Issue 526

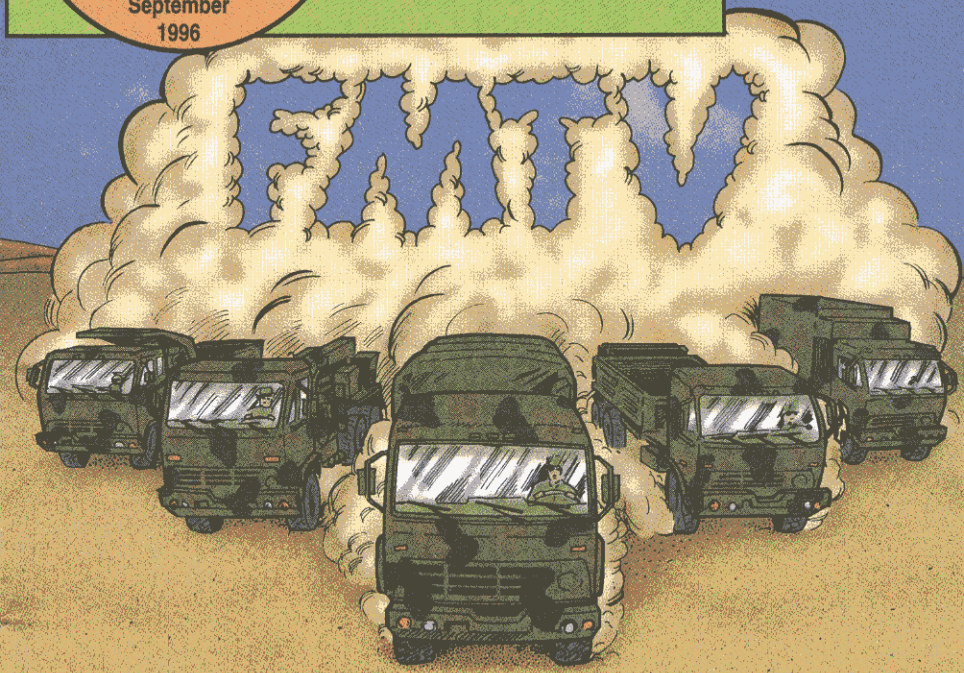
PS

September 1996

# THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-526

Has your buddy read this issue? Pass it along!




# THEY'RE COMING!

SEE PAGE 27

# Where Do I Go? LAO!

When a sticky maintenance or supply problem has you down, get right back up and visit the nearest logistics assistance office (LAO).

The Army Materiel Command's LAO program has logistics assistance representatives (LARs) all over the world. Their job is to help solve your maintenance and supply problems.

And if they don't have your answer, they know where to get it. They go to equipment managers, engineers, depot repair specialists and pubs folks.

LARs can find out why your requisitions are being cancelled or taking so long to be filled.

If your equipment doesn't work, they can help you troubleshoot.

When your unit deploys, LARs go with you, carrying satellite terminals to send questions to CONUS for resolution.

They help soldiers develop their skills by giving on-site training in any area of unit or DS maintenance.

If you don't know where the nearest LAO is, check out Appendix C of DA Pam 738-750 in the Maintenance Management UPDATE.

Questions about the LAO program? Call DSN 645-0788 or commercial (205) 955-0788. Or write:

**USAMC Logistics Support Activity**
**ATTN: AMXLS-LL**
**Redstone Arsenal, AL 35898-7466**

PS THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-526, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user.

ISSUE 526 SEPTEMBER 1996













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

*MSG Half-Mast*
*The Preventive Maintenance Monthly*
*Bldg. 5307*
*Redstone Arsenal, AL 35898-7466*

Or E-mail to:

*psmag@logsa-emh2.army.mil*

By Order of the Secretary of the Army:

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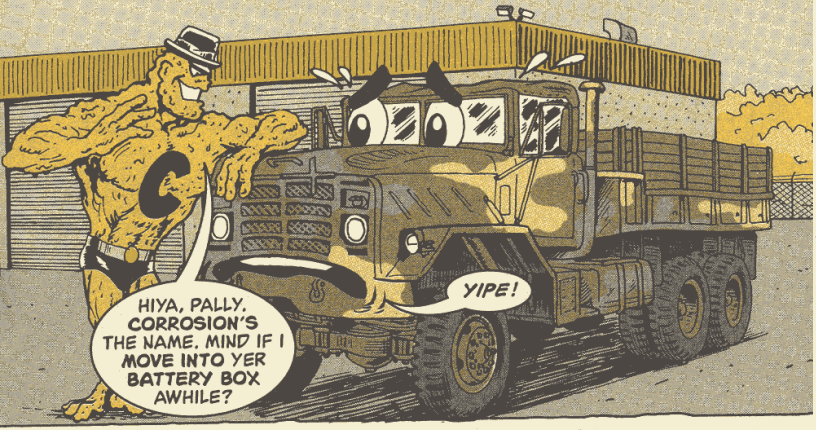
02250

**PS, The Preventive Maintenance Monthly** (ISSN 0475-2953) is published monthly by the Department of the Army, Redstone Arsenal, AL 35898-7466. Second Class Postage is paid at the Huntsville, AL post office and at additional mailing offices.

**Postmaster:** Send address changes to PS, The Preventive Maintenance Monthly, Redstone Arsenal, AL 35898-7466.

# Batteries, Boxes, Corrosion and You




Mechanics, your responsibilities are pretty straightforward when it comes to battery maintenance on your 5-tonners.

That PM is a lifesaver for the batteries. Since the batteries are in the truck cab, PM can be a lifesaver for drivers, too.

Read and heed what all of you need to know:

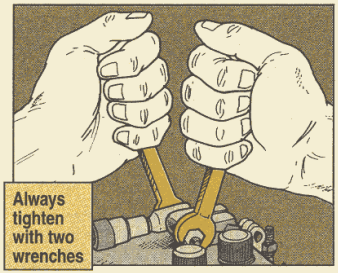
## Batteries

Since the batteries are under the passenger seat and battery box cover, sparks fly if the cover gives way and the metal lid touches the battery posts. Rubber covers on the terminals keep the sparks from flying. Put 'em on like so:

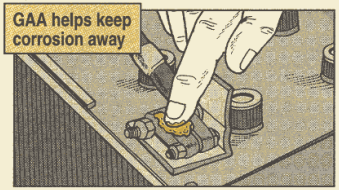
- ✓ Remove all the cables—ground cable first—and terminal clamps.
- ✓ Make sure the batteries are seated and clamped down.
- ✓ To prevent corrosion, put on treated felt washers, NSN 5970-01-101-4147.
- ✓ Put a rubber cover, NSN 2530-01-089-4992, on all posts with single cable terminals. Use cover, NSN 4940-00-738-6272, on posts with two terminals.




- ✓ Push the terminal clamps all the way down on the battery posts and tighten them.
- ✓ Put the battery cable under the head of the terminal bolt. Then vibration won't loosen it. If you've got two cables going to one clamp, mount the second cable under the nut.
- ✓ Lay the cable flat against the battery before tightening the bolts.
- ✓ Tighten the bolt and nut using two wrenches of the right size—never an adjustable wrench. Tighten the nut snug, then give 1/4 turn more. Test by pressing and lifting the clamp with your thumb and forefinger.



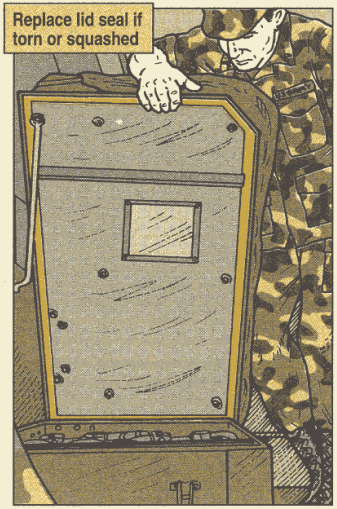

- ✓ Give the clamp and post a coat of GAA to prevent corrosion.




## Battery Box

Eyeball the box and cover during every scheduled service for any cracks or breaks. Replace any part that's bad. The box is NSN 6160-01-143-4538, and the cover is NSN 6160-01-130-8045.

The cover seal should be replaced if it's torn or so squashed out of shape that it doesn't form a good, tight fit. Get the seal with NSN 5970-01-144-4841.




Otherwise, fumes from the battery cells can get into the truck cab. The fumes are bad for crewmembers and the passenger seat itself.



P.S. MORE

While you're at it, check the battery box vent drain hole. If it's clogged, the built-in exit for those fumes is worthless. The fumes have no place to go—and a buildup of fumes is bad news if there's a spark from the battery posts or clamps.

Use a stick, nail or welding rod to punch the dirt or mud out of the vent.

Eyeball the passenger seat bottom for damage. If necessary, replace it, too.

## Corrosion

Keep an eye out for corrosion on the batteries and in the battery box. Most times it starts when a battery is overfilled or a filler cap is missing. Electrolyte is flushed or sloshed out and turns into a gray-white corrosion when it dries.

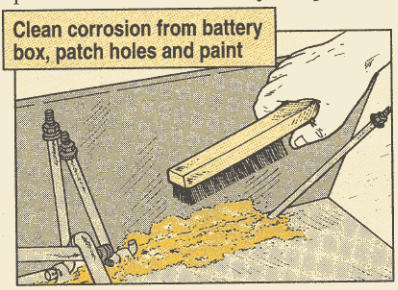
This stuff eats cables and brackets and gnaws holes in the box—unless you get to it first.

Go after corrosion with a solution of baking soda and water.

It's also a good idea to pull the batteries during semiannual services. That's the only way to find some rusty spots and pinholes.

Those spots need to be sanded and painted. Holes need patching and patches need painting before the batteries are put back in.

Make sure you check vent holes after the box has been painted or patched to make sure they're open.

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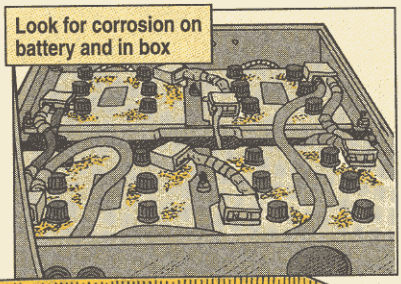
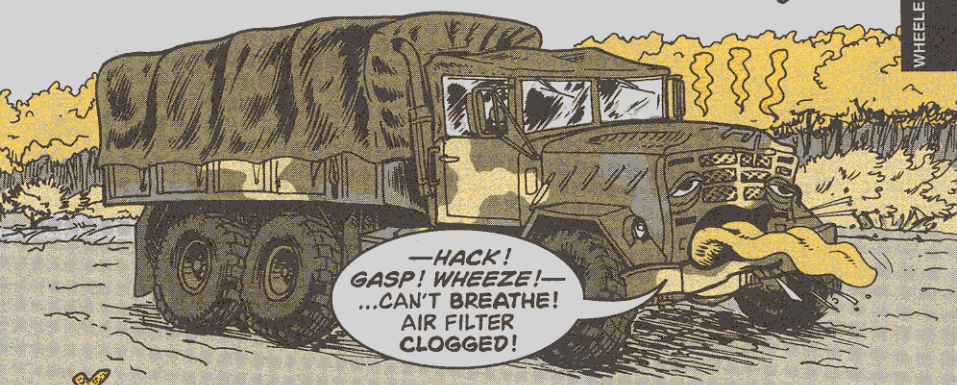


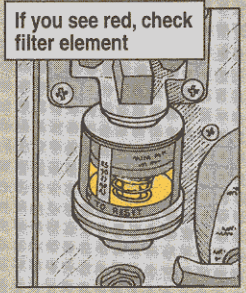

# Oil & Fuel Do Filter Dirty

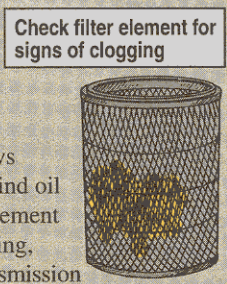





You expect a little dirt and dust in an air filter element. What you don't expect is fuel or oil. Both can get into the air cleaner under the wrong conditions.

Fuel and oil foul the filter element, of course, keeping it from sending air to the engine. They also indicate contaminated oil which ruins engine parts.



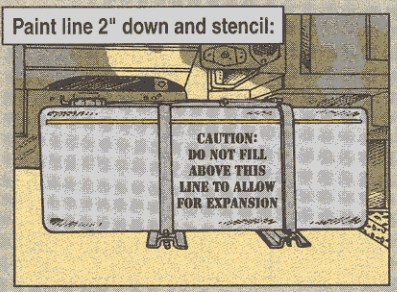




If the air restriction indicator shows red, and you find oil on the filter element or in the housing, check the transmission and transfer oil levels.

If they're overfilled, drain the excess. Check for fuel diluting the oil and change the oil if necessary. Oil that has diesel in it will feel watery and will smell like diesel.

If oil levels are low, get support to check the transfer interlock air cylinder for leaks.

Be sure the fuel tank is not filled to the top. On fuel tanks that don't have filler necks, paint a line two inches down from the top and stencil "**CAUTION: Do not fill above this line to allow for expansion**" in 1-in black letters, as Fig 17 of TB 43-0209 shows.



# There Is a Right Way


It's been said that there's the right way to do things, and then there's the Army way.

Some people must really believe it, too. Like soldiers who think commercial antifreeze is better than the stuff the Army uses in tactical and combat vehicles.

The Army touts MIL-A-46153 antifreeze for use in tactical and combat vehicles operating in temperatures down to -50° F, and MIL-A-11755 arctic antifreeze for use in those same vehicles operating in temperatures down to -65° F.

So if the Army says this is the right way, well, commercial antifreeze is bound to be best.

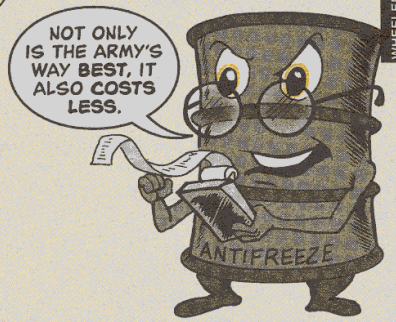

Light-duty commercial antifreeze, Fed Spec A-A-870, is for use in GSA administrative and commercial light-duty vehicles only.

It has added aluminum corrosion inhibitors for use in vehicles with light-duty aluminum alloy gasoline engines.

It doesn't have the inhibitors needed to prevent corrosion in vehicles with heavy-duty cast-iron diesel engines.

Before you go and say that the Army uses several commercial-type vehicles, consider **how** these vehicles are used:

- ✓ If the vehicle's intended use is in a tactical or combat situation, then the Mil Spec antifreezes are the ones to use.
- ✓ If the vehicle's intended use is in administrative, transportation or service situations, then use the Fed Spec antifreeze.




A 55-gal drum of MIL-A-46153 antifreeze costs about $200. The arctic antifreeze, MIL-A-11755, costs about $215 a drum. Commercial antifreeze, Fed Spec A-A-870, costs more than $300 per drum.





Dump Trucks . . .

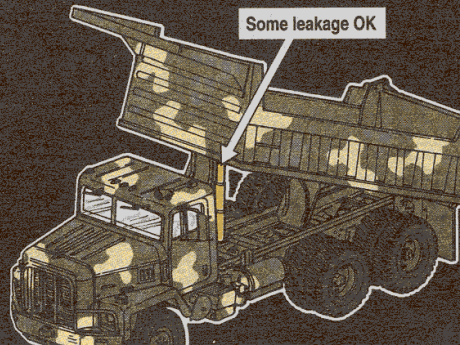
## Hoist Cylinder Leaks OK

It's a fact, operators: Dump truck hydraulic hoist cylinders leak. Some leak just a little, others a little more.

Your truck is not NMC unless the leak adds up to more than a quart a day, or the cylinders won't lift an empty dump body.

That's because single ram cylinders must leak enough to keep the rod coated with oil and the seal wet. The oil protects the rod from the elements and corrosion.

Telescoping cylinders, such as those on M917 and F5070 dump trucks, have seals at each section of the cylinders that leak for the same reasons.



# Oil in the Air Cleaner

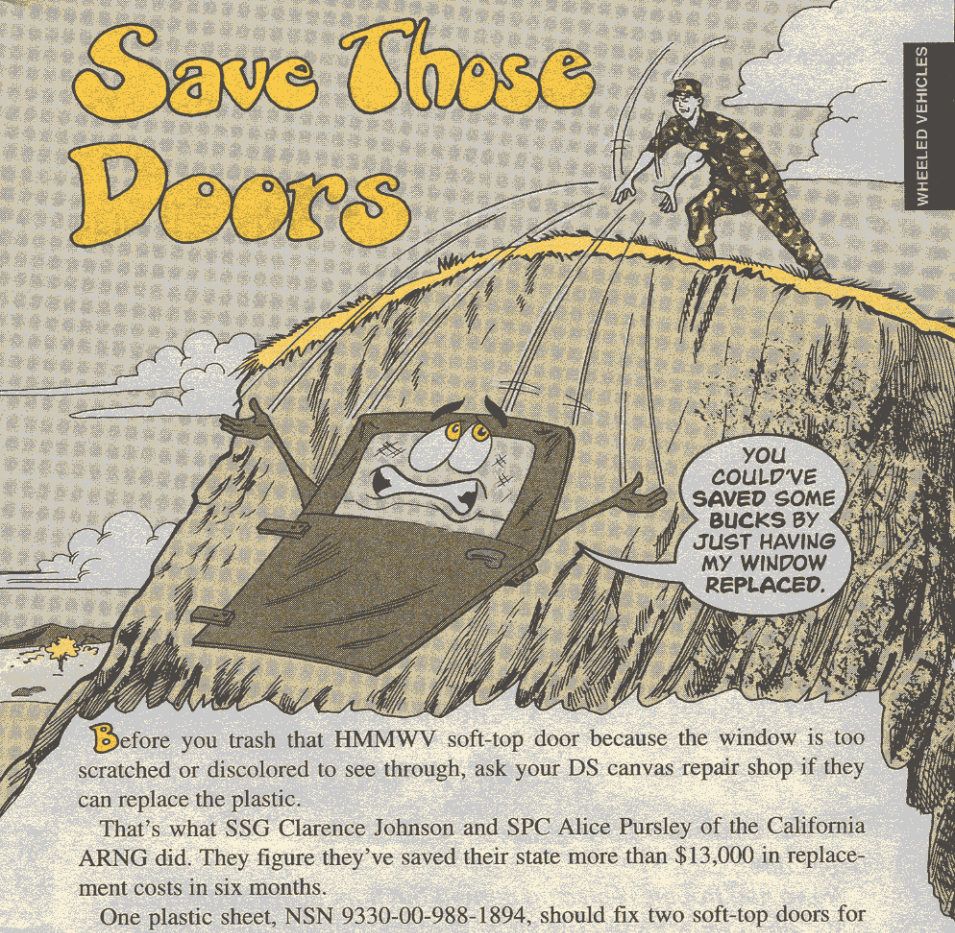
Mechanics, if you've found transfer case fluid in a HMMWV's air cleaner, you need a larger transfer case vent line.

That old vent line lets pressure build up that can push fluid into the cleaner. It can happen when the outside temperatures hit 80° F and you're driving long distances at 60 mph or faster. The fluid needs to stay in the transfer case to prevent premature wear and filter element damage.

Details on vent line replacements are on Pages 3-26 through 3-36 of TB 43-0001-39-8 (Mar 96). You replace the current vent line with a larger line and add an additional vent line to relieve the pressure.

Get the information from your local TACOM logistics assistance representative or write Half-Mast.

# Save Those Doors




Before you trash that HMMWV soft-top door because the window is too scratched or discolored to see through, ask your DS canvas repair shop if they can replace the plastic.

That's what SSG Clarence Johnson and SPC Alice Pursley of the California ARNG did. They figure they've saved their state more than $13,000 in replacement costs in six months.

One plastic sheet, NSN 9330-00-988-1894, should fix two soft-top doors for about $16 plus labor. New doors cost from $73 to more than $100.

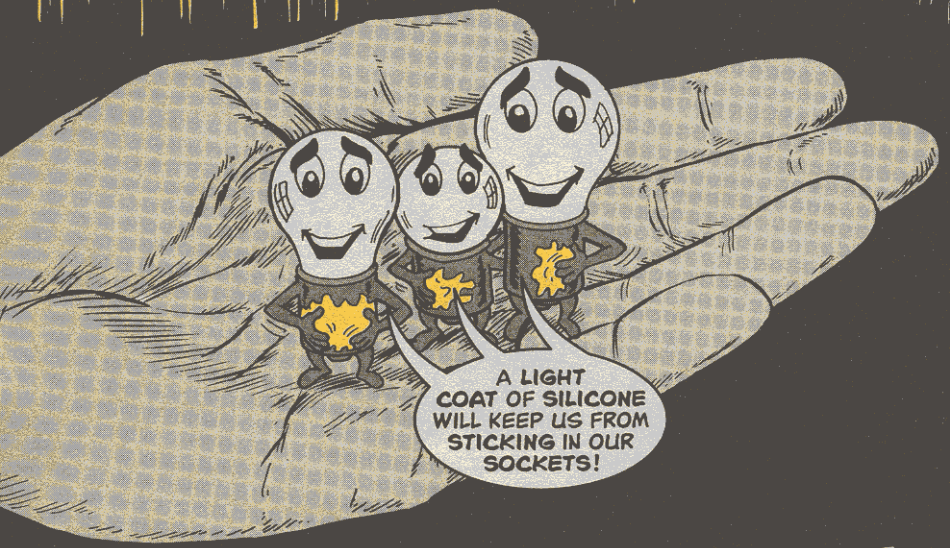
## Oil Pan Shroud Now "O"

**HMMWVs with arctic heaters will no longer stall unit mechanics who want to pull the engine's starter.**

**The starter is removed at unit level. But you have to remove the heater's oil pan shroud—a support job—to get to it.**

**No more. The headshed now says the shroud is removed at unit level, too. Page 3-23 of TB 43-0001-39-8 (Mar 96) has the details.**

# Lube Light Bulbs?




*Dear Editor,*

*We've had trouble replacing burned-out light bulbs in the trucks and trailers we work on. The sockets react with the bases of the bulbs and corrode.*

*Corrosion practically welds the bulbs in place. Some freeze so tightly that they break when you try to remove them.*

*We've fixed that problem by putting a thin coat of silicone grease, NSN 6850-00-963-5402, on the bulb base when we replace it. It stops the corrosion and makes removing the bulb a real breeze.*

*Bill Williams*
*ECS #33*
*Ft Riley, KS*

**FROM THE DESK OF THE Editor**

*Your tip sure brightened my day! Thanks!*

# Coupler Nut Torque

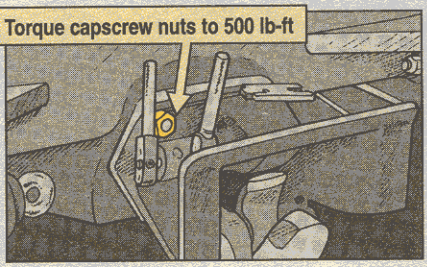
The capscrew nuts holding the self-guided coupler to the M1074 and M1075's rear cross member need 500 lb-ft of torque.

With the current 320 lb-ft of torque, the capscrews loosen, especially if you do much backing with the PLS trailer attached. If enough capscrews loosen, you could lose the coupler and any trailer you might be pulling.

Check the capscrews. If they are loose, damaged or missing, or if you can see they have moved—chipped or scratched paint around the heads—tell your mechanic.

Once any damaged or missing capscrews and nuts are replaced, the nuts must be torqued to 500 lb-ft.

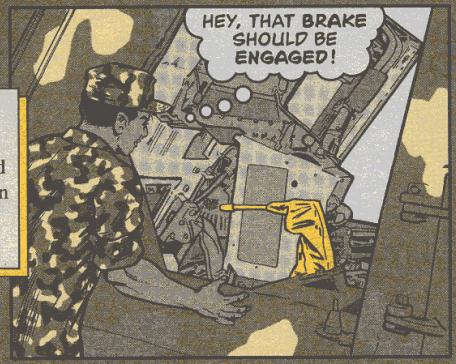
If the capscrews are not loose, damaged or missing, your mechanic should torque them as soon as possible.




# It's the Simple Things


**Open and secure the doors before raising the cab.** Unlatched doors fly open suddenly. That ruins the hinges—and your life if you're standing too close.


**Set the hand brake.** A disengaged hand brake will be crushed by the cab floor when the cab is lowered back into position.



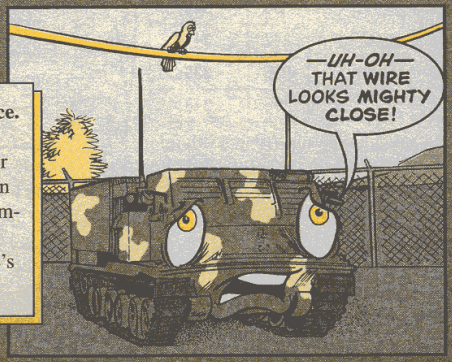



**Secure or remove all loose items inside the cab.** TMs, tools, and other gear shift suddenly when the cab is raised or lowered. They can break switches, gauges or even crack a window.

**Remove all items stored on top of the cab.** You won't forget twice if that gear comes crashing down on your head as the cab tilts forward.

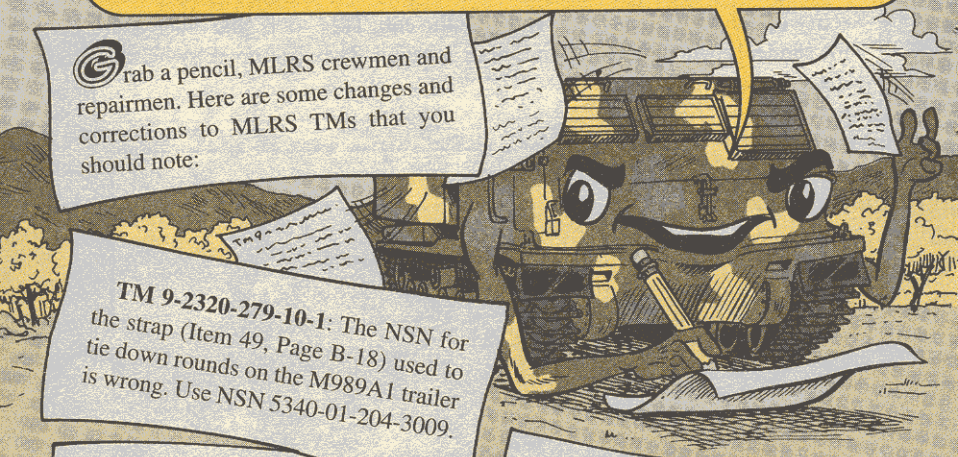

**Lock all louvers in place.** Unsecured louvers will swing outward suddenly as the cab is raised. You don't want to be standing anywhere nearby if that happens.

**Check antenna clearance.** Make sure there are no power lines, trees or other obstacles in the way when raising the cab. You'll damage the antennas—and maybe yourself—if there's something in the way.



# The TMs Are A'changing

Grab a pencil, MLRS crewmen and repairmen. Here are some changes and corrections to MLRS TMs that you should note:



**TM 9-2320-279-10-1**: The NSN for the strap (Item 49, Page B-18) used to tie down rounds on the M989A1 trailer is wrong. Use NSN 5340-01-204-3009.

**TM 9-1450-646-24P**: Several item numbers in the parts list on Page 32-4 don't correctly match the call-out numbers in Fig 32 (Sheet 11 of 11). On the parts list, change these item numbers:

| Item | Change to |
|---|---|
| 332 | 331 |
| 343 | 342 |
| 350 | 349 |
| 342 | 341 |
| 336 | 335 |
| 349 | 348 |

On Page 9-1, the self-locking nut (Item 5) should be NSN 5310-00-982-6809.

On Page 13-1, the self-locking nut (Item 4) should be NSN 5310-00-241-6664.

The electronic amplifier (Item 99 on Page 70-3 and Item 85 on Page 71-2) should be NSN 5895-00-267-7430.

**TM 9-1425-246-20**: The installation procedures (beginning on Page 2-168) for battery harness assemblies W7 and W8 forget to tell you to lockwire the harness connectors. If the connectors aren't lockwired, vibration loosens them and the launcher loses power. Para 4-4 in TM 9-1425-646-30-1 shows how to lockwire the connectors. Your support has a copy of the TM.

**LO 9-1450-646-12**: The fluid called out for the lockout and hydraulic systems is FRH (MIL-H-46170). Some cans of FRH, though, are labelled MIL-H-46170B—and they're fine to use. Note that in the LO.

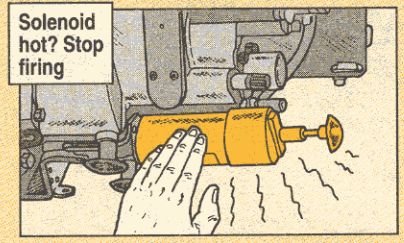
M242 Automatic Gun . . .

# COOL IT!

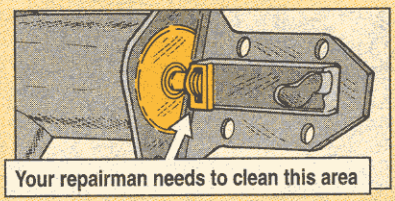
*Dear Editor,*

*If your Bradley's M242 automatic gun won't select when you go from HE to AP, dirt inside the feed select solenoid may be the problem.*

*Put your hand on the solenoid. If it's hot, stop trying to fire. You'll burn up the solenoid.*




*Tell your repairman. He needs to take off the solenoid and clean out any dirt that has built up where the solenoid fits on the feeder.*

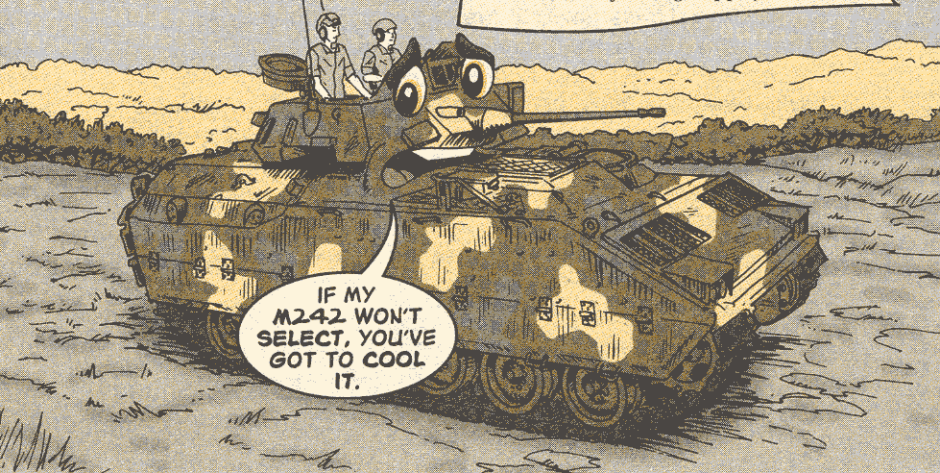



*Head off solenoid problems by checking it before you go to the field. With the M242 installed and turned on, feel the solenoid. If it's warm, your repairman needs to clean it.*

*Gary Williams*
*Arthur Holt*
*Ft Benning, GA*

**FROM THE DESK OF THE Editor**

*That's a hot troubleshooting tip. It should help Bradley crews to keep their M242s feeding happily.*



# A Little Detective Work


***Dear Editor,***

***We were having real problems with some M1-series tank turrets drifting while in normal or emergency mode. The daylight reticle on the gunner's primary sight (GPS) floated to the left and right and could not be nulled out no matter what we tried.***

***We discovered the answer to the problem completely by accident—when someone happened to turn off the radio.***

***With the AN/VRC-64 radio shut off, the problem went away. DS confirmed the AM-2060 power amplifier had an internal ground problem.***

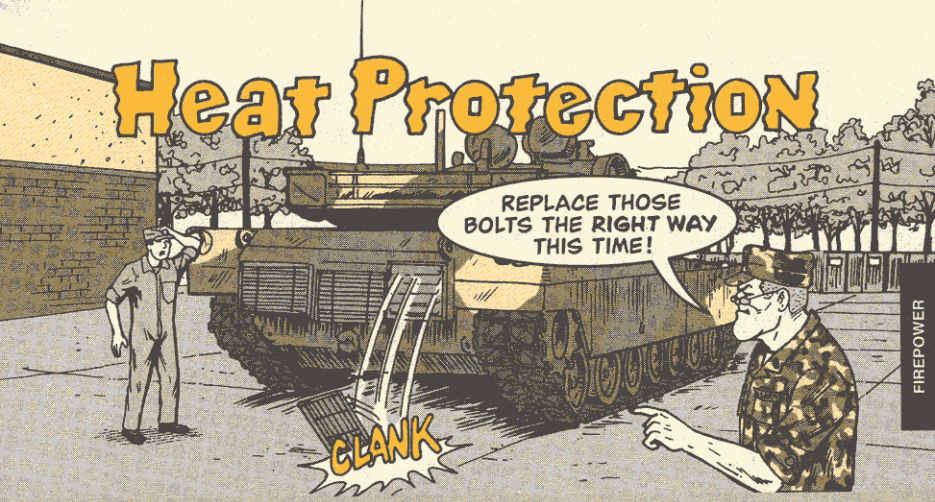
***Before going through all those GPS troubleshooting procedures, try turning off the radio. It could save you a lot of extra work.***

***SSG Erik L. Williams***
***1/34th AR***
***Ft Riley, KS***

**FROM THE DESK OF THE Editor**

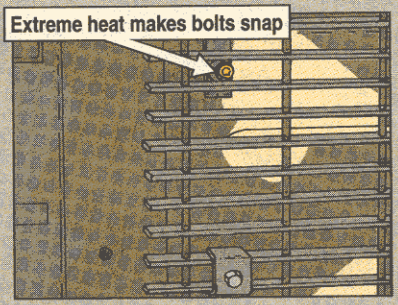
*Neat bit of detective work there, Sergeant! If the problem is a bum radio, turn it in for a replacement.*

# Heat Protection



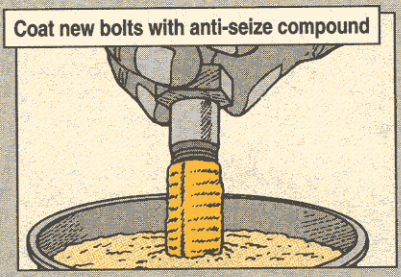



Broken heat shield and exhaust duct bolts on M1-series tanks are a common problem. Engine exhaust is so hot that the bolts crystalize and snap.




You're stuck drilling out the bolts and putting in new ones—over and over again.

Put an end to broken bolts. The next time you have to replace 'em, coat each new bolt with anti-seize compound, NSN 8030-00-105-0270.




The compound serves two purposes: it keeps the bolts from freezing in place, and it protects them against temperatures up to 2,400° F.

## M1A1/M1A2 NBC Hose

All stocks of hose, NSN 4720-01-213-7583, used for the M1A1 and M1A2 tank's NBC air cooling unit have been frozen. The hose has a safety defect which could cause a fire. Hose, NSN 4720-01-391-0771, is the replacement. Make a note until the TM is updated.

M1-Series Tanks . . .

# Watch Where You Stow It

Tankers have a knack for finding good places to stow their TMs, CVC helmets and other equipment. They sometimes find some really bad spots, too.

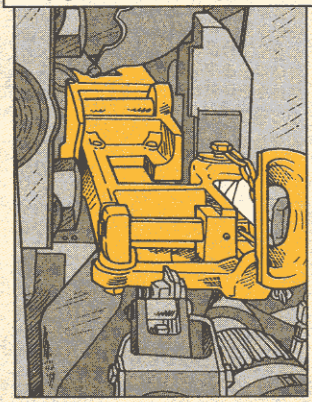
One such place is the M240 coaxial machine gun mount. When the main gun is lowered, the breech raises and crushes whatever is stored on top of the mount.

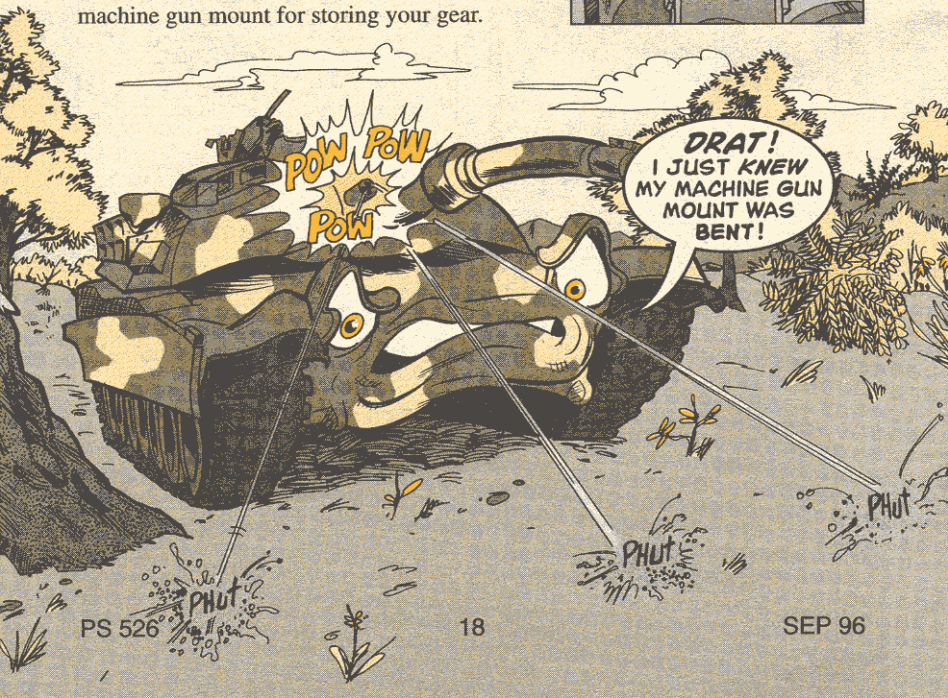
The pressure can be great enough to bend the mount itself. That changes its elevation and makes it impossible to zero out the machine gun level.

If the bend is bad enough, the bullets bounce off the walls of the flash hider and are deflected into the ground—or anybody unlucky enough to be in the way.

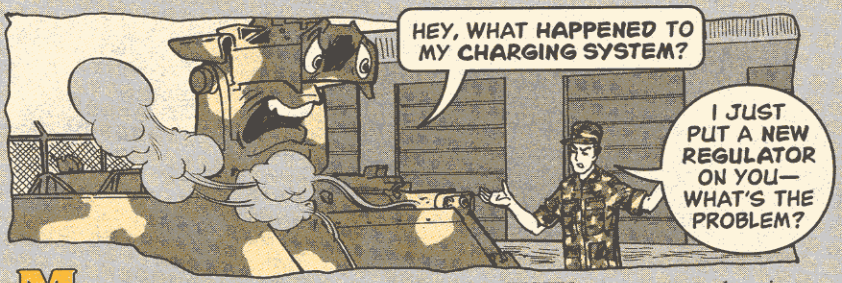
The only way to fix the problem is to replace the mount, NSN 1015-01-076-6842 (M1/IPM1) or NSN 1015-01-181-6023 (M1A1). So do yourself and your tank a favor. Don't use the M240 machine gun mount for storing your gear.

Keep gear off machine gun mount





# Use It or Lose It?

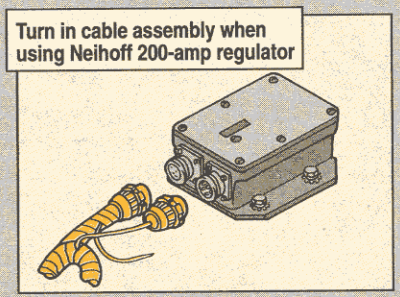




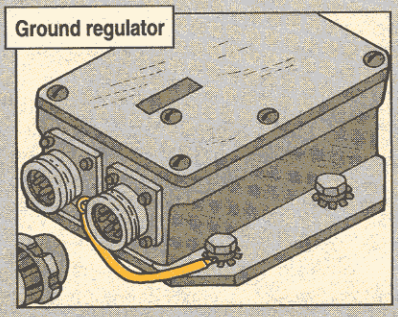

Mechanics, installing a new regulator on a FISTV means more than just changing a few screws and electrical connections.

First, you need to know if the FISTV is using special purpose cable assembly, NSN 6150-01-146-9008. That cable can be used **only** with the Leece-Neville 200-amp regulator.

Since the Leece-Neville regulator is no longer available, turn in the cable assembly to DS. Using the cable with a Neihoff replacement regulator, NSN 2920-01-300-3737, will damage the charging system.



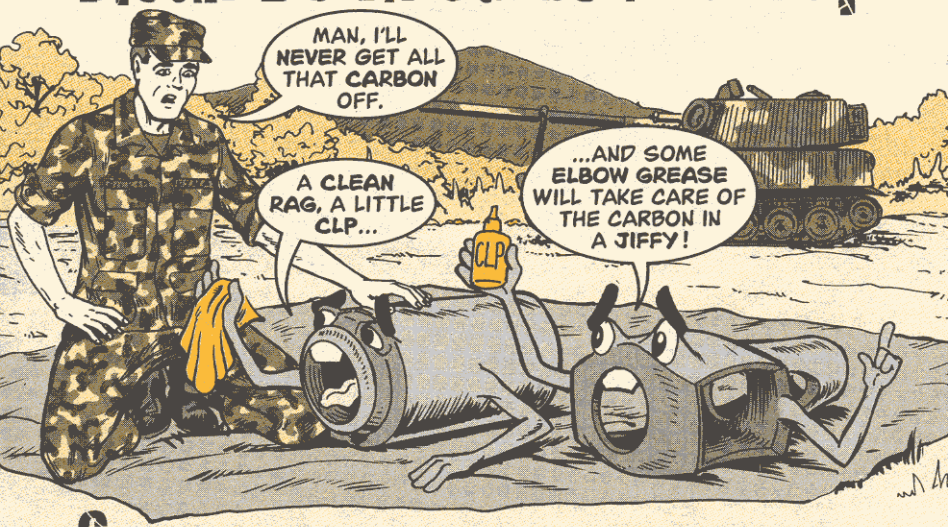

Second, you need a good ground to protect the charging system. Here's how to get it:




1. Attach a ground wire, NSN 2920-00-999-2100, to the regulator with a lockwasher, NSN 5310-00-550-1130, and nut, NSN 5310-00-761-6882.
2. Fasten the old mounting plate to the new regulator with four screws, NSN 5305-00-989-7435, and eight starwashers, NSN 5310-00-080-9786.
3. Put the regulator and mounting plate over the hull bosses. Then use one screw, NSN 5305-00-068-0501, the other end of the ground wire, and two starwashers, NSN 5310-00-067-6357, to secure one corner of the mounting plate to the hull.
4. Fasten each of the remaining corners of the plate to the hull using a screw and two starwashers.

M109-Series SP Howitzer . . .

# Break Down Carbon Buildup




Crewmen, if you want to shoot straight, keep the muzzle brake and bore evacuator on your M109-series SP howitzer free of carbon.

Every time you fire the cannon, a little carbon builds up inside. If you wait too long between cleanings, enough carbon accumulates to freeze the evacuator and brake in place. They become almost impossible to remove.

Avoid that sticky problem by inspecting, removing, cleaning, and greasing the parts according to the instructions in TM 9-2350-311-10 for the M109A2-A5 and TM 9-2350-314-10 for the M109A6. Here's how:

1. Eyeball the muzzle brake for cracks. If you spot one longer than one inch, you need a new muzzle brake.
2. Remove the muzzle brake and bore evacuator following the instructions in the operator's manual. The muzzle brake weighs about 350 pounds and the bore evacuator is no lightweight, either, so always use the proper lifting equipment.
3. Lay the parts on a clean dropcloth to prevent contamination by dirt or sand.
4. Scrub both items with CLP and a clean rag until they come clean.
5. Lightly coat the muzzle brake threads with general purpose grease, NSN 9150-00-985-7316, or molybdenum disulfide grease, NSN 9150-00-754-2595. Then, lube the inside, valve balls, valve ring, and all unpainted surfaces on the bore evacuator.
6. Reassemble the muzzle brake and bore evacuator following the instructions in the operator's manuals.

# A BASKET CASE




Operators, the stowage baskets on the back of your M109A6 Paladin are great for storing gear, tools, and other items. Too often, though, baskets end up damaged or missing because of a little forgetfulness.

The stowage baskets are normally attached to the sides of the Paladin. That makes it easier to move ammunition through the back door.

Unfortunately, that makes the baskets stick out quite a bit. It's easy to snag and damage them.

Play it safe. Whenever your vehicle faces a tight squeeze—like in a motor pool or a wooded area—swing the baskets around and attach them to the back of the vehicle.

## M992-Series Oil Gun Adapter

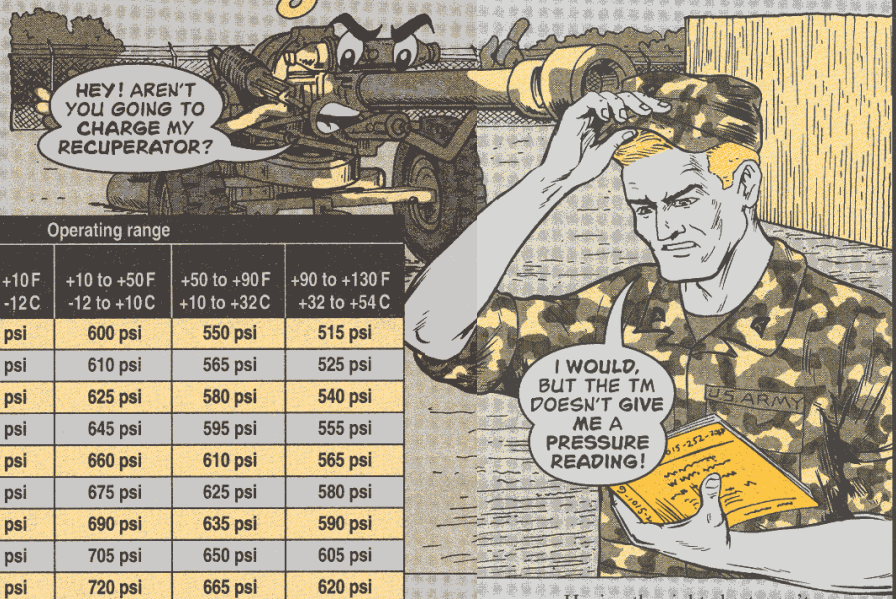
The oil gun adapter, NSN 4933-00-087-1267, that comes in your M992-series ammo carrier's BII only works with the M109-series SP howitzer. It was included in the ammo carrier's BII by accident. Turn in those unused adapters to your supply support.

# Turning the Tables

Mechanics, Table 3-1 on Page 3-48 of TM 9-1015-252-20&P comes up short on the list of pressures for charging the M119A1 howitzer's recuperator.

Until the TM is updated, use this revised table instead:

| Checking and charging temperature | Operating range: -70 to -30 F / -57 to -34 C | -30 to +10 F / -34 to -12 C | +10 to +50 F / -12 to +10 C | +50 to +90 F / +10 to +32 C | +90 to +130 F / +32 to +54 C |
|---|---|---|---|---|---|
| -70 F/-50 C | 710 psi | 650 psi | 600 psi | 550 psi | 515 psi |
| -60 F/-51 C | 730 psi | 665 psi | 610 psi | 565 psi | 525 psi |
| -50 F/-46 C | 750 psi | 685 psi | 625 psi | 580 psi | 540 psi |
| -40 F/-40 C | 770 psi | 700 psi | 645 psi | 595 psi | 555 psi |
| -30 F/-34 C | 785 psi | 715 psi | 660 psi | 610 psi | 565 psi |
| -20 F/-29 C | 805 psi | 735 psi | 675 psi | 625 psi | 580 psi |
| -10 F/-23 C | 825 psi | 750 psi | 690 psi | 635 psi | 590 psi |
| 0 F/-18 C | 840 psi | 765 psi | 705 psi | 650 psi | 605 psi |
| +10 F/-12 C | 860 psi | 785 psi | 720 psi | 665 psi | 620 psi |
| +20 F/-7 C | 880 psi | 800 psi | 735 psi | 680 psi | 630 psi |
| +30 F/+1 C | 895 psi | 815 psi | 750 psi | 695 psi | 645 psi |
| +40 F/+4 C | 915 psi | 835 psi | 765 psi | 710 psi | 660 psi |
| +50 F/+10 C | 935 psi | 850 psi | 780 psi | 720 psi | 670 psi |
| +60 F/+16 C | 950 psi | 865 psi | 795 psi | 735 psi | 685 psi |
| +70 F/+21 C | 970 psi | 885 psi | 810 psi | 750 psi | 700 psi |
| +80 F/+27 C | 990 psi | 900 psi | 825 psi | 765 psi | 710 psi |
| +90 F/+32 C | 1005 psi | 915 psi | 840 psi | 780 psi | 725 psi |
| +100 F/+38 C | 1025 psi | 935 psi | 850 psi | 790 psi | 735 psi |
| +110 F/+43 C | 1045 psi | 950 psi | 875 psi | 805 psi | 750 psi |
| +120 F/+49 C | 1060 psi | 965 psi | 890 psi | 820 psi | 765 psi |
| +130 F/+54 C | 1080 psi | 985 psi | 905 psi | 835 psi | 775 psi |



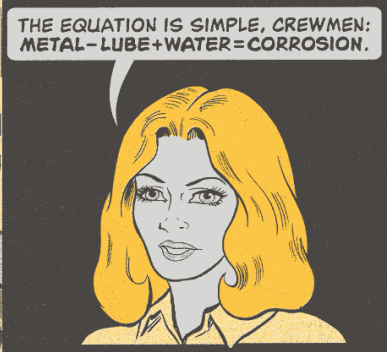

Having the right chart won't help much unless you use it properly. Here's how:

1. Determine the temperature of the room or area where the checking/charging will be done. Locate this temperature in the left hand column of the chart.
2. Find the temperature in which the howitzer will be operating and locate that temperature in the top row of the chart.
3. Read across from the charging temperature and stop under the operating temperature column. You'll find the correct charging pressure where the two columns meet.





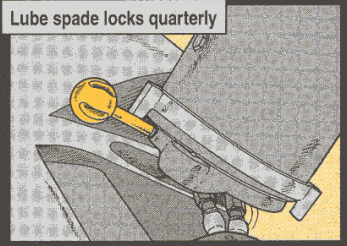
# Figure It Out




That formula holds especially true for the spade locks on your M110A2 SP howitzer.

If you forget to lube the threads on both spade locks quarterly with GAA, corrosion sets in and the locks freeze. Your spade's going nowhere.

Lube spade locks quarterly



Trying to force the locks is a big mistake, too. Some crewmen kick the lock handles or bang them with a hammer. All that gets you is a broken handle and a big repair bill.

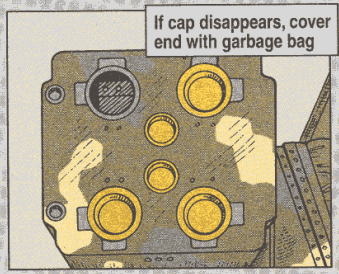
If the locks freeze up, tell your mechanic. He'll try to loosen 'em up with some penetrating oil.

# Keep It Clean


If dirt and moisture manage to get into the Avenger's standard vehicle mounted launchers (SVML), you're sure to have firing problems. Clean up dirt and moisture problems like this:

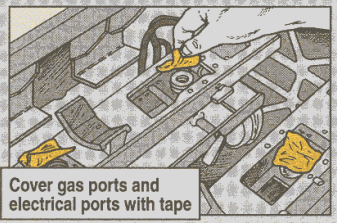
Keep protective caps plugged in both ends of the SVMLs and into the holes for viewing the pressure gauge on the coolant reservoir assembly. If you've lost the caps, order the rear caps with NSN 5340-00-855-7993, the front hole caps with NSN 5340-00-157-5624, and the caps for the pressure gauge holes with NSN 5340-01-348-6514.

Until the caps come, cover both ends of the SVMLs with garbage bags and tape.





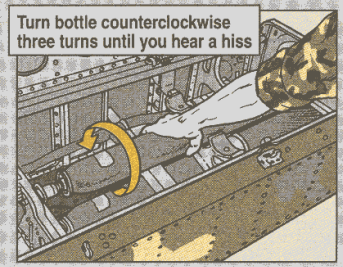

Put tape over the coolant ports and electrical plugs inside the SVMLs when you're not operating. Even a little dirt in ports and plugs can cause big coolant and electrical problems.



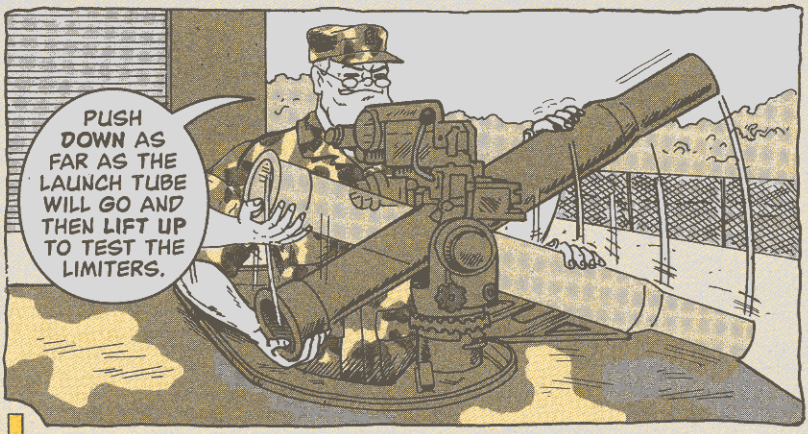

Keep the protective collars on the coolant reservoir bottles when the bottles aren't installed. The collars protect the bottle connectors from damage.

If you need more bottle protective collars, order them with NSN 1440-01-281-1195.


When you're not in the field, release the pressure of the coolant reservoir bottles. Open each bottle's quick release clamp and twist the bottle three turns counterclockwise until you hear a hiss. Close and latch the quick release clamp. If the reservoir bottles are left hooked up, the 6,000 pounds of pressure eventually causes leaks in the coolant system.



# Limiters and Clamps




If the elevation-depression limiters and coupler clamp are missing or unable to do their job, your whole TOW-HMMWV system is NMC—and dangerous.

## Limiters

The limiters are sometimes removed during repair and not put back on the traversing unit (TU). Without limiters, the launch tube can suddenly swing up or down during firing.

During BEFORE PMCS, look for both limiters. If they're missing, report it.

If they're in place, test them. Put the launch tube on the TU. Elevate the launch tube as far as it will go. Gently push down on the tube's rear end to make sure the elevation stop holds.

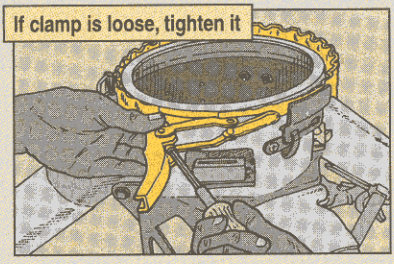
Test the depression stop by tipping the launch tube down as far as it will go. Gently push up on the tube's rear end.

If either stop gives, report it.

## Clamp

If the coupler clamp is missing, report that, too. Without the clamp, the tripod or adapter may not hold the TU tight, which hurts accuracy and is unsafe.

Test the clamp by locking the TU on the tripod or adapter. If you can move the TU side-to-side, tighten the coupler clamp's screw to increase clamp tension. If that doesn't clamp the TU in place, your repairman needs to check it out.



P.S

**F**amily of
**M**edium
**T**actical
**V**ehicles

# Not Your Father's Deuce and a Half

THE ARMY'S CURRENT 2½-TON TRUCKS AND SOME OF ITS 5-TONNERS HAVE BEEN AROUND SO LONG THAT YOUR FATHER COULD HAVE DRIVEN THEM.


LIFT STAPLES IN CENTER TO REMOVE THIS SECTION


The headshed calls them the Family of Medium Tactical Vehicles (FMTV). Here's what you'll call them:

**2 1/2-ton LMTV:**

- M1078 cargo
- M1079 van
- M1080 chassis
- M1081 air drop cargo

**5-ton MTV:**

- M1083 cargo
- M1084 cargo w/MHE
- M1085 cargo Long Wheel Base (LWB)
- M1086 cargo (LWB) w/MHE
- M1088 tractor
- M1089 wrecker
- M1090 dump
- M1092 chassis
- M1093 air drop cargo
- M1094 air drop dump
- M1096 chassis (LWB)

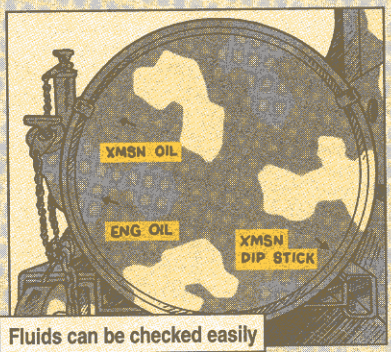
The 2 1/2-ton trucks are in TM 9-2320-365-series manuals and the 5-ton trucks are in TM 9-2320-366-series manuals

## Mark These Improvements

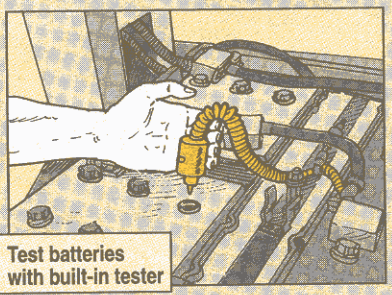
If they're new, these trucks must be better than the old ones, right? You got it. Check out these improvements:

★ More than 80 percent of the parts for both trucks are the same. Most of what you'll need to repair or replace on one truck will be what you'll need to repair or replace on the other.

★ PM checks and services are easier. For example, all fluid levels can be checked from outside the trucks and batteries can be tested with a built-in tester.



Fluids can be checked easily

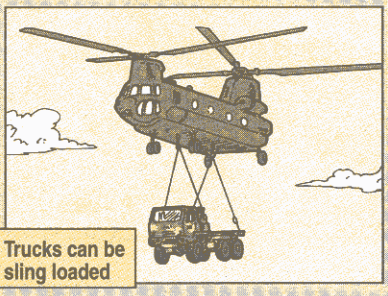

Test batteries with built-in tester

★ FMTVs have more power. The 2 1/2-ton has 225 HP and the 5-ton has 290 HP. The power is applied through an electronically controlled automatic transmission.


★ All are equipped with a central tire inflation system (CTIS).

★ Cargo bed sides, NBC equipment, weapons and other equipment can be stored on-board.

★ FMTVs are built for air transport or helicopter sling-load.



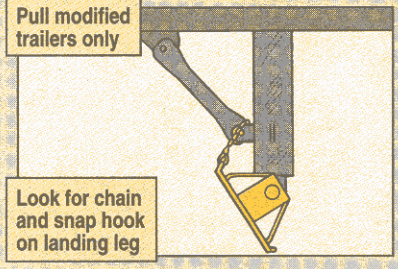

## Maintenance Preview

So, after this buildup, what do drivers and mechanics need to do to keep these vehicles rolling? Here's a heads up:

★ Since they use two different types of hydraulic fluid, you must use the right fluid in the right place. MIL-H-5606 (it's red) goes in the backup hydraulic pump reservoir and the air/hydraulic power unit reservoir. These operate the cab tilt, spare tire carrier and suspension compression systems.

The other hydraulic systems use OE-HDO-10 engine oil. Never use engine oil in the backup pump or air/hydraulic power unit or they will lock up.

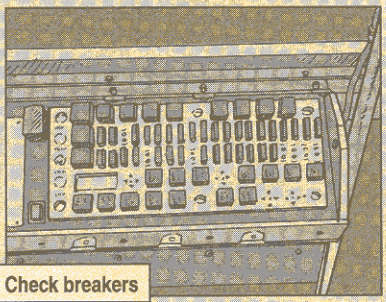
★ Before you tow any of the following semitrailers, make sure the landing gear has been modified so that the pads swing rearward and are secured with a chain and hook: M967/A1, M969/A1, M970/A1, M127-series, M128-series, M129-series, M270A1 and M146.




Without modification, the landing gear hits and rubs against the truck tires.

Info on modifying the trailers is on Pages 3-31 through 3-33 in TB 43-0001-39-7 (Dec 95). See your local TACOM LAR for a copy or write to Half-Mast.

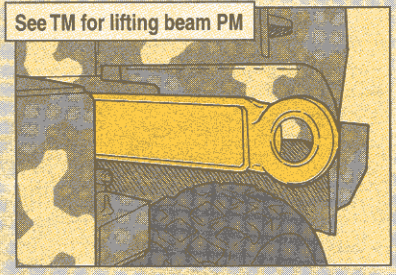
★ Your first check if you have electrical problems is the circuit breaker panel. Reset any tripped breakers. If they keep tripping, call in your mechanic.



Check breakers

★ All FMTV transmissions "learn" to match shift points to driving conditions. The electronic control unit will adjust shifting when you first get the vehicle, make drastic changes in terrain or change the load. Once the truck goes through the gear range a couple of times, shifting smooths out.

★ All trucks have lifting beams as standard equipment. They're used to sling-load the FMTVs. Service the beams every 6,000 miles or six months in normal conditions. In severe conditions, service every 1,000 miles or monthly.

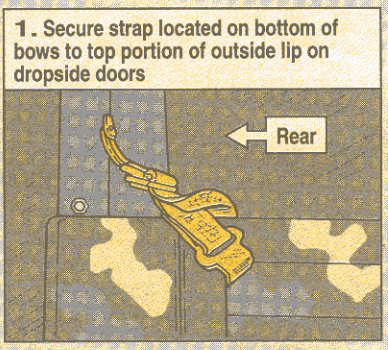


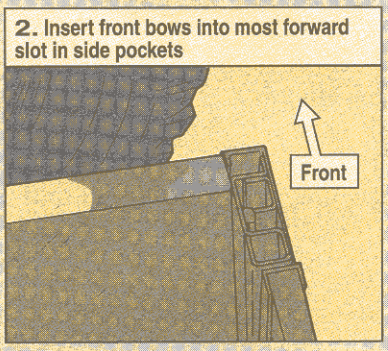
See TM for lifting beam PM

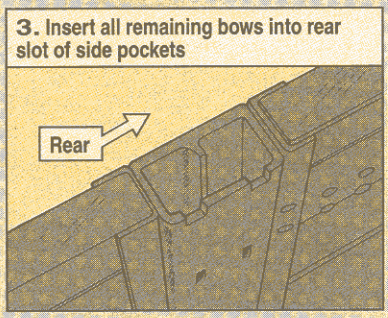
Clean the beams with P-D-680 dry cleaning solvent or its equivalent and then apply a light coat of GAA.

## Bows and Tarps

★ You must install cargo bows right or they'll interfere with the troop seats. Here's how:

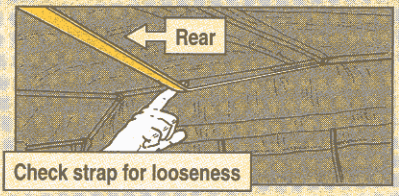



Then tie the bows together by putting the brace strap on the upper center

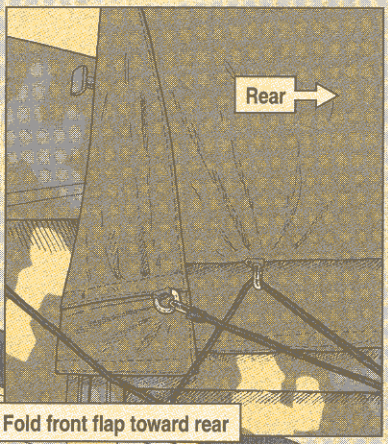
portion of all of them. Check that the strap is not too loose or too tight. If it's too loose, the braces may fall out when you try to install them. If it's too tight, you won't be able to install the braces/stringers at all.



Check strap for looseness

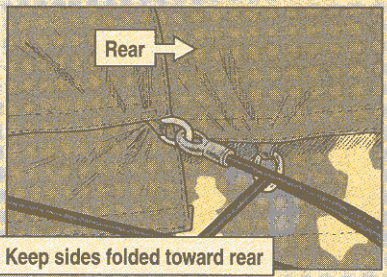
After you've installed all the braces/stringers, tighten the brace strap securely.

Put the tarp on by beginning at the front bow and rolling it rearward.



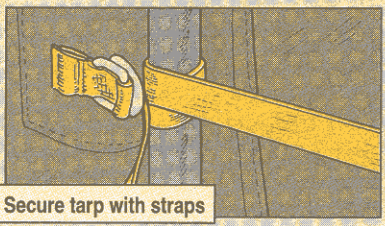
Fold front flap toward rear

Always fold the sides toward the rear to avoid flapping damage. Use tie-down



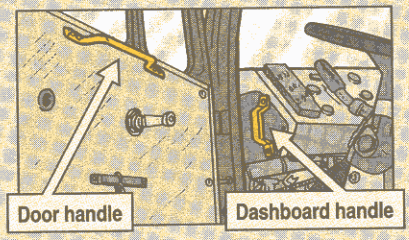
Keep sides folded toward rear

straps to secure the tarp to the bows using the wrap-around technique.

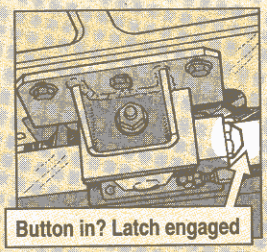

Secure tarp with straps

Remember this: The bows and tarps for the FMTV are not interchangeable. For quick ID, stencil the tarps and mark the bows. A good way to mark the bows is to use etcher, NSN 5130-00-596-8404, from the No. 1 Common shop set.

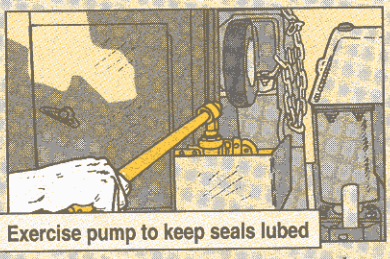
★ Use the dashboard handle to pull yourself into the cab. Do not use the door handle. It's only designed for closing the door and cannot support your weight.




★ Make sure the cab is locked down before driving the trucks. Climb onto the cargo bed and look at the hydraulic cab latch. If the button on the right end of the latch is **in**, the latch is engaged. If the button is **out**, it's not. Do this check every time you begin a mission.



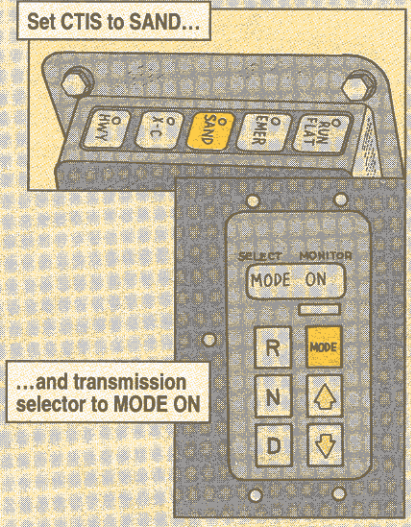

★ All vehicles have a manually operated hydraulic pump for the cab tilt, suspension compression and spare tire lowering and raising mechanisms if the powered systems fail.




Exercise the pump every month so seals don't dry out and leak.

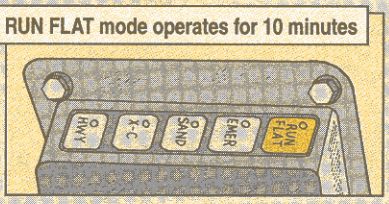
## CTIS Hints

★ Whether operating in sand or mud, set CTIS to SAND mode, set the transmission shift selector to MODE ON, and then pick a lower gear range for added traction.




★ If you're on a mission and the CTIS starts flashing all sorts of lights, try this:

1. Stop the truck and turn the MASTER POWER switch OFF.
2. Turn the MASTER POWER switch ON.
3. Select the RUN FLAT mode.



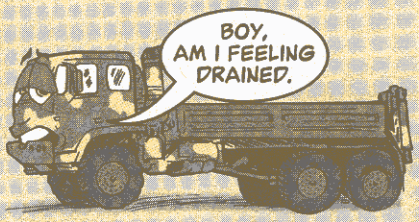

4. Start the engine.

This should reset the CTIS and you're good to go. If it doesn't, tell your mechanic after you get back to the motor pool.

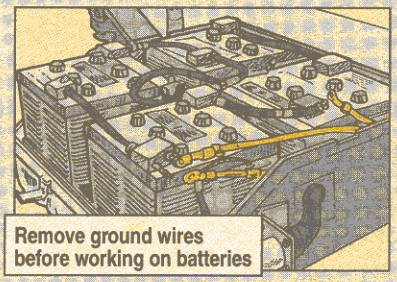
Your truck is still mission capable. RUN FLAT mode works a max of 10 minutes and shuts off. That helps protect system seals. You can reset it for another 10 minutes, and keep resetting it until you get back home.

★ Make sure the main power switch is OFF when you're finished using the materiel handling crane on the wrecker or 5-ton cargo truck.

If you leave the switch ON, power continues to drain from the batteries.




★ Vehicle batteries are grounded through three terminal leads. Before doing any maintenance other than fluid checks and battery service, disconnect and secure all three leads so you don't get shocked or burned.



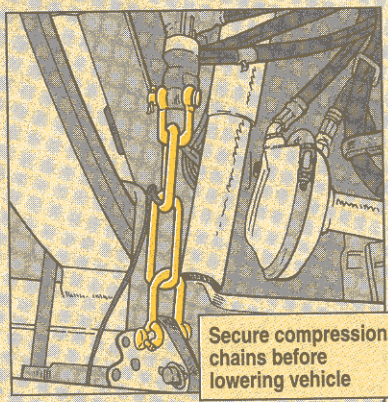

Two leads are fastened to one battery cable terminal lug, and the other lead is fastened to a second lug. Get 'em all.

## Airloading

★ The tires, suspension and cab air springs can be raised and lowered to simplify loading an FMTV in an aircraft. The -10 TM is your key, but pay attention to these items:

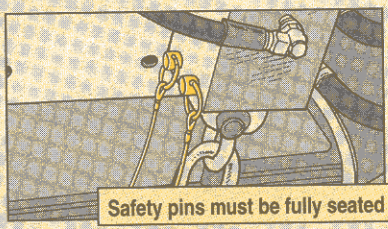
Drive only in first gear, and on smooth surfaces—no gravel, etc.—when the tires are in the air transport mode. Make sure the truck is clear of the aircraft before inflating the tires. The truck can be driven while the tires are inflating, but only on smooth surfaces while in first gear. After a minute or two of inflation, any gear or surface is OK.

When lowering the truck, secure both suspension compression chains. Operators can be severely injured or killed if the compression chamber fails.



Secure compression chains before lowering vehicle

The suspension is completely lowered if the cylinder adapter is fully retracted and the safety pins can be fully seated in the adapter.



Safety pins must be fully seated

If necessary, use the backup pump to fully retract the cylinder rod until the safety pins can be inserted.

Make sure there's enough room above the cab to raise the suspension. If there's not enough room, you can damage the cab. You may need to use the backup pump to fully retract the cylinder rods to remove the safety pins.

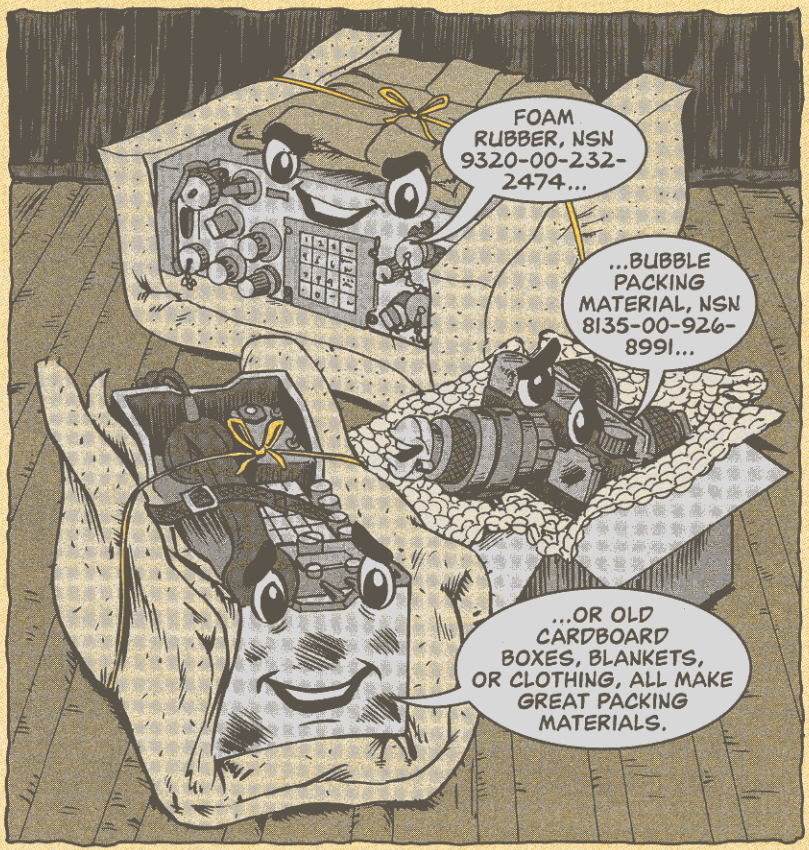
Cab air bags must be deflated and safety pins installed for air transport operations. The pins must be removed and the bags reinflated after air transport. Never operate the truck without cab air bags inflated, except for internal air transport operations.

# PACKING POINTERS

Before you send off your commo gear to the maintenance shop for repair, make sure it's safely packed for the trip.

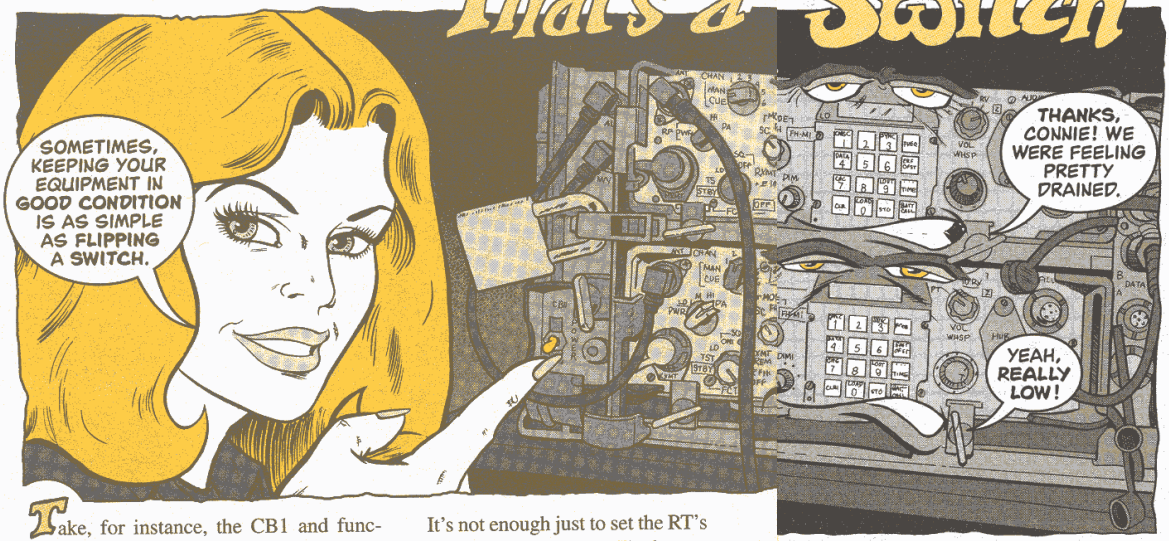
Equipment left sitting loose in the back of a truck or in a shelter can bounce around once you're on the move. That can turn a minor repair into a major repair.

Pack the commo equipment in whatever cushioning material is available—anything that'll protect it during the ride. Here are a few suggestions:




Ask your support people to hang on to the cushioning material. You'll need it for packing when you pick up the repaired items.

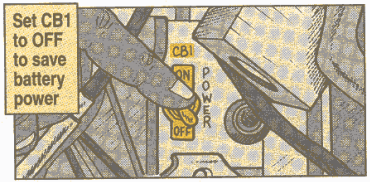
# That's a Switch




Take, for instance, the CB1 and function switches on your SINCGARS vehicular radio. The right switch settings can save vehicle battery power as well as data in the receiver-transmitter's (RT) memory.

## CB1 Controls the Power

When you're through communicating, turn off the CB1 power switch on the AM-7239 mounting adapter any time you shut down your engine. If the switch is left on, the radio draws power from the batteries.

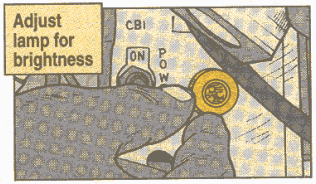



It's not enough just to set the RT's function switch to OFF. The batteries will still drain if the CB1 switch is on.

## A Good Indication

A lighted indicator lamp beside the CB1 switch tells you main power is on.

The light's easy to spot at night, but it's harder to see in bright daylight.






If the lamp doesn't light with the switch on, make sure it's not dimmed so low you can't see it. To make the lamp brighter, turn its lens to the left. If the light still doesn't come on, ask your unit maintainer to replace the lamp, NSN 6240-00-763-7744. If you don't get a light with the new lamp, ask your unit maintainer to troubleshoot the radio.

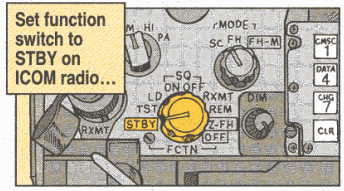
For blackout conditions, turn the lens to the right to dim the light. Turning it all the way to the right puts out the light altogether. When blackout is lifted, reset the lens to make the light brighter. That way it will alert you when the CB1 switch is left on.

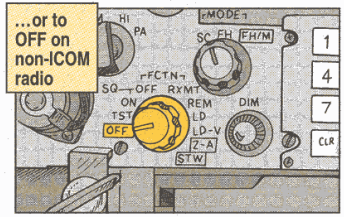
## Resetting Function Switch

The RT's function switch holds the key to saving your radio's data during shutdown. Remember to reset it before you turn off the CB1 switch.

If you need to save data in the RT's memory, follow these shutdown procedures:

- Set the RT's function switch to STBY on your ICOM radio. If you have a non-ICOM radio, set the function switch to OFF.




- Turn the CB1 switch OFF.
- Shut down the engine.

If you don't need to save data, shut down like this:

- Set the RT's function switch to OFF on your ICOM radio or to STW on your non-ICOM radio.
- Set the CB1 switch to OFF.
- Shut down the engine.

# Slings and Things

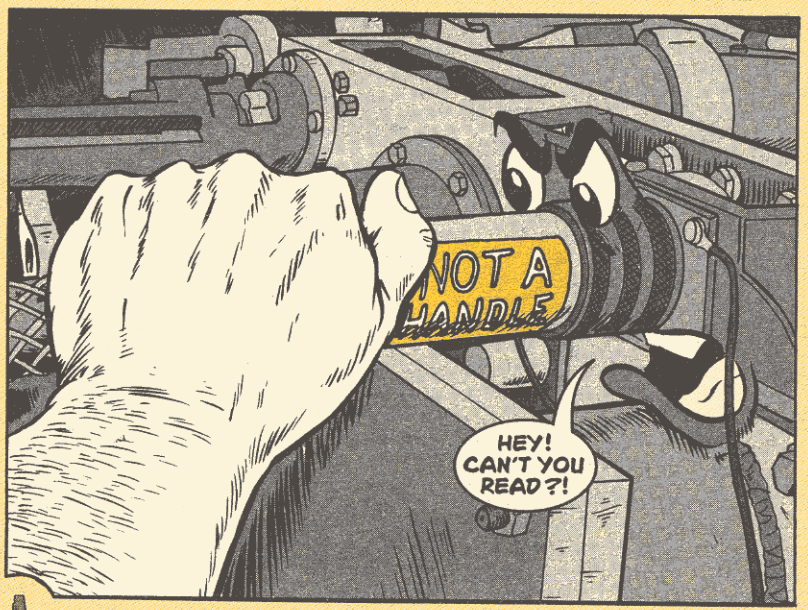
Your S-280 commo shelter TM doesn't list the parts for the holddown assembly. Get the complete assembly with NSN 3940-00-805-5533. Use these NSNs to get the individual parts of the assembly:

| Item | NSN or PN |
|---|---|
| Cable assembly, consisting of: | 4010-01-351-1428 |
| Safety hook assembly | 4030-01-238-6957 |
| Cable, 3/8-in diameter | SC-D-36424-1 |
| Sleeve, 28-23-H5 | 4030-00-445-6210 |
| Turnbuckle | 5340-01-174-8396 |
| Thimble | 4030-01-172-7126 |
| Plate and eyebolt assembly, consisting of: | 5410-00-030-6925 |
| Sleeve, 871-1-Q | 4030-00-466-2575 |
| Sleeve, 28-1-C | 4030-01-164-0205 |
| Cable, 1/16-in diameter | SC-C-595076-1 |
| Plate | 5340-01-344-6918 |
| Eyebolt | SC-B-595075 |
| Ring assembly, consisting of: | 17-1-5304 |
| Ring, weldless | 17-1-5304-1 |
| Cable, 3/8-in diameter | 17-1-5304-2 |
| Sleeve, 28-23-H5 | 4030-00-445-6210 |
| Thimble, G-414-3/8 | 17-1-5304-4 |

Order the part-numbered items on DD Form 1348-6 using CAGE 81337.

AN/TPN-18A Radar . . .

# NOT A HANDLE




A word of advice before you climb onto the antenna assembly of the AN/TPN-18A radar set: Never use the elevation antenna drive data cable as a handhold to pull yourself up.

The cable's screwed onto the data connector on the antenna assembly. If you pull yourself up by the cable, you could yank out the data connector.

So that you don't forget, put some tape on the data cable. On the tape in indelible marker, write "NOT A HANDLE".

TACFIRE . . .

## Paper Patter

When you load a pack of paper into your TACFIRE system's electronic line printer (ELP), toss the pack's cardboard bottom.

If you don't, the PAPER LOW light won't come on when the paper runs low. The cardboard makes the ELP think it still has plenty of paper to print on.

When the paper's gone, the ELP prints on the bare helix. That can damage the printing surface.

# Image Is Everything


Your AN/UXC-7 lightweight digital facsimile will suffer a tarnished image unless you spruce it up with a little PM. Here's how:

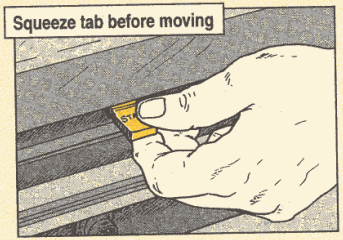
A facsimile mounted in a vehicular shelter is exposed to lots of dust. Keep the cover closed over the fax when you're not using it, or dirt and dust will coat and clog moving parts.

Close cover to keep out dust

Never oil or lube the fax. Lube tends to slow up moving parts. It can even make them stick completely.

Never reset the margins without first squeezing the margin release tab. Trying to slide the tab without squeezing it wears down the rubber teeth on the belt drive. Worn out teeth let the belt slip.

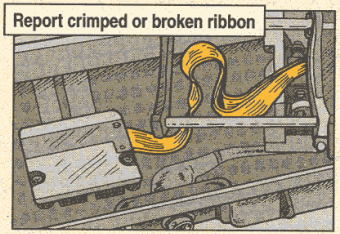
Squeeze tab before moving





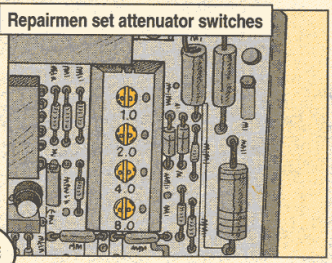
Take a look at the power impulse ribbon. A crimped or broken ribbon can keep the stylus from printing the way it should. If it's crimped or broken, report it.

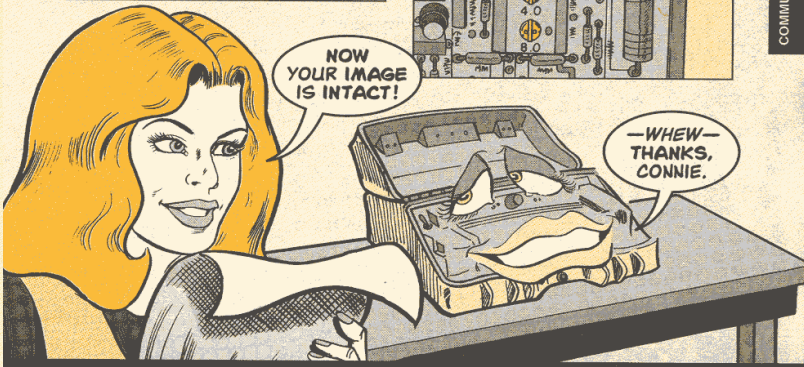
Report crimped or broken ribbon



If your fax fails to get an image, the problem could be with the AT1 attenuator on the FM modem circuit card. The attenuator switches could be set for civilian commercial telephone circuits only. Tell your unit maintainer, who will take it to direct support.

Repairmen set attenuator switches




## PP-7286 Cables

Before you can charge batteries with the PP-7286 battery charger, you need the right charging cables.

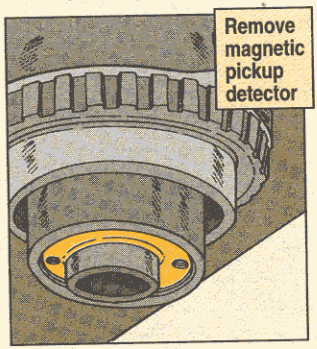

| Battery | Part No. | Cable NSN |
|---|---|---|
| BB-699, -704 | 1303490 | 5995-01-072-1020 |
| BB-503 | MX-10154 | 6130-01-092-6754 |
| BB-505, -507, -557, -590 | CX-13145 | 5995-01-086-3222 |

AH-64A . . .

# Use Jackscrews, Jack

Meet Jack. He's an Apache mechanic. He's working on a lean and mean main transmission. His job…remove the magnetic pickup detector.


Jack knows there is only one way to do it right and that's by using jackscrew set, NSN 4920-01-395-5208. But Jack's in a hurry. And Jack doesn't feel like hunting up the jackscrew set. And Jack's pretty sure that with a little hand wiggling the detector will pop off.




So he does, but it doesn't.

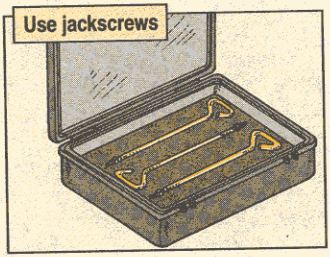
What does happen is the alignment pin, the transmission housing and the magnetic pickup get damaged.

Jack doesn't know that yet. He's still got to get the detector off. So he reaches in his overall pocket for his pliers.

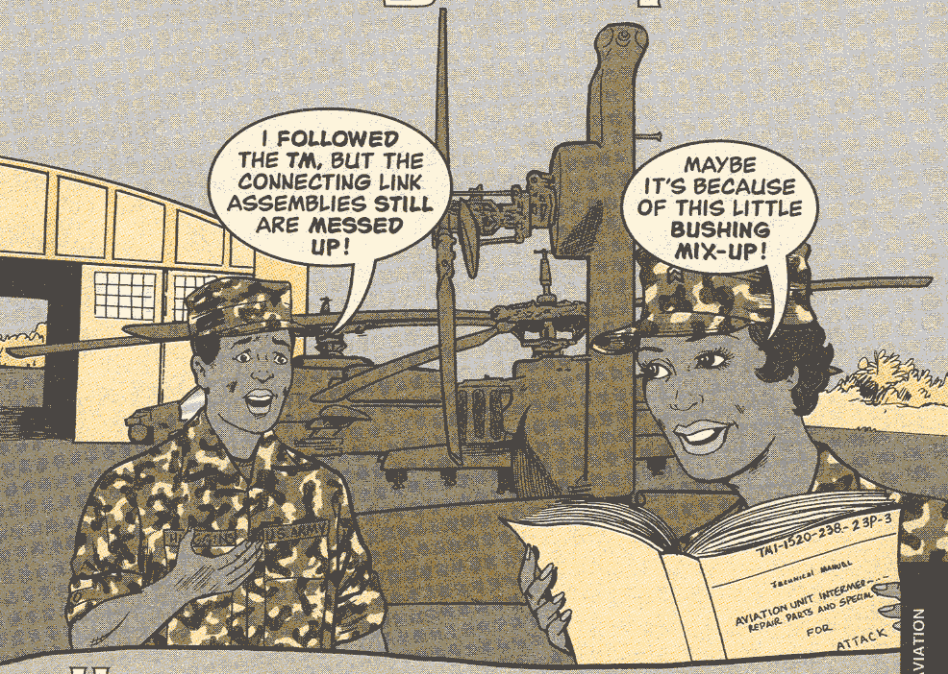
The detector is shot and Jack has screwed up.

Mechanics, when you remove the main transmission magnetic pickup detector, use jackscrews.

Any other tool and any other maneuvering and you'll damage the detector.



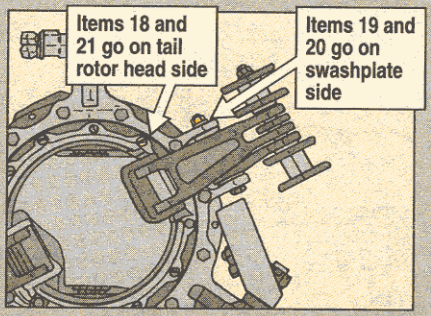
# The Right Space






Heads up, Apache mechanics! Fig 656 of TM 1-1520-238-23P-3 is wrong about the connecting link assemblies on the tail rotor pitch control. Items 18 and 20, the sleeve bushings, are reversed.

Here's what goes where: shear bolt, Item 19, NAS1304-37DH, and sleeve bushing, Item 20, HS5542-04120, go on the swashplate side; shear bolt, Item 21, NAS1304-33DH, and sleeve bushing, Item 18, HS5542-04119, go on the tail rotor side.




Don't switch 'em! The differences in sizes of the sleeve bushings means they're not interchangeable. The differences are small, but enough that switching the bushings could result in too much stress on the connecting links, tail rotor fork and the swashplate.

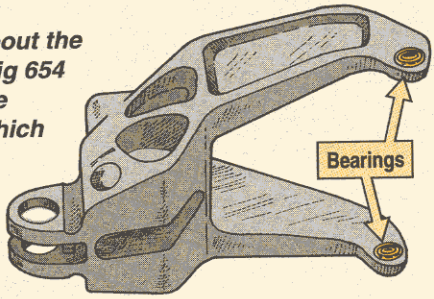
AH-64 . . .

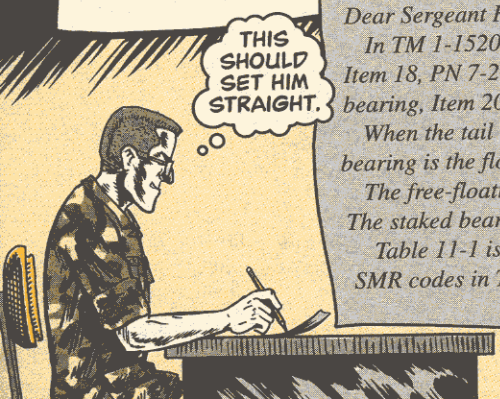
# Tail Rotor Bellcrank Bearings


***Dear Windy,***

***There's a lot of confusion about the bearings, Items 18 and 20 in Fig 654 of TM 1-1520-238-23P-3, on the Apache tail rotor bellcrank. Which one is free-floating and which one is staked? Also, can either one, or both, be relaced at AVUM level?***

***SGT R. A. A.***




*Dear Sergeant R. A. A.,*

*In TM 1-1520-238-23P-3, 28 May 96, the top bearing, Item 18, PN 7-211525060, is free-floating. The bottom bearing, Item 20, PN HS4736KR5CWGH, is staked.*

*When the tail rotor bellcrank is installed, the forward bearing is the floating bearing.*

*The free-floating bearing can be replaced at AVUM. The staked bearing is an AVIM job.*

*Table 11-1 is wrong and will be changed to match the SMR codes in TM 1-1520-238-23P.*

*Windy*

# A PLACE FOR EVERYTHING

*Dear Windy,*

*Keeping a hangar organized—with a place for everything and everything in its place—helps eliminate FOD and accidents.*

*Two storage problems because of their frequent use are rags and dry sweep. We solved these problems with heavy-duty trash containers.*

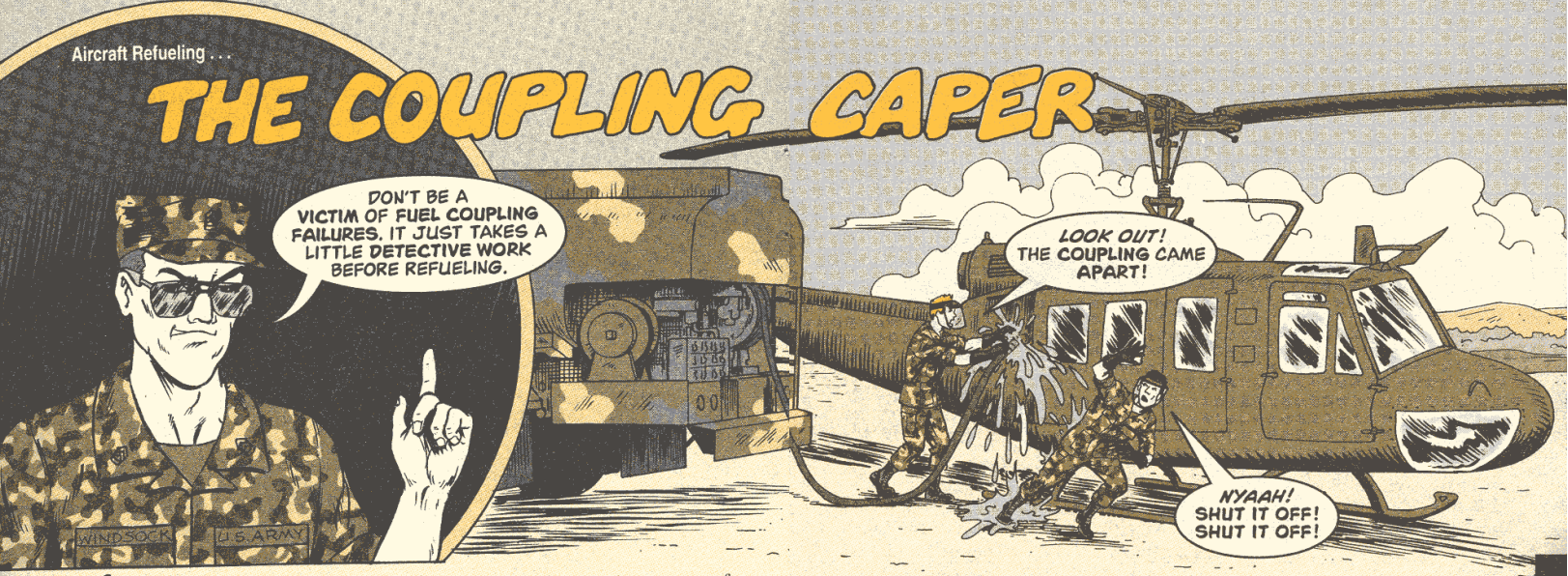
*Mark the containers for CLEAN RAGS, USED RAGS, CLEAN DRY SWEEP and USED DRY SWEEP. Paint a matching mark on the hangar floor.*

*SGT Alan Fox*
*2/82 Avn Bn*
*Ft Bragg, NC*

*A contained substance in a contained area. Good idea, Sergeant.*

*Windy*

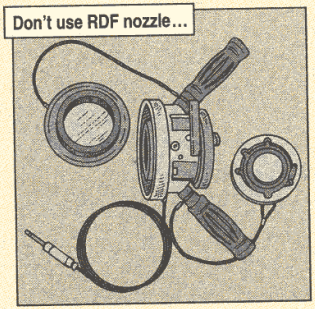
# THE COUPLING CAPER

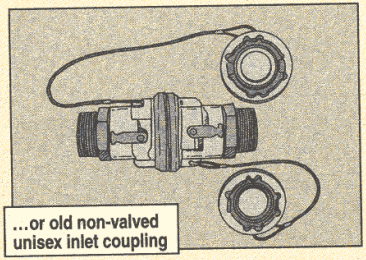



Many mechs are trying to unravel a maintenance mystery. It's the mystery of refueling couplings that break and spray fuel. Like any good mystery, there are good guys and bad guys—victims and villains. And yes, even sex. Well, unisex.

So whodunit and why?

The caper starts with the Aeroquip Corporation's closed circuit refueling (CCR) nozzle assembly, NSN 4930-01-214-2909, and the pressure fuel service RDF nozzle, NSN 4930-01-214-0991. The nozzles are good guys with bad hearts. That heart, the villain, is the non-valved unisex inlet coupling (or adapter).






The inlet coupling is not always compatible with the other unisex hoses and adapters in the field.

They fit together all right, but because of the location and angle of entry of the coupling interlocking pin, they don't always lock together.

Without this lock, the nozzle may separate from the hose at the coupling. When this happens, fuel is sprayed on the aircraft and the refueler. Then…FIRE!

For the CCR nozzle, there is a fix.

Right now, check all your Aeroquip CCR nozzles for the villain…er… coupling, PN AE84524R. Use the description in your TM to spot the coupling since it does not have its part number stamped on it. If your nozzles have the bad coupling, remove it. Break off the unisex locking tangs and dispose of the coupling.

Install a new, non-valved unisex coupling, PN AE70725R. The new coupling has the part number stamped on it, so you can't mistake it for the old one.

If you don't have the new coupling yet, don't use the nozzle.

Unfortunately, there is no quick, easy fix for the RDF nozzle, so, at least for now, don't use these nozzles.



PS MORE

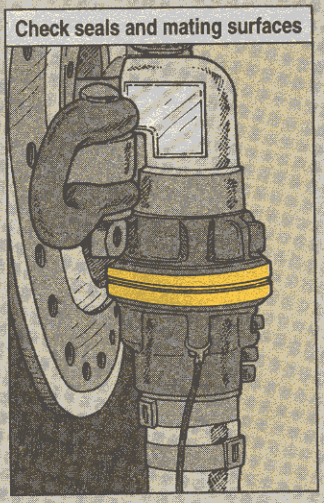
Even when you have all new couplings, it's a good idea to check the nozzle during PMCS to make sure the new coupling is installed. An old coupling may have found its way from the back of a supply shelf to your nozzle.

Also, when you use the Aeroquip CCR nozzle, always make sure that the coupling you are connecting it to was also made by Aeroquip Corp. If you try to connect an Aeroquip CCR nozzle to a coupling made by another manufacturer, you may not get a good lock and the nozzle could disconnect during fueling. Then…FIRE!

If at all possible, do all coupling checks and inspections, visual and mechanical, before you reach the fueling site.

The second villain in this story is poor maintenance on the coupling.

During normal refueling system PMCS, check all your unisex couplings for damage. Eye the locking tangs, mating surfaces and seals. Follow your TM for damage limits. When in doubt, turn the coupling in.



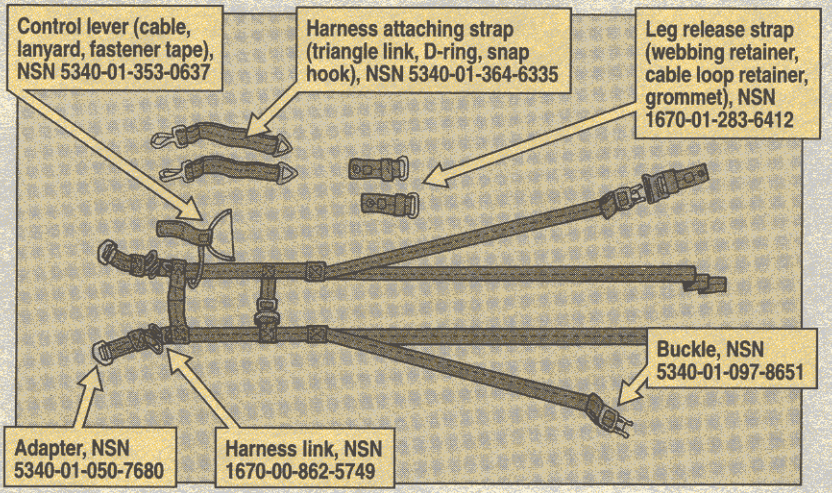

On non-valved couplings, make sure the coupling interlocking pin moves freely when the split ring is pulled and released.

On valved couplings, make sure the valve moves freely. Also, make sure the coupling interlocking pin extends from the face of the coupling when the flow control handle is moved from the closed to the open position. The flow control handle must move freely with only a few pounds of applied force.

Never use tools of any type to move the flow control handle on valved couplings. Tools apply too much force. Too much force causes damage to the safety interlocking mechanism.

# PARACHUTE HARNESS PARTS

Here are the available repair parts for the single-point release harness, NSN 1670-01-227-7992, for the troop parachute system.




**UH-1 . . .**

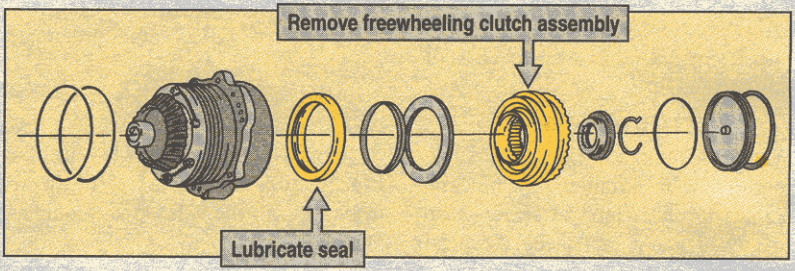
## Stop a Leaking Quill

If your Huey's transmission quill assembly is leaking oil, it could be a sign of a seal problem in the input drive quill.

To keep the seal from leaking in the future, do this before you install a new input drive quill (Para 6-108 of TM 55-1520-210-23-1):

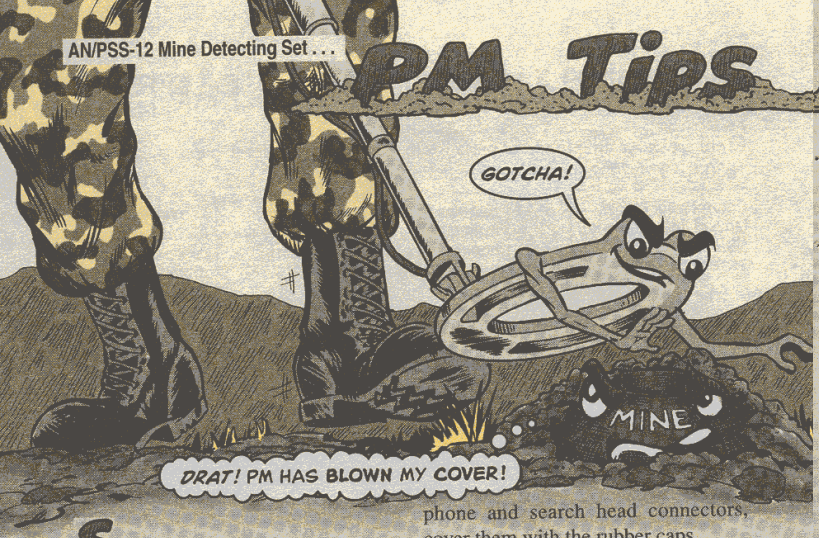
**1.** Remove the freewheeling clutch assembly (Para 6-103).

**2.** Lubricate the seal (Item 10 of Fig 6-26), following the info in Para 6-107.



AN/PSS-12 Mine Detecting Set . . .

# PM Tips Unearthed




Somewhere out there a minefield lies in wait—hidden, silent, deadly. All that stands between you and this lurking danger is your AN/PSS-12 mine detecting set.

For your own safety, keep your mine detector in first-rate shape.

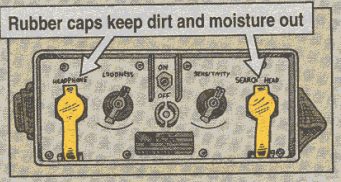
## Total Collapse

Never collapse the telescopic pole by setting the search head on the ground and pushing against the pole. The force could damage the search head, the joint or the plastic bolt.

Instead, hold the AN/PSS-12 completely off the ground when you collapse the pole.

## Cover 'em

Dirt and moisture can foul connectors on the electronics unit, blocking signals to and from the search head. So, when you're not using the headphone and search head connectors, cover them with the rubber caps.




## Eh? What's That?

When your mine detector finds a metal object, it sounds a tone in the headphone. Problem is, if you keep the LOUDNESS knob turned all the way up, the sound will eventually damage your hearing.

Here's the right way to set the controls and save your hearing:

Before you turn the set ON, turn the LOUDNESS and SENSITIVITY control knobs all the way down (counterclockwise).

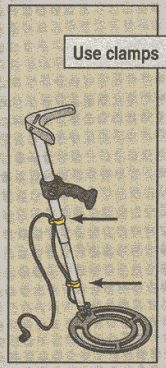


Turn the set ON and turn the LOUDNESS knob to adjust the volume to the lowest comfortable level.

Adjust the SENSITIVITY knob during operations as needed to eliminate interference.

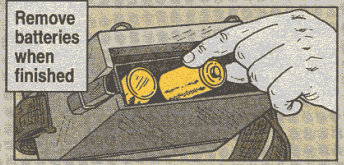
## Clamp's a Champ

Always use the cable clamp, NSN 5340-21-905-5919, from your set's plastic carry bag, to hold the search head cable away from the telescopic pole. If the cable touches the pole, you'll get false tones and spend time digging for things that aren't there.




## Battery Banter

When you're finished using the mine detector, remove all four D cell batteries from the electronics unit. Left inside, the batteries could leak and corrode the battery box.




When you put the cover on the box, make sure the cover's beveled edge is facing the rear of the electronics unit. That's the only way it will fit snugly and make good contact.

## Making a Case

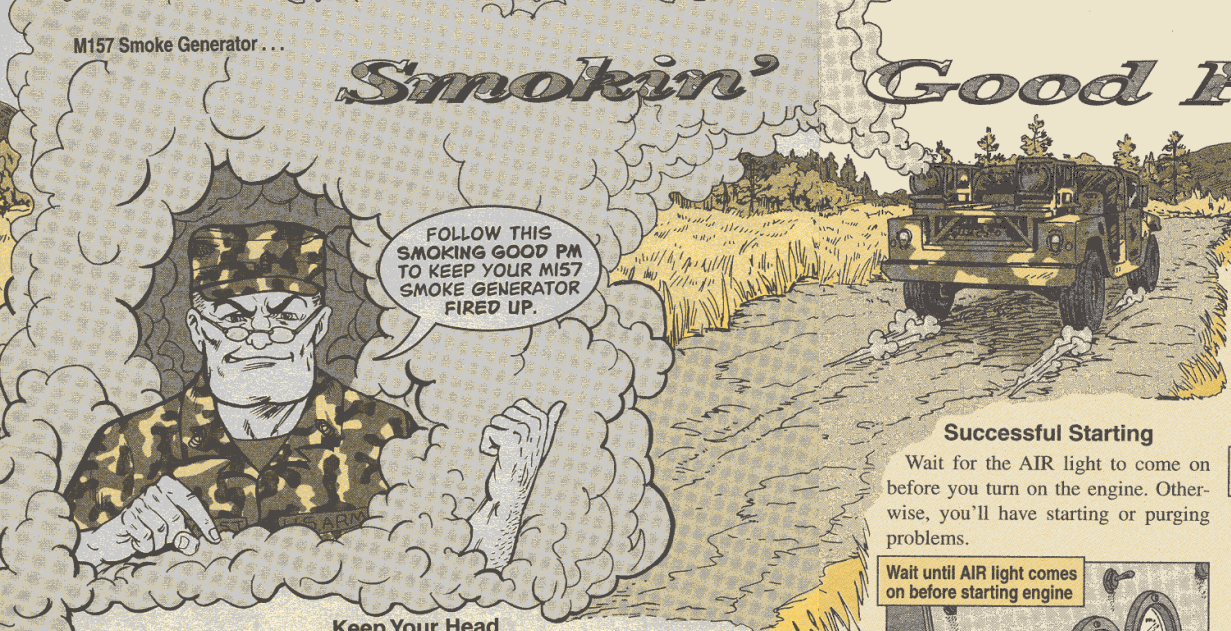
Always store the AN/PSS-12 and accessories in the carry bag. The bag's made to hold all the pieces safely in place. It also keeps out dirt and dust.



Once everything's in the bag, zip it up and slide it into the metal transport/storage case. The case protects the AN/PSS-12 against hard knocks, especially during shipment.

During air travel, open the pressure relief valve on the lid of the metal case. That will equalize air pressure and keep the case from bulging out. To open the relief valve, turn the captive screw counterclockwise.

# Smokin' Good PM

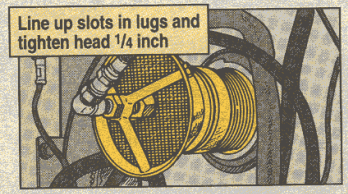



## Keep Your Head

To screw in the head, line it up so that the lugs on the head fit into the cutouts in the combustion chamber. Tighten the head about 1/4 inch—and stop.

If you muscle it tighter, the head's lugs bend. The head will seal poorly with the combustion chamber. The only fix is a new head.

After the M157 has been smoking, the head will be burning hot. You need a heavy-duty glove to safely handle the head. Your winter gloves or a rag won't cut it. Use the glove in the M157's Additional Authorization List in TM 3-1040-279-12&P. It comes with NSN 8415-01-092-3910.

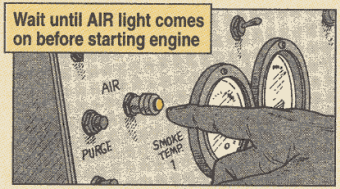




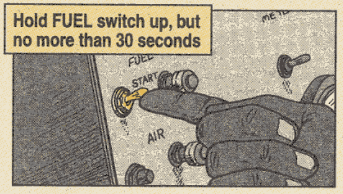


## Successful Starting

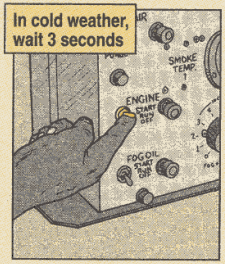
Wait for the AIR light to come on before you turn on the engine. Otherwise, you'll have starting or purging problems.



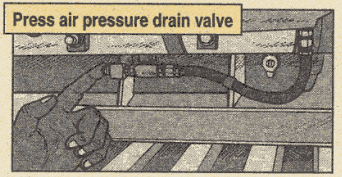

You must hold the FUEL switch up—you can't flick it up. But never hold it up longer than 30 seconds. You'll burn out the FUEL switch or the K101 relay on the generator.




The M157 may need a little extra starting help in cold weather after sitting all night. The TM says to release the ENGINE switch as soon as the ENGINE indicator lights. Instead, listen for the engine actually starting and then wait three seconds before releasing the ENGINE switch. That gives the engine more fuel and air and a better chance of starting.

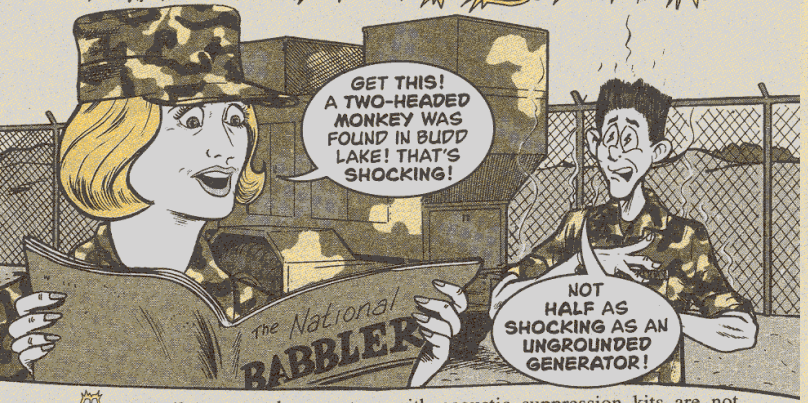



Before and after operation, hit the air pressure drain valve for a couple of seconds. If you forget, moisture dampens the air compressor filters. The compressor will have trouble building up air pressure and you'll have trouble starting your M157.



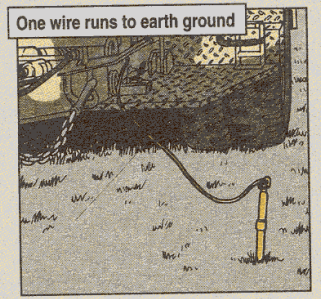
15- and 30-KW Generators . . .

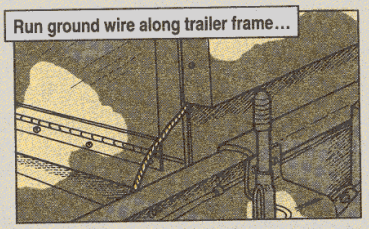
# The Shocking Truth

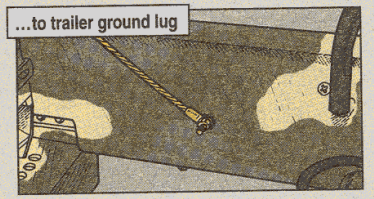



Many trailer-mounted generators with acoustic suppression kits are not grounded correctly. Shocking!

Make sure you have a good ground. Look for a copper ground wire running from the generator ground lug along the trailer frame to the trailer ground lug. If it's missing, have DS install one. Then, make sure another wire runs from the trailer ground lug to earth ground. If there isn't one, install one yourself.

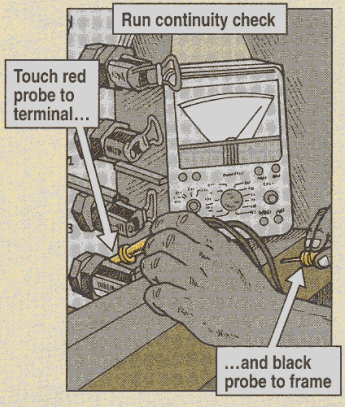


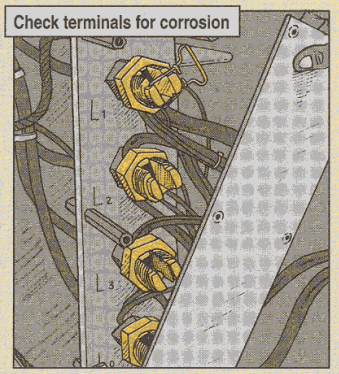






Before you start your generator set, look for loose or broken ground wires. Run a continuity check between $L_o$, the grounding terminal on the generator, and the trailer ground lug. Report any problems to your support unit.




And while you're at it, look at the terminals and ground lugs for dirt, grease, corrosion, and paint. They can kill a good connection. Remove dirt and grease with solvent, NSN 6950-00-281-1985. Use sandpaper to get rid of any corrosion or paint.




6-HP Mil Std Engine . . .

## Ignition Coils Up or Down

*Dear Editor,*

*There are two manufacturers of the ignition coils, NSN 2920-01-131-8253, used in the 6-HP Mil Std engine.*

*If you get coils made by Colt, install them both DOWN like TM 9-2805-262-14 says.*

*If you get Teledyne coils, place one up and one down. If you try to put them both down, the generator backfires and won't give continuous power.*

*SGT Vernon R. Defoor*
*OKARNG*
*Ft Sill, OK*

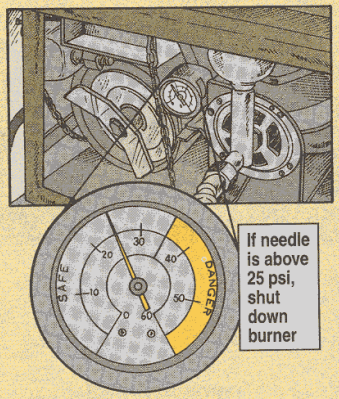
**FROM THE DESK OF THE Editor**

*Sounds like you're coiled for action! Thanks for the tip.*

# Stress Gauge Safety


The pressure gauge is the best indicator of the condition of your M2 burner unit.

Keep a close eye on the gauge, even though your M2 has a safety valve. Make sure it reads 6-20 psi. If pressure climbs to 20-25 psi, turn the flame valve knob clockwise and lower the flame to about half size. Let it burn that way for 30 minutes. Check the gauge frequently.

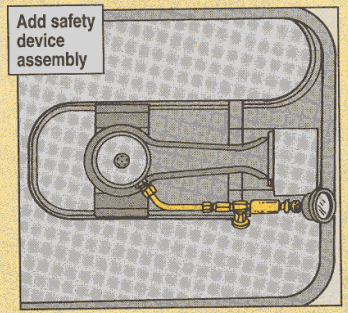



If pressure builds above 25 psi, the burner is much too hot, so shut down the burner. Turn the flame valve clockwise until it's tight. Then take the burner out of the range cabinet. Let it cool before lighting it again.

If it goes over 25 psi on the second try, report it to your mechanic.

## Can't See It?

TM 10-7360-204-13&P says that a safety valve device should be installed on all burner units. This also puts the air pressure gauge out where it is easy to read.





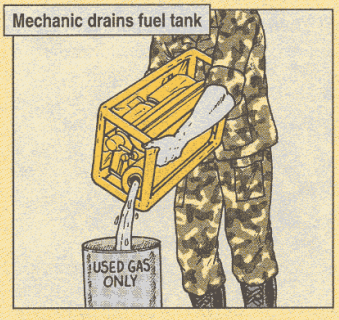

To order a complete safety device assembly, use NSN 7360-01-343-9014. This assembly comes with a nipple and 45° elbow already added.

Some of the older M2 burners just need the nipple, NSN 4730-00-196-1964, and the elbow, NSN 4730-00-448-5214, between the air tank fitting and the air pressure gauge.

Check out Para 4-9.11 for installation instructions.

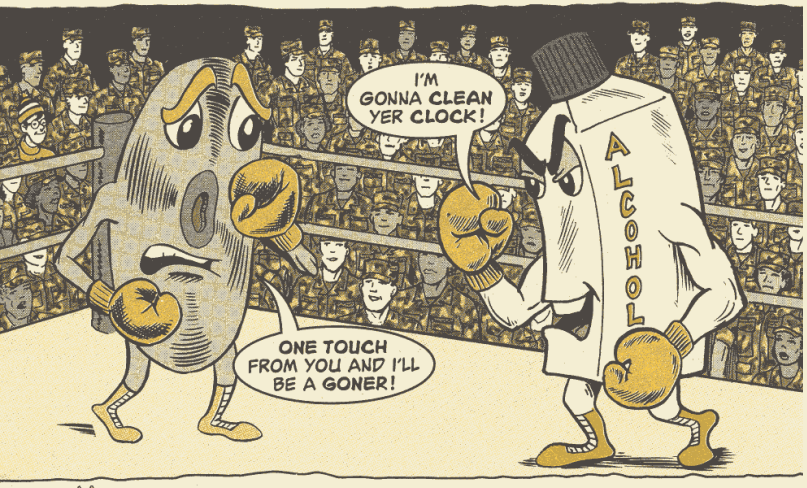
## Safety Valve Test

Get your mechanic to test the safety valve quarterly or every 250 operating hours by draining all the fuel from the tank into an approved container and pressurizing the tank to 60 psi.




If the safety valve doesn't bleed down to between 20-25 psi, it's broken. Replace it.

# FIGHT DISC FAILURE




More and more logistics products are being put on CD-ROM. But, if you don't take good care of the discs, you won't be able to read them when you need to. Fight CD damage with these PM tips:

⊙ **Hold discs by the edge.** Skin oils can damage the disc surface so the reader can't read the information.

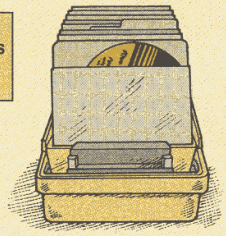
⊙ **Clean discs with a soft cloth, using a sweeping motion from inside to outside.** Never use a circular motion that follows the spiral track. That could damage the disc.




Don't use solvents or harsh chemicals to clean discs. Alcohol and paint thinner damage the disc.

⊙ **Store the disc in storage containers when it's not in use.** You can ruin the disc just by writing on a piece of paper with the disc hiding underneath.

Storage containers protect discs



Never burn, cut, shred, or pulverize discs. CD-ROMs contain materials that could be hazardous to your health.

On the FEDLOG and ARMYLOG, check out CD recycling information under bulletins.

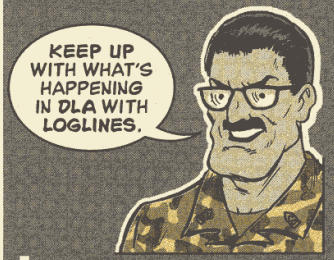
**ARMYLOG Bulletins**

- Beginner Instructions
- Help File Access
- Users Manual Access
- Enter a NIIN or LIN
- Incorrect Data? Use DIREP
- ARMYLOG Subscriptions
- RTAIS Subscriptions
- Microfiche Account Cancellation
- CD Recycling
- LOGSA Customer Support
- The Army Price Challenge Program
- SB 38-101 (CD-ROM)
- ARMYLOG Extraction Software
- DA Pam 25-30 (CD-ROM)
- NSN Not in the AMDF?
- FREE! FREE! FREE!





## Lifeline and Loglines




Loglines gives information on new products, replacement items and safety concerns on Defense Logistics Agency (DLA)-managed items.

To get on distribution, write:

Loglines
MMBC, Defense Logistics Agency
8725 John J. Kingman Rd, Suite 2533
Ft Belvoir, VA 22060-6221

Or fax your request to:

DSN 427-7523
Commercial (703) 767-7523

DLA also has a bulletin just for medical customers—*Lifeline*. To get it, write:

Directorate of Medical Materiel
Defense Supply Center, Philadelphia
ATTN: DPSC-MRCM
2800 South 20th St
Philadelphia, PA 19145-5099

Or call:

DSN 444-5781
Commercial (215) 737-5781

Be sure to give your name, address, telephone number (DSN and commercial) and how many copies you need.

# Maintenance Excellence Award Winners


## ACTIVE MTOE UNITS

LIGHT CATEGORY

**WINNER : 188th MP Co, Camp Walker, Korea**
**RUNNER-UP : HHC, 45th Corps Spt Grp (Fwd), Schofield Barracks, HI**

INTERMEDIATE CATEGORY

**WINNER : HHT, Spt Squadron, 11th ACR (OPFOR), Ft Irwin, CA**
**RUNNER-UP : Co A, 44th Sig Bn, Mannheim, Germany**

HEAVY CATEGORY

**WINNER : 1st Bn, 6th FA, Bamberg, Germany**
**RUNNER-UP : 201st MI Bn, Ft Gordon, GA**

## RESERVE MTOE UNITS

LIGHT CATEGORY

**WINNER : HHC, 322d Civil Affairs Bde, Ft DeRussy, HI**
**RUNNER-UP : 146th Trans Co (CT), Ogden, UT**

INTERMEDIATE CATEGORY

**WINNER : Co C, 411th Engr Combat Bn (H), Ft DeRussy, HI**
**RUNNER-UP : 629th Trans Co, Clearfield, PA**

HEAVY CATEGORY

**WINNER : 824th QM Co, (Air Delivery), Ft Bragg, NC**
**RUNNER-UP : 804th Sig Co, Ft DeRussy, HI**

## NATIONAL GUARD UNITS

LIGHT CATEGORY

**WINNER : HHD, 540th QM Bn, Lenoir, NC**
**RUNNER-UP : HHD, 337th Spt Bn, Reading, PA**

INTERMEDIATE CATEGORY

**WINNER : HHD, 728th Main Spt Bn, Lock Haven, PA**
**RUNNER-UP : Battery B, 1st Bn, 171st FA, Weatherford, OK**

HEAVY CATEGORY

**WINNER : 3637th Maintenance Co, Springfield, IL**
**RUNNER-UP : HHC, 2d Bn, 112th Inf, Lewistown, PA**

## TDA UNITS

LIGHT CATEGORY

**WINNER : Pusan Storage Facility, Pusan, Korea**
**RUNNER-UP : Cold Regions Test Activity, Ft Greely, AK**

INTERMEDIATE CATEGORY

**WINNER : HSC, 751st MI Bn, Camp Humphreys, Korea**
**RUNNER-UP : 34th Spt Group, Trans Motor Pool, Youngsan, Korea**

HEAVY CATEGORY

**WINNER : 1st Bn, 29th Inf Regt, Ft Benning, GA**
**RUNNER-UP : Joint Security Area Bn, Camp Bonifas, Korea**


## TB 1-1500-341-01 Additions

Add these components to the Aircraft Components Requiring Maintenance Management and Historical Data Reports:

| Item | NSN |
|---|---|
| Inertial Navigational (EGI) | 6605-01-421-0076 |
| Doppler GPS Nav System (ASN-128B) | 5841-01-399-5512 |
| Improved Data Modem (IDM) | 5895-01-426-5318 |

Follow DA PAM 738-751 for the forms info on these items. Don't forget to enter the software version of each item in Block 13a of DA Form 2410.

## Laundry Unit Water Pump

Use NSN 4320-00-707-5971 to get just the water pump for your M85 laundry unit. The NSN shown as Item 28 of Fig 52 of TM 10-3510-209-24P brings the complete water pump and electric motor assembly.

## M1009 Sliding Windows

Cool off your M1009 CUCV this summer by having support add sliding rear windows. Kits are available for both sides. The right side is NSN 2510-01-341-2474. The left side is NSN 2510-01-341-2473.

## M1A1 Bump Stop Brackets

Items 84 and 84.1 of TM 9-2350-264-10-1 say a broken or missing bump stop bracket makes your M1A1 tank NMC. No longer. TACOM maintenance advisory message 261631Z Jul 95 says your tank is FMC regardless of the condition of the bump stop brackets. Replace broken or missing brackets as part of normal maintenance.

## Can the Ether

Spray can ether is a no-no for starting diesel and multifuel engines in cold weather. Using spray can ether can crack pistons, bend rods and ruin heads. Some engines, like those in 2½- and 5-ton trucks, have starting aids built in. If your truck has one, use it when you have to. But never use spray can ether.

## NBC Bulletin Board

The US Army Chemical School's computer bulletin board has the latest info on NBC equipment, training, and doctrine and answers to your NBC questions. To use the bulletin board, call (205) 848-4921, DSN 856-4921. Log on by typing DRAGON for the first name, SOLDIER for the second, and CHEMTEST for the password. This lets you read the contents of the bulletin board. To download any files, though, you must register with the school. Questions? Call (205) 848-412/7317, or fax 848-4022. The DSN is 865-.

DISTRIBUTION: To be distributed in accordance with DA Form 12-34-E, Block 0312, requirements for TB 43-PS-Series.

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

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