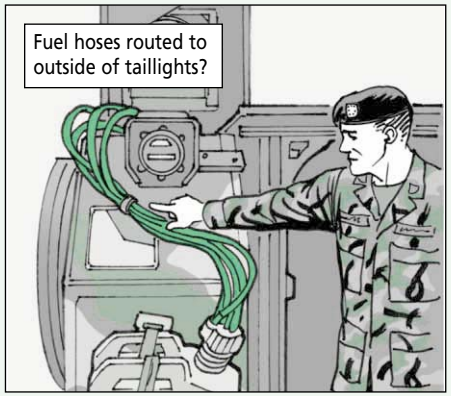
Storage

Don't store gear on top of the fog oil tank. Gear bounces around during travel and breaks the cable and fog oil line connectors on top of the tank. Then you can't smoke. Never store picks, shovels or other gear between the fog oil tank and tank straps. That can cause the straps to crack and the tank can break loose.

Fuel Cans and Hoses

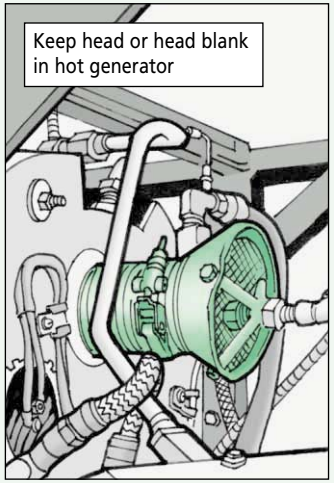
It's a good idea to keep the fuel cans more than 1/4 full. If the fuel level gets much lower than that, the generators have trouble drawing fuel. The best bet is to fill the fuel cans before you smoke. If you've been smoking a long time and aren't sure of the fuel level, use a flashlight to check.

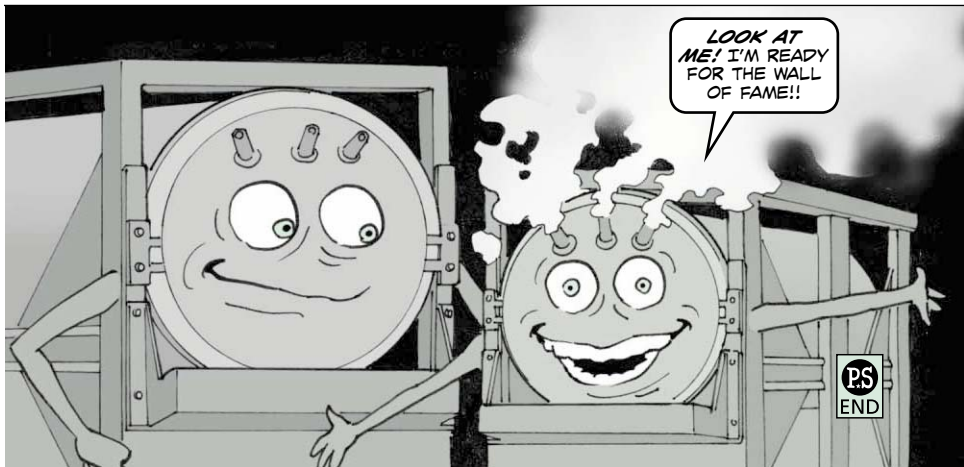
Check the fuel hoses weekly for dry rot and cracks. If the hoses sprout holes, fuel sprays everywhere. Make sure the hoses are routed to the outside of the taillights on the track version. If they run along the inside the lights, the ramp can catch the hoses and tear them off.



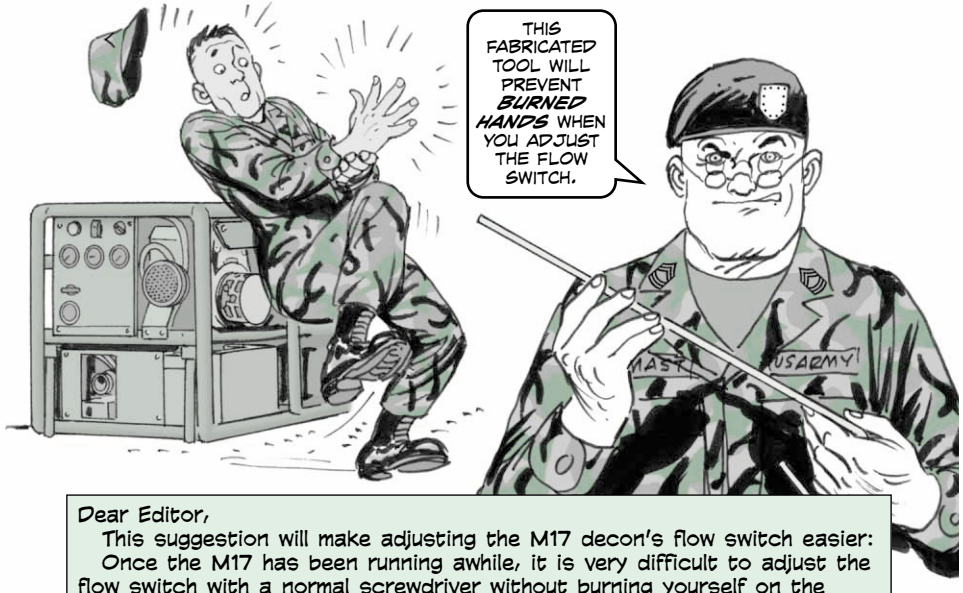
Head

If you have to remove the head during smoking, remember it's very hot. It's a good idea to wear heavy gloves **and** use a rag when you handle the head. Don't leave the smoke chamber open. Flames can shoot out the head opening and fricassee you. Put the head blank in until you're ready to replace the head.





Better Adjusting & Fitting

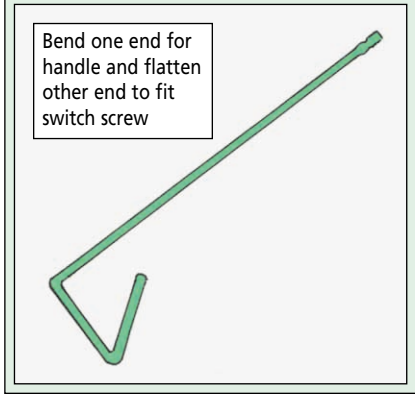


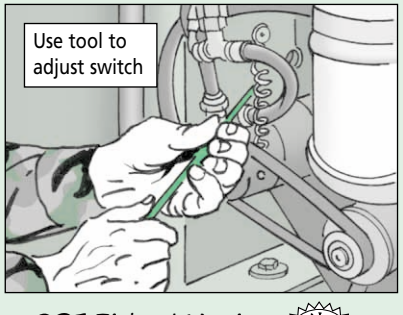
Dear Editor,

This suggestion will make adjusting the M17 decon's flow switch easier:

Once the M17 has been running awhile, it is very difficult to adjust the flow switch with a normal screwdriver without burning yourself on the exhaust. We avoided burns by making a long-handled screwdriver out of 1/4-in rod.

Cut off a 3-ft piece and bend one end in a vise to form a handle. Flatten the other end so it will fit the flow switch screw. Then you can adjust the switch without getting your hands near the hot exhaust.

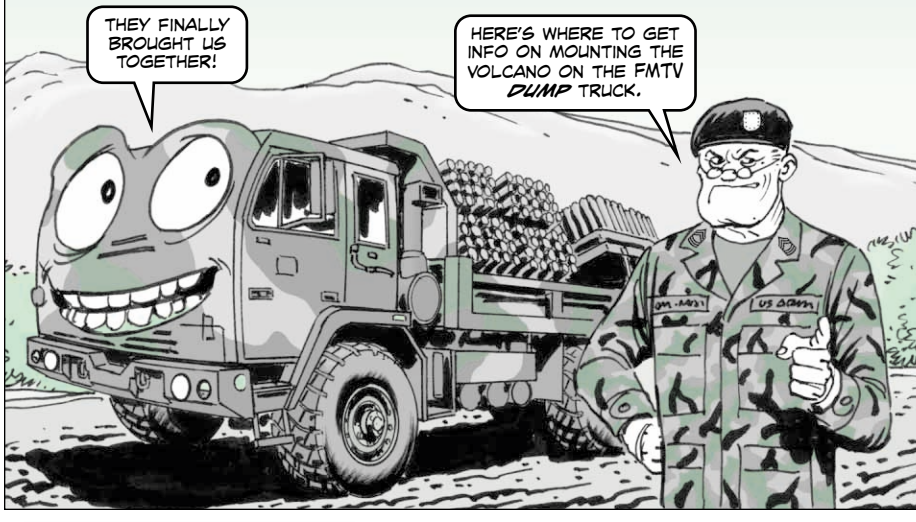




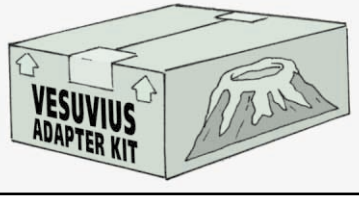
SGT Richard Morris
F Co, 782d MSB
Ft Bragg, NC

SEAL OF Editor's APPROVAL

MOUNTING VOLCANO ON FMTV



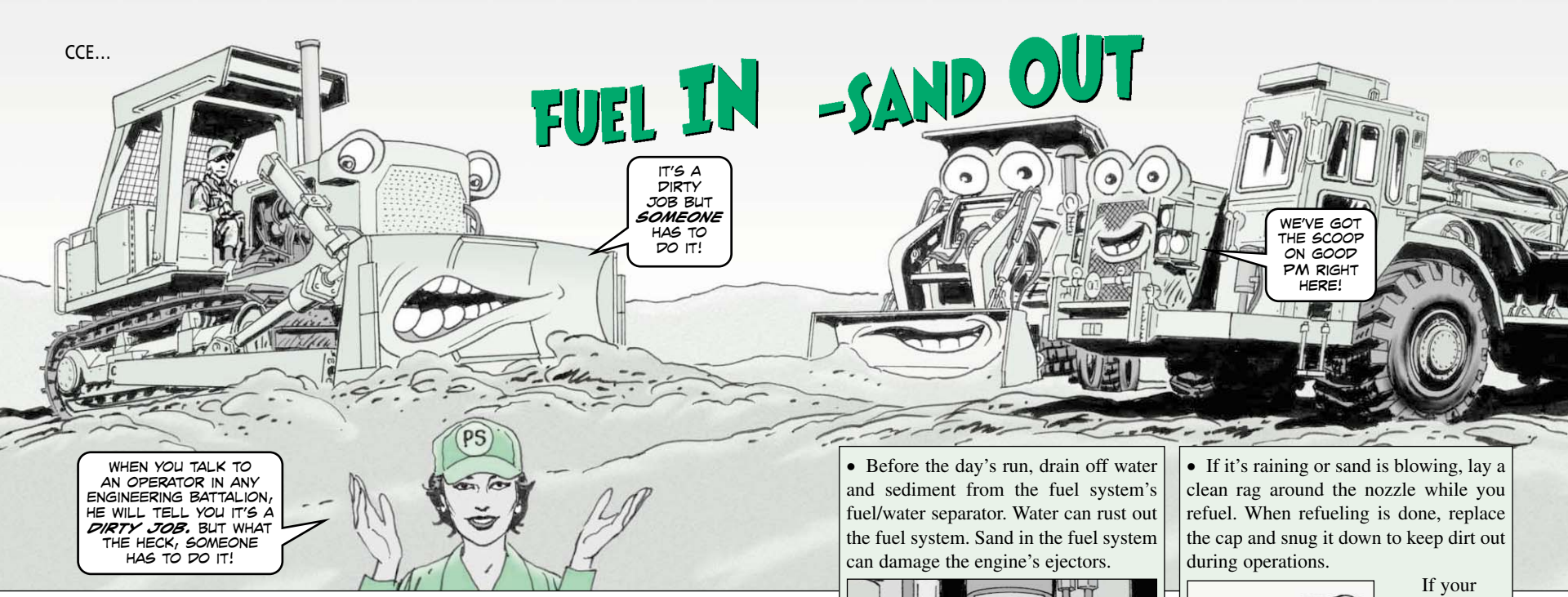
BUT TO DO IT YOU NEED AN ADAPTER KIT, WHICH YOU CAN GET FREE FROM THE ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER (ARDEC) BY E-MAILING **restaino@pica.army.mil**

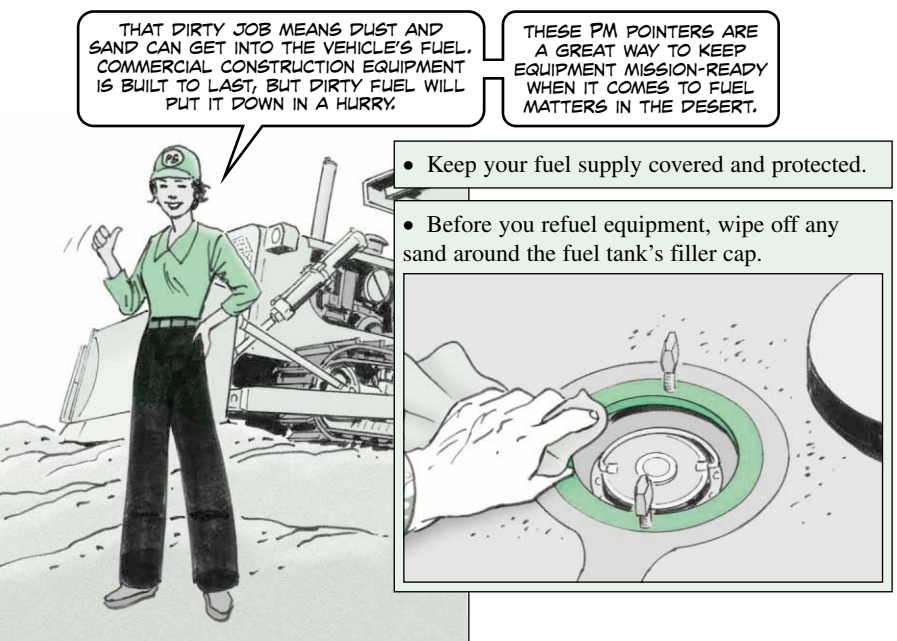


"MOUNTING THE VOLCANO ON THE FMTV 5-TON *CARGO* TRUCK IS *NOT* AUTHORIZED."

IF YOU HAVE ANY VOLCANO QUESTIONS, CONTACT ARDEC'S PETER GIOTIS AT DSN 880-5651/(973) 724-5651 OR E-MAIL HIM AT **peter.giotis@us.army.mil**

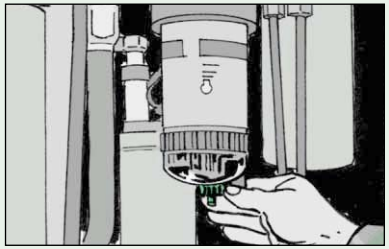
FUEL IN -SAND OUT



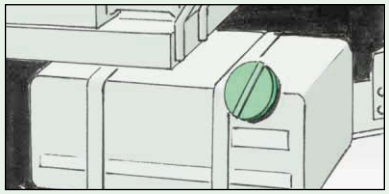


- Keep your fuel supply covered and protected.
- Before you refuel equipment, wipe off any sand around the fuel tank's filler cap.

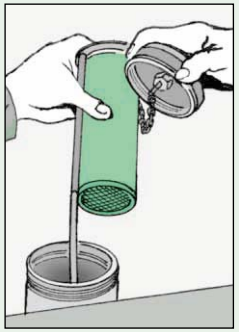
- Before the day's run, drain off water and sediment from the fuel system's fuel/water separator. Water can rust out the fuel system. Sand in the fuel system can damage the engine's ejectors.



- Fill the fuel tank at the end of operations to help prevent condensation in the tank.



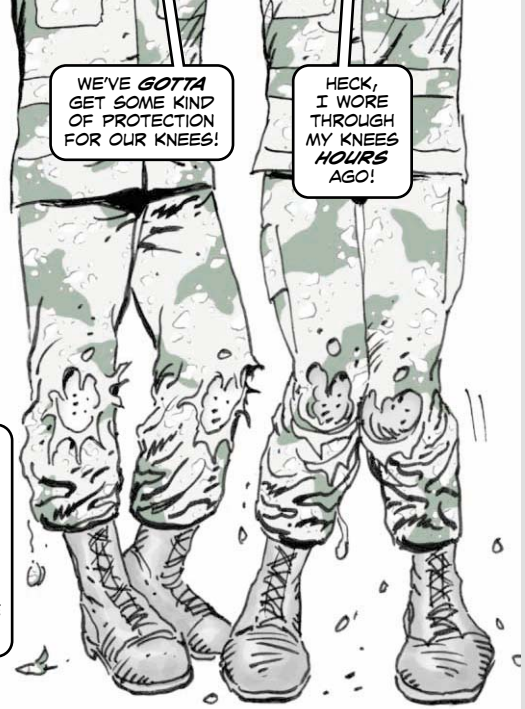
- If it's raining or sand is blowing, lay a clean rag around the nozzle while you refuel. When refueling is done, replace the cap and snug it down to keep dirt out during operations.



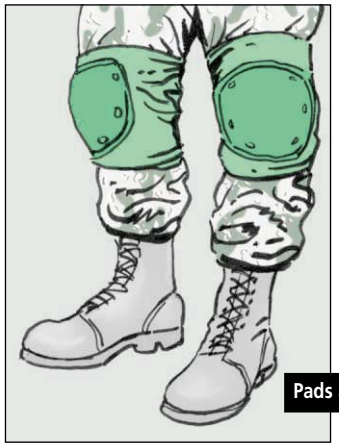
If your equipment's fuel tank has a strainer, make sure it's in place and in good shape. If it's damaged or missing, replace it.

Personal Equipment...

PADS PROTECT KNEES AND ELBOWS



"THAT'S WHEN YOU NEED A SET OF KNEE AND ELBOW PADS. THE PADS ARE MADE OF A SPECIAL NYLON CLOTH-COVERED FOAM THAT IS PROTECTED BY A HIGH DENSITY POLYETHYLENE SHELL. THE INSIDE IS LINED WITH A MOISTURE WICKING FABRIC FOR MORE COMFORT."



Knee Pads

Size	NSN 8415-01-	Camouflage Pattern
Small	458-8694	Woodland
Medium	458-8699	Woodland
Large	458-8703	Woodland

Elbow Pads

Size	NSN 8415-01-	Camouflage Pattern
Small	458-8759	Woodland
Medium	458-8761	Woodland
Large	458-8763	Woodland

Pads are secured with elastic hook-and-pile straps

Packaging...

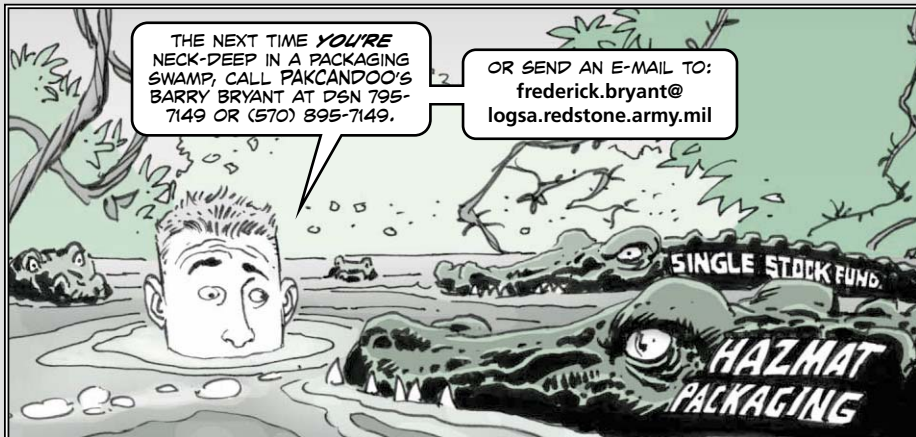
PAKCANDOO It!

Tired of playing tag with endless voice mails and e-mails while trying to fix your packaging problems? Never get a good answer, or any answer at all?

If your unit or installation could use some dependable "real people" who come to your place to give quality on-site packaging guidance and instruction, then the LOGSA Packaging Storage and Containerization Center's PAKCANDOO Team can help.

PAKCANDOO is a team made up of the Army's best packaging specialists who can handle just about any packaging situation that comes their way. Their specialties include:

- All supply classes
- Single Stock Fund and retrograde packaging
- Interpreting packaging coded data and special packaging instructions
- Stock readiness and shelf-life management
- Containerization and packaging configuration
- Packaging operations layouts
- Materials and equipment listings
- HAZMAT and ESD packaging



MAINTENANCE EXCELLENCE AWARDS

ACTIVE TOE UNITS

Small Category

Winner: HHSC, 1st MI Bn (USAREUR)
Runner-up: HHC, 8th MP Bde (EUSA)

Medium Category

Winner: Maint Trp, Rgtl Spt Sqdn, 2d ACR (FORSCOM)
Runner-up: 70th Trans Co, 28th Trans Bn (USAREUR)

Large Category

Winner: 3d Bn, 7th Inf Rgt, 3d ID (Mech) (FORSCOM)
Runner-up: 112th Sig Bn (Airborne) (USASOC)

TDA UNITS

Small Category

Winner: HQ/A Battery, 2d Bn, 6th ADA (TRADOC)
Runner-up: Maintenance Activity Vilseck, General Support Center-Europe (USAREUR)

Medium Category

Winner: 205th MI Bn (INSCOM)
Runner-up: 58th Trans Bn (TRADOC)

Large Category

Winner: 527th MI Bn (INSCOM)
Runner-up: 52d Sig Bn (NETCOM)

RESERVE TOE UNITS

Small Category

Winner: 332d Engr Co (FORSCOM)
Runner-up: HHD, 787th Spt Bn (Corps) (FORSCOM)

Medium Category

Winner: 383d QM Co (FORSCOM)
Runner-up: 826th Ord Co (FORSCOM)

Large Category

Winner: None selected

NATIONAL GUARD TOE UNITS

Small Category

Winner: 210th Fin Bn, (MSARNG)
Runner-up: Svc Btry, 2d Bn, 138th FA (KYARNG)

Medium Category

Winner: 731st Maint Co (NCARNG)
Runner-up: 1344th Trans Co (ILARNG)

Large Category

Winner: 527th Engr Bn (Combat Heavy)(LAARNG)
Runner-up: 232d Corps Spt Bn (ILARNG)

M113A3 STEER LOCK CONVERSION

Mechanics, hold off on replacing a bad electrical steer lock solenoid, NSN 5945-00-933-8450, on the M113A3 FOV. Instead, get your DS to install the new electrical-to-mechanical conversion kit, NSN 2520-01-434-8596. At around $435, the kit costs more than a new electrical solenoid, but it also lasts a lot longer.

TACTICAL GROUNDING PAMPHLET

If it's your job to ground or bond tactical equipment, you can't do the job right without CECOM TR-98-6, *Earth Grounding and Bonding Pamphlet: A Guide to Proper Grounding and Bonding Methods for Use with Tactical Systems.* The pamphlet is 46 pages of good grounding info and PS will email it to you as a PDF file. Just write to Half-Mast and ask for it.

3-KW TQG Freq Converter Change

Item 49 of Fig 2 in TM 9-6115-639- 23P gives you a choice of two frequency converters for the 3-KW TQG—a 60-Hz and a 400-Hz model. But the part numbers are flopped! Pencil that change in your paper TM and then order a 60-Hz converter (the one you probably want) with NSN 5895-01-477-0855 and a 400-Hz converter with NSN 5895-01-477-0858.

No Hoffman or M21 on M109s

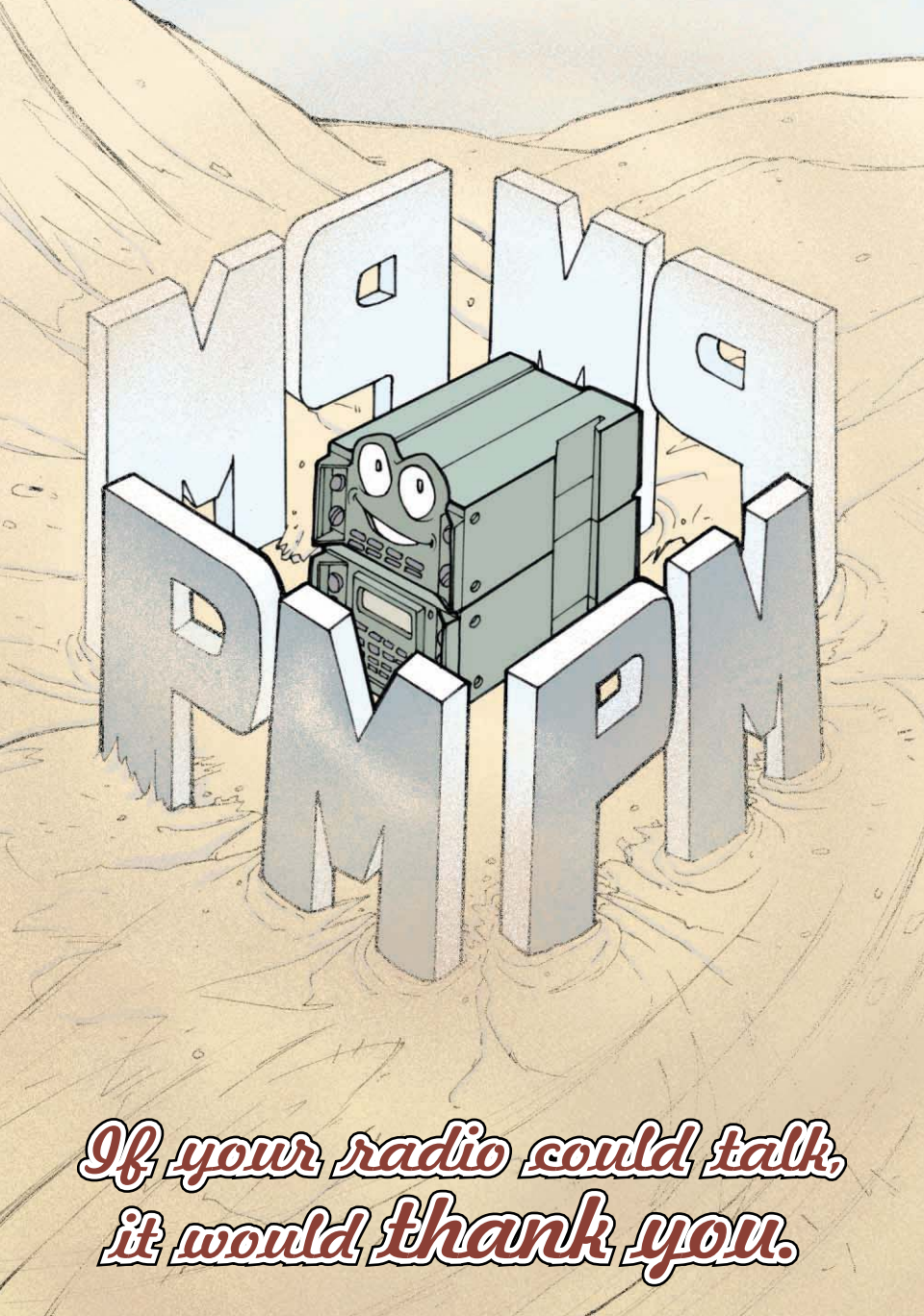
The M21 artillery flash simulator is designed to be loaded into a Hoffman training device to simulate firing of the M1-series tank's main gun.The M21 and Hoffman are not authorized for use on M109-series SP howitzers. Using them on the howitzer may result in malfunctions. Ammunition Information Notice (AIN) 40-03 (221919Z APR 03) has the scoop. Send an e-mail to **jmc-ofc-qas@osc.army.mil** or call Quinn Williams at DSN 793-7561 for a copy.

SOLVENT GLOVES NSN

Need some protective gloves to use while working in a solvent tank? Get them with NSN 8415-00-266-8675. They're the gloves found in the No. 1 Common tool set. They're rubber, size 11, 14 inches in length, with a gauntlet cuff.

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?



If your radio could talk,
it would thank you.