Issue 411

# PS

February 1987

# THE PREVENTIVE MAINTENANCE MONTHLY


HOTLINES
Inside Front Cover and Page 1

# Here's Hotline

Reached the end of your problem-solving rope? Call these numbers for hotline help after you've checked out your problem with local MAIT, DS and LAO personnel. They may be able to help, too.

• Tanks, small arms, missile guidance/control systems for LCSS, ground and air TOW, Dragon, LANCE, Shillelagh (Anniston)

**AUTOVON 694-6582**
**COMM 205-235-6582**

• Aircraft engines (Corpus Christi)

**AUTOVON 861-2651**
**COMM 512-939-2651**

• Cat I EIR (Aircraft) (duty hours 693-1672) (AVSCOM)

**AUTOVON 693-2066**
**(after duty hours)**
**COMM 314-263-2066**

• Aircraft Vibrex balancing kit (AVSCOM)

**AUTOVON 693-1107**
**COMM 314-263-1107**

• M113 FOV (incl Vulcan, Chaparral), M2/M3 Bradley (Red River)

**AUTOVON 829-3100**
**COMM 214-838-3147**

• Power generation eqpt, wheeled vehicles, brake problems, Redeye, topo eqpt (Tooele)

**AUTOVON 790-2129**
**COMM 801-833-2129**

• All howitzers, M578, FAAR, FADAC, ground guidance and shop/test eqpt for I-HAWK, and Nike-Hercules (Letterkenny)

**AUTOVON 570-9693**
**COMM 717-267-9693**

• Commo/Electronics (Sacramento)

**AUTOVON 839-2839**
**COMM 916-388-2839**

• Commo/Electronics (Tobyhanna)

**AUTOVON 795-7900**
**COMM 717-894-7900**

• Commo/Electronics (Ft Monmouth-CECOM)

**AUTOVON 992-3266**
**COMM 201-532-3266**

• Computer software (Ft Monmouth-CECOM)

**AUTOVON 995-2980**
**COMM 201-544-2980**

• Belvoir R & D Combat Engr Dir (Ft Belvoir)

**AUTOVON 354-2654**
**COMM 703-664-2654**

• Supply, maintenance policy guidance for AR's 750-1, 710-2, 735-5, 735-11, 700-131 and 710-28 (New Cumberland)

**AUTOVON 977-6842**
**COMM 717-782-6842**

• Fuels/lubes (Ft Belvoir)

**AUTOVON 354-3576/4594**
**COMM 703-664-3576/4594**

• DA Form 2028 (TACOM)

**AUTOVON 786-7415**
**COMM 313-574-7415**
**FTS 973-7415**

• Warranty (TACOM)

**AUTOVON 786-7889**
**COMM 313-574-7889**
**FTS 973-7889**

• Defense Construction Supply Center (for ROD's)

**AUTOVON 850-3413/2089**
**COMM 614-238-3413/2089**
**(For non-NSN requisitions)**
**AUTOVON 850-2841**
**COMM 614-238-2841**



# Help!

• Food service eqpt, individual eqpt (clothing), aerial delivery, tentage and shelter (NATICK)

**AUTOVON 256-5341**
**COMM 617-651-5341**

• CARC (Chemical Agent Resistant Coating) General (TROSCOM)

**AUTOVON 693-2361**
**COMM 314-263-2361**
**Supply Source (GMPA)**
**AUTOVON 977-7741/7031**
**COMM 717-782-7741**

• AMCCOM maintenance, supply of managed items, location of nearest LAR, NICP, NMP

**AUTOVON 793-6440**
**COMM 309-782-6440**
**FTS 367-6440**

• TAMMS-DA Pam 738-750 (USALC)

**AUTOVON 687-1559/4413**
**COMM 804-734-1559/4413**
**FTS 927-1559/4413**

• Substitute NSN's, part number cross reference to NSN, item ID, price questions and AMDF code problems (MIRAC)

**AUTOVON 977-7431**
**COMM 717-782-7431**

• AMDF Code Guide (USAMC Catalog Data Activity) (mailing info)

**AUTOVON 977-6608/6741**
**COMM 717-782-6608/6741**

• Packaging problems, SF 364 ROD (AMCPSCC)

**AUTOVON 795-7150**
**COMM 717-894-7150**
**FTS 590-7150**

• Equipment Historical Records—DA Form 2408-9, etc—missing information (USAMRSA)

**AUTOVON 745-3957/4265**
**COMM 606-293-3957/4265**



PS THE PREVENTIVE MAINTENANCE MONTHLY

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**PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:**

*MSG Half-Mast*
*PS Magazine*
*Lexington, KY*
*40511-5101*

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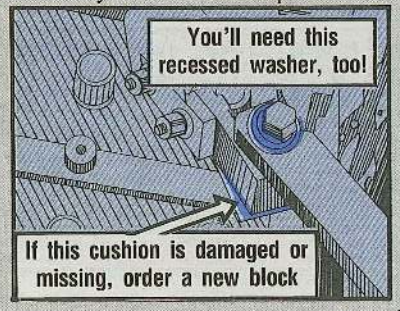
M1/M1A1 Tanks...

# PM Check Heads Off Fire!


Poor battery bus block cushioning invites a fire, crewmen.

As part of your weekly PMCS, look at the rubber cushion under the positive bus block. If it's missing or damaged, tell your mech.

The cushion isolates the block from the battery retainer. That keeps the block from rubbing through the retainer insulation, causing electrical arcing—and a possible fire.




Cushion missing or damaged? Your mech needs these NSN's not shown in Fig 92 of TM 9-2350-255-20P-1: Item 18—bus block, NSN 2590-01-185-5766; and Item 36—recessed washer, P/N MS9768-14, FSCM 96906, RIC S9I.

While you're at it, check all battery connections, bus bars, terminal clamps and quick disconnect links.

Look for bare wires, signs of arcing, corrosion, poor alignment or loose connections. Look for dirt buildup around the bolts holding the positive terminal board to the hull.

If everything's not OK, let your mech know right now.



M1-Tanks...

# WTR—Not GAA—Is Grease of Choice


Wear and tear on a 60-ton main battle tank is a fact of life.

But, the grease you use to lube the M1 makes a big difference in how quick wear and tear puts your tank out of action.

That's why you don't use GAA any more. Use only General Purpose Aircraft Grease Wide Temperature Range (WTR), MIL-G-81322, for all applications calling for GAA in your LO and TM's.

WTR is especially needed on compensating idler hubs and arms and on track idlers.

NSN 9150-00-145-0268 gets a 5-lb can and 9150-00-935-5851 gets a 35-lb can of WTR.

If your tanks still have GAA in them—or if you don't know for sure—pump in enough WTR to push out all of the old grease.

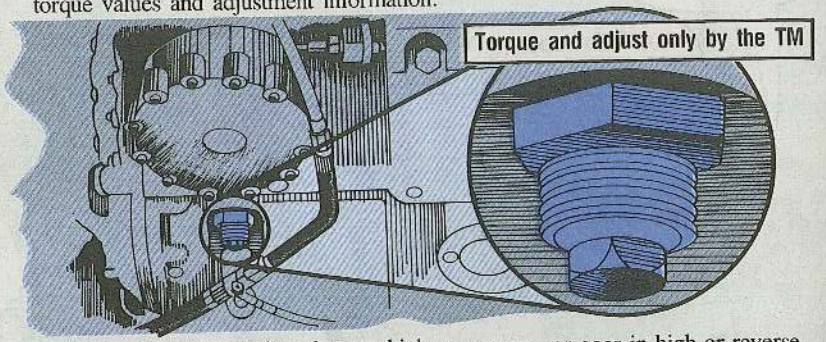
More details on the changeover are in Para 2-5b of TB 43-0001-39-7 (Oct 85).

M60-Series Tanks...

## Servo Band Adjustments Set

Some mechs are just guessing when they adjust transmission servo bands. That's why so many are out of adjustment.

There's no need to guess. Both the M60A1 and M60A3 -20 TM's give the right torque values and adjustment information.



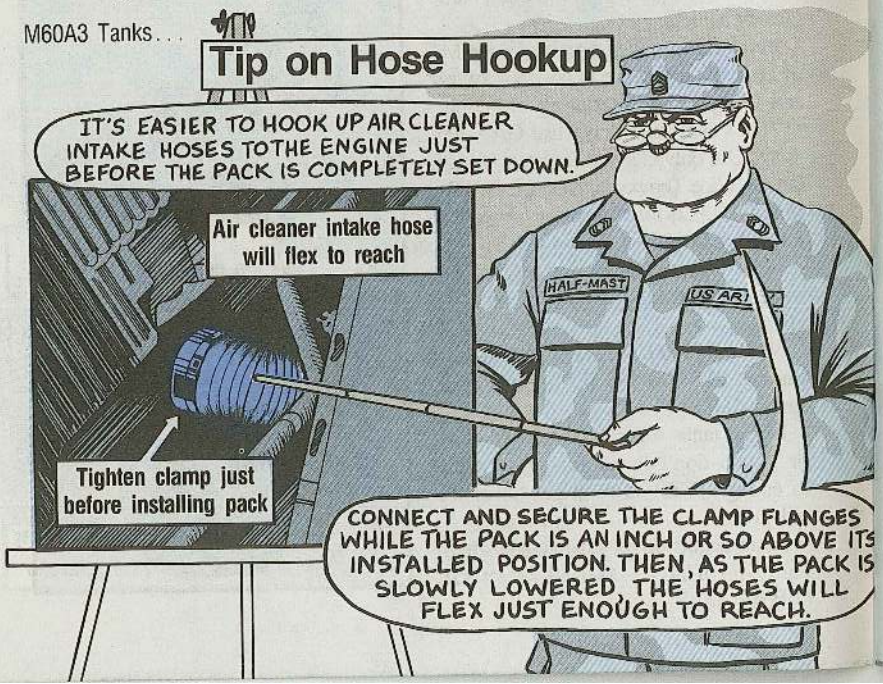

When a tank goes in low, but not high or reverse—or goes in high or reverse, but not in low—turn to the TM's.

TM 9-2350-257-20-1-3 has the word for M60A1's on Pages 11-63 through 11-66. Page 3-218 in TM 9-2350-253-20-1 has the same word for M60A3's.

Don't guess, look it up.

M60A3 Tanks...

## Tip on Hose Hookup

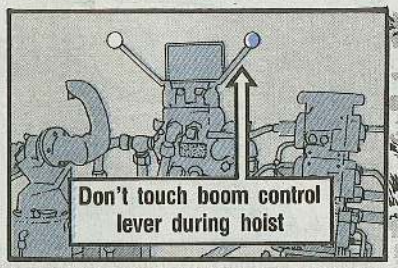



M728 Combat Engineer Vehicles...

## Just When You Thought Hoisting Was Safe...

...along comes this warning for you M728 CEV crewmen:

During a hoisting operation, make sure you don't operate or even bump the boom control lever. If it's moved, the load will fall—maybe injuring people or damaging equipment!





The headshed's working on a modification that will require two hands to operate the boom control lever. Then the lever can't be moved accidentally.

Until then, watch where you put your hands during hoisting operations!

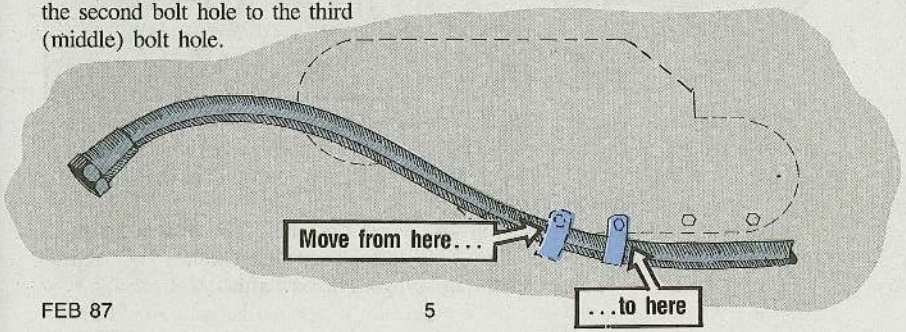
M667 LANCE Carrier...

## Hose Woe? Move Clamp

There's nothing wrong with differential oil hose, NSN 4720-00-781-9866, that you're getting through supply.

It is shorter than the hose it replaces, but don't try to modify it or make it longer. To install it, you do need to move a hose clamp.

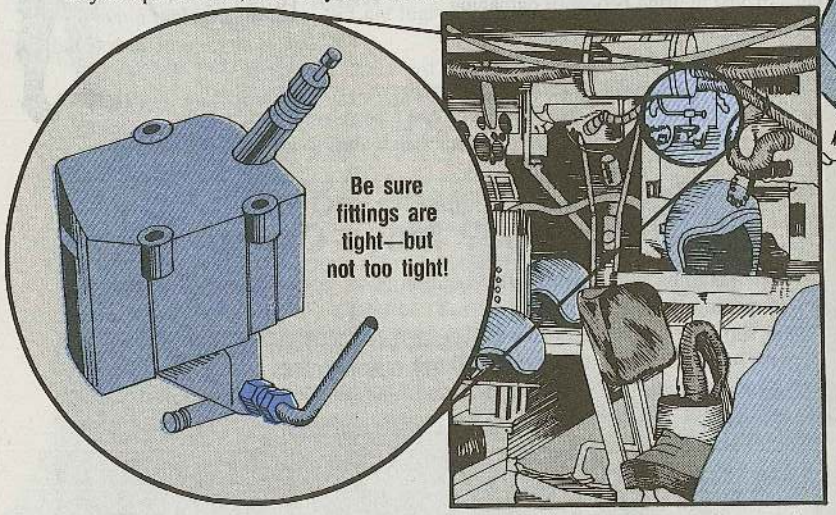
The clamp located on the lower portion of the oil cooler must be moved from the second bolt hole to the third (middle) bolt hole.



# Too Tight's Not Right!


The FISTV and some M901 ITV's have a plastic auxiliary hydraulic oil reservoir. It's tough, but it'll leak like a holey umbrella if you overtighten the fittings.

If you spot a leak, call in your mechanic.




Mechs, be careful when tightening the fittings. One flat of the nut—1/6 turn—is all that's needed. If that doesn't work, replace the copper gasket with a Teflon seal washer, NSN 5310-01-189-8481. It seals better and you won't have to tighten the fitting so much to stop leaks.

A busted fitting ruins the reservoir—no repair's possible. You'll have a fluid mess to clean up and Uncle puts out $113 to replace the reservoir.

Be tight with Uncle's money and not so tight on the plastic.



# AN/VVS-2's a Stowaway


Seen all you want through your driver's night vision viewer? Stow it!

Don't just try to tuck it into an out-of-the-way corner, either. You KNOW a piece of gear or a clumsy foot will find a way to mash it.

Instead, use the ready-made stowage spots provided in all armored vehicles that use the viewer:

- On your M1 tank, there's a metal cabinet to the left and rear of the driver.
- The M728 Combat Engineer Vehicle has a box under its gun mount.
- In your M60A3 tank, the cabinet is under the gun breech.
- Bradley Fighting Vehicles have a special bracket located to the left of the driver.

In all cases, tho, be sure the viewer is securely strapped or fastened into the pads provided.

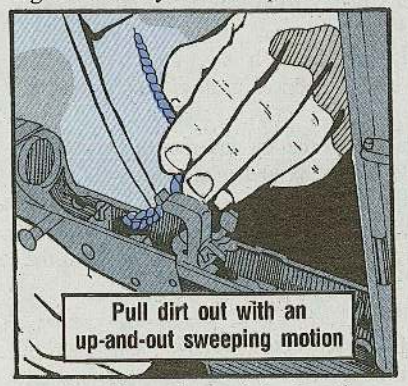
Here are two other tips to keep in mind:

- Any time the VVS-2's not in use, slip on its protective cover. One shot of bright light can KO the image intensifier tube.
- When you're using vehicle power to light up the night, be sure you've removed the viewer's internal battery. If you leave it in, you can blow circuit diodes.

# Better Cleaning and Easier Disassembly


## Trigger Clean-Up

Use only a pipe cleaner to clean inside the trigger assembly. Bend the end of the pipe cleaner into a circle. Use the circle end to clean with an up-and-out, sweeping motion. If you clean up-and-down, you just shove dirt back in the trigger assembly.




If you can't get all the dirt around the trigger assembly, tell your armorer. Never take the trigger assembly apart. It's hard to put back together right—and you're not authorized to do it.

## Slip Ring Success

Cleaning under your M16's slip ring can be a headache, especially in a sandy area. Dirt's hard to get out.

Here's how to slip slip ring dirt out:

• After removing the handguards, gently pull the slip ring down. To loosen dirt use a pipe cleaner and small arms cleaning brush, NSN 1005-00-494-6602,



and clean the area as well as possible.


• Blow away the dirt you've brushed up.

• Repeat these steps until you can't feel any grit when you move the slip ring.

If you can't get all the dirt out, tell your armorer.

## Handy Handguard Help

The best way to put on and take off handguards is the "Buddy System" described on Pages 3-15 and 3-48 in TM 9-1005-249-10.

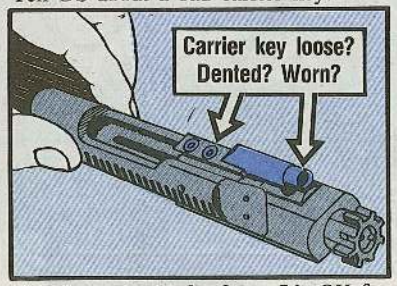
But if a buddy's not around, try twisting the slip ring slightly and cocking one side of it down. The handguard on the down side should snap right on or off.


# SPOTING TROUBLE

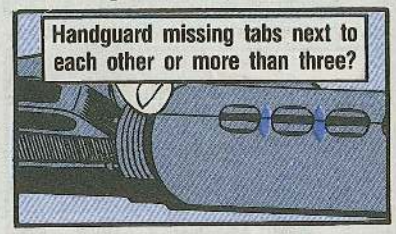
When doing PMCS or cleaning M16's, watch for these signs of trouble, armorers.


**Buttstock loose, cracked**—A little side-to-side movement is OK. But if the buttstock moves back-and-forth a lot where it meets the lower receiver, accuracy's ruined. In certain areas cracks can deadline the rifle. Check TM 9-1005-249-24&P.

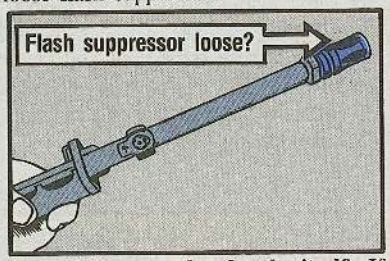

**Carrier key loose, dented, or showing unusual wear**—If the carrier key can't mate right with the gas tube, the M16 will short recoil, and eventually the carrier key and gas tube will be damaged. Tell DS about a bad carrier key.




**Handguard tabs broken**—It's OK for some tabs to be missing. But if four tabs are missing or two tabs next to each other are missing on a handguard, replace it.

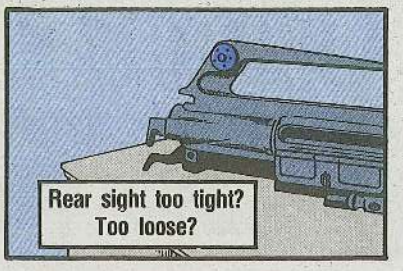



**Flash suppressor loose**—That could hurt accuracy and safety. Check for looseness with your hand only. Tell DS about a loose flash suppressor.




**Rear sight moves hard or by itself**—If you can't adjust the sight or the sight moves by itself, accuracy's ruined. Have DS fix it.





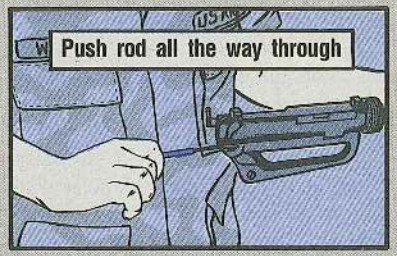

**Shiny spots**—They are like a neon sign for the enemy, and they allow rust. Touch up shiny spots with solid film lubricant, NSN 9150-00-168-2000.


## Don't Spoil the Rod

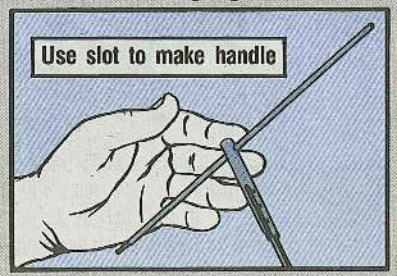
Your cleaning rod is one of the best tools for cleaning your M16A1 . . . if you use it right. If you use it wrong, you'll damage your rifle!

If the rod tip won't screw in the rod—or the rod bends at the joints—tell your armorer. Something's wrong. Never try to clean with a rod that won't screw together all-the-way.

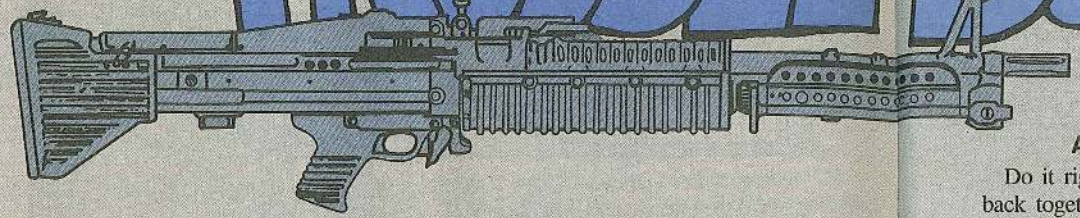

Once you push the cleaning rod and bore brush into the bore, push it all the way through the flash suppressor without stopping. If you jerk the rod back-and-forth inside the bore, you'll damage the bore brush.




The slot on the end of your cleaning rod handle is there to help you. Stick a section of the cleaning rod through the slot and use it as a handle. That makes it a lot easier when you're cleaning the chamber or locking lugs.



# TROUBLE BUSTERS



Here's how to help keep your M60 out of trouble, operators:

## Cylinder Commandments

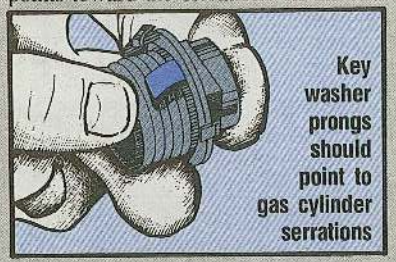
Take the gas cylinder apart for cleaning only if the piston won't slide back-and-forth in the cylinder when you tip the barrel end-to-end.

Use CLP to clean carbon and crud off the piston. But wipe the piston completely dry before you put it back in the cylinder. CLP fouls the gas system.

After you ream the gas port, gas piston holes, and gas cylinder vent holes with your combination tool's reamer, run your bore brush through the cylinder and over


the cylinder and piston holes to make sure you've cleaned out all the carbon. Even if the outside of the piston is clean, it will stick if there's carbon in the cylinder.

When you reassemble the gas cylinder, make sure the key washer's long prong points toward the serrations on the end



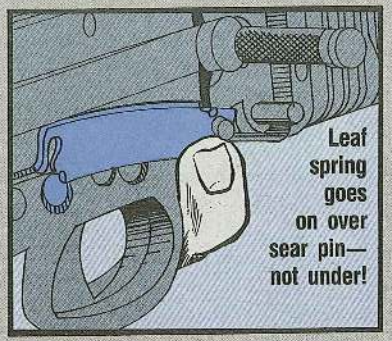

of the cylinder. If you put the washer on with the long prong pointing the other way, it will be difficult to remove the cylinder nut or extension next time—unless you ruin the key washer.


Your armorer needs to safety wire the gas cylinder after you've put it back together. Make sure he wires both the gas cylinder plug and the gas extension washer to keep the gas cylinder tight.



## Assembly Advice

Do it right when you put your M60 back together. On the leaf spring, the hooked groove goes over the sear pin

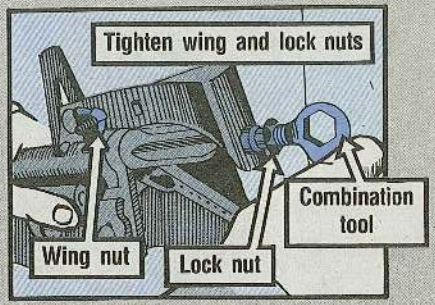



from the top. If you put it on from under the sear pin, the leaf spring can slip off. . . and so can the trigger housing.

Be careful to get the ends of the cover's torsion spring in the holes of both the

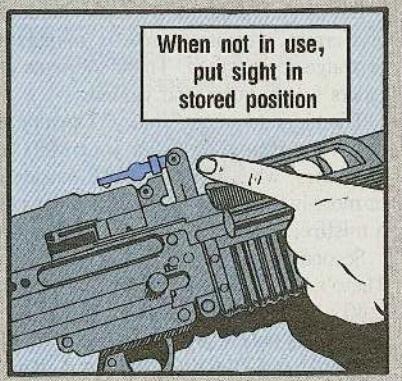

cover and receiver. If you forget a hole, the cover won't stay up.

Tighten the wing nut of the Blank Firing Attachment (BFA) fingertight and




tighten the lock nut with your combination tool. If the BFA's loose, it could cause firing stoppages.

When you're not using the rear sight, keep the leaf assembly down in the stored




position. It's fragile and easily bent. Then it has to be replaced.

# Shortcuts are Deadly


Too many soldiers are injured each year while firing the M60 machine gun.

But that's not the M60's fault. Three out of four accidents resulted from operator errors...errors caused by soldiers taking shortcuts for problems like stuck cartridges or misfires. These shortcuts cost one soldier his life, another his leg, others severe burns and wounds.

The biggest cause of injury? Opening the M60's cover too soon after a misfire on a hot weapon. Consider your M60 hot if you've fired 50 rounds or more in 2 minutes, when it's over 80°F outside. Cooler than that? Two-hundred rounds or more makes an M60 hot. **Keep the cover closed for at least 15 minutes after a misfire.** That way, if a round cooks off, it'll go downrange—not in your face.

Second biggest cause of injury? Cutting corners to remove a stuck cartridge. There's only one way to remove a cartridge...like it says on Pages 2-37 through 2-40 of TM 9-1005-224-10.

There is only one way to fire your M60: **By the book.**

TM 9-1005-224-10 is **the** word. Know the TM's sections on IMMEDIATE ACTION and REMEDIAL ACTION by heart. They're lifesavers.

If you don't operate by the book, you can blow yourself away!





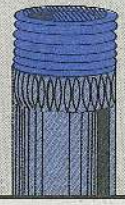
# Straight Out's the Straight Scoop


If you roughly drag the barrel out of your M2, you'll damage the barrel threads on the barrel support. That means the barrel goes to DS for repair—or replacement.

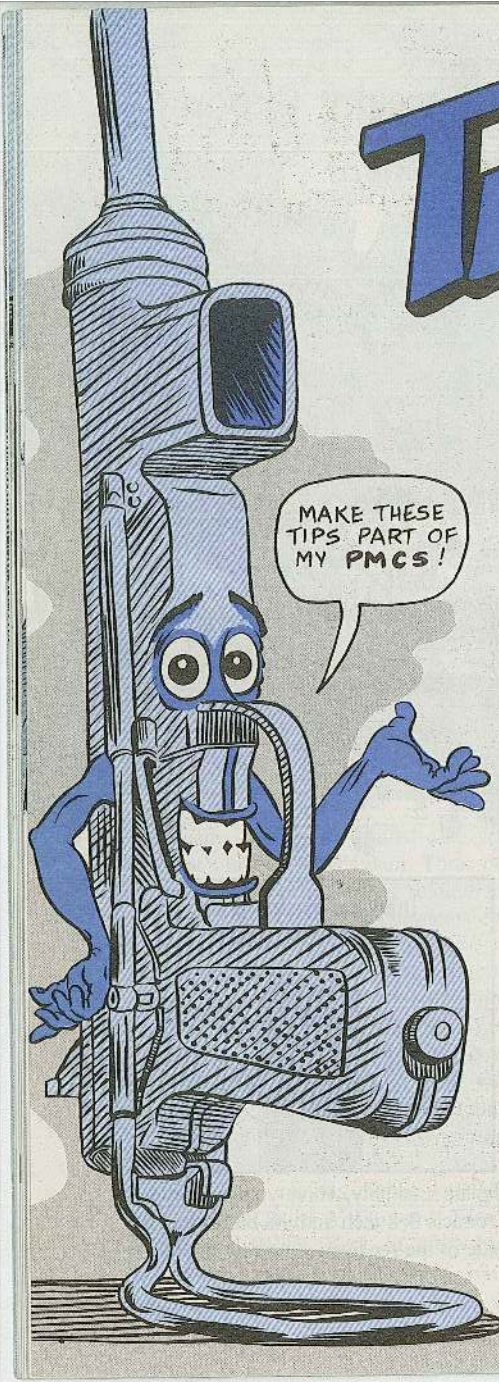
Do the job right. Slowly bring the barrel out as straight as possible so that you're not banging the barrel against the sides of the barrel support.

If your M2's not mounted, you'll need help. Place the M2 on the ground on a poncho or tarp. Never stand it on the backplate assembly. Have your buddy pull back on the charging handle until the bolt retracts 3/8 inch and the barrel locking spring is centered in the hole in the right side of the receiver. Unscrew the barrel and pull it straight out.

**Dragging the barrel out will damage threads**



# Tracking Down Trouble




Get a jump on trouble by watching for these problems on your M3 when you do PMCS.

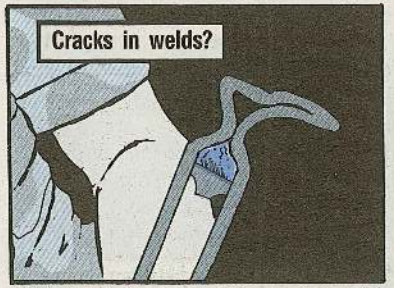
**Oiler cap**—It should be hand-tight. If it's loose, oil leaks on your hands. Also, check for the gasket. If it's missing, you'll have a leak, too.


**Safety**—Make sure your M3 won't fire with the cover closed. Eyeball the safety latch for wear. That's the only safety you've got. If the bolt slips off the safety, your M3 goes off. The results could be tragic.

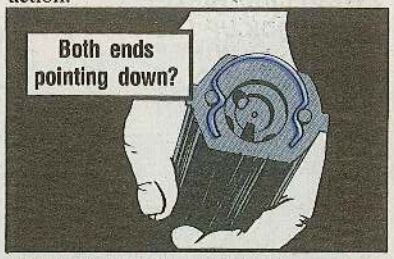



**Magazine well**—Test the well by inserting an empty magazine. The magazine should slide in place easily. Make sure the magazine catch holds when you pull down on the magazine. If the magazine well can't do its job, your M3's useless.

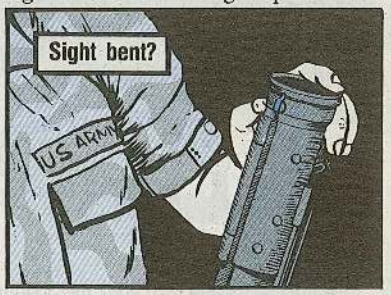

**Gun stock extension**—Make sure it's not bent and it locks in place. Check for cracks around the welds. A bad gun stock extension makes for awkward firing.




**Bolt retaining clip**—The ends of the clip must be pointing down on the bolt. An upside-down clip means bad bolt action.

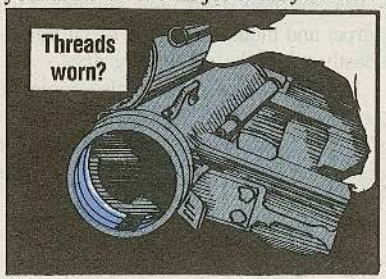



**Sight**—It must be straight up.



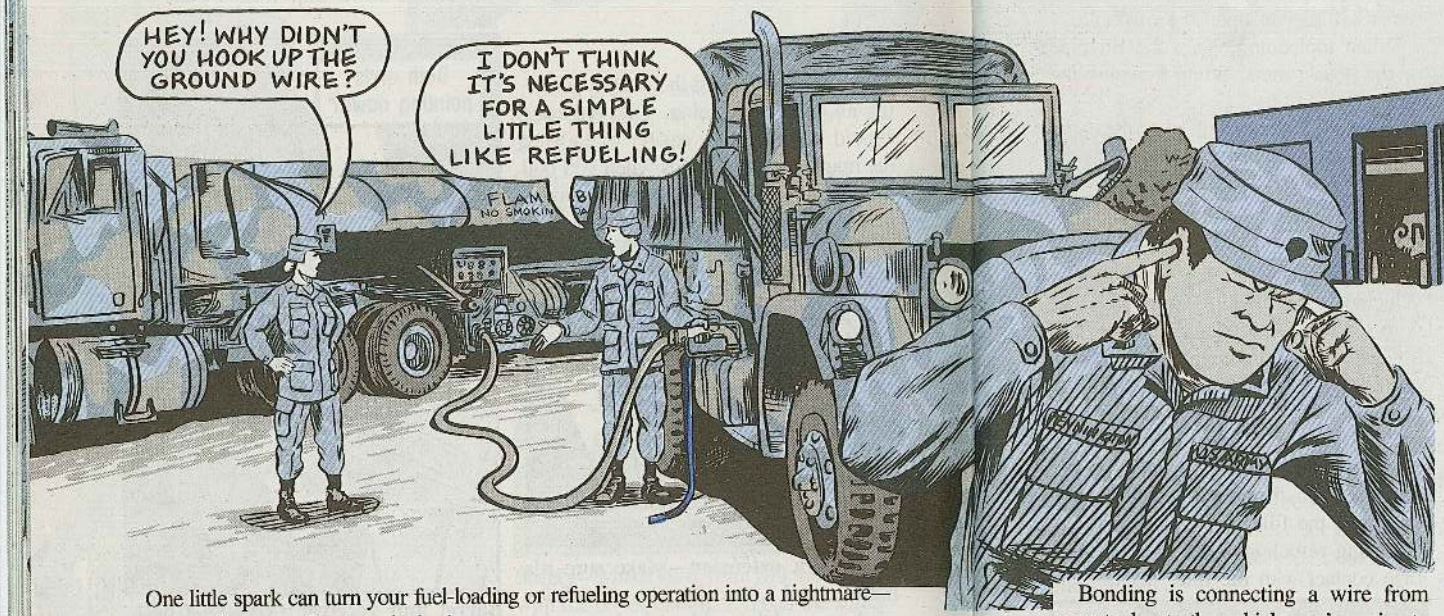

**Barrel and receiver threads**—Check for wear. If the threads are bad, the barrel could loosen during firing.

If you spot any of these problems, tell your armorer. It's his job to fix your M3.




Fuel Tankers...

# You Prevent Fire or Explosion!




One little spark can turn your fuel-loading or refueling operation into a nightmare—a raging fire or a fiery explosion!

That tiny spark can come from your failure to control static electricity by good grounding and bonding.

This is the same kind of electricity you've felt—maybe even seen in the dark—when you pulled off your sweater. Or you strike a spark when you walk on a carpet and then reach for a metal object—or touch another person. This happens mostly when the air is very dry.

But static electricity can also come from the friction of fuel flowing through a hose or fuel falling through the air. As the static charge builds, it strains harder to jump across any gap separating it from other parts of your system.

If there're fuel vapors in the gap when a spark flashes across—BLOOEY!

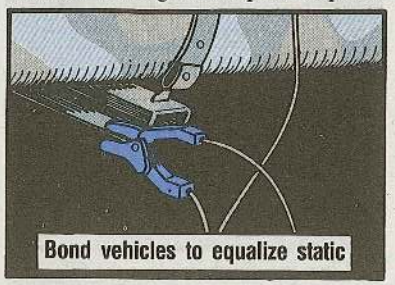
## It's Up to You!

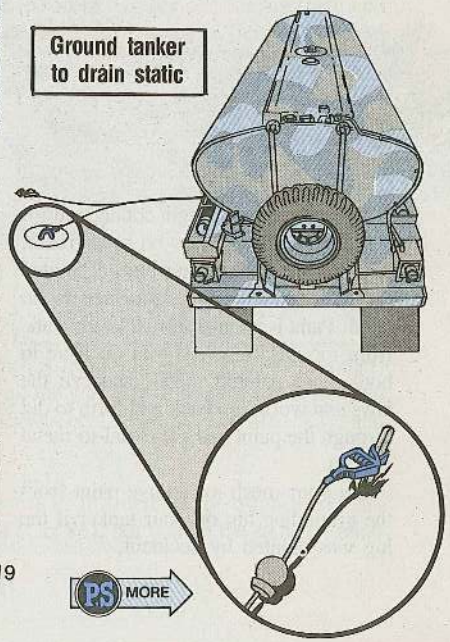
You can't prevent static, but you can prevent it from arcing or sparking. You control it with grounding and bonding.



Grounding is hooking up a vehicle to a ground rod so static will flow into the earth. You drive a rod into the ground or you hook onto a water pipe or other grounded metal.

Bonding is connecting a wire from your tanker to the vehicle you're going to refuel. This equalizes any static on the vehicles. Bonding offers a path to equalize static formed during refueling, too.




P.S. MORE


You need a clean, tight connection for a good ground or bond—no rust, grease, dirt, or paint. Clamping onto a painted ground stud or painted surface is no good. Paint is an insulator. It keeps static from moving safely. If you do have to hook onto painted metal, squeeze the jaws and work 'em back and forth to dig through the paint and get metal-to-metal contact.

Get your mech to remove paint from the grounding lug on your tanker if the lug was painted by accident.

### Loading Fuel

Bottom load your tanker if you can. Then there's no worry about static electricity caused by fuel falling from the hose into the tank.

If you have to top load thru the manhole, hook up the grounding and bonding wires before you open the manhole.

When toploading, keep the fill pipe or the hose's metal fitting touching the tanker.

When the tanker is full, close the cover before you disconnect any bonding or grounding wires.

### Ready . . . Dispense

When you're ready to dispense fuel, park your tanker close enough to the vehicle you're refueling so the bonding wire reaches. Don't run the engine until bonding and grounding are complete.

Hook up your ground wire from the tanker to a ground rod or other ground point. Then hook a bonding wire to the other vehicle. Finally, hook the nozzle bond wire to the other vehicle before you open the filler cap.

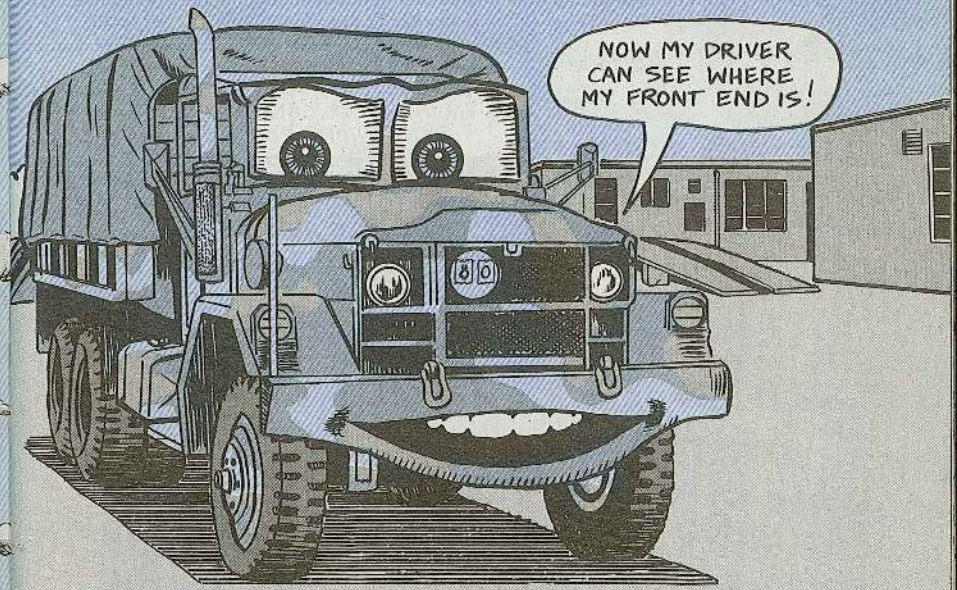
During refueling, keep the nozzle in firm contact with the filler neck.


When you finish, replace the filler cap before you remove any bonding wires.

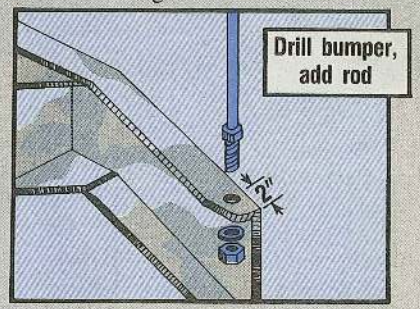




# End Justifies Means




It's tough to judge the distance between the front bumper of your big truck and an obstacle when you can't see the bumper. It's even tougher to find out the hard way—by clobbering the obstacle! Worst are 2½-ton and 5-ton trucks with front winches—those bumpers stick out a couple of feet.




Get your shop to add a guide rod to mark the right end of your bumper.

Needed is a 3-ft length of 3/8-in rod, NSN 9150-00-189-0652. This is threaded to about 3½ inches from the end using a 3/8-16 die, NSN 5136-00-189-3217 in the No. 2 Common shop set.

A 7/16-in hole is drilled a couple of inches from the right end of the bumper.

A nut, NSN 5310-00-042-7017, is run all the way down, and the rod is inserted in the bumper hole. It's secured with a lock washer, NSN 5310-00-402-5857, and another nut.

Paint the rod to match your truck.

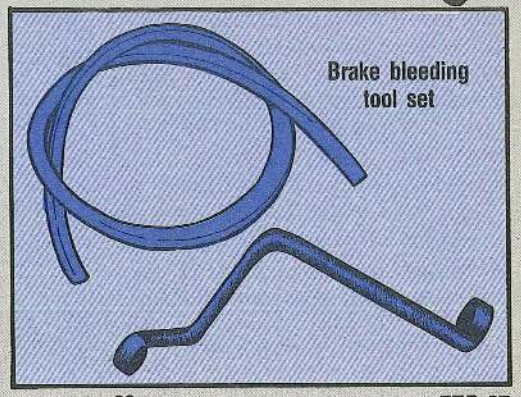
Your CO can OK adding this to your truck. Instructions for 5-ton trucks are covered in Para 2-15 of TB 43-0001-39-4 (Oct 86), but you do the same on other trucks as needed.

# Bleeding Made Easier


Bleeding the brakes on a Gama Goat is tough because the bleed valves are inside the brake drum.

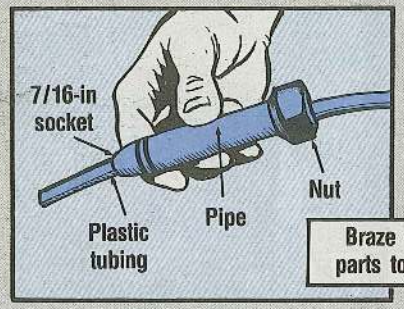
One slip and you've got brake fluid inside the drum and on the brake shoes. You've got to pull the drums and clean out the mess.

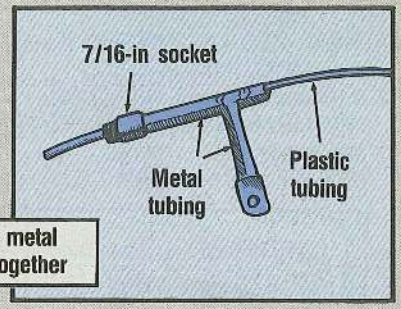
You can use the brake bleeding tool set, NSN 5120-01-024-1029, in your special tools.



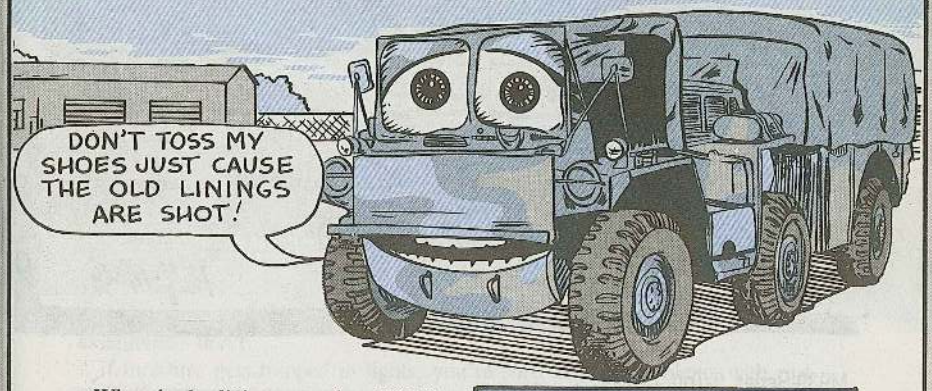



Or you may prefer a homemade bleeder wrench. There are several designs around, all quick and easy to make. If you go that route, you'll need 24 inches of plastic bleeder tube, NSN 4720-00-996-0372.




# Brake Relining Cheaper

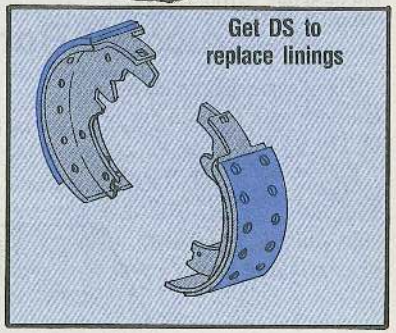



When brake linings are shot, TM 9-2320-242-20P leads you mechs astray.

The SMR code shows the shoes as non-repairable. Not so! DS can reline them and save big bucks.

They use brake lining kit, NSN 2530-00-898-6434, to repair two wheels for about $10.

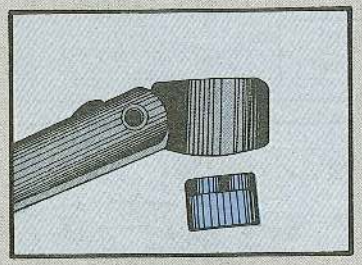
If the shoes are beyond repair, NSN 2530-00-933-3585 (listed in Fig 97 of TM 9-2320-242-20P) brings shoes with linings for one wheel for about $40.



## Where's the Bushing?

***Dear Half-Mast,***

***When we get a new wiper arm, NSN 2540-00-050-0810, it doesn't include the bushing that goes between the arm and the wiper motor. What's the NSN for this bushing?***



***SP4 M. L. J.***


*Dear Specialist M. L. J.,*

*Get the bushing with NSN 3120-00-293-5041. It's part of the vacuum wiper motor, NSN 2540-00-391-4322, used on M44-series 2½- and M39-/M809-series 5-ton trucks. Make a note until the truck -20P TM's are updated.*

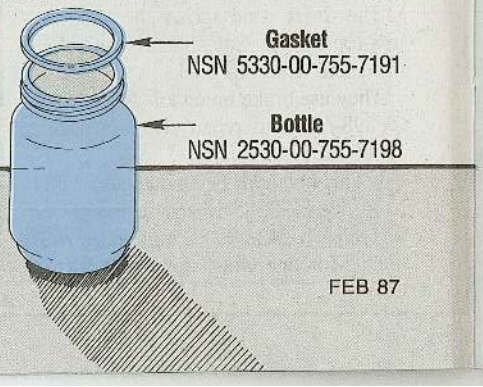
*Half-Mast*

M939-Series 5-Ton Trucks...

## Alcohol Bottle Available

There's no replacement alcohol evaporator bottle in Fig 141 of TM 9-2320-272-20P.

But the bottle that was used on M915-series trucks will fit.






Vehicle Light Assemblies...

# Seal Out Moisture


Some things—like a garden—welcome moisture. Other things—like vehicle light assemblies—don't.

If moisture gets trapped in lights, you're sure to have problems with rust.


One way to stop rust before it starts is to use a new gasket every time you change a lamp.

SGT Eric R. Bartlett, APO NY, tackled the moisture buildup problem in headlights and blackout marker assemblies the SMART way. He gives new lens gaskets a thin coat of gasket and joint sealing compound. Sealing the gaskets cuts down on time spent replacing hardware.

# Pubs

**This is a selected list of recent pubs of interest to organizational maintenance personnel. This list was made from a computer printout provided by the Adjutant General.**

**TM 3-4230-204-12&P** Oct M11 decontaminating apparatus
**TM 5-2350-262-10** Nov Armored combat earthmover, M9
**TM 5-2350-262-20** Nov Armored combat earthmover, M9
**TM 5-4120-378-14** Oct Air conditioner, horizontal, compact 9,000 BTU/HR
**TM 5-4610-215-10** Sep ROWPU 600, 600-1,600-3
**TM 9-1005-313-10** Sep M240/M240C machine gun
**TM 9-1410-485-20P** Dec Lance field artillery missile system
**TM 9-1430-600-24P** Aug Patriot missile
**TM 9-1430-601-24P** Oct Patriot missile
**TM 9-1430-602-24P** Sep Patriot missile
**TM 9-1440-600-24P** Oct Patriot missile
**TM 9-1440-1585-24P** Oct Chaparral missile
**TM 9-1450-486-20P** Oct Lance missile
**TM 9-2320-218-20P** Oct M151-series ¼-ton trucks
**TM 9-2320-279-10-HR** Oct HEMTT
**TM 9-2320-289-10** Aug CUCV
**TM 9-2330-374-14&P** Oct M129A3 semitrailer supply van
**TM 9-2350-215-20P-1** Dec M60A1 and M60A1 (AOS)
**TM 9-2350-252-10-2** Sep M2/M3 Bradley
**TM 9-6920-746-12&P** Sep M2 practice bolt plastic ammunition for M16 rifle
**TM 11-1520-248-23** Oct OH-58D
**TM 11-5815-361-24P** Feb 87 Central office AN/TGC-30 teletypewriter
**TM 11-5820-489-20** Apr AN/GRA-6 control group
**TM 11-5820-667-12** Jan 87 AN/PRC-77 radio set
**TM 11-5820-667-20P** Jan 87 AN/PRC-77 radio set
**TM 11-5820-879-24P** Dec MD-945/TSC digital data modem
**TM 11-5820-893-24P** Mar AN/URC-103(V)1 radio set & C-11021 remote control monitor
**TM 11-5821-330-20P** Sep AN/ARC-199 radio set
**TM 11-5830-256-13** Nov LS-147F/FI intercommunication station
**TM 11-5855-247-24** Sep AN/TAS-4 night vision sight; AN/TAS-6; vehicle power conditioner and boresight collimator
**TM 11-5895-1082-14** Jan AN/UGC-135 teletypewriter set
**TM 11-5895-1128-20P** Dec AN/TSC-85A SHF satellite communications terminal
**TM 11-6115-470-23&P** Sep MK-2120/G field radio equipment and MK-2121/G permission action link accessory kits
**TM 11-6625-2773-10** Jun AN/USM-410(V)2 electronic equipment test station
**TM 11-6625-3038-24P** Sep AN/USM-465A digital card tester test set
**TM 11-6625-3053-24P** Sep AN/USM-213 signal generator
**TM 55-1730-225-23P** Nov Tow bar assembly, AA1730-1251
**TM 55-2305-001-PM** Oct LACV-30 phased maintenance checklist
**TM 55-2305-001-PMD** Nov Lighter air cushion vehicle: 30-ton (LACV-30)
**TM 55-4920-412-13&P** Nov Vertical instrument display system bench test set, 476-854
**TM 55-4920-414-13&P** Nov Test box assembly, pilot assist, 70700-20678-041 w/nulling fixture assembly SAS actuator, 70700-20675-041
**TB 55-1500-340-20-2** Nov Inspection of elevator connecting link, U-21A, U-21G, RU-21A thru D, RU-21H and JU-21A
**TB 55-1520-214-20-52** Oct Inspect tail rotor assembly, OH-6A/H6
**TB 55-1520-228-20-37** Sep Inspect OH-58C transmission support fittings
**TB 55-1520-237-20-82** Oct Contractor inspection of transmission oil cooler fan splines and tail rotor drive shaft, UH-60A
**TB 55-1520-238-20-10** Oct Inspect drive shaft coupling for proper assembly, AH-64A
**TB 55-1520-238-20-11** Oct Inspect/replace vertical stabilizer bolts for AH-64A
**TB 55-1520-241-30-3** Sep Inspection and testing of T55 engine sling PN LTCT-14700
**TB 55-4920-423-50** Oct Calibrating VIDS flight line test set
**LO 5-2805-257-12** Nov Engine, 3 HP, Models 2A016-1, 2A016-2, 2A016-3
**LO 5-4610-215-12** Nov ROWPU 600 GPH, 600-1, 600-3
**LO 5-6115-457-12** Nov 100-KW generator set
**LO 5-6115-458-12** Nov 200-KW generator set
**LO 5-6115-464-12** Oct MEP-004A, MEP-103A, MEP-113A generators
**LO 5-6115-465-12** Oct 30-KW generator set
**LO 5-6115-545-12** Oct 60-KW generator set
**LO 5-6115-600-12** Nov 100-KW generator set
**LO 5-6115-612-12** Oct MEP 362A gas turbine generator set
**LO 9-1025-211-13** Sep M198 howitzer
**LO 9-2320-280-12** Oct HMMWV
**LO 55-2305-001-12** Oct LACV-30
**DA Form 5533** Oct SMART suggestion form
**FM 1-102** Sep 85 Army aviation in an NBC enviornment
**PAM 710-2-119** Oct Combat service support units, combat PLL/ASL
**C-1, Vol 4, MCRL** Sep Introduction to Master Cross Reference List

## AUDIO-VISUAL STUFF

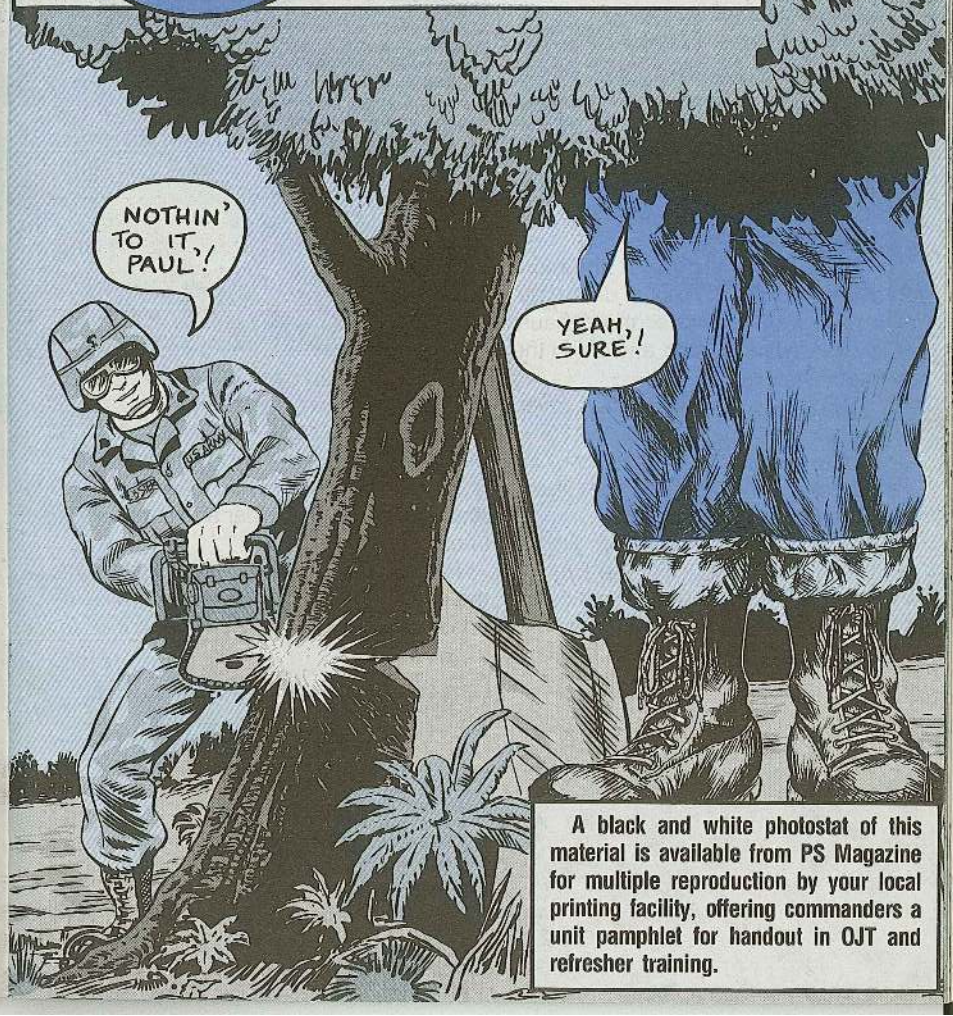
**Available at battalion or post Learning Center**

**TVT 55-154** US Army Aviation Logistics School
**TVT 9-34** M578 Recovery Vehicle, PMCS
**TVT 9-38** M578 Light Recovery Vehicle - Operation of the TOW Winch, Spade and Lockout Suspension System
**TVT 55-1** Tracking and Balancing CH-47D Rotary Wing System
**TVT 38-16** Battle Damage Assessment and Repair
**TVT 6-10** Tire Change on the M985 HEMTT and M989 HEMAT



# CHAIN SAWS

# Good PM Cuts Clean




**A black and white photostat of this material is available from PS Magazine for multiple reproduction by your local printing facility, offering commanders a unit pamphlet for handout in OJT and refresher training.**

# Good PM Cuts Clean

If you neglect your chain saw, you may end up trying to cut down that tree with your Swiss army knife.

Here's how to keep your saw singing sweet and cutting clean:

### Clean—Clean—Clean

When you figure all the dirt, oil and sawdust that your saw throws around, you see that cleaning is a never-ending job.

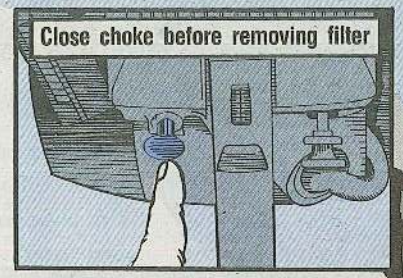
These areas need special attention:

**AIR FILTER**—The filter cleans air going into the engine. A clogged filter makes the engine run rough or hesitate . . . or not run at all! And having no filter is worse. Dirt sucked into the engine wears bearings and rings quick.

Clean the filter daily . . . and more often when there's a lot of dust. If the engine loses power or the exhaust is extra smokey, stop and clean the filter.

Before you remove the filter cover, use low-pressure air—under 30 PSI—to blow away loose dirt 'n' trash. Use a brush if you don't have compressd air handy.

Close the choke to keep dirt out of the carburetor. Take the filter off and use light air pressure to blow off most of the dirt. Wash the filter with P-D-680 or soap and water. Let it dry completely. If you can't get it clean, or if it's damaged, replace it.





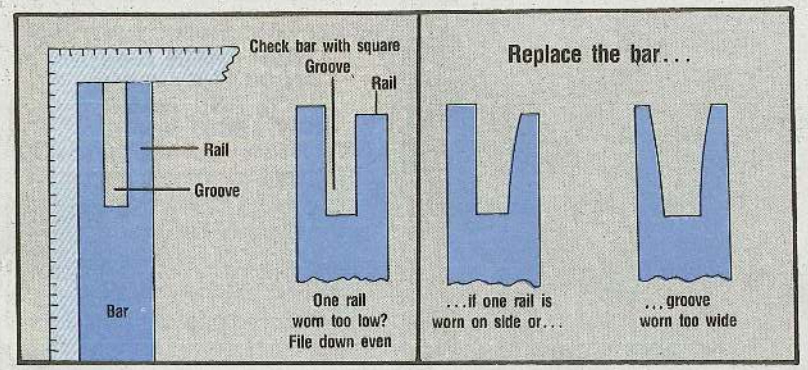
**BAR AND CHAIN**—Dirt and grit wear out the guide bar and chain fast. Cutting goes from bad to worse. Always clean both the bar and chain after operation.

Take off the bar and chain. Soak the chain in cleaning solvent to get rid of sap, dirt and oil. Then re-oil it to prevent rust.

Clean sawdust and gunk out of the bar's chain groove with a wire brush or stiff piece of wire. Clean out the oil supply hole with a piece of wire. Wipe oil and dust off the sides of the bar.



While the bar's off, check it for bends and for wear in the chain groove. If one side rail is higher than the other, use a file to get them even. If you find other wear, replace the bar.

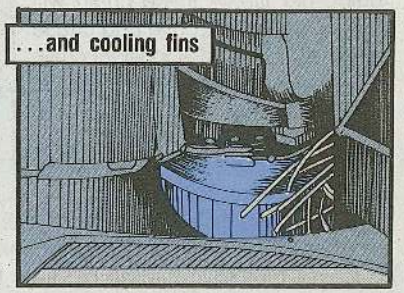



When you remount the bar, the edge that was up now goes down. That evens out the wear and stretches bar life.

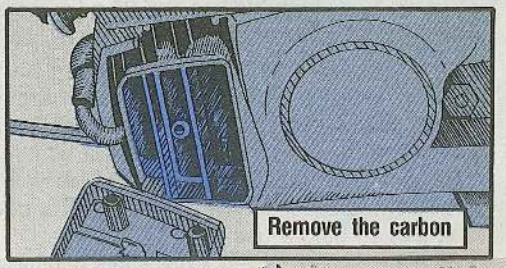
But not all bars can be reversed. Bars designed to reduce kick-back have a sharper curve on the top half at the end. And there's a more gradual curve at the bottom. Don't reverse this type of bar.


## Clean Is Cool

Your chain saw's engine is cooled by air. The cooling fins and the area around the drive sprocket collect sticky, oily sawdust that blocks cooling air. A bottle brush, NSN 7920-00-282-7783, or a toothbrush, NSN 8530-00-290-2920, is good for hard-to-reach spots. You may need to remove the engine shroud to clean the area around the drive sprocket.

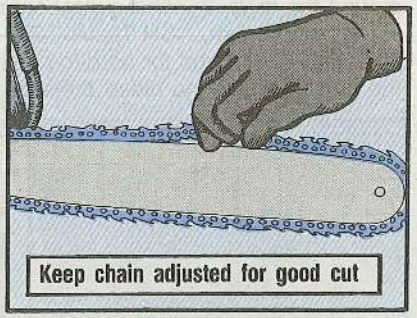




Carbon builds up in the exhaust port. Take the muffler off to reach the port. Be careful to prevent carbon particles from falling into the engine. Use a blunt-edged tool to scrape away carbon, then wipe away any loose stuff.




## Chain Care

Keeping the chain tight enough—but not too tight—is the key to good cutting and long chain and guide bar life. A loose chain will jump out of the groove and cause the chain to break. A too-tight chain robs cutting power and causes fast wear to the bar.



Keep chain adjusted for good cut

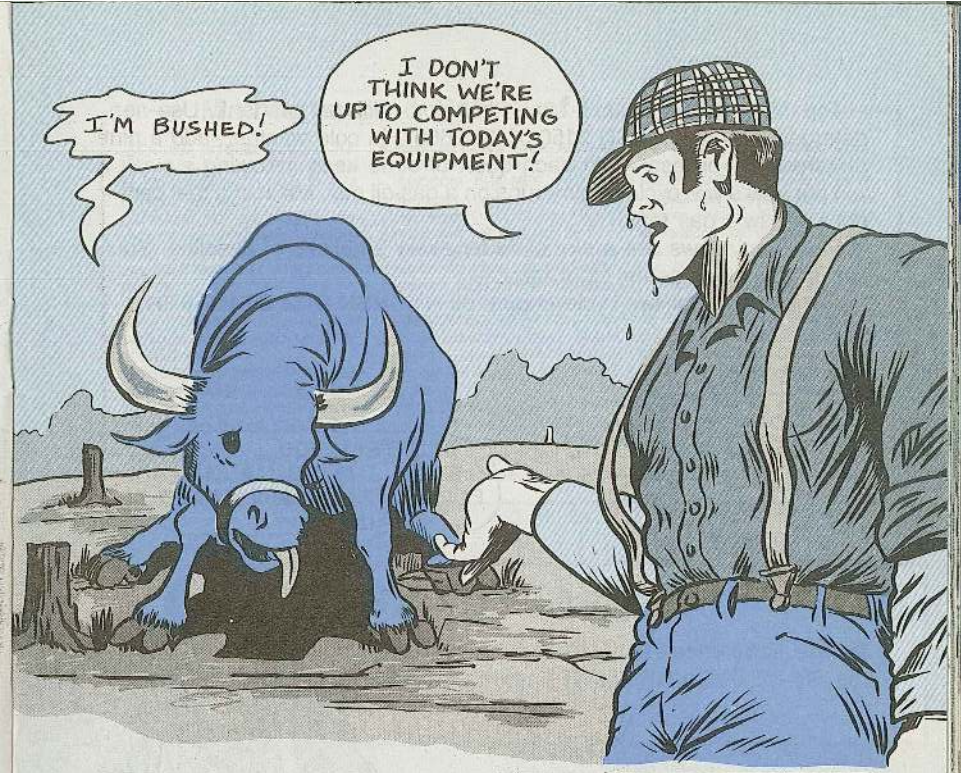
Adjust tension before you start when the chain's cold. Wear gloves to protect your hands.

With the guide bar nuts only finger-tight, hold the end of the bar up and turn the adjusting screw until the links on the bottom just touch the guide bar. Pull the chain around by hand to be sure it moves freely. Then pull the chain away from the bar and let go a couple of times to work out any kinks. Make the final tension adjustment like so:

- For a sprocket (roller) nose bar, the chain should be snug—yet still move without any binding—when pulled around the bar.
- For solid (hard) nose bars, the chain should sag enough so you can get a dime between the links and the bottom of the bar.

Replace a worn drive sprocket when you replace the chain. A bad sprocket wears out a new chain. Wash a new chain with solvent, then soak it in oil before use.

Give a new chain a few extra shots of oil with the thumb oiler after you put it on. If your saw has an automatic oiler, add a little extra oil to the chain before you start cutting. A well-oiled chain throws a little oil when you rev up the saw to cutting speed.

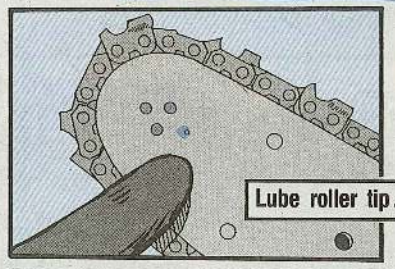

Check a new chain's tension after a few minutes cutting. It'll stretch with use. Let the chain cool, then readjust the tension.

A worn bar can ruin a new chain quick-like. Check it for wear before you put on a new chain.

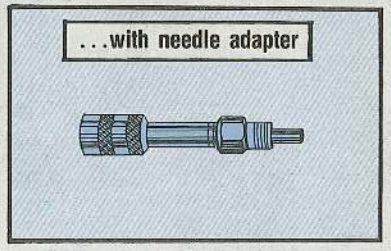
## Lube and Fuel

Don't spare the chain oil! Use the thumb oiler (if your saw has one) while you're cutting. Don't wait until the chain starts squeaking and the bar turns blue from heat.

If your saw has a sprocket-tip bar, use a needle-nose adapter, NSN 4930-00-200-1841, on your grease gun to lube the sprocket. Grease again every time you refuel.



Lube roller tip...



...with needle adapter

Top off the chain oil tank every time you refill the gas tank. Use non-detergent OE-30 oil, NSN 9150-00-186-6681. In cold weather, add a pint of kerosene—or less—with each quart of oil to keep it flowing.

Your saw's two-cycle engine runs on a gas-oil mix. Mix it in a fuel can—not the saw's gas tank!

Most Army saws use a pint of oil for every 2 gallons of gasoline. Your saw's manual gives the right mix.

Get pint cans of two-cycle engine oil with NSN 9150-00-117-8791.

**One hour later...**




## Maintenance & Safety-of-Use Messages

**TACOM SOU-MES-86-86**—Ref MES 86-38, fuel filter NSN corrected to 2910-00-845-6770. AMSTA-MTA 071700Z Nov 86.

**TACOM SOU-MES-86-82**—Advisory, technical/maintenance, Bradley ramp actuating mechanism misalignment. AMCPM-LCV-TF 131300Z Nov 86.

**TACOM SOU-MES-86-81**—Advisory, operational, Bradley swimming instruction changes. AMCPM-LCV-TF 201700Z Oct 86.

**TACOM SOU-MES-86-80**—Advisory, operational, 250 CFM, 100 PSI wheel mounted Ingersoll-Rand compressor safety hazard. AMSTA-MVC 031900Z Nov 86.

**AMCCOM SOU-MES**—Advisory, operational, M102 towed howitzer trunnion cap screw failure. AMSMC-MA 072230Z Nov 86.

**AMCCOM SOU-MES**—Advisory, operational, update of message about personnel on outside of tanks. AMSMC-MA 142020Z Nov 86.

**AMCCOM SOU-MES-86-25**—Maintenance advisory, M3A4 Smoke Generator, NSN 1030-01-143-9606. AMSMC-MAR-EC (A) 251400Z Nov 86.

**AMCCOM SOU-MES-86-26**—Maintenance advisory, M12A1 Decon Apparatus offset valve assembly parts. AMSMC-MAR-EC (A) 251400Z Nov 86.

**AMCCOM SOU-MES-86-27**—Maintenance advisory, M12A1 decon gun assembly parts replacement. AMSMC-MAR-EC (A) 251400Z Nov 86.

**AMCCOM SOU-MES-86-28**—Maintenance advisory, Sanator, Decon Apparatus fuel ignition below 60°F. AMSMC-MAR-EC (A) 251400Z Nov 86.

**AMCCOM SOU-MES-86-29**—Maintenance advisory, M3A3/M3A4 Smoke Generator's fixed carriage configurations. AMSMC-MAR-EC (A) 011400Z Dec 86.

**TROSCOM SOU-MES-31-86**—Emergency, safety hazard with Ram-Air Free Fall parachute, three-ring canopy release. AMSTR-MES 142030Z Nov 86.

**PM Trade Orlando FL SOU**—Armor Target Kill Simulator use suspended on AMTC and RETS. AMCPM-GFD 030205Z Nov 86.

**Your Direct Support or Logistic Assistance Office (LAO) can provide you with more information.**

## M911 Light Change

To order a replacement flashtube lamp for your M911 truck's warning light, use NSN 6240-01-085-2319. The NSN called out for Item 4, Fig 43 in TM 9-2320-270-20P, gets a lamp that won't fit period.

## M939 Belt NSN Change

Use NSN 3030-01-200-6004 to order a new V-belt for your M939-series truck's water pump. NSN 3030-00-233-8046, called out as Item 22 of Fig 40 in TM 9-2320-272-20P, gets the wrong size belt.

## New Sampling Pump

A new fuel sampling pump for Black Hawks comes under NSN 2910-00-400-2378. It replaces pump, NSN 4820-01-136-2143, Item 74 in Fig 444 of TM 55-1520-237-23P-2.

OH-58...

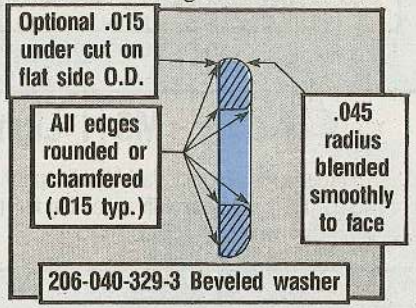
# No Sub for Beveled Washer


Kiowa mechs, you've got to have beveled washers, NSN 5310-00-131-2665, installed against the flex coupling plates of your bird's tail rotor driveshaft assembly. You may have got and installed flat washers, NSN 5310-00-141-1795, by mistake.

The beveled washer evenly distributes the load produced by the bolted joint. The flat washer does not.

During your bird's next Phase, make sure the right washers are installed. They're Item 10 in Fig 6-15 and Item 3 in Fig 6-16 of TM 55-1520-228-23-1. The chamfered edge of the washers should be against the flex coupling plates, Item 14 in Fig 6-15 and Item 4 in Fig 6-16.

If you've got the right washers, the beveled face and edges will look like this:




If you've got the wrong washers, replace 'em—on the aircraft and in your supply bins, too. Then you won't grab the wrong washers again.

## AVIATION MESSAGES

CAT 1 EIR Phone
AUTOVON 693-2066
(24 hours)

**If your unit has not received a message you have an interest in, check with your next higher headquarters.**

**AH-1-86-06,** SOF, Technical, Revision to TB 55-2840-229-20-1, 201530Z Oct 86.

**UH-1-86-10,** SOF, Technical, Revision to TB 55-2840-229-20-1, 201530Z Oct 86.

**CH-47-86-08,** SOF, Maintenance Mandatory, Revision to Corrosion Inspection Requirements, 061300Z Oct 86.

**CH-47-86-09,** SOF, Technical, Inspection of transmission pressure switches, 211930Z Oct 86.

**OH-58-86-09,** SOF, Technical, One-time Inspection for proper fuel filler cap retention cable, 141500Z Oct 86.

**UH-60-86-16,** SOF, Technical, Revision to previous message concerning lever assembly PN 70-400-02623-041, NSN 1560-01-083-6799, 141400Z Oct 86.

**UH-60A-86-17,** SOF, Maintenance Mandatory Contractor inspection of transmission oil cooler fan splines and tail rotor driveshaft, 212000Z Oct 86.

**UH-60-86-18,** SOF, Operational, Immediate restriction of rappelling operations, 231130Z Oct 86.

**UH-60-86-19,** SOF, Maintenance Mandatory, Repetitive inspection of eyebolt, NSN 5306-01-102-8797, 031500Z Oct 86.

**AH-64-86-16,** SOF, Technical, Inspection and replacement of vertical stabilizer bolts, 070400Z Oct 86.

**MIM-CH-47-86-MEM-02,** CH-47D wire harness chafing PN 145E3559-8 and PN 145E5559-10, 061700Z Oct 86.

**MIM-OH-58-86-MEM-05,** Loose insert in main rotor pitch link, 201300Z Oct 86.

**MIM-UH-1-86-MEM-10,** Discrepant two-man troop seats, 062000Z Oct 86.

**MIM-UH-1-86-MEM-11,** Revision to component Update No. 2 message, 031600Z Oct 86.

**MIM-UH-60-86-MEM-14,** Anti-flap cam sticking to displaced bushing, 141330Z Oct 86.





# When to Take It All Off

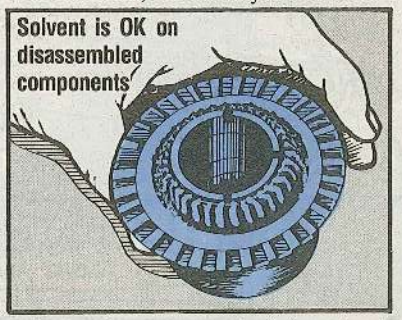
Never use solvent to clean your Huey's drive shaft hanger assemblies, bird mechs—not while they're installed on your bird.

Solvent will ruin the grease that keeps those hanger bearings friction free.

The only way to clean installed hanger assemblies is to wipe away excess grease


and crud with a clean, lint-free cloth.

Solvent may be used to clean couplings if couplings are removed from the aircraft and completely disassembled, then dried with filtered, dry, compressed air. If couplings are not completely disassembled, or are installed, solvent may not be used.




Just make sure you get all the solvent off the assembly before you repack it with grease, NSN 9150-00-506-8497. Use compressed air to remove the last of the solvent.

'Course, any time you work with a solvent, you must wear protective clothing and gloves, as well as a face shield or goggles. And if you have to work in a poorly ventilated area, you need a respirator. Check with the medics to make sure you have the right respirator.

# Caution Light Filter Change

If you need to replace your Huey's night vision goggles' slide filter assembly, order NSN 1680-01-230-1485.

It's the plastic assembly that covers the master caution light during night training.

If you don't need the whole assembly, you can get the lens filter under NSN 1680-01-230-5307.

The new filter is a blue-green plastic. It replaces the blue glass version that's now obsolete. The new parts are listed on the AMDF, but plan on a wait for delivery—maybe several months.

# OV-1 Stowage Bag

Hold one, Mohawk mechs, before you trash that bird's stowage bag because of a busted zipper. Your support can install a new slide fastener, NSN 5325-00-276-9718, and save Uncle more than $400. The fastener comes in 6-ft lengths, so it'll have to be trimmed to fit.

# Lockwiring Tools & Materials


***Dear Windy,***

***Instructions in Task 3 of TM 55-1520-237-23-7 say to lockwire the blade spar pressure indicator to the indicator adaptor after replacing the indicator. Then it says the lockwire must be sealed by the quality control inspector.***

***But nowhere does it say how to seal the lockwire. If it's not sealed right, there's no way to know if nitrogen pressure inside the blade has been accidentally released.***

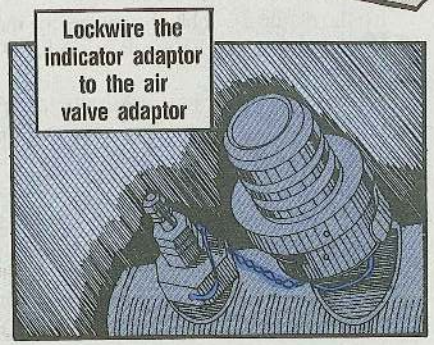
***We've been using fire extinguisher seals, but we don't have a crimping tool or know how to get one. What should we be using to seal the lockwire?***

***SSG R. A.***

*Dear Sergeant R. A.,*

*You've got the right idea. The headshed says to use the same wire seals and crimping tool that're used for sealing aircraft first aid kits and fire extinguishers. You can get 5 pounds of copper wire with NSN 6145-00-234-4991, 100 lead seals with NSN 5340-00-598-3427, and a crimping tool with NSN 5120-00-221-1668.*

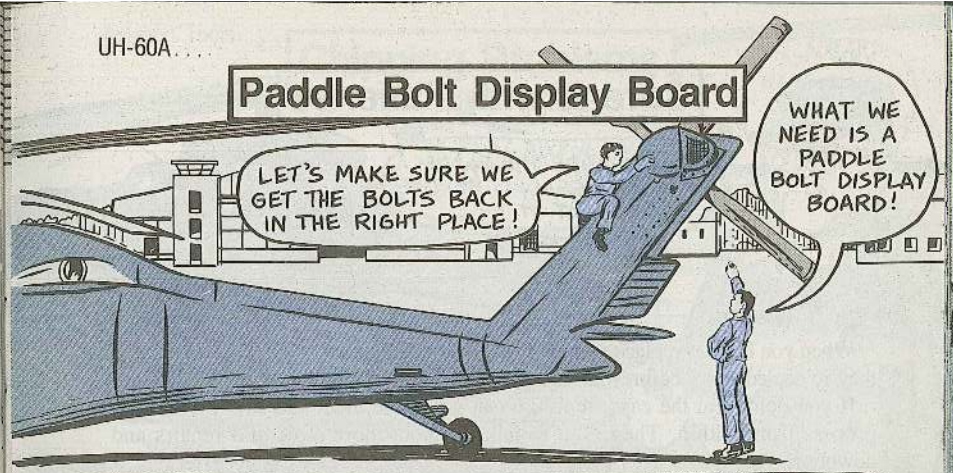
*Windy*







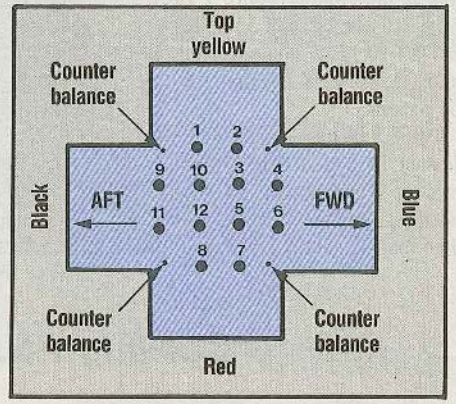

# Paddle Bolt Display Board




***Dear Editor,***

***When you remove the tail rotor on Black Hawks it's easy to get the retention plate hardware mixed up. When that happens, you've got to stop and figure out what goes where.***

***So we came up with a paddle bolt display board to make sure all the bolts, nuts, washers and shims are reinstalled in the right holes.***



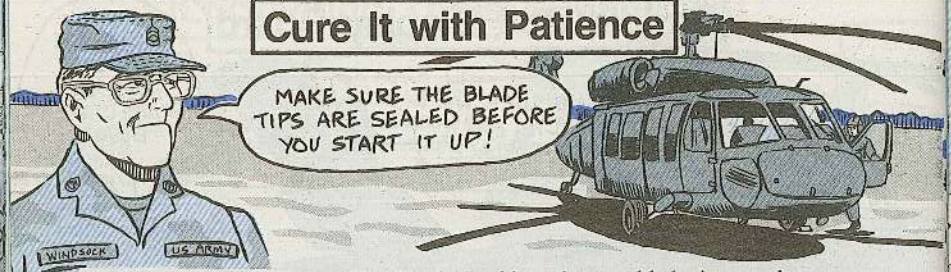

***The only material you need is a sheet of thin Styrofoam or plywood. Cut out a 2-ft square piece and draw in the shape of a tail rotor retention plate. Drill ½-in holes for each bolt and mark the board FWD and AFT, TOP and BOTTOM to avoid confusion.***

***As you remove each piece of hardware from the retention plate, put it in the appropriate hole in your display board. When you put the tail rotor back on, you don't have to guess what goes where.***

***SSG Raymond Garza***
***Ft Bragg, NC***

*(Editor's note: Sounds like you're good at board games, Sarge. Way to go!)*

# Cure It with Patience




When you have to replace your Black Hawk's main rotor blade tip caps, be sure they're sealed good before the bird flies again.

If you don't seal the caps, moisture can get inside them and start a corrosion process from within. Then, you're talking about more structural repairs and downtime.

So do it right the first time, like it says in Procedure 7 of Step 5, Task 28, TM 55-1520-237-23-10. But it's not right until the sealant is cured, so be patient.

Place a test specimen of the sealant in a convenient place nearby. When the test specimen is cured—hard to your touch—the repair sealant is cured, too.

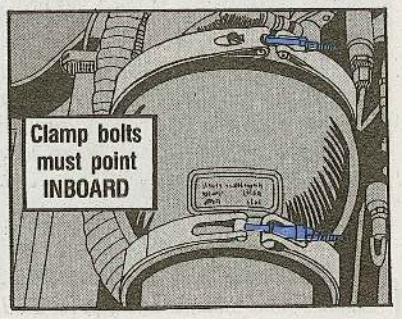

# Cowling Fouling

When you replace the blower duct on your Black Hawk's left engine, careful how you install the V-band clamps.

If you install the clamps—Item 2 in Fig 213 of TM 55-1520-237-23-P-1—backwards, the clamp bolts will puncture the engine cowling when it's closed.

Head off that revolting development by installing the clamps, NSN 4730-01-098-5086, with the bolts pointing **inboard.**

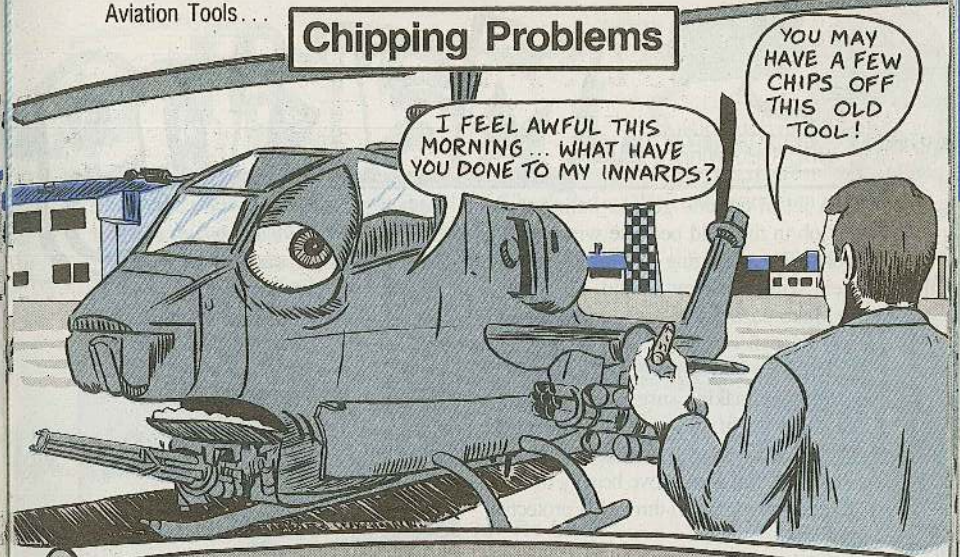
'Course, you don't have to worry about which way they're facing on the right hand engine 'cause the blower duct's located on the inboard side of the engine.








# Chipping Problems




***Dear Windy,***

***We're concerned about FOD (Foreign Object Damage) to our aircraft engines because the plating on some of our tools is chipping.***

***We thought the General Aircraft Maintenance Manual (TM 55-1500-204-25/1) made it clear that only chrome-plated tools should be used on aircraft, but we can't find the statement in the April 1970 edition. So, what's the latest word on tools?***

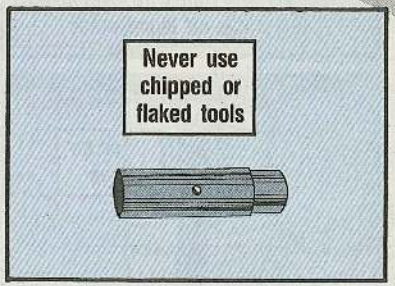
***SGT J. H.***

*Dear Sergeant J. H.,*

*Don't use anything but chrome-plated or unplated-steel tools on aircraft. Cadmium- and zinc-plated tools (dull finish) can chip and flake. Chrome-plated tools (shiny) and unplated steel tools don't.*

*NEVER accept anything but chrome-plated or unplated-steel tools when you get replacements for aviation tool kits.*

*Windy*



# Making It Work

## WD-1 Field Wire...

A lot of commo gear is failing to do its job in the field because wiremen are not laying, stringing and handling their field wire like they should.

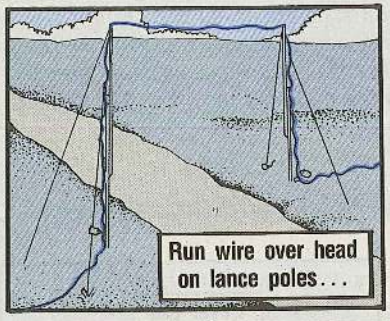
Make sure telephones, switchboards and control boxes stay on the job.

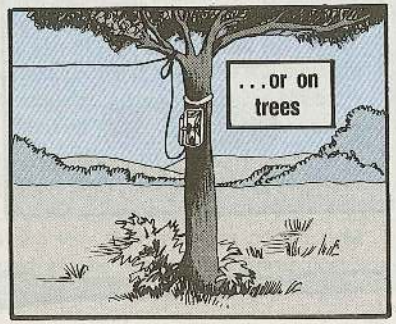
Put wire PM on the job!

Start by making sure your wire's not in the way of heavy feet and vehicle traffic. Rough treatment damages wire.

Always run wire above heavily traveled routes or underneath through a protective cover.

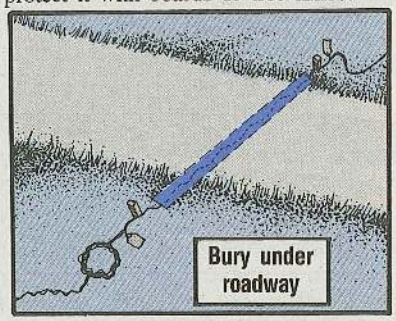
For protecting wire, see FM 24-20, Field Wire and Cable Techniques (Dec 85).




Attach wire to trees, posts or lance poles 18 feet above roadways to clear vehicles and their cargoes.

If you lay wire across a roadway at ground level, bury it six to twelve inches deep. Or dig a ditch for the wire and protect it with boards or tree limbs.




### Wire Take-up

As you reel in WD-1, eye it closely for damage so it'll be ready for next time.

To save your skin and that of your wire, wear gloves and don't let wire drag on the ground.

Get help to inspect the wire as it's unwound from the reel and wound onto another reel.




Wipe the wire with a clean, dry cloth. Check for insulation deterioration, nicks and cuts, too many splices and worn spots.

If insulation damage is less than 3 inches, tape it. If it's more, cut out the damaged section and splice it.


### Test for Re-Use

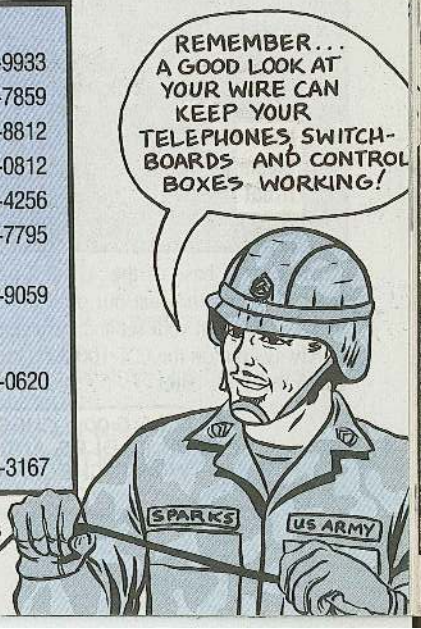
With a multimeter, check the wire for loop resistance to see if you can use it again or if it's ready for disposal.

WD-1 should show no more than 200-230 ohms per mile at 70° F.

If resistance is OK but there're more than four splices in each ½-mile, the wire's good only for training.

To renew your wire, reels and tape supply, use these NSN's:

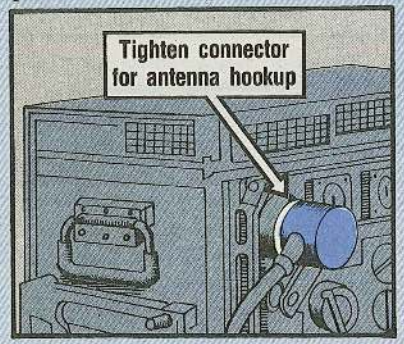
| Item | NSN |
|---|---|
| WD-1 1 mile | 6145-00-220-9933 |
| DR-8 (reel only) | 8130-00-407-7859 |
| DR-8 (with ¼ mile of wire) | 6145-00-226-8812 |
| RL-159 (reel only) | 8130-00-174-0812 |
| RL-159 (with 1 mile of wire) | 6145-01-155-4256 |
| MX-306 wire dispenser (½ mile of wire) | 6145-00-160-7795 |
| TL-636 electrical tape (use in tropical or temperate zones) | 5970-00-685-9059 |
| TL-600 electrical tape (for arctic or cold weather) | 5970-00-240-0620 |
| TL-83 insulation tape | 5970-00-644-3167 |



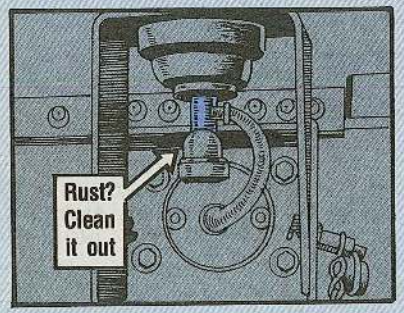
# Cable Connections

If you neglect cables on your radio set, your communications will be one big silence.

Take the CX-10171/U electrical lead cable that ties the AM-3349 RF amplifier to the AB-652. If it's loose or makes poor contact, the amplifier is damaged.



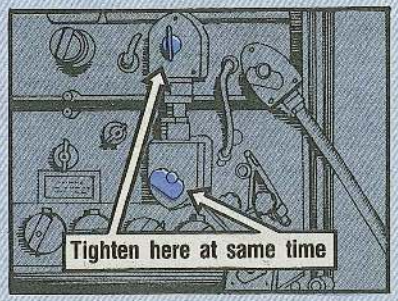

So keep connectors tight and free of dust and dirt.




Inspect the base of the AB-652 often for rust. Keep the rust out or it'll build a barrier between your set and the antenna.

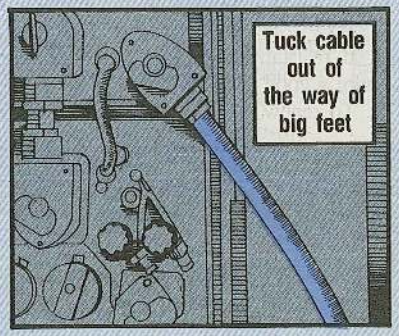
Always put on the CX-10099/U cable assembly with care.

The dumbbell-looking cable ends must be tightened at the same time.




Tightening the connectors one at a time can snap the flexible metal in two.

Give the CX-10071/U power cable the once-over to make sure it's tied into the RT-662 or -834 receiver-transmitter.

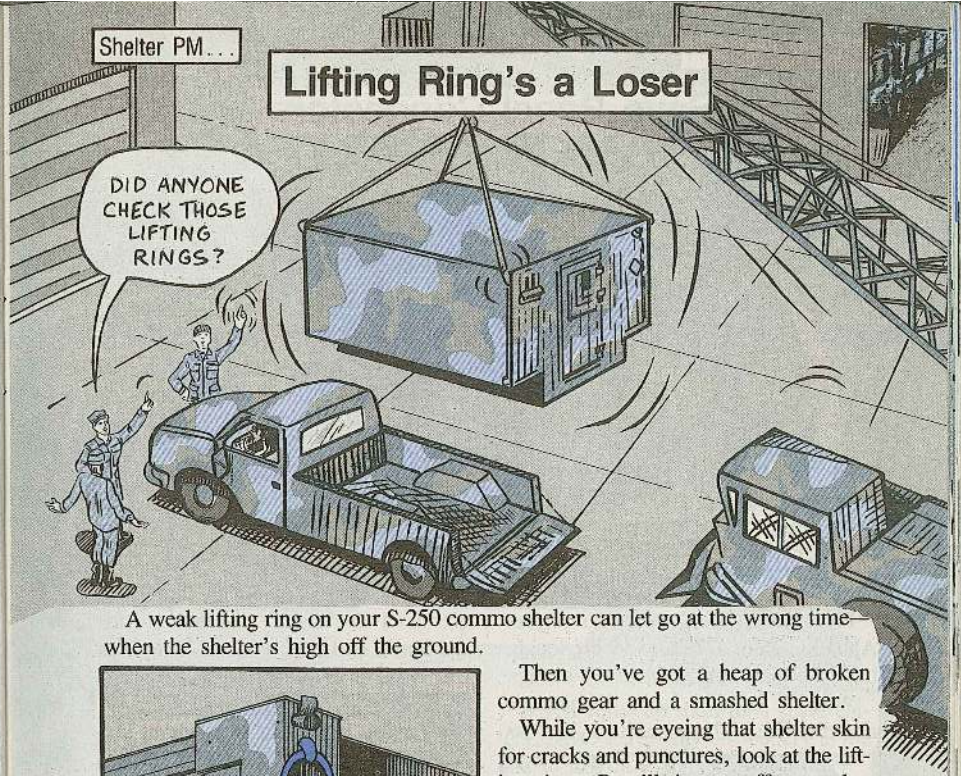






Shelter PM...

# Lifting Ring's a Loser




A weak lifting ring on your S-250 commo shelter can let go at the wrong time—when the shelter's high off the ground.


Then you've got a heap of broken commo gear and a smashed shelter.

While you're eyeing that shelter skin for cracks and punctures, look at the lifting rings. Rust'll tip you off to cracks.

Get your support to weld or replace the ring.

Before hoisting the shelter onto a truck or airlifting it, lift it 1 inch off the ground. Make sure the rings are holding firm.

Other lifting and handling info is in Chap II of TB 43-0124.

# Remove Drain Plug

Get rid of moisture...a commo gear killer...by blocking wetness from building up inside.

If there's an air conditioner in your shelter, take out the drain plug before operating the cooling unit.

If the plug's left in during operation, moisture will build up.

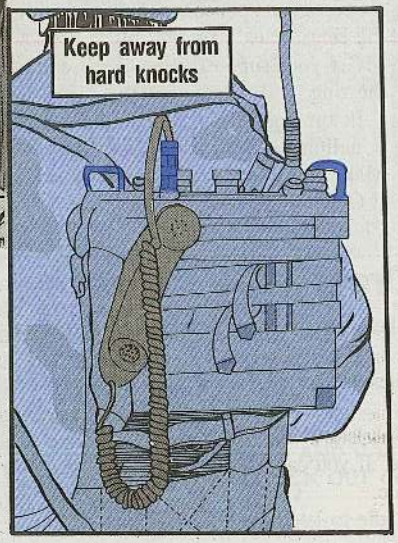
Keep the shelter level to drain moisture. If you can't level the shelter, position it so the cooling unit is on the lower side.

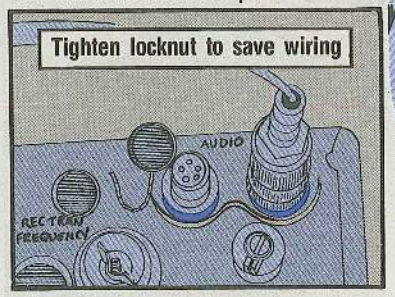
Replace the plug when your shelter's idle to keep out dust and dirt.

# Save Panel Connectors


Front panel AUDIO connectors on your AN/PRC-25 or -77 radio set are tough, but rough handling is messing 'em up.

When a handset cable connector's added to one of the connectors, it sticks out like a sore thumb. So, look out for low limbs. Bad bumps on the connectors will crack or break the panel.



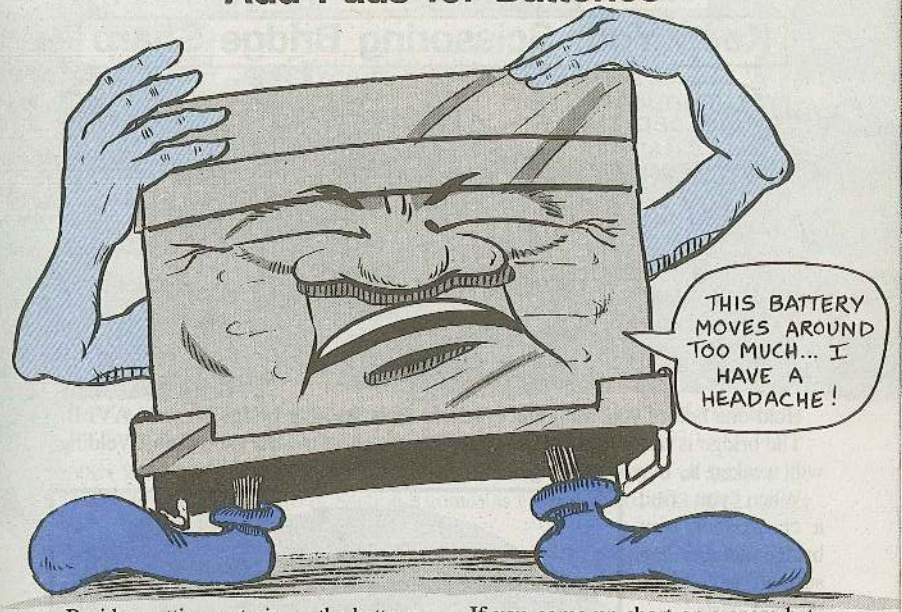

Loose locknuts lead to broken wiring. So, before hooking up a cable connector, make sure the locknuts are in place and tight.

If you're using only one AUDIO connector, put the protective cap, NSN 5340-00-973-1732, on the other connector. It'll keep out dust and dirt and serve as a bumper protector.



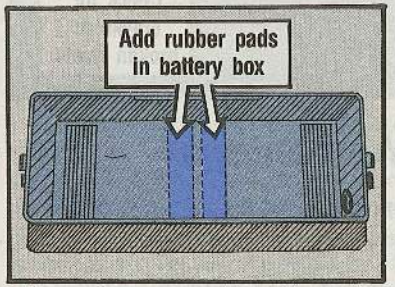


# Add Pads for Batteries



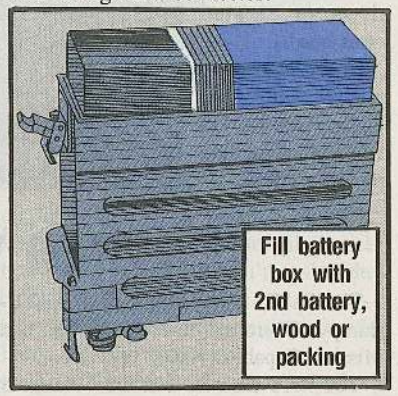

Besides putting a strain on the battery connector of your receiver-transmitter, those half-size BA-5598/U lithium batteries do lots of rubbing on the bottom of the CY-2562 battery box.

Before a hole is worn in the battery




or box, get your support to put two extra rubber pads, NSN 5820-00-930-0724, in the center of the box and seal them side by side with adhesive, NSN 8040-00-664-4318.

If you come up short on a spare battery, never leave only one battery in the box to tug on a connector.




Fill the empty half with a piece of Styrofoam packing or a block of wood 6 by 1 1/2 by 2 1/8 inches... the same size as a battery.

TROOP SUPPORT

AVLB's...

# Keep Your Scissoring Bridge Sharp

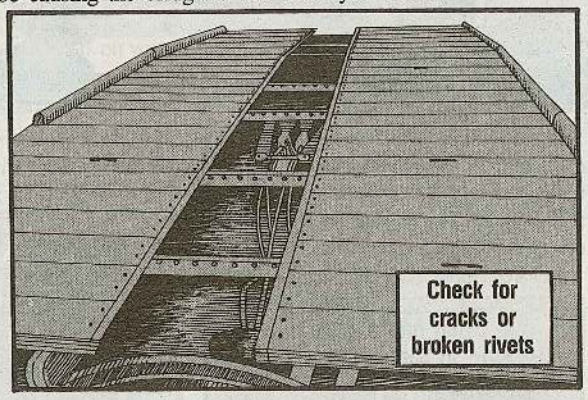

Hold one before you weld that crack on the scissoring bridge on your AVLB.

The bridge is made of a special high-strength, heat treated aluminum. Welding will weaken it, maybe causing the bridge to fail when you use it.

When you find a cracked or bent bridge member, get support to replace the bad parts.

Keep an eye out for loose or missing rivets or sheared rivet heads.

If you can move a rivet with your fingers, report it. DS will replace missing or loose rivets.




## Inspecting Your Bridge

The PMCS chart in TM 5-5420-203-14 for the bridge part of the AVLB is skimpy. There are few checks and nothing that tells when your bridge is Not Mission Capable (NMC).

You need the NMC status because the bridge and launcher now make up a reportable item. If the bridge is down, the launcher is down.

The headshed is revising the TM to update the PMCS, but in the meantime, the information is in TACOM Msg AMSTA-MCA 291800Z Jul 86. Your local TACOM Logistic Assistance Representative has a copy.



M10A RT Forklift...

# NSN's Available for Parts


Need a tire, alternator, battery or starter for an M10A RT forklift? If so, listen up. Jot down these changes to parts listed in Chapter IV of TM 10-3930-643-14&P:

NSN 2610-00-726-5168 gets the 20.5×25 L2 tire on Page 15-2 of Section 15.

The battery on Page 8-10 of Section 8 comes as NSN 6140-01-203-4912. Order on a DD Form 1348-6 using RIC JGS.

NSN 2920-01-140-4283 gets the starter on Page 9-2 of Chapter V.

The alternator on Page 9-2 of Chapter V is NSN 2920-00-909-2483.

DS will order from:

**GSA, 7FXER**
**819 Taylor St**
**Fort Worth, TX 76102**

D7F Tractors...

# A Tale of Two Engines

You can damage your D7F's engine if you use the wrong size engine oil dipstick.

Caterpillar's replacement engine—PN 5R3383—comes with a shorter oil dipstick than the old engine. Depending on which engine you have, if you're using the wrong dipstick, it'll show either too much or too little oil.

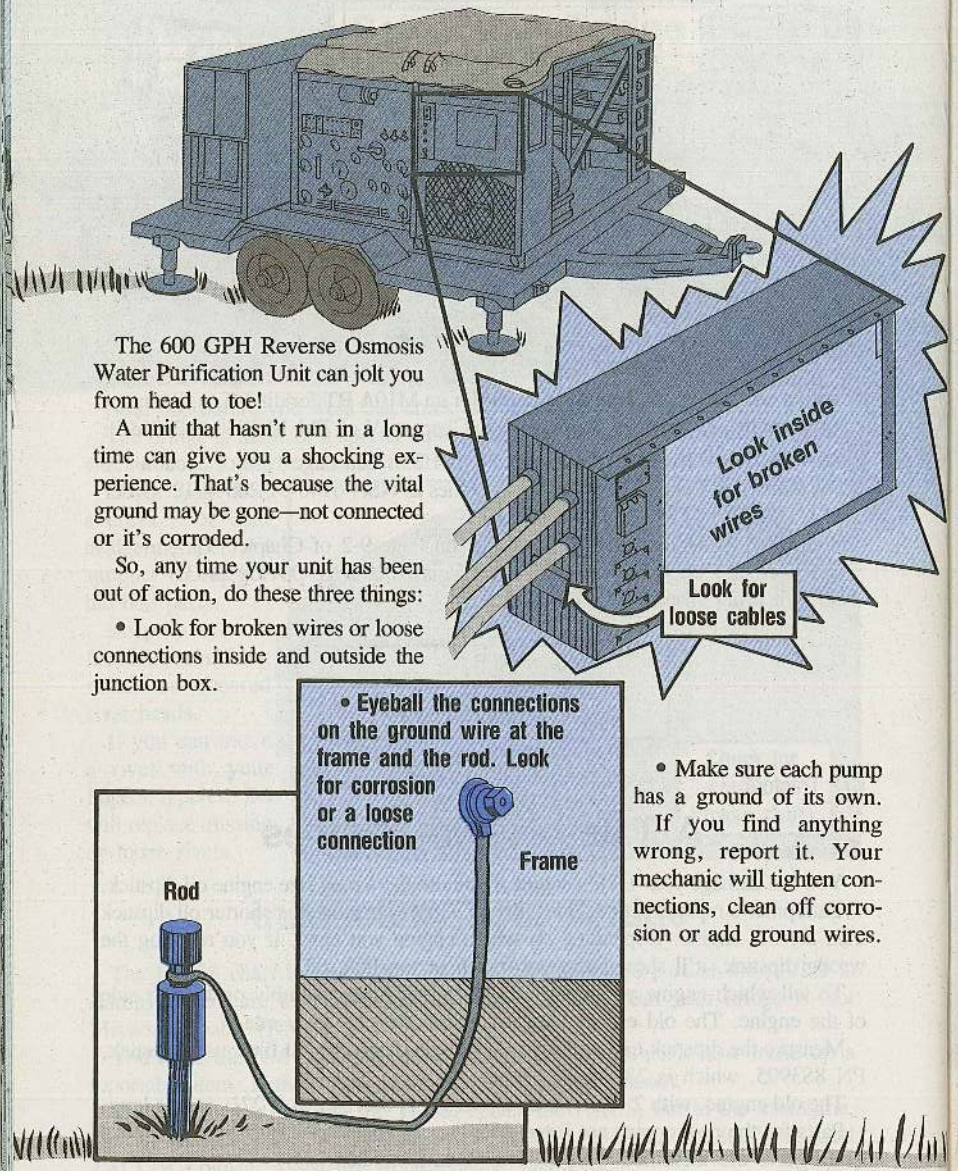
To tell which engine you have, look at the oil filter assembly on the left side of the engine. The old engine has two filters, the new only one.

Measure the dipstick to make sure. The engine with one oil filter uses dipstick, PN 8S3995, which is 23¾ inches long.

The old engine, with 2 filters, uses dipstick, PN 5R1245. It is 27¼ inches long.

Parts for the new engine are listed after the old engine in TM 5-2410-233-20P. The figures are identified with the engine part number.

# It Will Shock You!




The 600 GPH Reverse Osmosis Water Purification Unit can jolt you from head to toe!

A unit that hasn't run in a long time can give you a shocking experience. That's because the vital ground may be gone—not connected or it's corroded.

So, any time your unit has been out of action, do these three things:

- Look for broken wires or loose connections inside and outside the junction box.
- Make sure each pump has a ground of its own.

If you find anything wrong, report it. Your mechanic will tighten connections, clean off corrosion or add ground wires.



# Stovepipe Tent Shield

***Dear Half-Mast,***

***Do we need the stovepipe tent shields called out in the space heater TM if we have GP tents with the silicone shields already sewn in?***

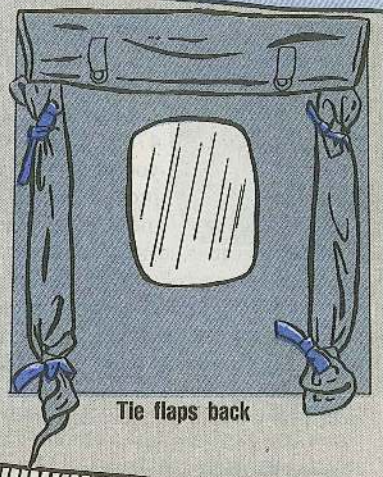
***SGT T. T. P.***

*Dear Sergeant T. T. P.,*

*No, the silicone rubber shields will do the job.*

*Make sure the flaps are securely tied back. They will burn if they touch the stovepipe.*

*Half-Mast*




Aluminum Cot...

# Short Cover Can Be Fixed

***Dear Half-Mast,***

***Assembling the aluminum folding cot, NSN 7105-00-935-0422, is an impossible dream. The nylon cover won't reach from end to end. We could tie the ends to M60 tanks and pull... but I doubt the tanks can manage it. What can we do about it?***

***SGT K. L. D.***

*Dear Sergeant K. L. D.,*

*Get your support to lengthen the cover. There are 5 inches of material turned under at each end for the tunnels. They'll cut the stitching and restitch with only 4 inches turned under—increasing the overall length by 2 inches.*

*New covers will be the right length, but short covers will be issued until the supply's exhausted.*

*Half-Mast*

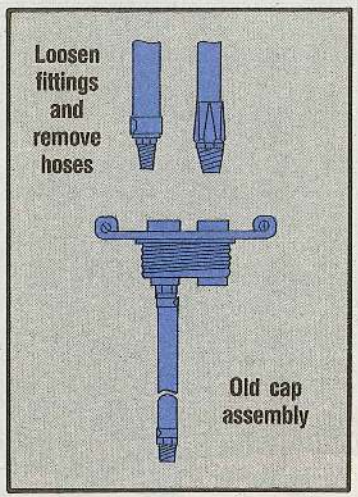
# New Improved Cap

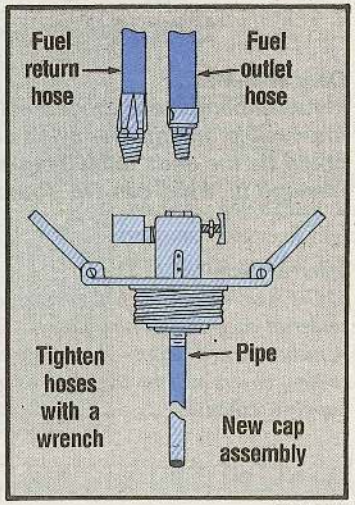

When you order the M2 water heater's filler opening cap hose, NSN 4720-00-022-8380, you'll get an improved cap with a metal pipe instead of a hose. The cap is easier to screw in the fuel can, and the pipe helps the cap last longer.

Wait until your old filler opening cap hose wears out before ordering the new cap. The new cap-with-pipe comes under NSN 4520-01-185-9474.

Here's how to put the new cap on:

- **Loosen the outlet and return hoses' fittings to remove the hoses from the old cap.**
- **Wrap anti-seize tape, NSN 8030-00-889-3535, around each hose's threads to prevent leaking.**
- **Screw the outlet hose in the new cap's center opening and tighten with a wrench.**
- **Screw the return hose in the other opening and tighten with a wrench.**


FEB 87



# Check Up or Check Out

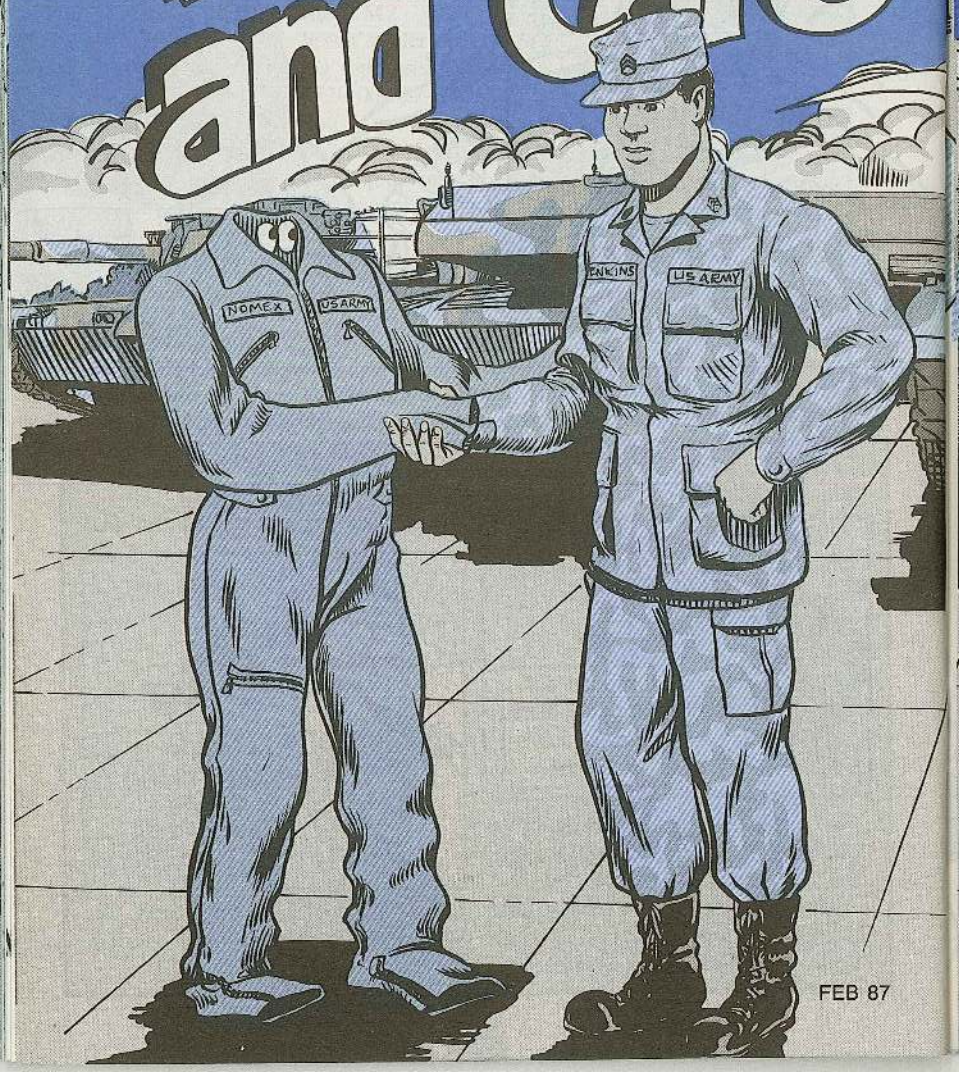

Inspect your M24 or M25A1 mask's cannister and connector plug **before** you head to the field or you could find yourself in a mask that won't let you breathe or communicate. You can't get much worse off than that. Head off trouble like this:

Pull the coupling off the top of the cannister. With a clean cloth, wipe dirt from inside the coupling and top of the cannister. Dirt clogs cannister valves and makes it hard to breathe.


Make sure the cannister's valve discs lie flat and completely cover the air inlets. If the discs are out of place, your mask can't protect you. Tell your NBC NCO about out-of-place discs.

Eyeball the connector plug for corrosion and frayed wires. Even if the connector looks good, plug it in and try it out. It's too late when you get to the field.

# Wear and Care Update




FEB 87


Nomex clothing is designed to protect aviation and combat vehicle crew members from flames. But it needs a helping hand to do its job. Nomex will protect you if you protect it and wear it right.

This clothing is sized to wear loose, so never alter it for a tighter fit. The loose fit leaves an airspace between the fabric and your skin. That space insulates against heat.

## Cleaning

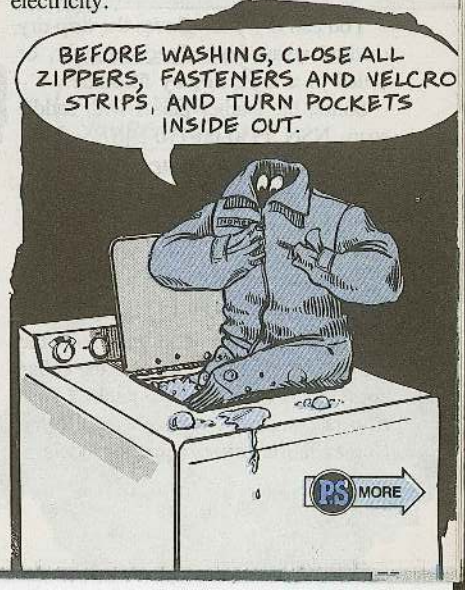
Be sure to wash and dry new Nomex clothing before you wear it. That softens the fabric and prevents skin irritation.

You can wash Nomex clothing several ways. Whether it's dry-cleaned, hand-laundered or machine-washed, it loses the fire retardancy if it's starched.



If Nomex is starched, wash and rinse it in warm water. That restores the fire retardant qualities.


Machine-wash Nomex using the wash-and-wear or "delicate" cycle. It's best to use a fabric softener to reduce static electricity.



Either drip-dry or machine-dry Nomex at a low heat. If you machine-dry Nomex with other fabrics, use an anti-static strip.

Hand-launder Nomex gloves by putting them on and washing with warm soapy water. Machine-washing's OK, too. After washing, remove the gloves and squeeze out the water. Never twist or wring the gloves.


You can dry your gloves the drip-dry method away from direct sunlight, or rolled in a towel, or by machine.

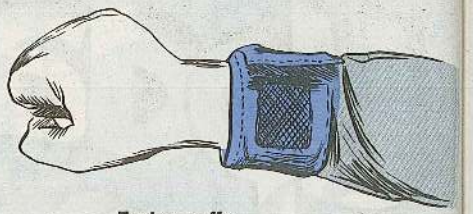
Soften the leather palms with saddle soap, NSN 7930-00-170-5467.

### Protection Guaranteed

Then your Nomex clothing is ready to wear. Keep in mind, tho, if the Nomex isn't worn right, it won't protect you.

When you put Nomex clothing on...

• Wear the sleeves rolled down. Fasten the cuffs and trouser bottoms. Tuck the shirt into the trousers. Be sure the collar goes up to protect your neck. Close zippers completely, and make sure the Nomex fabric covers zippers inside and



**Fasten cuffs and trouser bottoms**

out. That protects you from metal zipper burns.

• Wear all natural-fiber underwear, like cotton or wool. Synthetic fabrics can melt and stick to your skin if heat gets thru the Nomex.


If local SOP requires you to wear rank, insignia, name tags or whatever, use natural fiber items. Never wear metal pin-ons...they get hot.

### Static and Fuel Spills

Static can be your worst enemy during refueling operations. One spark can start a fire that kills!



You can prevent sparks by keeping equipment grounded and bonded.


**Fuel spilled on Nomex clothing can lead to a big burn**

Treat ANY fuel spill immediately, like so:

• Slowly move at least 50 feet away from the refueling area.

• Drench the fuel spill with water. Water prevents static electricity from igniting the fumes. If you don't soak the spill right away, you can end up with first and second degree burns. Never remove


the Nomex clothing without soaking the fuel spill first.

No water?

Grab any grounded bare metal and hold on for a few seconds. That drains static buildup. Then slowly remove your clothes. Be sure they're washed before you wear them again.

### Repairs

A lot of Nomex damage is fixable. Only Aviation Life Support Equipment (ALSE) technicians are authorized to repair aviation Nomex clothing. Tankers should turn their Nomex clothing in to unit repair.

# Alive and Kicking







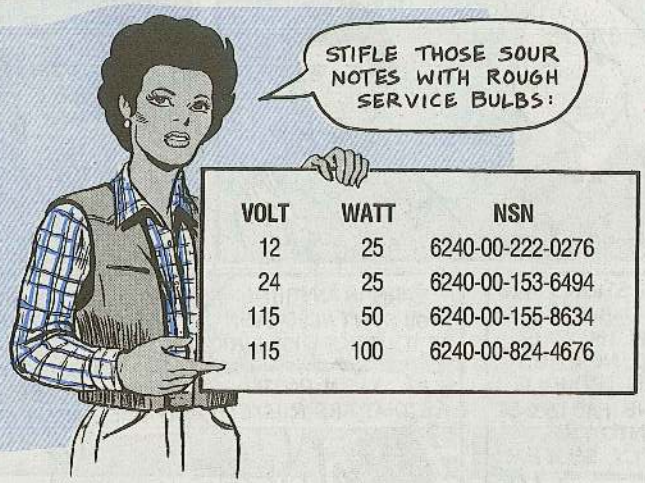





Rough Service Bulbs...

## The Blown Bulb Blues

Are you singing the blues over drop cord lamps that blow when they get a gentle bump?




| VOLT | WATT | NSN |
|---|---|---|
| 12 | 25 | 6240-00-222-0276 |
| 24 | 25 | 6240-00-153-6494 |
| 115 | 50 | 6240-00-155-8634 |
| 115 | 100 | 6240-00-824-4676 |

Use rough service lamps for those tough jobs and soon you'll be singing a different tune.

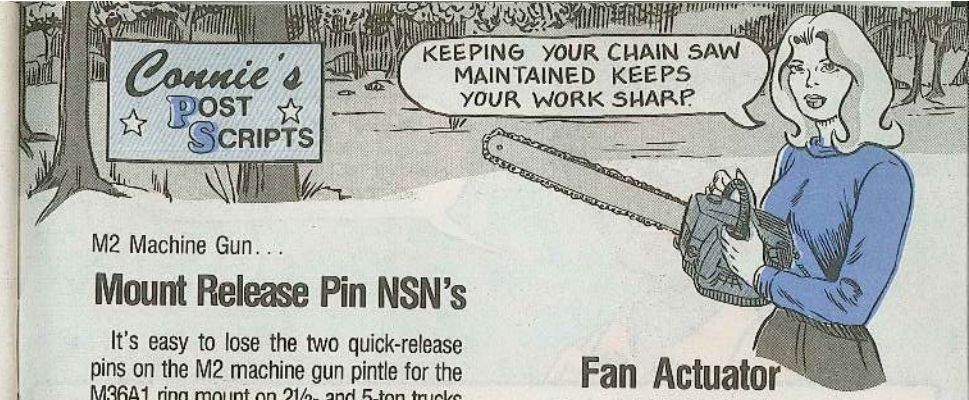
## Welding Check Valve NSN's

You can now get reverse flow check valves to go between a welding torch body and the hoses to prevent flashback into the hoses.

Get the oxygen check valve with NSN 4820-01-227-0999 and the acetylene check valve with NSN 4820-01-227-7145.

Check your torch before ordering, tho. New torches have check valves built in where the hoses attach.

When you use check valves at the torch, remove check valves at the regulators. Using two check valves in series reduces pressure and gas flow. That makes it hard to keep the steady flame needed for good welds.




M2 Machine Gun...

## Mount Release Pin NSN's

It's easy to lose the two quick-release pins on the M2 machine gun pintle for the M36A1 ring mount on 2½- and 5-ton trucks and for the mounts on all combat vehicles except tanks. And NSN's for the pins 're not in the TM's for the M2 or the vehicles. No problem, though. You can find the NSN's in TM 9-1005-245-14, which covers machine gun mounts. Order the front pin with NSN 5340-00-707-0292 and the rear pin with NSN 5340-00-707-0291.

## Head Off Pump Fire

You can now shut down your gas engine-operated tank and pump unit from a safe distance if it's leaking fuel. Control cable and switch, NSN 6150-01-191-9732, can be used as a remote shut-off. Get DS to do the fix. Instructions are available from your TROSCOM Logistic Assistance Rep.

## .50 Cal Charger Change

You won't get what you need to make that emergency charging handle for the tank-mounted M2 machine gun if you use NSN 1005-00-556-4102 in PS 406. Instead, order NSN 1005-00-653-5441—the complete cleaning rod for the M2.

## Fan Actuator for M915-Series

TM 9-2320-273-20P lists the wrong NSN for the fan clutch actuator, Item 4 of Fig 29. NSN 2530-01-149-1317 gets the right actuator for all M915-series trucks except the M919 and M915A1. Use NSN 3010-01-089-3242 for the M919's actuator. The M915A1's acutator is listed in Fig 26 of TM 9-2320-283-20P.

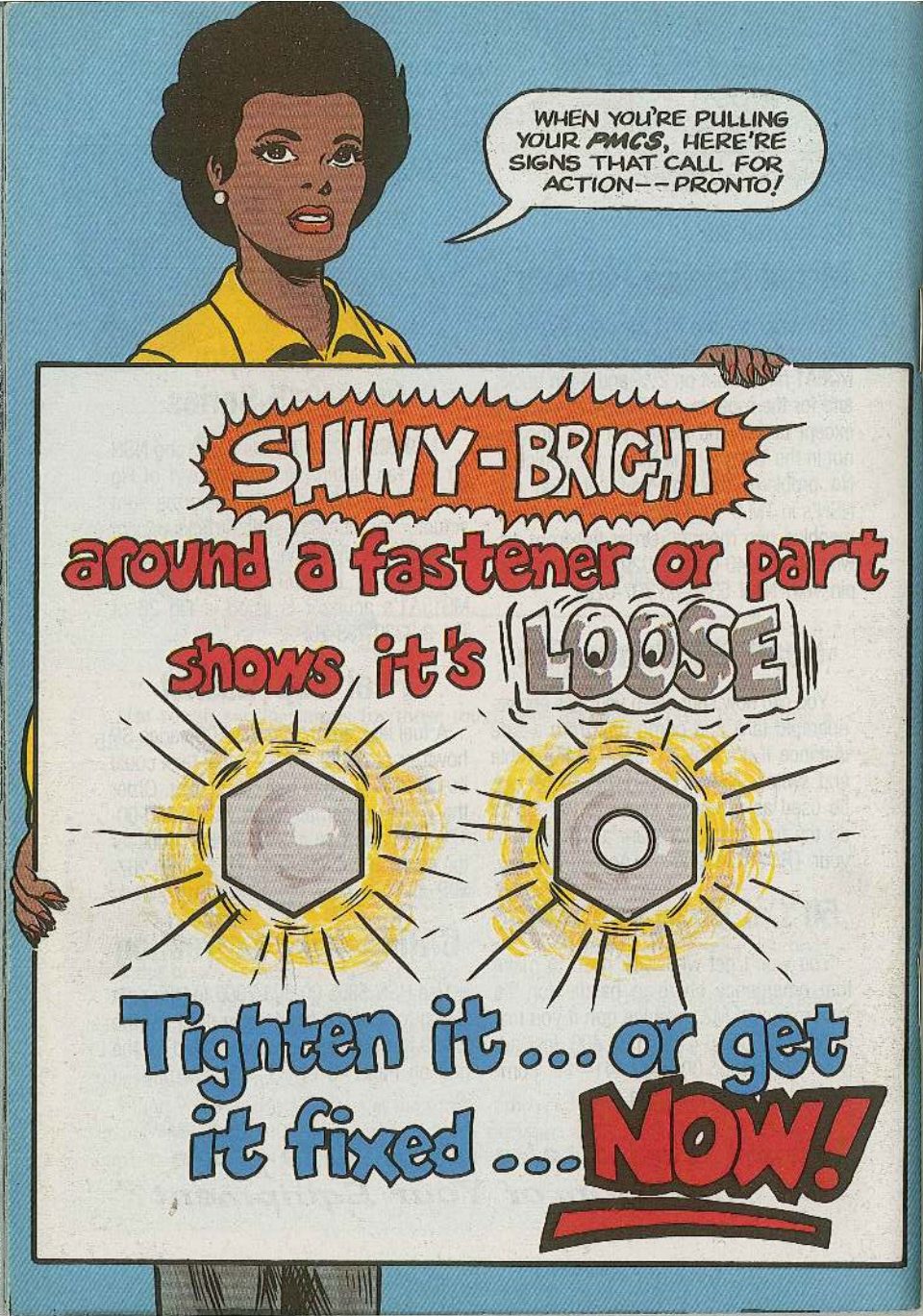
## Fuel Cap Gasket

A fuel leak around your M109-series SP howitzer or M992 FAASV's fuel tank could be caused by a bad fuel cap gasket. Order the gasket separately with NSN 5330-00-179-0414 and save more than $21. Look for the gasket in an update to TM 9-2350-267-20P and the new TM 9-2350-311-24P-1.

## C-Ring NSN Correction

Use NSN 5365-00-803-7306 for the right C-ring to hold the bearings in place on the RL-39 reel. The stock number listed for the ring on Page 49 of PS 406 is wrong.

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


WHEN YOU'RE PULLING YOUR PMCS, HERE'RE SIGNS THAT CALL FOR ACTION--PRONTO!
SHINY-BRIGHT
around a fastener or part
shows it's LOOSE
Tighten it ... or get it fixed ... NOW!