

Issue 434

**PS**

January  
1989

**THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY**



RESOLUTIONS 1989  
1. QDR's

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Public Release;  
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Unlimited

Quality Deficiency Report  
See Page 27

Engines...

## Idled Engines End Up in the Shop

**D**rivers, hurry-up-and-wait is SOP in the Army. But you're asking for trouble if you keep your truck's engine idling while you wait.

**A long, slow idle will damage the engine.** The engine won't get hot enough to burn all the fuel in the combustion chambers. Engines like it hot—up to operating temperature. Running an engine below operating temperature leaves carbon deposits on the valve stems, which fouls the valves.



The push rods have to work harder because of the carbon to do their job, and if you keep the engine idling, the results are burnt valves and worn out or bent push rods.

And there's more...blowby. Blowby is the unburned fuel and moisture formed by condensation that slips past the pistons and gets into the crankcase. There it becomes acid and sludge in the engine oil.

The acid breaks down the oil and the oil doesn't lubricate the bearings like it should. The sludge blocks lube passages and oil can't get through to lube the engine.

Metal rubs metal. That causes friction, which makes heat. Parts wear out quicker, bearings burn up and the engine stops—cold.

All this damage can be prevented. Watch how long you let the engine warm up in the morning—5 to 10 minutes is the limit.

**If you have to idle the engine, do it at fast idle.** It's better to burn a little extra fuel than to damage the engine. High idle holds down trouble, if you keep an eye on the tachometer and the TEMP gage.

Find the RPM's that keep the engine temperature in the normal operating range spelled out in your truck's -10 TM. That will keep your engine warm and working like it should.




### THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-434, 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 434 JANUARY 1989

#### FIREPOWER

M1-Series Tanks	2-3	Combat Vehicles	9
M2/M3-Series Bradleys	4-5	NATO Slave Cable	10
M113-Series FOV	6-7	M16-Series Rifle	11
M110A2 SP Howitzers	8	M60 MG	12-13, 14
		FAAR	15-17

#### GROUND MOBILITY

HMMWV	18, 19	CUCV	24
2½-, 5-Ton Trucks	20, 21	M151-Series Tanker	25
M939-Series Truck Tires	22-23	M131-Series Trailer	25
	24		

#### AIR MOBILITY

AH-64A Apache	34	CH-47 Chinook	39
UH-60A Black Hawk	35, 37, 38	AH-1 Cobra	40, 41
UH-1 Huey	36-37	Aviation Msgs	41

#### COMMUNICATIONS

AN/GRC-106	42-43, 44	MX-6707 Matching Unit	48
Vehicle Radio Start	44	BUCS	49
AN/PRC-68	45	Lithium Battery Pubs	49
WD-1 Wire PM	46-47		

#### TROOP SUPPORT

New Pubs, SOU's	26	MT-250 Crane	53
SF 388	27-34	Generators	53
Scoop Loaders	50	Puller Kit Parts	54-55
Warehouse Forklifts	51	Wrench Sets	56-58
Torque Wrenches	52, 53	AOAP	59, 60

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

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By Order of the Secretary of the Army:

**CARL E. VUONO**  
General, United States Army  
Chief of Staff

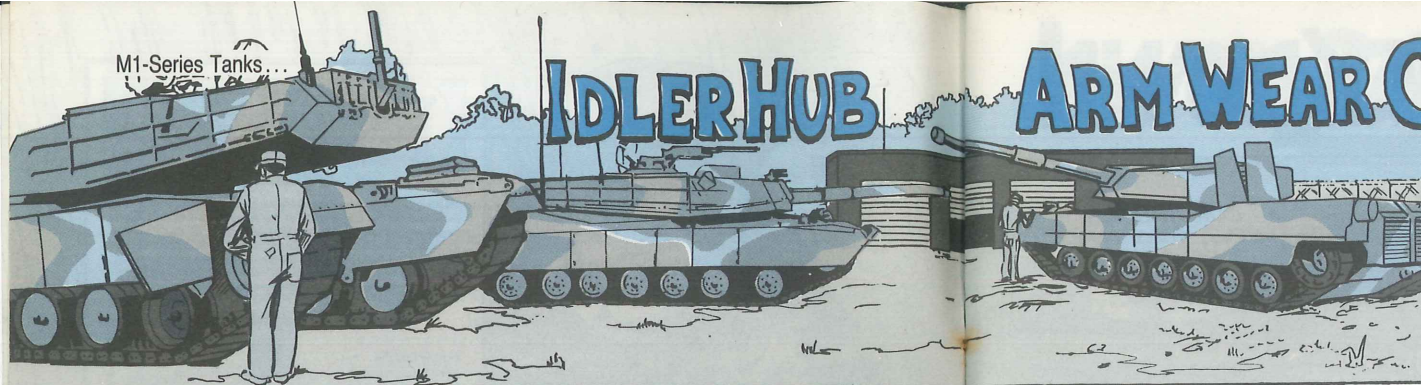
Official:

**R.L. DILWORTH**  
Brigadier General, United States Army  
The Adjutant General

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# IDLER HUB

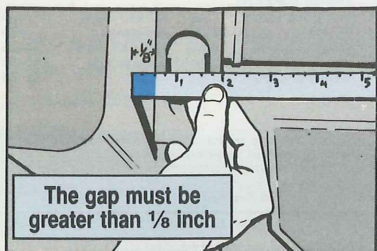
# ARM WEAR CHECK



The upper spindle bearings on an M1 tank's compensating idler hub and arm are harder than the spindle metal. They're grinding away at the softer metal of the spindle.

Until new bushings designed to solve this problem hit the field, here's what you need to do to keep your M1 moving:

🛠 Crews, as part of your after-operations checks, open both front fenders and measure the gap between the track end connectors and the #1 skirt. If the gap is less than 1/8-inch—or if the end connectors are touching the skirt—sing out to your mechanic.



The gap must be greater than 1/8 inch

🛠 Mechs, here's what you do at each semiannual service—or whenever crews report too little room between end connectors and skirts.

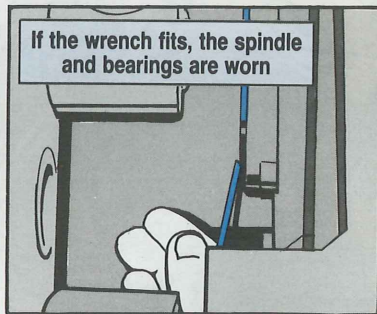
1. With the track on the tank and with the correct track tension applied,

eyeball the retainer and idler arm where they join. If there's metal-to-metal contact at the top and a gap at the bottom, the upper spindle is bent. The arm must be monitored closely and lubed at least once every day. Check out LO 9-2350-255-12 or LO 9-2350-264-12 for instructions.



Metal to metal contact here, but gapped at the bottom? The spindle is bent!

2. If you can insert a 5/32-in Allen wrench (NSN 5120-00-198-5392 from the No. 1 Common tool set) into the



If the wrench fits, the spindle and bearings are worn

gap between the retainer and the idler arm at the front, the upper spindle and bearings are worn.

Again, the arm must be monitored closely and lubed every day. When the gap is 1/4-inch, replace the compensating idler arm.

🛠 Mechanics, if you don't have to replace the idler arm, but the end con-



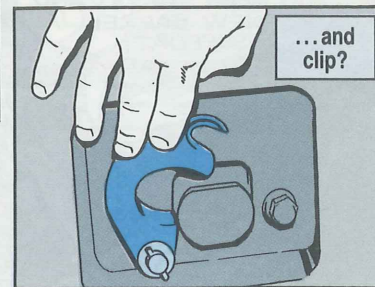
Shim out the support with shim, NSN 5365-01-102-4737

nectors are within 1/8-in of the #1 skirt, move out the fender skirt support with shim, NSN 5365-01-102-4737. Use as many shims as necessary, as long as



Using shims? Does skirt still close with pin...

the retaining pin and clip can still be used to close the skirt.



... and clip?

Shimming instructions are found in TM 9-2350-264-20-1-5 on Pages 16-121 through 16-124 and in TM 9-2350-255-20-1-3-4 on Pages 7-255 through 7-260.

As a reminder, when you're working on the skirts, never open two skirts at the same time if they have the same hinge line. The hinge can't take the weight, and neither can any part of your body that happens to be in the way if the skirts fall.



Never have skirts that share the same hinge open at the same time

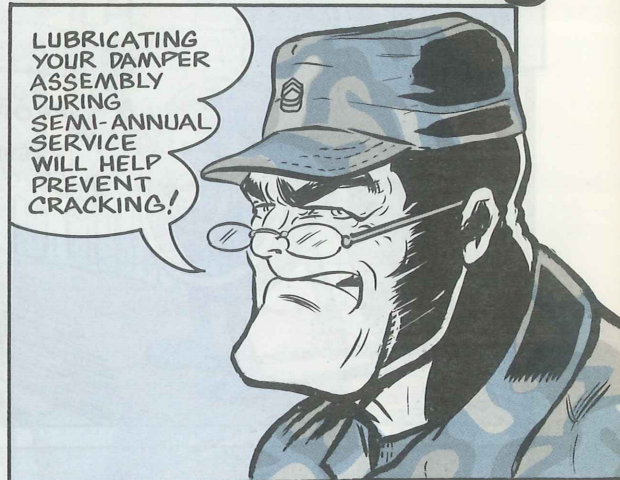
# CRACKDOWN

# ON M242 CRACKS



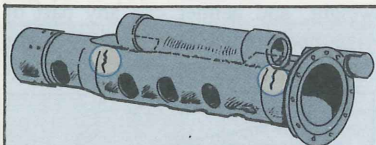
WHENEVER EYEBALLING THE BARREL, IT HELPS TO KNOW THE DIFFERENCE BETWEEN THE OLD AND NEW BARREL SUPPORT!

CONTINUOUS WELD, THAT MAKES THIS A NEW BARREL SUPPORT.



LUBRICATING YOUR DAMPER ASSEMBLY DURING SEMI-ANNUAL SERVICE WILL HELP PREVENT CRACKING!

**W**eed out unusable barrel support assemblies by eyeballing the damper weld and tubes for cracks. If you find any, you need to see if you have an old barrel support that can be temporarily fixed.



Look for cracks in barrel support tube and damper weld

Both the old and new barrel supports have an inside weld at the breech end of the barrel support assembly where the damper assembly is attached. The old barrel supports have a tack weld and new barrel supports have a continuous double weld.

If you have a new barrel support, you can't fix or continue to use it if it has cracks.

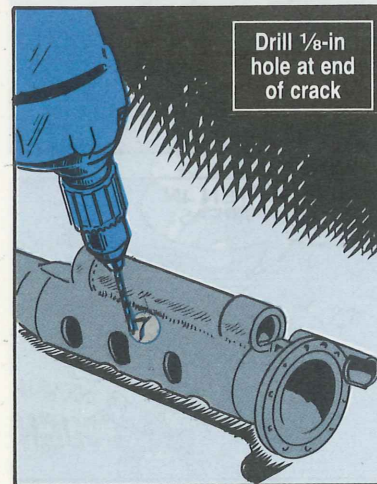
If your tube has the tack weld, measure the cracks. If the cracks are shorter than two inches, order a new tube but continue to use the old one. Note on DA Form 2408-4, Weapons Record Data, that the cracks should be re-measured after every firing mission.

If cracks in the weld are longer than two inches, the tube's unusable.

Eyeball the rest of the barrel support tube. If there are any cracks longer than one inch, the tube's no good.

If you find a crack—other than those on the damper weld—less than one inch, fix these older tubes by drilling a 1/8-in hole at the end of the crack farthest from the damper assembly. Drill all the way through the tube. That

relieves the pressure causing the crack and stops it from going farther. Use the tube until you get a new one.



Drill 1/8-in hole at end of crack

Measure cracks after every firing and continue to stop drill. If any reach one inch, stop using the barrel support tube.

If your barrel support is one of the new ones, you need to fill out a Quality Deficiency Report (SF 368) when you order a new tube and send it to:

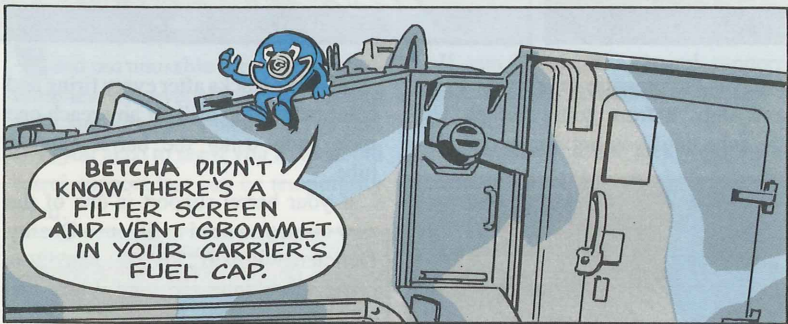
**Commander  
US Army Armament, Munitions  
and Chemical Command  
ATTN: AMSMC-QAD  
Rock Island, IL 61299-6000**

Help prevent cracking by lubricating the damper assembly during semiannual service. The procedure's on Page 2-310 through 2-312 in TM 9-1005-200-20&P.

# CLEAN FUEL CAP, TOO



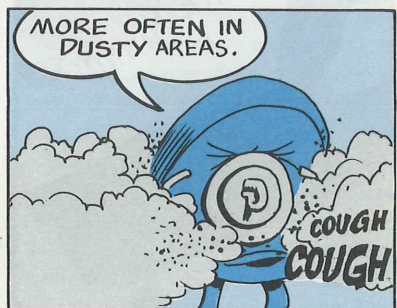
FOLLOW ME FOR PROPER MAINTENANCE AND PREVENT FUEL FLOW PROBLEMS.



BETCHA DIDN'T KNOW THERE'S A FILTER SCREEN AND VENT GROMMET IN YOUR CARRIER'S FUEL CAP.



BETCHA ALSO DIDN'T KNOW THE SCREEN AND GROMMET NEED CLEANING AT LEAST EVERY SIX MONTHS!

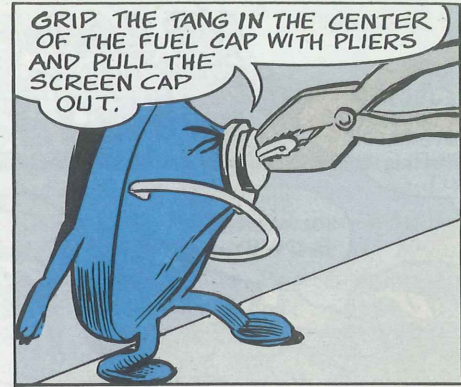


MORE OFTEN IN DUSTY AREAS.

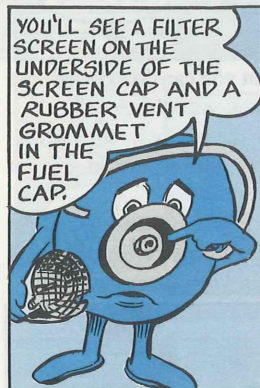
COUGH COUGH



LET ME SHOW YOU HOW TO CLEAN 'EM.



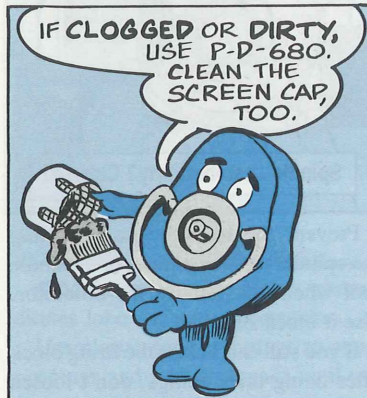
GRIP THE TANG IN THE CENTER OF THE FUEL CAP WITH PLIERS AND PULL THE SCREEN CAP OUT.



YOU'LL SEE A FILTER SCREEN ON THE UNDERSIDE OF THE SCREEN CAP AND A RUBBER VENT GROMMET IN THE FUEL CAP.



IF THE GROMMET IS DAMAGED, GET A NEW FUEL CAP WITH NSN Z901-01-083-5674.



IF CLOGGED OR DIRTY, USE P-D-680. CLEAN THE SCREEN CAP, TOO.



PUT IT ALL BACK TOGETHER AND THAT'S ALL THAT'S NEEDED TO PREVENT FUEL FLOW PROBLEMS CAUSED BY A PLUGGED FUEL CAP.

# NO LOOSE OBTURATOR SPINDLES

REDLEG HALL OF FAME

REJECTED FOR LOOSENING OBTURATOR SPINDLE NUT...

... SPLIT PRIMERS, BLOWBY...

... DAMAGED BREECHES. WE JUST DON'T HAVE ANY LUCK AT ALL!

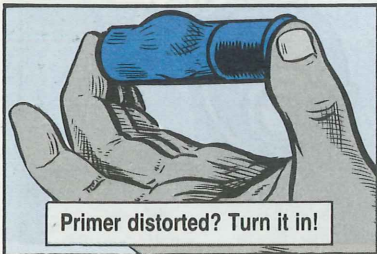
Here's what you can do to make sure the firing block will close:

- ☆ Eyeball the primer. If it's distorted, put it aside for turn-in and get another.
- ☆ Check out the obturator spindle chamber. If it's dirty, clean it. If it's burred, call in your mechanic.

There is no place in the Redleg Hall of Fame for crews who loosen obturator spindle nuts to get space enough for the firing mechanism to be closed.

A loose spindle nut causes split primers, blowby and damaged breech and breech ring threads.

A warning on Page 2-125 of TM 9-2350-304-10 tells you, up front, that loosening the obturator spindle nut to get more room for the firing block is out. The nut should be snug.



Prevent the burrs by never hitting the spindle with a hammer or T-handle tool when you remove the obturator. Use a block of wood.

If you still can't close the firing block after doing these things, don't loosen the spindle nut. Call your mechanic.

## Cap, Plug or Bag Exposed Parts

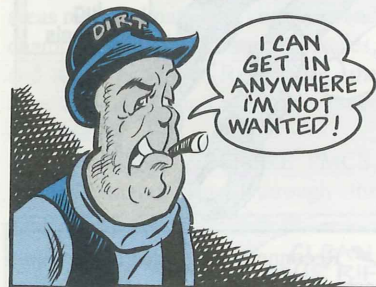
Unless you protect exposed parts from dirt, moisture and damage, all your maintenance work is wasted—and your problems multiply.

Any time you work on a vehicle system that has hoses, lines, tubes and fittings—say, during powerpack removal—these things can happen:

- Rough handling breaks delicate connector pins and mashes threads.



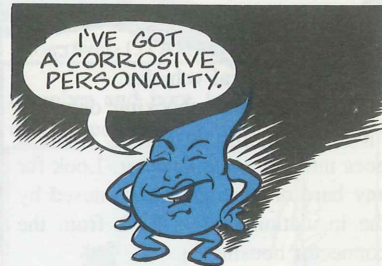
- Dirt gets into holes and open lines, contaminating fluids and gritting up connections so they won't seal.



- Moisture gets into places where it dilutes lube and causes corrosion.

Use plastic caps and plugs to cover openings and protect threads until you put everything back together again.

NSN 5340-00-450-5718 gets you 156 caps and plugs in different sizes. Need only certain sizes? Check the FSC 5335-5340 IL microfiche under Cap, Protective, Dust and Moisture Seal, or Cap, Plug, Protective, Dust and Moisture Seal.



Use plastic bags to hold bearings and small parts like nuts and bolts that might get dirty or lost. Larger bags can hold larger parts or disconnected cables, for example.



KEEP'EM CLEAN...  
KEEP'EM ORGANIZED!

You can tag the bags to make sure everything goes back to the same place.

Bags in different sizes and styles are on FSC 8100 IL microfiche, under Bag, Plastic.

# Naked Wire Shock



Some folks are getting a charge out of disconnecting the NATO slave cable from their tactical vehicles.

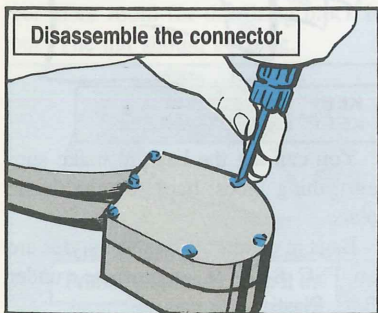
To prevent this shocking development, inspect the slave cable where it goes into the end connector. Look for any bare or exposed wires caused by the insulation pulling back from the connector housing.



Check here for bare or exposed wires

If you see bare or exposed wires, do this:

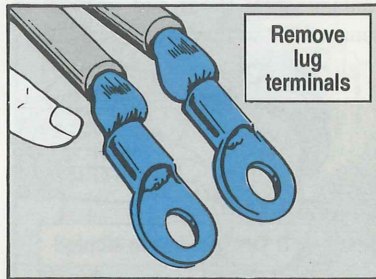
⚡ Disassemble the connector and disconnect the cable from the connector.



Disassemble the connector



⚡ Cut off the lug terminals. Strip back just enough insulation to put on new lug terminals, NSN 5940-00-115-5004.



Remove lug terminals

⚡ Reconnect the cables to the connector.

Make sure the (+) positive lead is reconnected to the center post and the (-) negative lead is reconnected to the negative cup of the connector.

⚡ Reassemble the connector.

# THOSE DIRTY BLANKITY BLANKS



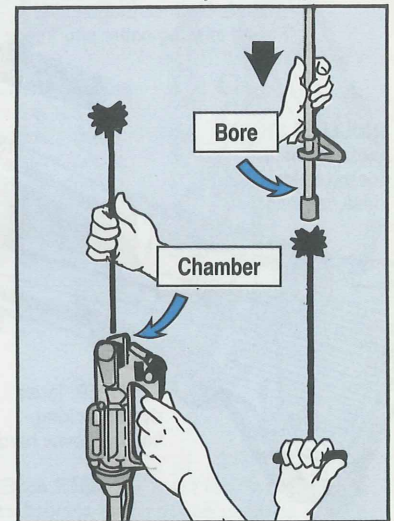
Firing blanks can cause just as many cleaning problems as firing live rounds.

Gun powder residue builds up inside the chamber and bore from firing blanks. If you fire ball or tracer ammunition in an M16 that has a chamber and bore caked with residue, you risk chamber pressure that could cause the rifle to explode.

After firing blanks, clean your M16 just like you would after firing live ammo. Give the chamber and bore areas real workouts with your bore and chamber brushes, cleaning patches, and CLP or LSA. Remember, the bore's not clean until the patch comes out clean.

As part of your BEFORE PMCS, run a cleaning patch through the

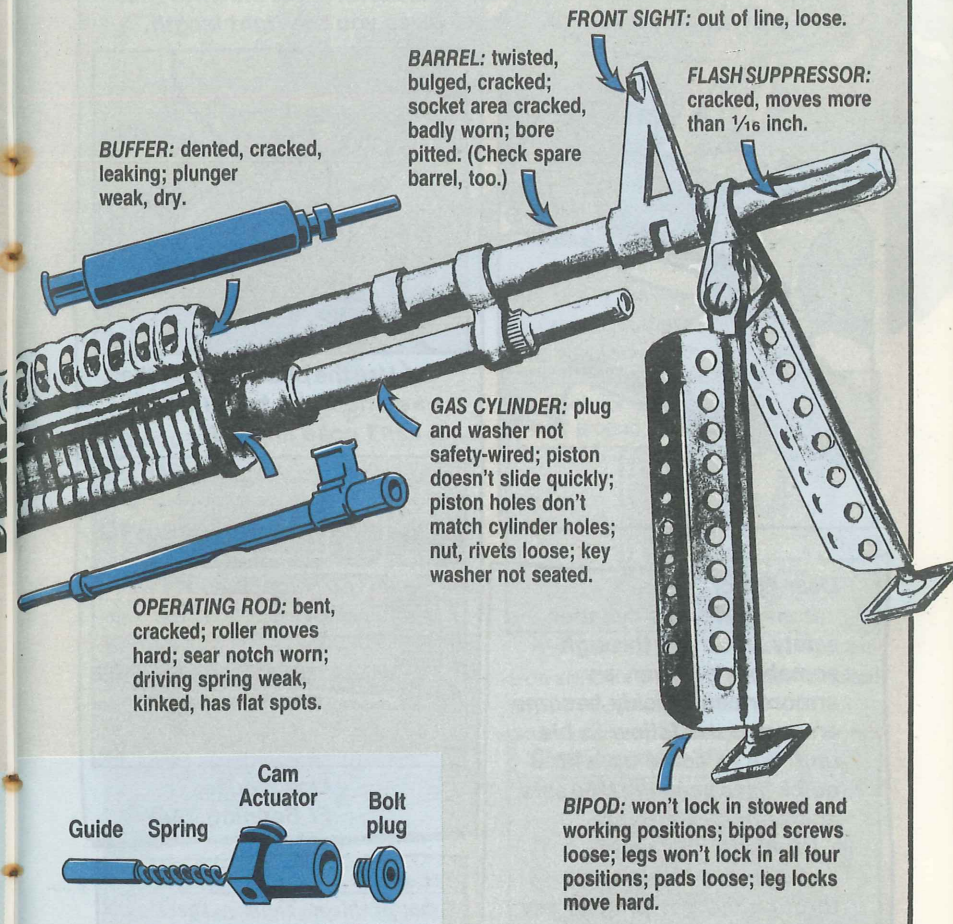
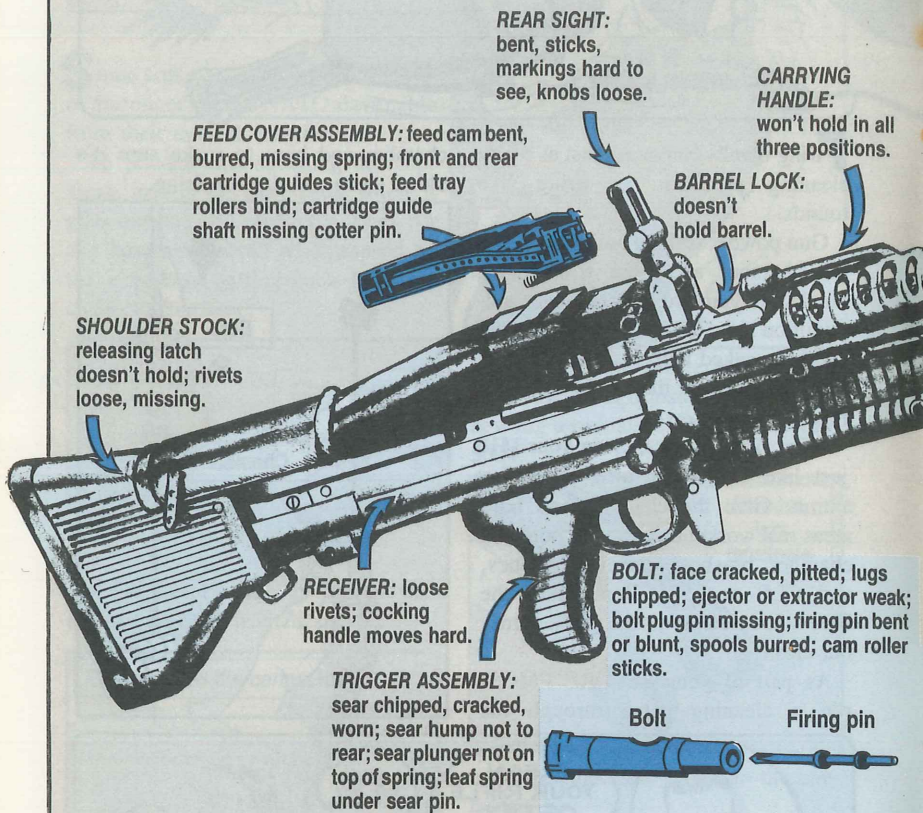
chamber and bore to make sure it's clear, clean and dry for firing.



# BE YOUR OWN

# INSPECTOR

M60 Machine Gun...

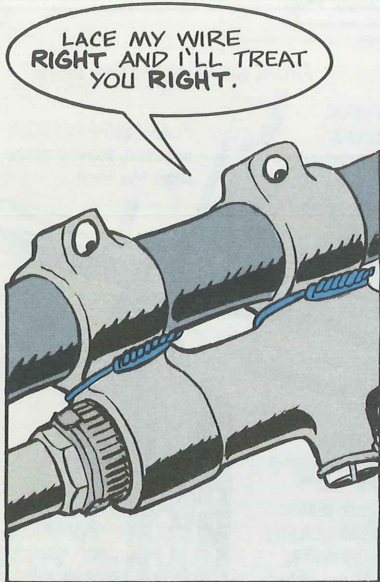


Catch the little things before they become **big problems.**

Use this handy guide for **PMCS** on your **M60.**



# LACING HELP



Dear Editor,

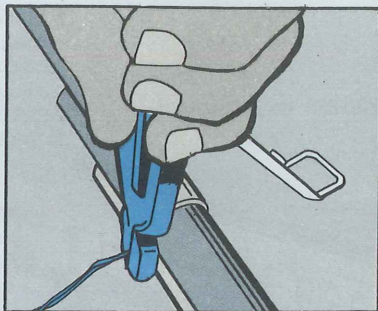
If an M60's gas cylinder safety wire runs through somebody's finger, an armorer can quickly become an unpopular fellow in his unit. We've come up with a quick fix to keep the M60 safe and armorers popular.

Lace wire this way:

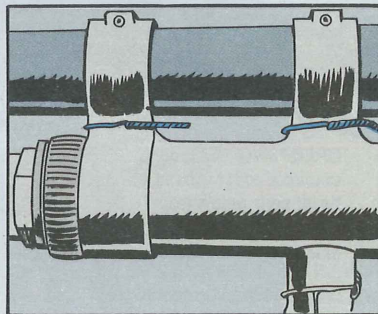
✓ Run the lacing wire through the gas plug or key washer and around the mounting arm.

✓ Set the lacing pliers 1 inch from the mounting arm and twist the wire tight.

✓ Hold the pliers against the barrel to cut the wire. That gives you the right length.



✓ Use the pliers to bend the wire under the barrel where it can't poke anybody.



Lew Lindsey  
Ft Benning, GA

(Editor's note: You've laced up that problem. Thanks. There's a new gas plug, NSN 1005-01-209-3590, in the system that doesn't require safety wiring. So don't get excited if you get a plug without safety wire holes.)

To Head Off Trouble...

# USE FAAR-SIGHTED PM



bouncing they take. If the bolts come out, the Goat will break apart. Look at the bolts every time before you move out. If you see any shiny spots or rust, report it. Get those bolts tightened before you leave home.

Because of the Forward Area Alerting Radar (FAAR) system's heavy load and the rough country it goes over, carrier tires wear out fast. During BEFORE PMCS, closely eyeball tire sides for cracking or dry rot. If you spot any, tell your mechanic.

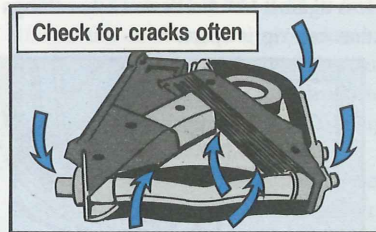


Also, eyeball the rear lower suspension arms for cracking. Report cracked arms to your mechanic.



Before every operation gage all tires and make sure they all have 25 PSI. This will slow tire wear.

The bolts that hold the articulation joint safety pins work loose from the



Take It Easy

Drive slow in rough country. The top-heavy FAAR turns over easily. Keep your speed below 10 MPH.



GENERAL  
HOSPITAL

HERE, SARGE. THEY'RE ALL HEALTHY. TAKE CARE OF THEM.

THEY'LL GET PROPER MAINTENANCE REGULARLY.

Take the trailer cover off if you're going through rough or hilly country. Otherwise, when you go down and up a dip the antenna rips a hole in the cover.

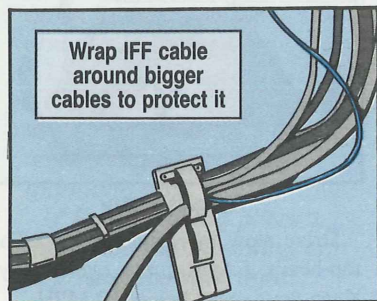


Take trailer cover off for travel to prevent torn covers

### Cable Countdown

Before you move out, always pull out any slack in the cables that run down the side of the van and tie them back.

The IFF cable is especially defenseless against tree limbs and other things that can rip it apart.



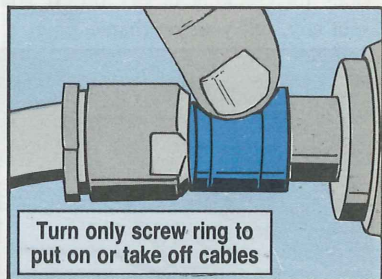
Wrap IFF cable around bigger cables to protect it

Protect the IFF cable by disconnecting it and wrapping it around the heavier cables until it's tight. Then reconnect the cable.

During set up, connect the E1W1 cable to the mast rotary coupler first. Without the other two cables in the way, it's easier to maneuver the heavier E1W1. Give yourself more room by getting as much slack on the E1W1 as possible before you connect it.

Tight is the only way to connect all three cables to the mast rotary coupler. If the cable connections are loose, arcing damages jacks and connectors and causes bandpass filters, circulators and the traveling wave tube to fail. Loose connections also let in water that damages that rotary coupler.

Turn only the cable head's screw ring to tighten cables. If you don't, it's



Turn only screw ring to put on or take off cables

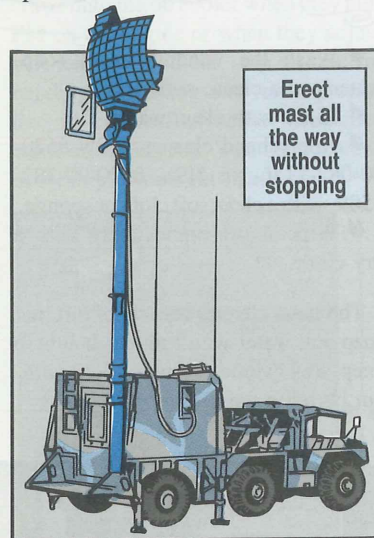
easy to rip the cable's wiring, especially on smaller cables like the W73.

When you disconnect cables, immediately put on the jacks' protective covers. They shut out moisture and dust that cause electrical damage and poor connections.

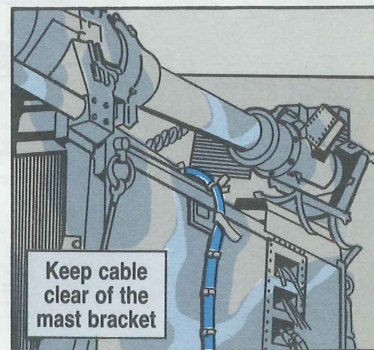


### Mast Musts

Once you start to raise the mast, don't stop until the mast is fully up. You'll hear a loud click when the mast's top section locks in place. If you stop and start, the mast loses pressure and you strain the drive belts that operate the mast.



Erect mast all the way without stopping



Keep cable clear of the mast bracket

Before you lower the mast, make sure the W20 cable is clear of the stow bracket. The mast can catch the cable and pinch or cut it. The mast has no power until the W20's replaced.

### On and Off

Carefully follow the energizing procedure in Table 2-1 in TM 9-1430-588-10 and the de-energizing procedure in Para 2-20. Taking even one shortcut during startup and shutdown leads to damaged components like the K6 relay in the power distribution unit.

If you shut down the generator set before you cut all systems power, you'll get a voltage spike that will zap the K6 relay.



# Grime and Punishment

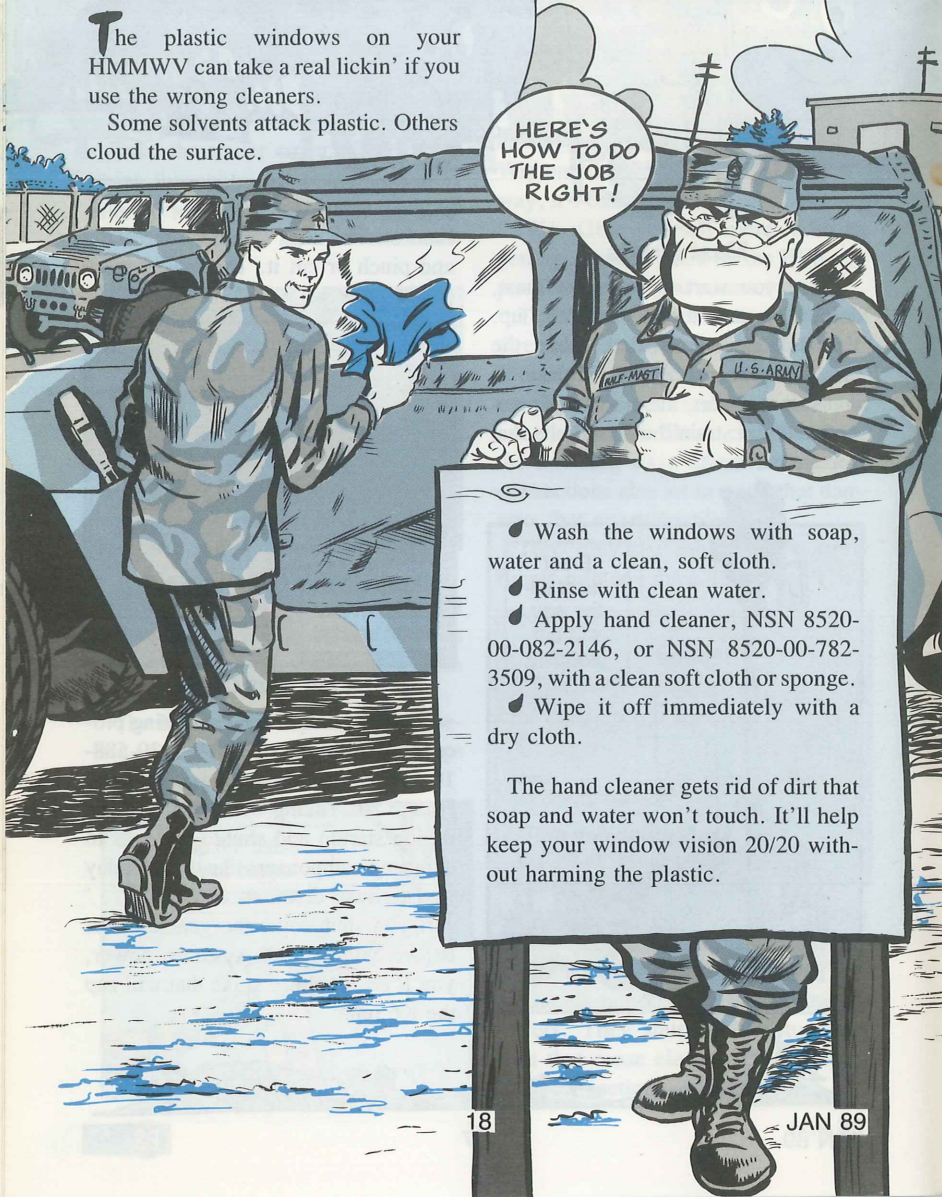
The plastic windows on your HMMWV can take a real lickin' if you use the wrong cleaners.

Some solvents attack plastic. Others cloud the surface.

HERE'S HOW TO DO THE JOB RIGHT!

- Wash the windows with soap, water and a clean, soft cloth.
- Rinse with clean water.
- Apply hand cleaner, NSN 8520-00-082-2146, or NSN 8520-00-782-3509, with a clean soft cloth or sponge.
- Wipe it off immediately with a dry cloth.

The hand cleaner gets rid of dirt that soap and water won't touch. It'll help keep your window vision 20/20 without harming the plastic.

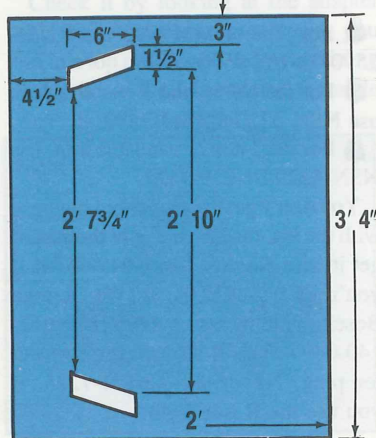


# OIL COOLER FINS PROTECTOR

YOU'RE NOT GETTING UNDER MY HOOD WITHOUT A FIN PROTECTOR!

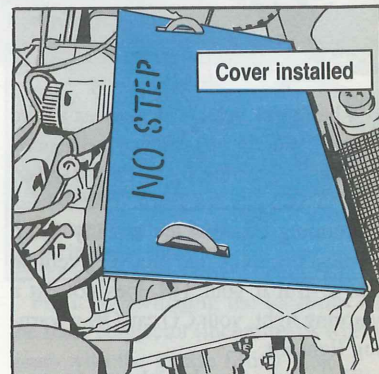
The fins on your HMMWV's oil cooler have to be straight and formed just right to work well. Bent fins stop air flow through the oil cooler and radiator and can cause both the engine and transmission to overheat.

Fins get bent because mechanics crawl onto the oil cooler when they pull PM on the engine or when they adjust belt tension. You can stop all that fin bending by making a cover to protect the oil cooler fins while mechanics work on the engine. You need a piece of 3/4-in plywood cut like so:



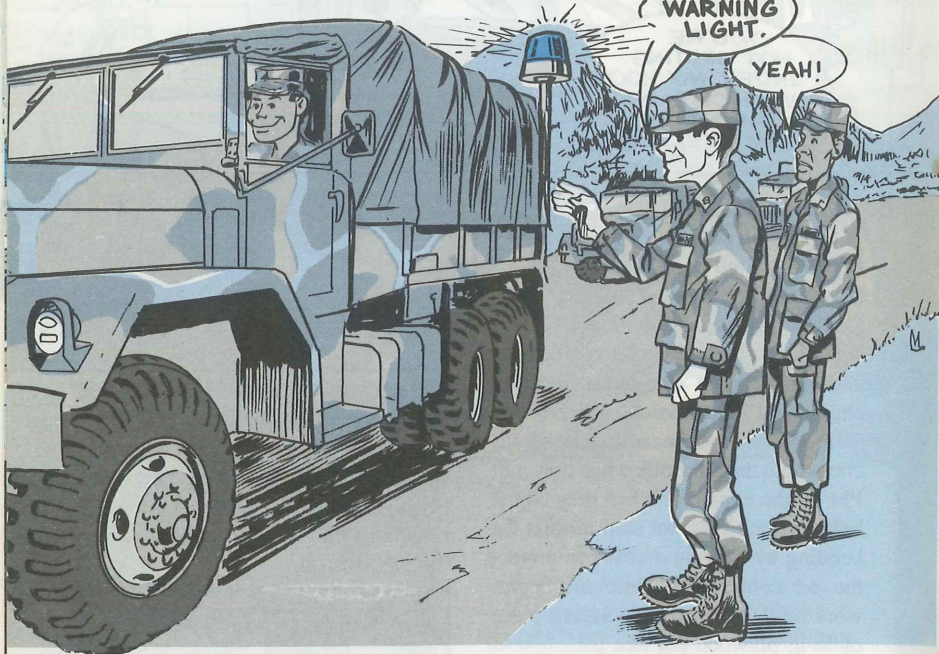
Round off the edges and paint the board to prevent splinters.

To use it, remove eye-hook seals and slip it over the two lifting rings and lay it flat on the oil cooler frame. The rings will prevent it from sliding into the raised hood.



The board stops air flow so never use it while the engine is running. It'll cause the engine to overheat. After use, replace eye-hook seals and check for bent cooler fins.

# WARNING LIGHT KIT



**W**hen your vehicle is used as a lead or trail vehicle in a convoy, you need a rotating warning light. Para 216g of AR 55-162 has the word.

Rotating beacons are already listed in most big truck and recovery vehicle TM's. But if your TM does not list a warning light, your CO can OK a warning light kit.

There are several to choose from:

For 2½- and 5-ton dump trucks, use NSN 6220-01-219-7620. For all other 2½- and 5-ton trucks, use NSN 6220-01-195-1791.

For the HMMWV, use NSN 2590-01-107-9696.

For the M936 and 5-ton wrecker, use NSN 6220-00-947-7570.

For the 5-ton expandable van, use NSN 6220-01-219-7621.

You don't get the amber bubble light with the kit, tho. If you're in the states, get it with NSN 6220-00-947-7570. If you're in USAREUR, get the German Bosch light by using NSN 6220-12-140-0499. You'll also need a connector plug, NSN 5935-12-121-7285, if you use the Bosch light.

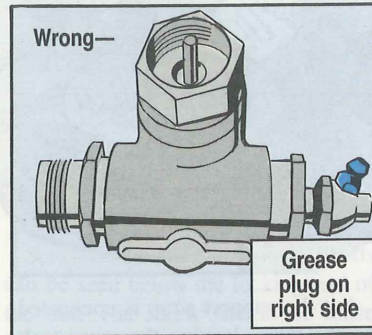
# Speedometer Drive Fix

**M**echs, make sure the 90-degree angle drive adapter for your speedometer works right before installing it.

Some adapters were assembled backwards. They'll turn your odometer

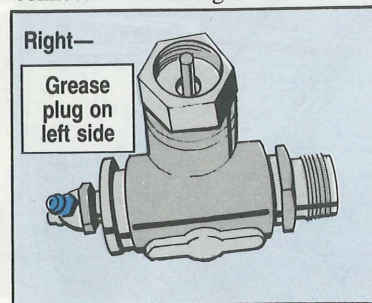
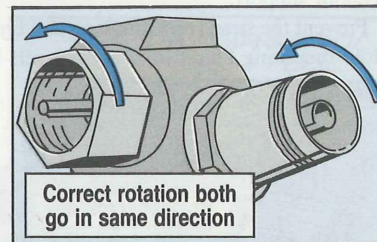


The shafts should rotate in the same direction. To be sure, rotate one shaft. If the other shaft turns in the same direction then the unit is OK. If it doesn't, it's wrong.



back, damage your speedometer or snap your speedometer cable.

Check it by looking at the adapter with the female connector facing you and in a top position. The grease fitting should be on the left end and the male connection on the right.

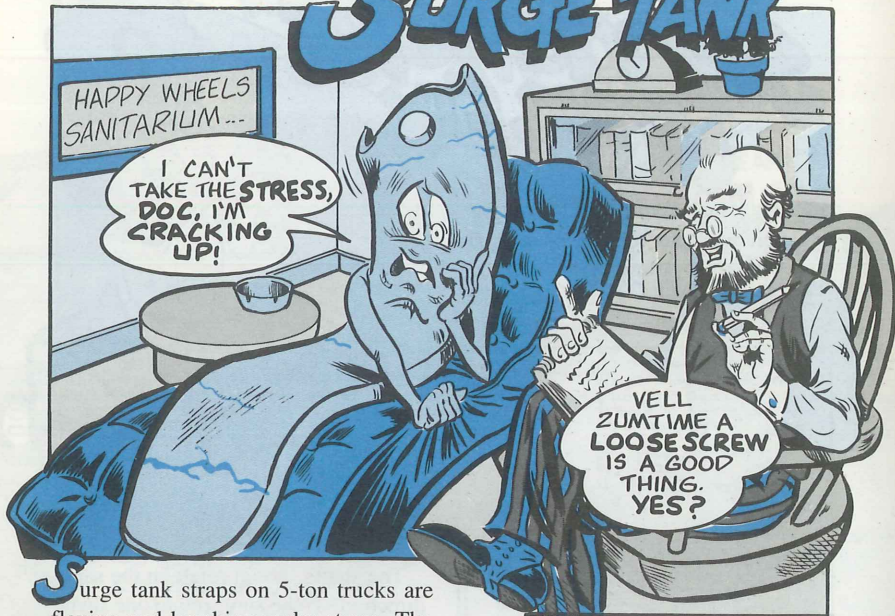


Fix it by switching the locations of the male connector (including its worm gear) with the grease fitting plug.

Then test it again. Both drives should be turning the same way.

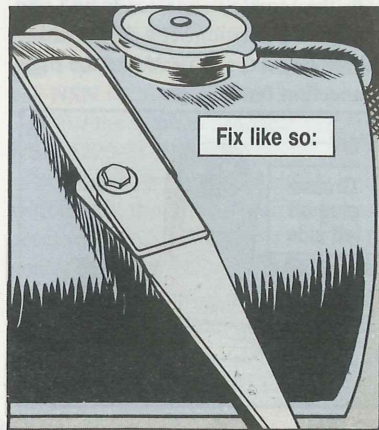
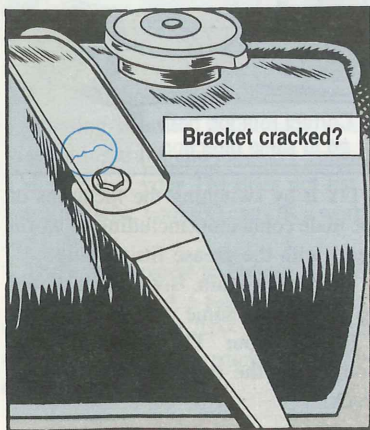
Eyeball your TM to make sure you've got the right adapter for your truck.

# SURGE TANK

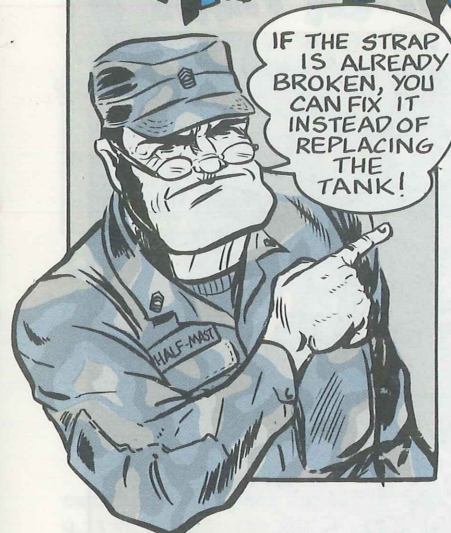


Surge tank straps on 5-ton trucks are flexing and breaking under stress. The tank is mounted on the frame of the truck, but the support strap is connected to the engine. Engine vibration soon cracks the strap, leaving the surge tank without support.

Prevent the strap from cracking and breaking by replacing the nut on the engine strap mounting bolt with a special self-locking nut, NSN 5310-00-984-3806.



# STRAP FIX



Screw on the nut until 1 or 2 threads can be seen below the locking end of the nut. The screw should be loose enough for you to turn it with your fingers. This way the strap is loose enough to absorb the vibrations, but the self-locking nut keeps the bolt from falling out.

If the strap is already broken, you can fix it instead of replacing the tank.

Here's how:

- ▶ Get some rubber material, like an old mud flap, or splash shield, NSN 2450-00-715-7407 and epoxy adhesive, NSN 8040-00-109-2481.
- ▶ Remove the broken strap without breaking the spot weld on the tank.
- ▶ Use it as a pattern to measure and drill the rubber material. Add 2 inches to the length before cutting out the rubber strap.
- ▶ Drill a 1/2-in hole in the rubber strip that matches the hole in the old strap.
- ▶ Glue the undrilled end of the rubber strap—overlap it 2 inches—to the remaining surge tank strap with epoxy adhesive. Let the adhesive cure.
- ▶ Bolt the support strap to the rubber strap and you're done.

The rubber strap absorbs the vibrations and doesn't crack under stress.



# 2 BACKS ARE BETTER THAN 1



**H**old one, Mr. Macho! Brains are as important as brawn when you have to change a flat tire on a 2½-ton or larger truck.

A 2½-ton truck tire weighs almost 200 pounds, and the bigger tires are even heavier. Wrestling with something that big, alone, can leave you flat on your back for weeks.

It takes at least two people to change any tire that's 38 inches tall or taller. So, on any tire that size, use your head and ask a buddy to lend a hand.

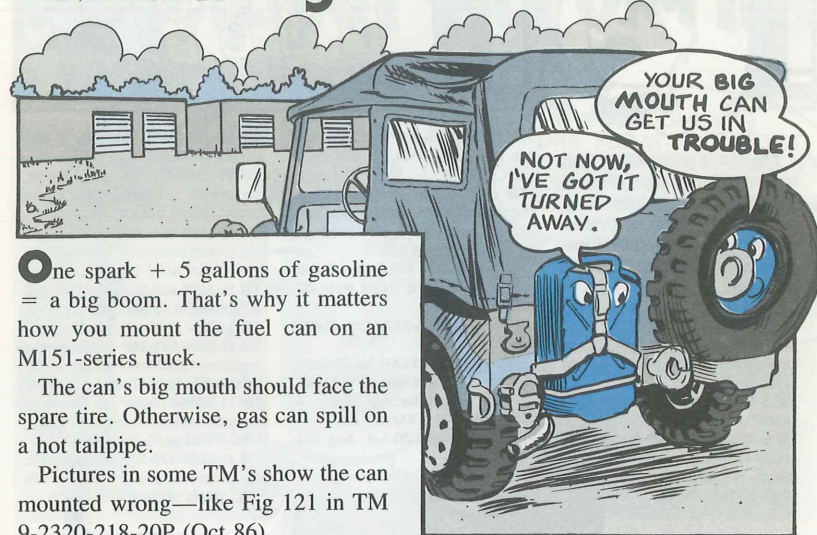
## CUCV Clevis Update

**T**he CUCV's tiedown clevis, NSN 5340-01-160-4677, has been canceled, so you'll get clevis, NSN 4030-00-542-3183, instead. But it won't fit. Instead, use clevis, NSN 4030-00-740-9523, used on M939-series 5-ton trucks.

## CUCV Brake Shoe NSN

**T**he NSN's have changed for the brake shoes on all CUCV's since TM 9-2320-289-20P (Jun 85) was fielded. Order NSN 2530-01-183-8860 for the front and NSN 2510-01-140-6144 for the rear shoes on all models except the M1009. The M1009 uses NSN 2530-01-158-1458 on the front and NSN 2530-01-166-3033 on the rear.

# Mouth Right on Fuel Cans



**O**ne spark + 5 gallons of gasoline = a big boom. That's why it matters how you mount the fuel can on an M151-series truck.

The can's big mouth should face the spare tire. Otherwise, gas can spill on a hot tailpipe.

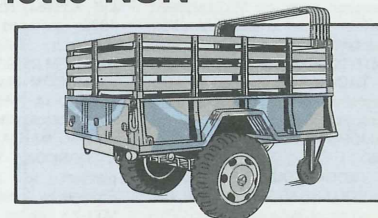
Pictures in some TM's show the can mounted wrong—like Fig 121 in TM 9-2320-218-20P (Oct 86).

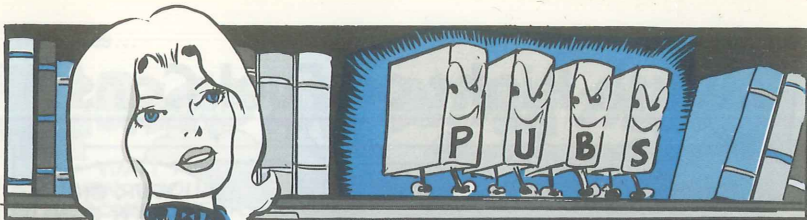
## Hose Reel Snafu

**H**ose reel assemblies made under contract No. DAAE07-08-C-1820 won't fit the M131A4C and M131A5C fuel tankers. Check your stock to see if you have assembly, PN 1-222281-3, made by Torkheim or Aeromotive. It looks like the old assembly, but it's about 2 inches too long to fit in the cabinet. Turn it in and order a new assembly with NSN 4930-00-757-9938.

## Trailer Lunette NSN

**G**et the lunette for the 1½-ton trailer with NSN 2540-00-999-5584. The lunette is Item 1 of Fig 24 in TM 9-2330-213-14&P, but the NSN's not listed and the part number is wrong. The right part number is PN MS51339-3.





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

- TM 3-4240-312-12&P Jun M+3 mask
- TM 5-1080-200-13&P-HR Sep Lightweight camouflage screen systems
- TM 5-4610-215-24/2 Jul 600-GPH ROWPU
- TM 5-4930-235-13&P Aug Closed circuit refueling nozzle assembly, model number 125-10000 (NSN 4930-01-167-2067)

TM 5-5430-219-23P Aug Tank, fabric, collapsible, POL 3K, 10K, 20K, 50K, 5K BBL

TM 5-5430-225-12&P Aug Tank, fabric, collapsible, air column supported, open top, water shortage, 3,000 gal, model 90028

TM 5-6115-631-14&P Jun Power plant AN/MJQ-16 (NSN 6115-00-033-1395)

TM 9-1430-604-24P Oct Patriot missile

TM 9-2330-376-14&P Jun Chassis, trailer: 5 ton, 4-wheel, GEMSS, XM979 trailer, flatbed: 5 ton, 4-wheel XM1061, XM1061E1

TM 9-2350-255-20-1-4 Aug M1/IPM1 tank

TM 9-6920-428-24P Sep M76 training set (Redeye missile)

TM 10-1670-271-23&P Sep T-10B personnel parachute

TM 11-1520-236-23-2 Aug Avionic equipment configuration Army model AH-1S helicopters

TM 11-5820-951-20P Oct Electronic equipment installation kit MK-2368/VRC (NSN 5820-01-218-5267)

TM 11-5820-962-20P Oct Electronic equipment installation kit MK-2195/VRC (NSN 5820-01-225-0511)

TM 11-5820-971-20P Oct Electronic equipment installation kit MK-2372/VRC (NSN 5820-01-225-0512)

TM 11-5820-972-20P Oct Electronic equipment installation kit MK-2373/VRC (NSN 5820-01-225-0513)

TM 11-5820-979-20P Oct Electronic equipment installation kit MK-2403/VRC (NSN 5820-01-225-0520)

## Maintenance & Safety-Of-Use Messages

**CECOM SOU-MSG-88-07-01**—Advisory, Possible shock from the AN/GRM-114A radio test set power supply module, AMSEL-SF-SEP 261800Z Jul 88.

**CECOM SOU-MSG-88-09-01**—Advisory, Operational, Deadlines BA-5513/U batteries, AMSEL-SF-REE 121800Z Sep 88.

**MICOM SOU-MSG**—Advisory, Inspect Patriot launching station antenna for cracks, AMSMI-LC-AM 251430Z Oct 88.

**TACOM SOU-MSG-88-28**—Advisory, Operational, Install battery terminal boots on M939/M939A1 series vehicles to keep cables from contacting battery box, AMSTAMTB 031600Z Jul 88.

**TACOM SOU-MSG-88-32**—Operational, Bradley vehicles using obsolete water barrier tripod, AMCPM-BFVS-SC 161000Z Aug 88.

**TACOM SOU-MSG**—Follow-up to SOU Msg 86-35, Technical, Disposition of defective Quality Plus (Windham) 15-K forklifts, AMSTAMTB 061330Z Oct 88.

**TACOM SOU-MSG-88-42**—Advisory, Technical/Maintenance, Follow-up to SOU-MSG-88-27, Disposition of M1009 CUCV tires, AMSTAM 061400Z Oct 88.

**TACOM SOU-MSG-88-47**—Advisory, Technical/Maintenance, Battery servicing problem on CAT 130G Grader, NSN 3805-01-126-7895, LIN G74783, AMSTAM 111500Z Oct 88.

**TACOM SOU-MSG-88-48**—Advisory, Technical/Maintenance, Under-the-hood fires on Ambulance, modular, 4x4, LIN X54765, NSN 2310-01-091-1684, and 4x2, LIN X38464, NSN 2310-01-094-1372, procured under contract number DAAE07-83-C-H272, AMSTAM 281930Z Oct 88.

**AMCCOM Maintenance Advisory 88-14**—M8 chemical agent alarm black filter paddle NSN, AMSMC-MAR (A) 271300Z Oct 88.

**TROSCOM SOU-MSG**—Supplement to SOU-MSG-88-23, Emergency, delayed openings of MT1-XX free fall parachutes which were immersed in water, AMSTRWD 071300Z Nov 88.

**TROSCOM Maintenance Advisory MSG-88-30**—Use spin-on oil filter element, NSN 2940-00-586-4792, on the 6-HP Mil Std engines used with the 4.2-KW generator set and the 15 CFM compressor, AMSTR-MES 071700Z Oct 88.

**TROSCOM Maintenance Advisory MSG-88-35**—Follow-on to SOU-MSG-88-20, Clarification of NSN and possible deficiencies on fire truck, pumper, model CC-1000-4044, AMSTR-MES 181900Z Oct 88.

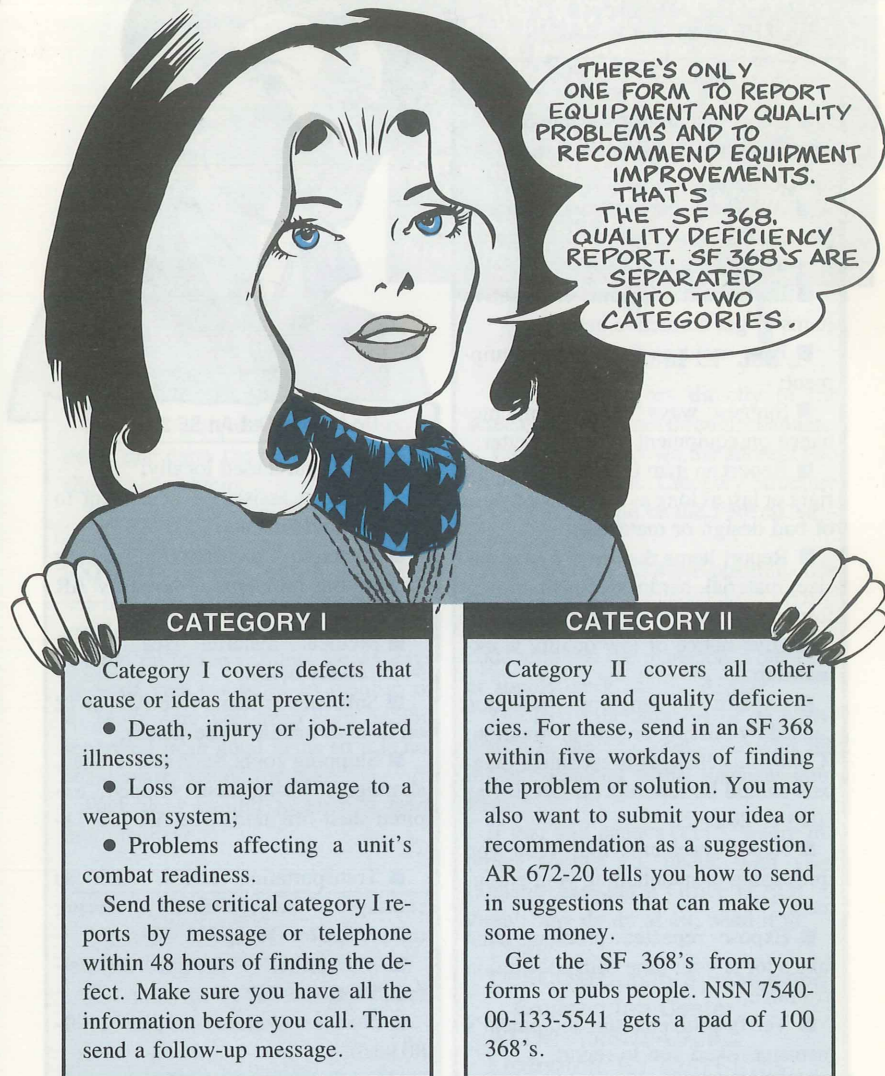
**TROSCOM Maintenance Advisory MSG-88-37**—Recalls non-metallic hose, NSN 4720-00-420-4636, manufactured by Aeroquip Inc., CAGE 50556, that is used in pressurized applications AMSTR-MES 191945Z Oct 88.

**TROSCOM Maintenance Advisory MSG-88-40**—Inspect Mark 1 Mod 0 lightweight diving outfit, NSN 4220-01-064-0608, second stage regulator diaphragms, AMSTR-MES 011500Z Nov 88.

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

SF 368...

# DEFICIENCY REPORTING



THERE'S ONLY ONE FORM TO REPORT EQUIPMENT AND QUALITY PROBLEMS AND TO RECOMMEND EQUIPMENT IMPROVEMENTS. THAT'S THE SF 368. QUALITY DEFICIENCY REPORT. SF 368'S ARE SEPARATED INTO TWO CATEGORIES.

## CATEGORY I

Category I covers defects that cause or ideas that prevent:

- Death, injury or job-related illnesses;
- Loss or major damage to a weapon system;
- Problems affecting a unit's combat readiness.

Send these critical category I reports by message or telephone within 48 hours of finding the defect. Make sure you have all the information before you call. Then send a follow-up message.

## CATEGORY II

Category II covers all other equipment and quality deficiencies. For these, send in an SF 368 within five workdays of finding the problem or solution. You may also want to submit your idea or recommendation as a suggestion. AR 672-20 tells you how to send in suggestions that can make you some money.

Get the SF 368's from your forms or pubs people. NSN 7540-00-133-5541 gets a pad of 100 368's.

TOOLS, PARTS OR END ITEMS... REPORT THEM ALL ON SF 368! EVEN A 25¢ ITEM IS WORTH REPORTING-- THERE MAY BE MILLIONS OF THEM GOING BAD!

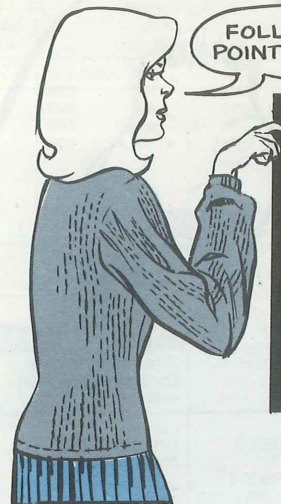
#### Fill Out An SF 368 To:

- Report conditions dangerous to operators/crews, other equipment or your mission;
- Ask for disposition instructions to get credit, replacement items or to repair defective items;
- Halt repeat shipments of defective items to get corrective action;
- Pass on ideas to improve equipment;
- Suggest ways to make maintenance on equipment easier or better;
- Report an item that does not work right or last as long as it should because of bad design or materials;
- Report items that do not meet the size, material, hardness, finish, or performance standards of a specification;
- Give notice of low quality workmanship;
- Explain a dangerous situation caused by missing or bad information. (Comments/changes to technical manuals should be reported on DA Forms 2028 or 2028-2);
- Report problems that keep you from using or maintaining your equipment;
- Expose repeated problems that take a lot of your time with no solution available;
- Verify problems the equipment's manager asked you to report.



#### Do Not Fill Out An SF 368 On:

- Items purchased locally;
- Security assistance items sent to foreign governments;
- Packaging, preservation, packing or marking problems covered by AR 735-11-2;
- Medical materiel (see DLAR 4155.28 for help);
- Subsistence items (see AR 30-12 on how to handle those items);
- Shipping goofs, such as overages, shortages, wrong item shipped, expired shelf life items (see AR 735-11-2);
- Transportation errors, such as shortages, losses, or damages during transportation (see AR 55-38);
- Ammunition and explosives malfunctions (see AR 75-1);
- Nuclear weapons (see TB 9-1100-803-15).



FOLLOW THESE POINTS CAREFULLY.

1. SEND THE ORIGINAL TO THE PROPER COMMAND AS IDENTIFIED HERE OR IN APPENDIX G OF DA PAM 738-750.
2. KEEP A COPY.
3. SEND A COPY TO YOUR SUPPORT MAINTENANCE OUTFIT.
4. GIVE A COPY TO YOUR UNIT TO FILE — BUT KEEP IT NO LONGER THAN ONE YEAR.

#### SF 368 Exhibits

Exhibits are parts, components or items that carry the reported defect or show the problem.

Tag your exhibits with a DA Form 2402 and mark on it "SF 368 EXHIBIT" in red. Attach a copy of the message or SF 368 reporting the problem.

Hold on to the exhibits for 45 days or until you get word to dispose of it. Make sure you keep your exhibit separated from good items so it is not accidentally issued for use.

Pack your exhibit to keep it from more damage.

**DO NOT TAKE IT APART TO SEE WHAT THE PROBLEM IS. LEAVE THAT TO THE INVESTIGATORS.**

#### Where to Send SF 368's

The SF 368 goes directly to the screening point—not through channels.

You can track down the address two ways: The Materiel Category Structure (MATCAT) code or the Federal Supply Class (FSC).

The MATCAT is a five-position code on the Army Master Data File (AMDF). The first position of the MATCAT code tells you the manager. Your PLL or supply clerk has the AMDF.

The first four numbers of an NSN, which is the FSC, tell you who the major command is that manages your item.

If you still cannot decide where the report should go, check with your Logistic Assistance Office (LAO). If there's any doubt at all, send it to:

**Chief  
DESCOM Quality Systems and  
Engineering Center  
ATTN: AMSDS-QA-EQ  
Lexington, KY 40511-5105**



ONCE YOU KNOW  
THE MATCAT CODE OR THE  
FSC FOR THE ITEM YOU'RE  
REPORTING,  
USE THIS TABLE OR  
APPENDIX G OF DA PAM  
738-750 TO TRACK DOWN  
THE SCREENING  
POINT ADDRESS.



AMDF OR MATCAT Position 1	Federal Supply Classes	Send Category II Reports to:	Send Category I Reports (life, limb or combat ability endangered)
B, E, F, J, R, S, T	1070-1080 3915 6670-6675 1510-1740 3940, 3960 6810-6850 1860-2305 3990 (cargo 6930 2620 netonly 7105-7720 2810-2840 4010-5210 8145 3110-3230 5305-5430 8305-8475 3455-3770 6115-6116 9110-9160 3820 (well drilling equipment only) 6620 6630-6640 3830-3835	Commander US Army TROSCOM ATTN: AMSTR-Q 4300 Goodfellow Blvd St Louis, MO 63120-1798  DODAAC: W81D18	Call: AUTOVON 693-9468 ATTN: (314) 263-9468  Send Message to: RUCIFRA/CDR TROSCOM/ AMSTR-Q/ST. LOUIS, MO  Info to: RUKLDAR/CDR AMC/ AMCQA-P/ALEX, VA  Electronic Mail Box: TROSCOM-DRS@ST-LOUIS-EMH1. ARMY.MIL
Dor M	1005-1055 3645 4940 1090-1270 3650 5220-5280 1285-1330 3660-3685 6650 1345-1398 3690 6665 3405-3450 3693-3695 6920 3611 4921-4925 8140 3620 4931-4933  1336 (To determine correct address for particular NSN's under FSC 1336, check the AMDF for position 1 of the MATCAT) 1340 (Except free rockets) 2320 and 2350 (SP artillery and antiaircraft guns only)	Commander US Army AMCCOM ATTN: AMSMC-QAD (R) Rock Island, IL 61299-6000  DODAAC: W52HIC	Call: AUTOVON 793-2421 ext 33 COMM: (309) 782-2421 ext 33  Send Message to: RUCLAFB/CDR/AMCCOM/ AMSMC-QAD/ROCK ISLAND, IL  Info to: RUKLDAR/CDR AMC/ AMCQA-P/ALEX, VA  Electronic Mail Box: AMCCOM.DRS@RIA-1.ARP.A
G, P, Q	2596 6105 6680 2598 6110 6695-6780 2691 6125-6145 6920 5450 6605 6940-7050 5805 6615 7450 5810  5811 6625 7550 5815-6080 6660 8130	Commander US Army CECOM ATTN: AMSEL-PA-MA-D Ft Monmouth, NJ 07703  DODAAC: W15P6Z	Call: AUTOVON 992-3808 COMM: (201) 532-3808  Send Message to: RUEDBIA/CDR CECOM/ AMSEL-PA-MA-D/FT. MONMOUTH, NJ  Info to: RUKLDAR/CDR AMC/ AMCQA-P/ALEX, VA  24-HOUR HOTLINE: AUTOVON 992-1276 COMM: (201) 532-1276  Electronic Mail Box: AMSEL-PA@CECOM.1

AMDF OR MATCAT Position 1	Federal Supply Classes	Send Category II Reports to:	Send Category I Reports (life, limb or combat ability endangered)
H	1510-1730 2935 5303-5365 2810 2945 6340 2840 2995 6605 2915 3110-3130 6610 2925 4920 6615 6620	Commander US Army AVSCOM ATTN: AMSAV-QF 4300 Goodfellow Blvd St Louis, MO 63120-1798  For Category I messages and SF 368s on aviation items see DA Pam 738-751.	Call: AUTOVON 693-3733 COMM: (314) 263-3733  Send Message to: RUCIFRA/CDR AVSCOM/ AMSAV-EI/ST. LOUIS, MO  Info to: RUKLDAR/CDR AMC/ AMCQA-P/ALEX, VA
K	2310-2315 2630-2805 3040 2325-2340 2815 3110-3130 2410-2430 2910 3805-3815 2510-2590 2920 3820 (except well drilling equipment) 2610 2930 3825, 3830 3895, 3910 3930 3950 3990 (except cargo nets) 4310, 5430	Commander US Army TACOM ATTN: AMSTA-QRD Warren, MI 48397-5000  DODAAC: W81D19	Call: AUTOVON 786-5422 COMM: (313) 574-5422  Send Message to: RUCIWMA/CDR TACOM/ AMSTA-QRD/WARREN, MI  Info to: RUKLDAR/CDR AMC/ AMCQA-P/ALEX, VA  Electronic Mail Box: AMSTAQRD@TACOM- PYRAMID 98XE.ARP.A
L	1280 1810-1850 4960 1337, 1338 2845 6920 1410-1450 4935 8140 1340 Free 9135 rockets only	Commander US Army MICOM ATTN: AMSMI-QA-CF Redstone Arsenal, AL 35898-5290  DODAAC: W31P38	Call: AUTOVON 746-0447 COMM: (205) 876-0447  Send Message to: RUCICDA/CDR MICOM/ AMSMI-QA-CF/ REDSTONE ARS, AL  Info to: RUKLDAR/CDR AMC/ AMCQA-P/ALEX, VA  Electronic Mail Box: CFO@MICOM
U	5810	Commander US Army CSLA ATTN: SELCL-NMP-MM Ft Huachuca, AZ 85613-7090  DODAAC: W61QL1	Call: AUTOVON: 879-7537 COMM: (602) 538-7537  Send Message to: RUWJHRB/CDRUSACSLA/ SELCL-NMP-MM/FT HUACHUCA, AZ  Info to: RUEDBIA/CDR CECOM/ AMSEL-PA-MA-D/FT MONMOUTH, NJ

Remember, the SF 368 is the key to getting the kind of equipment you need. But YOU have to start the action.

Here's a guide that will help you fill out the SF 368. If you need more help with the form—or any of its entries—call your AMC Logistic Assistance Representative (LAR). See DA Pam 738-751 for help in filling out an SF 368 on aircraft items.

The highlighted blocks are the essential items needed for a report. The remaining blocks should be completed if data is available. Blocks 8, 9, and 13 are essential items for aircraft only!

**Block 1a**  
Enter your unit and location plus zip or APO number. Add your unit's Department of Defense Activity Address Code (DODAAC). Your PLL clerk will know the DODAAC.

**Block 2a**  
Put in the address of the item's managers. You'll find the addresses on pages 11 and 12 of this handbook.

**SECTION I**

1a. From (Originating point) SVC CO, 1ST SF FT BLANK, USA 01234 DODAAC: W18R4R	2a. To (Screening point) Commander, US Army, TACOM ATTN: AMSTA-QRD Warren MI 48397-5000
1b. Typed Name, Duty Phone and Signature WILLIAM J. FAULKNER, AV 623-5446 <i>William J. Faulkner</i>	2b. Typed Name, Duty Phone and Signature

**Block 1b**  
Your name and phone. Note AV if for AUTOVON, FTS or Commercial.

**Block 3**  
Make the Report Control Number with your unit's DODAAC, the calendar year, and then with four places, the number of SF 368's you have sent in during the calendar year. DODAAC (6 places) + calendar year (2 places) + number of SF 368's (4 places).

3. Report Control No. W18R4R870001	4. Date Deficiency Discovered 1 DEC 87	5. National Stock No. (NSN) 5365-01-161-4055	6. Nomenclature RING, RR WHL HUB BRG
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**Block 4**  
The calendar date you found the defect or got the idea.

**Blocks 5 & 6**  
The item's NSN and name.

**Block 7**  
Enter the Commercial and Government Entity (CAGE) code of the manufacturer who made the item. Enter the name of the government or contracting agency that repaired or overhauled the item when the CAGE is not available. If the shipper is different from these activities, include the shipper's address.

**Block 8**  
Enter the part number.

**Block 9**  
Enter the serial, lot or batch number of the bad items.

**Block 10**  
List the contract or purchase order number and the requisition number. On GSA items, list all three numbers. Contract numbers may be found on the bad item's data plate.

7. Manufacturer/Mfg. Code/Shipper 11862	8. Mfg. Part No. 474309	9. Serial/Lot/Batch No.	10. Contract/PO/Document No. DAAD-05-C-86-0001
--	----------------------------	-------------------------	---

11. Item <input checked="" type="checkbox"/> New <input type="checkbox"/> Repaired/Overhauled	12. Date Manufactured/ Repaired/Overhauled	13. Operating Time at Failure 8609.1 MILES	14. Government Furnished Material <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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**Block 11**  
Is the item new? Has it been overhauled?

**Block 12**  
If it applies and you know it, the date of manufacture or last overhaul.

**Block 13**  
How long had the equipment been run when the problem was found—miles, cycles, hours, rounds?

**Block 14**  
Contractors mark yes; everybody else marks the no box.

**Block 15a**  
Enter the number of items you received in the lot or batch that contained the bad item.

**Block 15b**  
Enter the number of items that were actually inspected for the same fault or failure.

**Block 15c**  
Enter the total number of defective items you wish disposition or credit for.

**Block 15d**  
Enter the number of items in stock.

15. Quantity	a. Received	b. Inspected	c. Deficient	d. In Stock
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**Block 16a**  
Give the name or noun of the major end item, and its type, model, series, and NSN.

16. Deficient Item Works On/With	a. End Item (Aircraft, tank, ship, howitzer, etc.)	(1) Type/Model/Series TRUCK, CARGO, TACTICAL M1008	(2) Serial No. 317626
	b. Next Higher Assembly	(1) National Stock No. (NSN) 2320-01-123-6827	(2) Nomenclature (3) Part No. (4) Serial No./Lot No.

**Block 16b**  
Enter the NSN, name or noun and type/model/series, part number, and serial number of the next higher assembly that the bad item is part of. For ammo items use the lot number instead of serial number.

**Block 17**  
Enter the estimated cost of the item (use the AMDF price).

17. Dollar Value	18. Est. Correction Cost	19. Item Under Warranty <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	20. Work Unit Code/EIC (Navy and Air Force only)
------------------	--------------------------	---	--

**Block 21**  
Check the box that shows the action you've taken or are asking for.

**Block 18**  
Give the actual cost incurred or estimated cost (including overhead if you know it) for repairing deficient items listed in block 15c.

**Block 19**  
Is the item under warranty? If unknown, check the Unknown box.

**Block 20**  
Enter the code for the maintenance level of the activity where the bad item was discovered and reported: O - organization; F - direct support; H - general support; L - special repair activity; D - depot.

21. Action/Disposition <input checked="" type="checkbox"/> Holding Exhibit for <u>45</u> days	<input type="checkbox"/> Released for Investigation	<input type="checkbox"/> Returned to Stock/Disposed of	<input type="checkbox"/> Repaired	<input type="checkbox"/> Other (Explain in Item 22)
--	---	--	-----------------------------------	---

**Block 22**  
This is the block where you explain what happened and give the information needed to evaluate the problem. Need more space? Add another sheet headed by your Report Control Number. Here are the types of information needed:

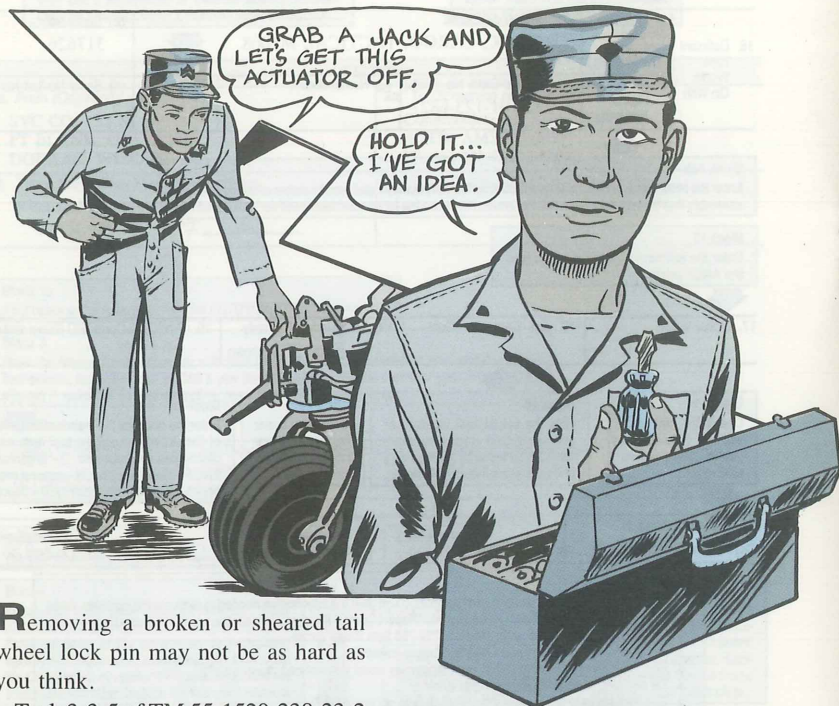
- Utilization Code for your unit. DA Pam 738-750 lists those codes.
- Failure detected during (when was the failure found?)
- First indication of trouble (What was happening when you noticed the trouble?)
- TM number, date, and latest change number.
- Circumstances prior to difficulty (What details do you have?)
- Description of difficulty
- Cause (What do you think caused the problem or need for improvement?)
- Action taken (What did you do or suggest be done to fix or improve the equipment?)
- Exhibit information
- Recommendations

22. Details (Describe, to best ability, what is wrong, how and why, circumstances prior to difficulty, description of difficulty, cause, action taken including disposition, recommendations. Identify with related item number. Include and list supporting documents. Continue on separate sheet if necessary.)

- a. O
- b. Failure Detected During: Normal Operation
- c. First Indication of Trouble: Rear wheel & hub assy came off
- d. TM 9-2320-289-20P, Jun 85, Fig. 86, Item 20, Page 2-194
- e. Right rear wheel bearings were changed on 22 Sep 87/8112 miles.
- f. When retaining ring displaced, bearings became loose in hub and the hub came off the spindle.
- g. Cause: Possible damaged retaining ring during maintenance, possible defective ring, possible incorrectly installed ring. Retaining ring had been removed/re-installed during bearing replacement.

For Category I equipment deficiencies, send in a message that includes all the information in Section I of an SF 368.

## Easy Sheared Lock Pin Removal



Removing a broken or sheared tail wheel lock pin may not be as hard as you think.

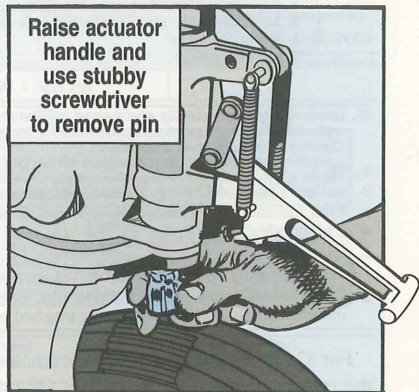
Task 3-3-5 of TM 55-1520-238-23-2 says to remove the wheel's hydraulic lock actuator before you try to remove the damaged lock pin.

But before you go to all that trouble, latch onto a stubby screwdriver from your tool kit.

Raise the actuator handle and slip the screwdriver up into the actuator.

Unscrew the bolt that holds the pin in place. The bolt and both pieces of the sheared lock pin will fall right out.

If it doesn't fall out, follow the procedures in your TM.



## STRUTS STUFF

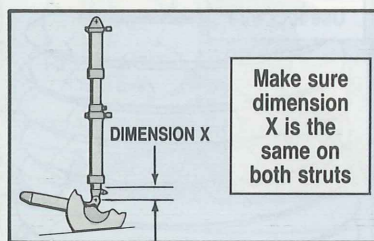


You may wish you'd given your Black Hawk's struts more attention the next time it has a hard landing.

Eyeball the part number of any new strut before you install it. Most struts are interchangeable, but PN 70250-12051-042 is NOT one of 'em.

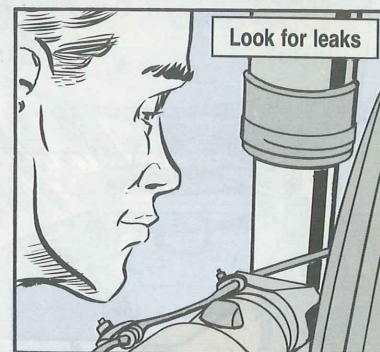
Never install an -042 on one side of your bird and an -043, -044 or -045 on the other side.

Careful, too, when you service a new strut. Dimension X is critical—it must be the same on both sides of the aircraft or the bird's survivability is reduced.



Step 1 of Task 1 in TM 55-1520-237-23-4 tells how to measure Dimension X.

After you replace a shock strut, do a static leak check like it says in Step 1 of Task 31, TM 55-1520-237-23-5.



If you find evidence of leaking fluid, replace the shock. If you don't find any leaks, wipe down the exposed part of the piston with hydraulic fluid.



Make it a point to keep the pistons clean and they'll last a lot longer. Wipe 'em down with a clean cloth and hydraulic fluid every day.

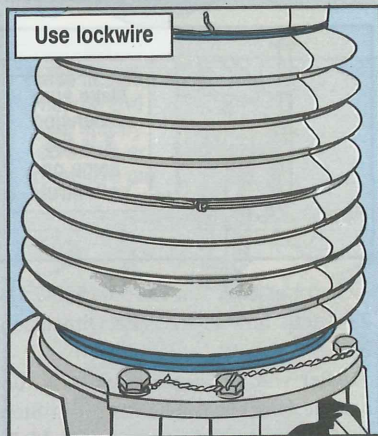
# KEEP YOUR BOOTS ON

Dear Windy,  
Para 5-67g of TM 55-1520-210-23-1 says to secure the dust boot of the swashplate and support assembly with lockwire. But it's not clear how to secure it. Can you help?

Mr. D.W.



Use lockwire



Dear Mr. D.W.,

The procedure depends on the boot. If it's the old, one-piece boot, first pull it down over the flange at the top of the scissors and sleeve.

Then put the spacer under the top edge of the boot. Use 0.032-in lockwire at the top and bottom of the boot to keep it in place.

Apply a bead of Proseal, NSN 8030-00-753-4599, around the top of the spacer to keep moisture out of the boot.

If you have a split-type boot, apply a thin coat of adhesive, NSN 8040-00-664-0439, to the inside of the boot where it contacts the flange at the top of the scissors and sleeve. Form the boot around the mast while the adhesive is wet.

Then secure the top and bottom of the boot with lockwire, just as

you would with a one-piece boot. Seal the spacer with Proseal.

If your boot is the split type, also



apply a bead off Proseal along the outside of the split.

Windy

## Restrain Yourself

UH-60A Black Hawk...

THE TM SAYS THE RESTRAINT SYSTEM IS NON-REPAIRABLE!



I KNOW, BUT IT'S BEING CHANGED. HERE ARE THE REPAIR PARTS.



You can repair the restraint system for the gunner's seat aboard your Black Hawk. The SMR code in Fig 211 of TM 55-1520-237-23P is wrong. It should be AOOOO instead of XDOZZ.

Get the following repair parts through normal supply channels:

ITEM	NSN
Reel assy, L/H	1680-01-167-5730
Reel assy, R/H	1680-01-147-4335
Reel assy, shoulder	1680-01-155-9392*

\*The shoulder reel assembly comes complete with all webbing attached.

## Check Your Bearings



Until recently, all you had to do for the 30-hour special inspection of your bird's main rotor head damper bearings was check 'em for wear.

But all that changed when a QDR investigation turned up some frozen damper bolts in the outboard rod end

bearing and spindle bracket.

Now you've got to check the bearings for pitting and gouges, as well as for radial and axial play.



That's the word in Para 2-84 of TB 43-0001-3-14 (Feb 88).

The inspection requirement is part of Task 9, Step 15, in TM 55-1520-237-23-4. Inspection procedures are spelled out in Task 12, Step 6, of TM 55-1520-237-23-7.

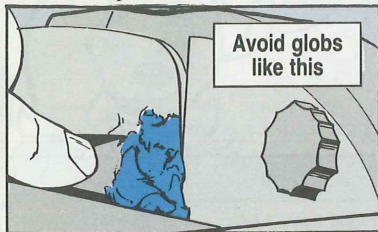


## BEWARE

## of the GLOB

Some Black Hawk mechanics glob on Proseal adhesive when they install main rotor spindle bolts.

But globbed-on Proseal is a real pain to remove next time you have to remove the spindle.



Plus, when it's globbed on, it may not completely cover the boltheads and nuts. Those not covered will corrode easily.

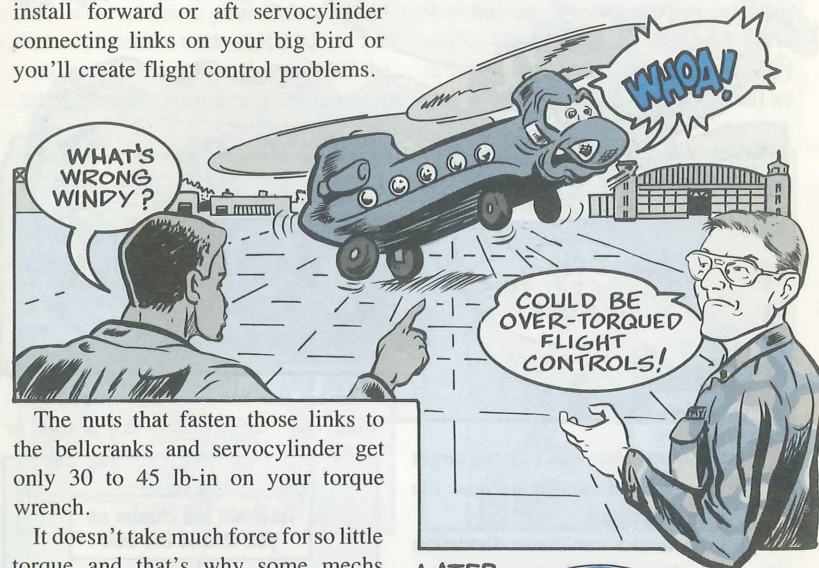
Instead of Proseal, use synthetic rubber sealing compound, MIL-S-81733, to coat the spindle bolts. NSN 8030-00-008-7196 gets a pint. Apply it with



an acid swabbing brush, NSN 7920-00-514-2417. The brush is part of the AVUM No. 2 tool set.

## Finesse over MUSCLE

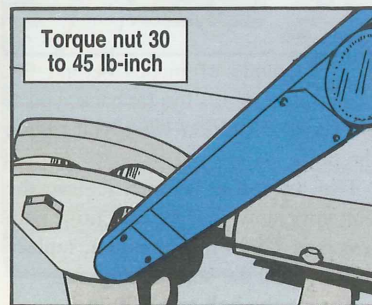
Use a light touch, mechs, when you install forward or aft servocyliner connecting links on your big bird or you'll create flight control problems.



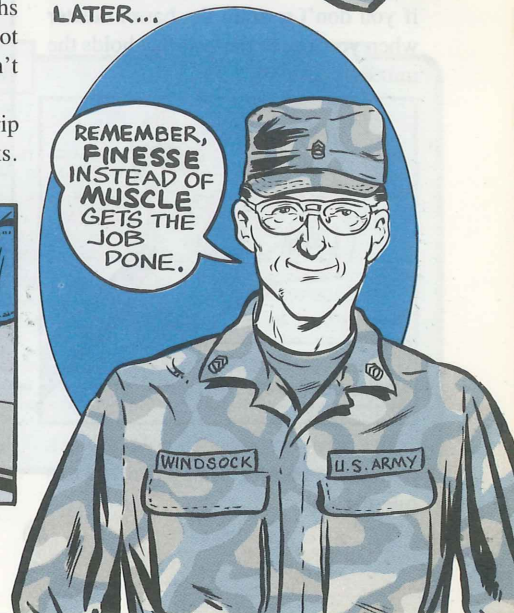
The nuts that fasten those links to the bellcranks and servocyliner get only 30 to 45 lb-in on your torque wrench.

It doesn't take much force for so little torque and that's why some mechs overtorque those babies. You've got to feel the wrench click if you can't hear it when you reach the limit.

If you overtorque the nuts, you strip the bolt threads or bend the bellcranks. Bye-bye flight control.



LATER...



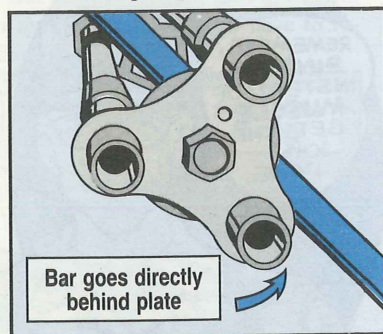


AH-1 Cobra...

# CLAMPS AND CLUSTERS

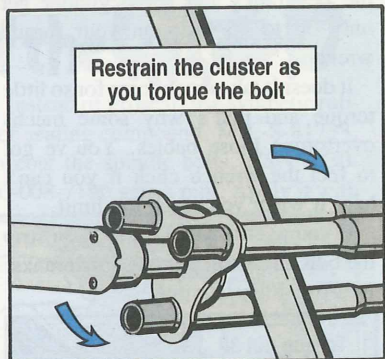
Some Cobra crews can't hit the target with their 20-MM cannon because the barrels are distorted.

You mechanics can cause distortion if you don't restrain the barrel cluster when you torque the bolt that holds the muzzle clamp in place.



Use a bar or a wooden pole or block to hold the barrel cluster when you torque the bolt.

Insert the bar or wood directly behind the clamp plate—not a foot or



even a couple of inches behind the clamp plate. If it's too far back, you'll get barrel distortion when you torque the bolts.

Use the torque wrench to turn the bolt very slowly. If the bolt turns with less than 7-8 lb-ft of pressure, replace the bolt and the self-locking nut.

Torque the bolt to 63-79 lb-ft.

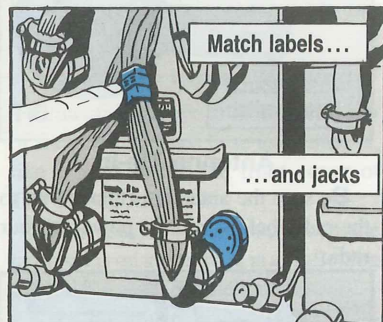
AH-1 Series...



Don't Mix

It pays to be cautious when you connect wire cables to your Cobra's M65 line replaceable units (LRU's).

If you don't take the time to read the label on each wire bundle and match it to the correct LRU connector, you could ruin the LRU or other electronic equipment.



ID labels should be attached to each wire bundle. If labels are missing from any of your LRU cables, get AVIM to re-label 'em so there won't be any costly mixups next time you install an LRU.

## 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.

**CH-47-88-15**, SOF, Maintenance Mandatory, Procedure for fuel sampling when using the extended range fuel system (ERFS), 212000Z Sep 88.

**AH-1-88-09**, SOF, Technical, One-time inspection of specific serial numbered scissors and sleeve assemblies, 192000Z Sep 88.

**OV-1-88-MIM-01**, Defective bolt P/N K22319-1, 072230Z Sep 88.

**GEN-88-02**, SOF, Technical, One-time inspection for installation of correct internal portable fire extinguisher, 211830Z Sep 88.

**OV-1-88-04**, SOF, Technical, Daily inspection of the spot weld assembly (FS204 aft bulkhead), 072200Z Sep 88.

**AH-64-88-13**, SOF, Maintenance Mandatory, Tail rotor swashplate bearing/slider inspection, 212100Z Sep 88.

**AH-1-88-10**, SOF, Technical, Revision to one-time inspection of specific serial numbered scissors and sleeve assemblies, 211500Z Sep 88.

**AH-64-88-14**, SOF, Maintenance Mandatory, Inspection of main rotor housing nuts, 282100Z Sep 88.

**AH-64-88-MIM-13**, Amendment to a MIM concerning chop collar safety wire, 262100Z Sep 88.

**UH-60-88-MIM-09**, Inspection of tail rotor drive shaft spline wear indicator, 272100Z Sep 88.

# PM KEEPS

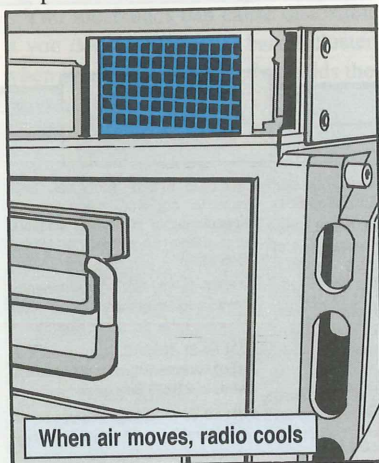


**K**eeP it clean, keep it dry and keep it cool!

These PM tips will go a long way to keep your Angry-106 radio sending and receiving the commo signal.

Dust and dirt cover your set like a blanket, causing it to overheat. Brush or wipe your set off.

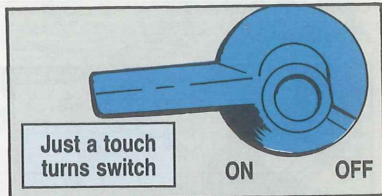
Never put clothing and other personal gear on your radio. Those items block the airflow. This leads to heat buildup, too, since the heat exchanger assembly cannot pass cool air to keep temperatures down.



Ice will also restrict air movement. So, keep it out of the intake or exhaust vents.

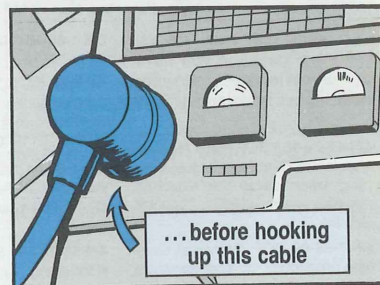
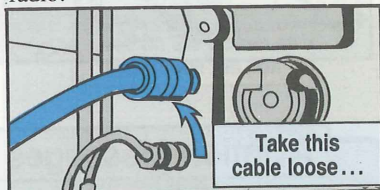
## Easy Handling

Back off the muscle when you're turning the AM-3349 radio frequency amplifier's primary power ON-OFF switch. Forcing the switch will break it. A finger touch is all that it takes.



## Antenna Tie-in

Be sure the antenna is hooked up to the radio before you put power to your radio.

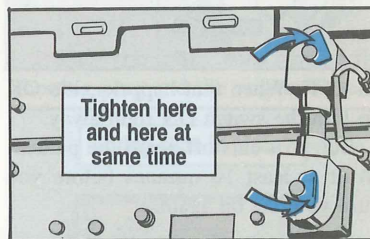


You might think you have a good hookup since the whip antenna is installed and the cable is connected. But look again.

# COMM IN TOUCH

## Tighten Together

Tighten both ends of the CX-10099/U electrical special purpose cable assembly at the same time. When you tighten one end at a time the flexible metal shield is put in a bind. It could snap.



## More PM Tips

Here are more PM pointers to keep your radio sending and receiving:

- Keep the antenna lead and contact clean. Look at them each time you hook up to the antenna.

- Keep dust and dirt out of connectors to insure good electrical contact.

- Avoid kinks in the RF cable and eye the cable for cracks and breaks. Get a damaged cable repaired or replaced.

- Keep fuses in the spare fuse well. Make sure they have the right value: 2-amp, 250-volt.

- Keep the bowl on the mast base clean and dry. Moisture or dirt buildup will cut down or knock out the commo signal.

If the UG-201A adapter connector is on the 50-ohm line, you have no whip antenna. The antenna switch is held open by the adapter connector.

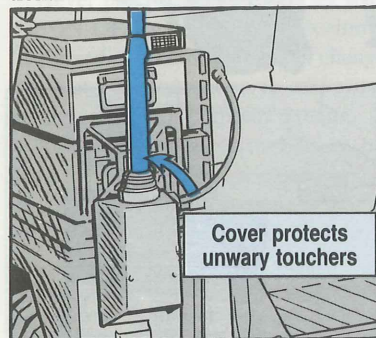
Without an antenna hookup, you will burn out the radio's power amplifier tube.

## Protective Cover Warning

Protective cover or not, stay clear of the AB-652 mast base and antenna, like it says inside the front cover of TM 11-5820-520-10.

Never touch the antenna when the radio set is on since there is a walloping 10,000 RF volts in the antenna.

Keep the cover, NSN 5985-00-078-4769, on the antenna for added protection.

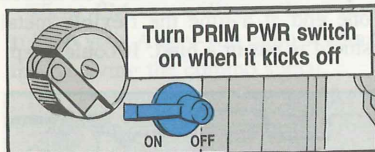


Snug the cover onto the antenna with a clamp, NSN 5820-00-571-1828. This clamp will keep the cover from splitting when the antenna starts whipping about.

## KEEP COOL HEAD FOR HOT RADIO

If you're short on patience with a hot radio, circuits in your AM-3349 radio frequency amplifier will do a slow burn.

An overheated radio automatically flips the ON-OFF PRIM PWR switch



to OFF. When that happens, it's OK to turn the switch ON right away.

But, if it cuts off again, be patient. Wait at least 10 minutes before you turn your set on again.

Vehicle Radio...

## Turn it off

When you start your vehicle with the radio on, the voltage surge you get when the engine starts will zap your radio. So, make sure the radio's OFF before you start your engine.

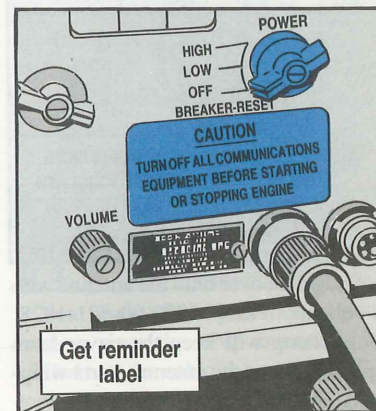
To help remind you to turn off the radio, add a caution label, NSN 7690-00-942-7067, next to the vehicle starting switch. The label says: CAUTION—TURN OFF ALL COMMUNICATIONS EQUIPMENT BEFORE STARTING OR STOPPING ENGINE. SB11-624 is the authority for ordering the label.

While you're waiting, make sure the air vents are clear. This helps to cool your commo gear.



Then turn the power switch ON. You can operate for two hours or as long as your set doesn't overheat.

Be sure to check the meter dials for needle deflection to assure transmission.



JUST USE A LITTLE TLC.



## PM FOR YOUR PERK

When you're pushing the PUSH-TO-TALK switch keep your fingers off

Rough handling of your handy portable, pocket radio will make it stop talking to you or for you.

It just takes some tender loving care PM to keep it communicating.

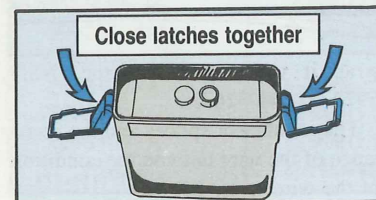
Like, always hold your radio by its body. Never carry it by the whip antenna or you'll pull the wiring loose.

While you have the antenna in mind, never bend the AS-3575 antenna backward. You'll break it. Always fold the antenna toward the concave side.

If you let the handset dangle when it's idle, it'll tug by its own weight or snag on brush. This'll tear the cord loose from the auxiliary control. Put the handset in your pocket or hang it by the clip to your clothing.

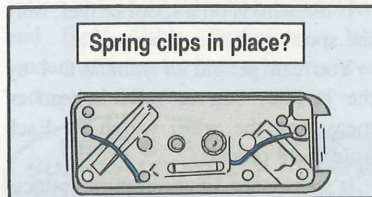
Never put a battery in your set with the ON-OFF switch in the ON position. If the radio's left on while you change the battery, a current surge will cause arcing. This will burn out circuits.

After you've replaced the battery, be sure the case latches are closed at the same time. Closing them one at a time will put the case in a bind. This will break a latch or crack the case.



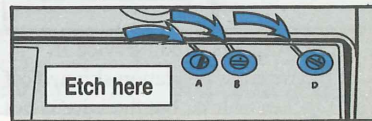
the microphone screen on the other side of your radio. Too much touching will damage the screen, letting dust and dirt in.

Eyeball the spring clips holding the shorting plug and the alignment tool.



If they're not fastened in place, they'll fall on top of the battery connectors. Then, when the case is closed the battery shorts out, which leads to a battery blast.

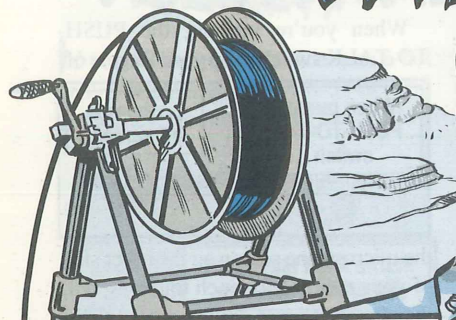
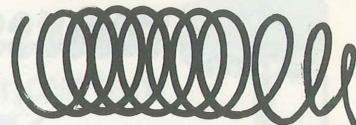
Make a more lasting mark while the paint is still on the indicator marks for the frequency code, antenna coupler and transmitter module switches. Put the switches in the "O" position. Then, make an etch on each position with a sharp tool. This'll leave you guides after the paint is worn off.





# VITAL TO THE

# MISSION



WD-1 WIRE IS DISPOSABLE BUT NOT DISCARDABLE. IT MUST BE RECOVERED AFTER EACH USE.

Afterwards, depending on its condition, you reuse it for a mission or for training purposes, or you dump it.

If the wire is on a spool or reel, only the spool or reel is recoverable.

You can get rid of your WD-1 by the bundle, bag or roll. Instead of measuring the wire, weigh it. Each mile is 48 pounds.

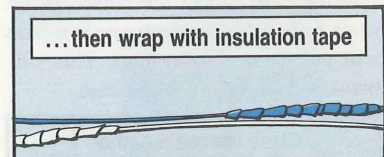
It's disposed of through your local Defense Reutilization and Management Office.

broken, cover the exposed wire with electrical tape, NSN 5970-00-240-0620.



If the insulation or wire damage is more than 3 inches, cut out the damaged wire and splice it.

If the wire is broken, splice it. Then



wrap it with insulation tape, NSN 5970-00-644-3167.

The number of splices and the resistance of the wire tell you the condition of the wire.

Less than four splices in 1/2 mile of wire is OK for mission use as long as the electrical resistance checks out. WD-1 should show no more than 200-230 ohms per mile at 70°F.

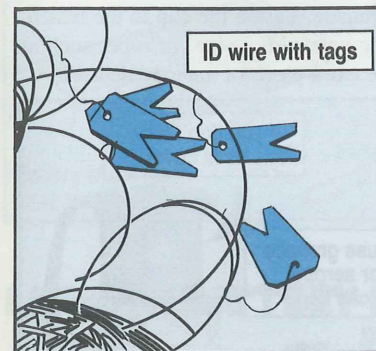
Four or more splices means the wire can be used for training only, or that it's ready for disposal.

Use local SOP as your guide for dumping un-serviceable wire.

You can use wire tags to put on the spool or reel of wire to give you a ready reference as to the condition of the wire.

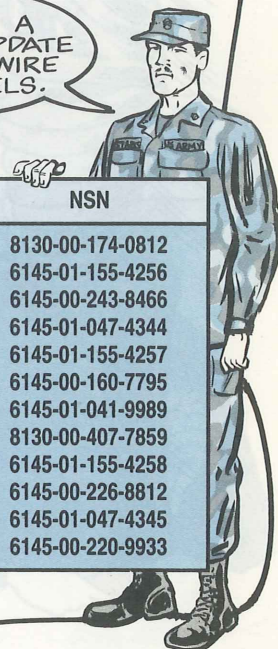
NSN's for the tags with tie-on wires are:

TAGS	NSN 9905-00-537-
Red	8954
Yellow	8955
Green	8956
White	8957



Use FM 24-20 (Dec 85), Field Wire and Field Cable Techniques. It's loaded with tips on how to lay, recover and splice field wire.

HERE'S A SUPPLY UPDATE ON YOUR WIRE AND REELS.



ITEM	LENGTH	NSN
RL-159 (reel only)		8130-00-174-0812
RL-159 WD-1A	2 Kilometers (6,562 Ft.)	6145-01-155-4256
RL-159 WD-1	1 Mile (5,280 Ft.)	6145-00-243-8466
RL-159 WD-1A	1 Mile (5,280 Ft.)	6145-01-047-4344
MX-306 WD-1A	1 Kilometer (3,281 Ft.)	6145-01-155-4257
MX-306 WD-1	1/2 Mile (2,640 Ft.)	6145-00-160-7795
MX-306 WD-1A	1/2 Mile (2,640 Ft.)	6145-01-041-9989
DR-8 (reel only)		8130-00-407-7859
DR-8 WD-1A	1/2 Kilometer (1,640.5 Ft.)	6145-01-155-4258
DR-8 WD-1	1/4 Mile (1,320 Ft.)	6145-00-226-8812
DR-8 WD-1A	1/4 Mile (1,320 Ft.)	6145-01-047-4345
WD-1	2 1/2 Miles (13,200 Ft.)	6145-00-220-9933



# TOPLESS MX-6707?

There's trouble ahead when you leave your MX-6707 matching unit uncovered after removing the AS-1730 antenna element. Moisture gets into the element. Contacts corrode and commo shorts out.

When you remove the AS-1729 or -1730 antenna, always cap the matching unit. Use antenna base cover, NSN 5985-01-135-2307. If you don't have a cover, try one of these make-do substitutes to protect your equipment until you get a cap:



- A protective cup from an M203 grenade. Fasten the cup to the matching unit with a piece of rope, such as an extra piece of antenna tiedown.



- A top from an aerosol can. Use a thin piece of wire to fasten the top down.

- Plastic dust covers, NSN 5340-00-342-5577 or 5340-00-213-8881. Punch a hole below the "ledge" of the dust cover and use strapping to hold it on.

- Masking tape. Use a pencil eraser to wipe off the sticky stuff from the contact after removing the tape.

BUCS...

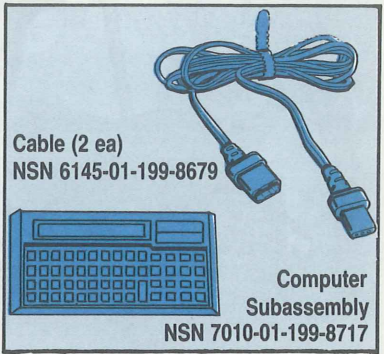
## Passing 'em? Know 'em

Keep your backup computer system's (BUCS) components together so you know they're ready to go.

Here's what you need—  
**For the U41 BUCS General:**



**For the U42 BUCS Special:**



Both of the BUCS use the same carrying case, NSN 7010-01-199-8664. These and other items which complete the BUCS are listed in TM 9-7000-200-13&P (Jun 85).

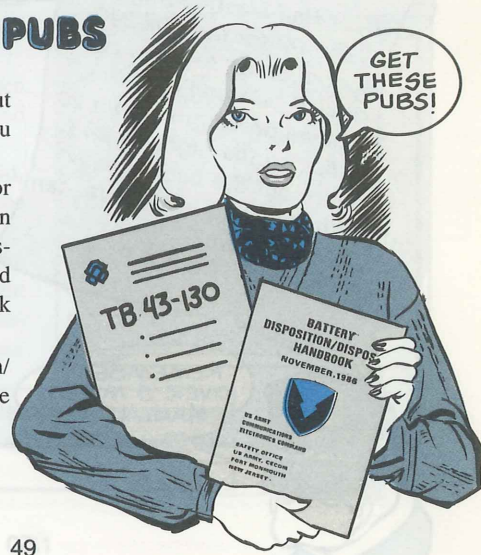
## LITHIUM BATTERY PUBS

There are a couple of pubs about lithium-sulfur dioxide batteries you can get for the asking.

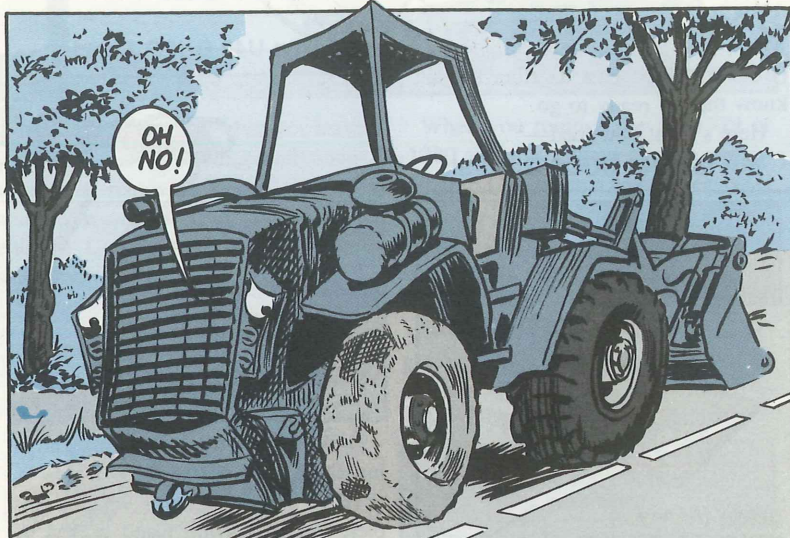
One is TB 43-130 on Instructions for the Safe Handling and Identification of the US Army Communications-Electronics Command Managed Lithium-Sulfur Dioxide Batteries. Ask your pubs clerk to order it for you.

The other pub, "Battery Disposition/Disposal Handbook," is available from:

**USA CECOM**  
**ATTN: AMSEL-SF-REE**  
**Ft Monmouth, NJ 07703-5000**



## Road March or Not?



Dear Half-Mast,  
The TM for the MW-24C scoop loader says we can drive it between job sites. But we drove one about 20 miles on the highway and wore out the back tires. What's the word? How far can we drive 'em?  
CW3 J. P. H.

Dear CW3 J. P. H.,  
If the distance between job sites is 5 miles or more, load it on a trailer and haul it.

The large tires on scoop loaders and other wheeled construction equipment flex, and when driven on a hard surface the tires tend to cup. Underinflation makes cupping worse. If you do have to drive the loader on a road, be sure the tire pressure is correct before you start.

*Half-Mast*

REMEMBER,  
OVER 5 MILES...  
HAUL IT!



## MATCH TIRES for a SMOOTH RIDE



When you're changing pneumatic drive tires on your Allis-Chalmers ACP-40-PS warehouse forklift, check the size of the tire before you put the tire on the tractor.

The circumference can vary between tires from different manufacturers, and even from the same manufacturer.

Mismatched tires can cause rapid, uneven wear, or perhaps damage to the differential.

After you have mounted the tire on the wheel and inflated it to the right pressure, use a tape measure to measure the circumference. Then measure

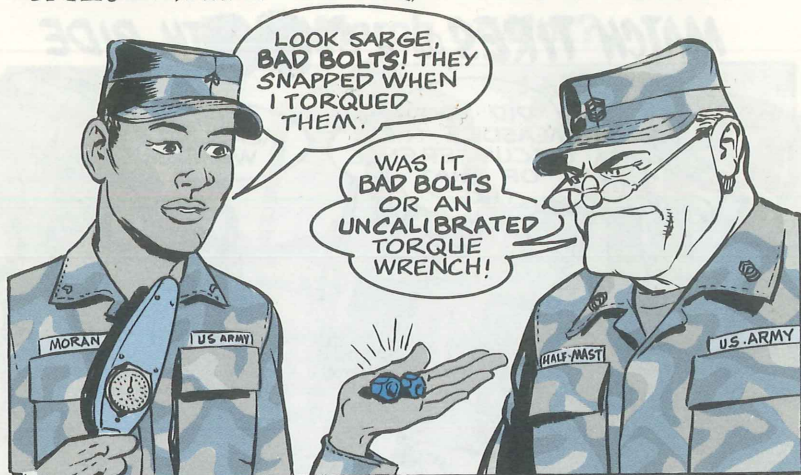
the tire on the forklift. The tires are matched and safe to use if there's 3/4-in or less difference.



For more details on matching tires, see Para 2-6 of TM 9-2610-200-24.



# CALIBRATE TORQUE WRENCHES



Let's say your TM tells you to torque a nut to 45 lb-ft, but the bolt snaps at 40 lb-ft.

Was the bolt bad? Or was the calibration on your torque wrench off?

Could be either, but you need to have your wrench checked. The torque value shown on the wrench can be off as much as 50 percent. That means when your torque wrench reads 40 lb-ft, you are applying up to 60.

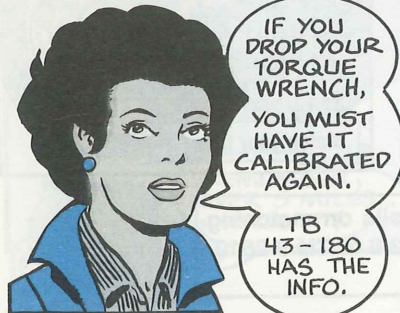
Torque wrenches do not come calibrated. The first stop for a new wrench

is your TMDE shop for calibration. They will calibrate the wrench and put on a calibration sticker, DA Label 80. The sticker tells when the wrench was calibrated and when that calibration expires.

U.S. ARMY CALIBRATED INSTRUMENT			
1 DATE CALBR 88-232	2 CALBR W80123	3 CALBR VOID 88 252	4 NAME-REPORT NO SFC SMITH
5 IDENTIFICATION NO 346	6 OWNER WD9AAA	REPLACES EDITION 1 JAN 70 WHICH IS OBSOLETE	
DA LABEL <b>DA Label 80</b>			

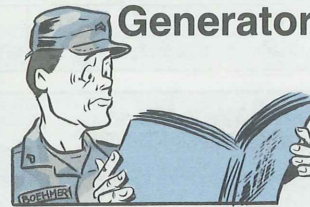
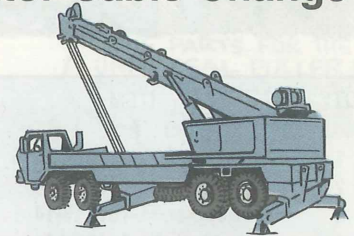
Never use a torque wrench that doesn't have a calibration sticker. Send it for calibration pronto! Same goes if the expiration date is passed.

A torque wrench is a sensitive instrument. Many things can throw off the calibration, like dropping it, using it for a hammer, letting it bounce around in a tool box, or treating it like a regular wrench. One good jolt and it's gotta go back to TMDE for calibration.



# MT-250 Boom Indicator Cable Change

Use CAGE 41625, PN 304241-5-102 to get the cable used on the MT-250 crane's boom angle indicator. The NSN listed for the cable, Item 11 in Fig 97, has been dropped and the part number listed is wrong. Order the cable on a DD Form 1348-6 from RIC S9C.



## Generator Door Latch NSN

TM 5-6115-464-24P for the 15-KW generator and 5-6115-465-24P for the 30-KW generator do not list a door latch. You can get the latch for both with NSN 5340-00-229-3643.

## 5-KW Generator Cover NSN

The cover listed in TM 5-6115-365-15 for your PU-620/M generator on the M116A1 ¾-ton trailer won't fit. Get a cover that will fit with NSN 2540-00-926-0993.



Common Shop Sets...

## Torque Wrench Added

When you need to tighten a bolt in the range of 15 to 35 lb-ft, the 175 lb-ft torque wrench in the No. 1 and No. 2 Common shop sets won't hack it. It's just not accurate enough in the bottom 20 percent of full scale.

Instead, get a ¾-in square drive 15 to 75 lb-ft torque wrench, NSN 5120-00-554-7292. It gives you accurate torque readings between 15 and 60 lb-ft.

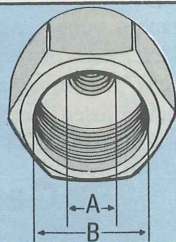
It's going to be showing up in the No. 1 and No. 2 Common, but in the meantime, use Appendix A of CTA 50-970 as your authority to order it.



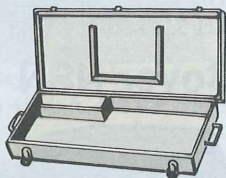
Use smaller torque wrench, NSN 5120-00-554-7292

# Puller Kit

QTY	ITEM	NSN
	A B	
1	Adapter, 5/8-18 to 5/8-18	-5180
2	Adapter, 5/8-18 to 3/4-16	-5181
1	Adapter, 5/8-18 to 7/8-14	-5182
1	Adapter, 5/8-14 to 1-14	-5183
1	Adapter, 5/8-14 to 1 1/8-12	-5184
1	Adapter, 5/8-14 to 1 1/2-12	-5186



1 Box, puller set  
NSN 5140-00-357-5463



1 pair Legs, push/pull, 4 1/2 inches  
NSN 5120-00-227-0633



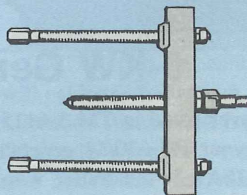
1 pair Legs, push/pull, 16 1/2 inches  
NSN 5120-00-227-0635



1 pair Legs, push/pull, 22 1/2 inches  
NSN 5120-00-227-0636



1 Push/pull; 3 1/2- to 12 3/4-in  
spread NSN 5120-00-633-5085

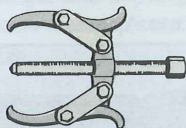


Includes:  
1 pair Legs, push/pull 9 1/2  
inches NSN 5120-00-227-0634



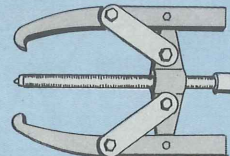
1 pair Leg ends  
CAGE 45225, PN 24827\*

1 Puller, 3 1/4-in reach  
NSN 5120-00-595-9304

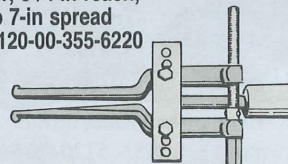


# Parts

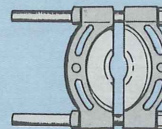
1 Puller, 11-in reach,  
12 1/2-in spread  
NSN 5120-00-288-7711



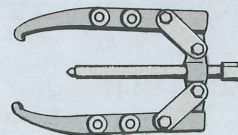
1 Puller, 5 1/4-in reach,  
1 1/2- to 7-in spread  
NSN 5120-00-355-6220



1 Puller, 1- to 9-in spread  
NSN 5120-00-711-6753



1 Puller, 8 3/4-in reach 0-to 10-in  
spread NSN 5120-00-030-7942



HERE ARE  
THE PARTS FOR THE  
UNIVERSAL PULLER KIT,  
USED TO PULL  
BEARINGS AND  
GEARS.



# Hand Impact

YOU SAY YOU'RE NOT SATISFIED? YOUR PACKING LIST HAS TOOLS THAT ARE NOT IN THE SET? TELL YA WHAT I'M GONNA DO!



Your hand impact wrench sets are good for tough jobs like breaking loose stubborn bolts. What's tougher than breaking loose the bolts, though, is finding the NSN or part number to a missing set item.



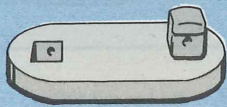
The 3/4-in drive impact wrench, NSN 5120-00-961-9813, is part of the No. 2 Common shop set.

The No. 2 Supplemental shop set has hand impact wrench set, NSN 5120-00-961-9815, which includes the 3/4-in set and a 1-in drive wrench set.

When you inventory the sets, you can't go with the printed packing list on the lid of the wrench sets. That's because some of the replacement items do not always come from the manufacturer of the complete set. And some NSN's have been assigned since the inventory list was printed.

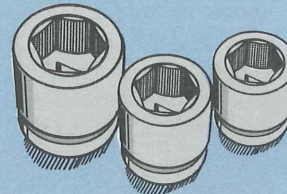
You'll find only a partial listing of the components of these wrench sets in SC 4910-95-CL-A72 covering the No. 2 Common and in SC 4940-95-CL-A08 covering the No. 2 Supplemental.

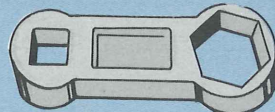
Here's what makes up the 3/4-in drive wrench set, NSN 5120-00-961-9813:

NSN	ITEM
5120-00-440-8047	Wrench: 800 lb-ft 
5130-00-449-6656	Extension: 7 inch
5130-00-723-2896	Extension: 10 inch
5130-00-449-6657	Extension: 13 inch
5120-01-152-8281	Special extension: for turret studs 
5120-01-151-1823	Offset link: 1 1/4-in long
5120-01-151-1824	Offset link: 3 3/4-in long 

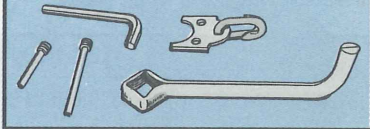
# Wrench Sets

NSN	ITEM
	Socket: Impact Size (Inches)
5130-00-227-6701	3/4
5130-00-227-6676	13/16
5130-00-227-6677	7/8
5130-00-293-1411	15/16
5130-00-227-6679	1
5130-00-293-1412	1 1/16
5130-00-227-6681	1 1/8
5130-00-293-1413	1 3/16
5130-00-227-6683	1 1/4
5130-00-227-6684	1 5/16
5130-00-227-6685	1 3/8
5130-00-227-6686	1 7/16
5130-00-236-3979	1 1/2



NSN	ITEM
5120-01-154-5137	Wrench: Box end, 1 1/8-in hex
5120-01-151-1805	Wrench: Box end, 1 1/4-in hex
5120-01-154-5138	Wrench: Box end, 1 7/16-in hex 
5140-01-154-3030	Box: Tool kit

The accessory kit, PN 41-0001000\*, CAGE 66640, includes a 5/16-in Allen wrench, NSN 5120-00-240-5274; 2 steel pins; a hanger; and speeder wrench.




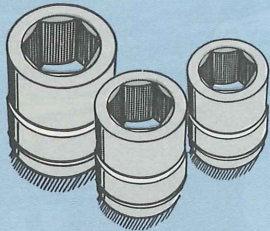
\*Order on a DD Form 1348-6 from RIC B14.



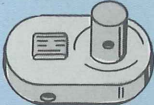
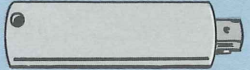
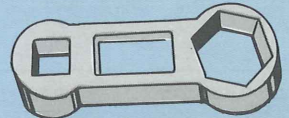
## Supplement Your Wrench Set

Hand impact wrench set, NSN 5120-00-961-9815, in the No. 2 Supplemental shop set, gets you the complete 3/4-in drive wrench set... and this 1-in drive set:

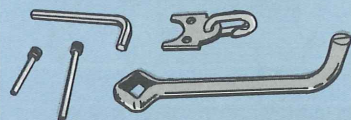
NSN	ITEM
5120-00-440-8011	Wrench: 2,000 lb-ft
	
<p>Socket: Impact Size (Inches)</p>	
5130-00-684-0919	1 9/16
5130-00-221-8023	1 5/8
5130-00-221-8024	1 1/4
5130-00-684-0918	1 3/4
5130-00-221-8025	1 3/16
5130-00-189-7917	1 1/4
5130-00-684-0917	1 5/16
5130-00-235-5881	2
5130-01-166-6465	2 1/16
5130-01-166-6466	2 1/8
5130-00-293-1375	2 3/16
5130-00-293-1374	2 1/4
5130-01-167-6632	2 5/16
5130-00-293-1373	2 3/8
5130-01-166-6467	2 7/16
5120-01-170-3274	2 1/2



\*Order on a DD Form 1348-6 from RIC B14.

NSN	ITEM
5120-01-164-7329	Offset link: 1 3/4-in long
5120-01-163-9689	Offset link: 4 1/4-in long
	
5130-00-449-6658	Extension: 7 inch
5130-00-449-6659	Extension: 13 inch
5120-01-164-7327	Special extension: for Budd wheels
5120-01-164-7328	Extension: for Budd wheels
5120-01-164-1455	Special extension: for turret studs
	
5120-01-170-3275	Wrench: Box end, 1 1/2-in hex
5120-01-163-9690	Wrench: Box end, 2 1/4-in hex
	
5140-01-163-9699	Box: Tool kit

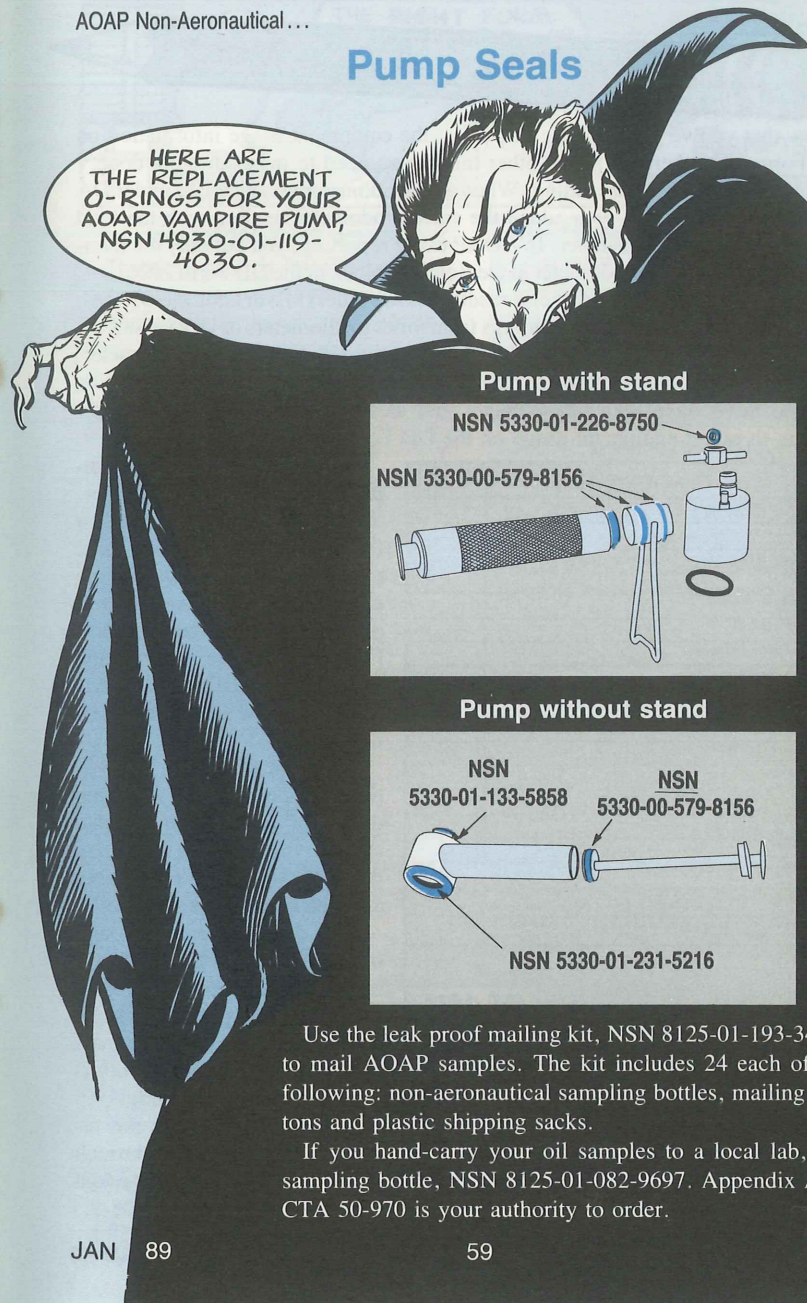
You also get an accessory kit, PN 41-0000900\*, CAGE 66640, that contains a 3/8-in Allen wrench, NSN 5120-00-198-5390; 2 steel pins; a hanger; and a speeder wrench.



AOAP Non-Aeronautical...

## Pump Seals

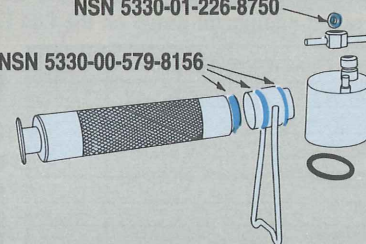
HERE ARE THE REPLACEMENT O-RINGS FOR YOUR AOAP VAMPIRE PUMP, NSN 4930-01-119-4030.



### Pump with stand

NSN 5330-01-226-8750

NSN 5330-00-579-8156



### Pump without stand

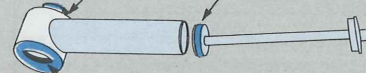
NSN

5330-01-133-5858

NSN

5330-00-579-8156

NSN 5330-01-231-5216



Use the leak proof mailing kit, NSN 8125-01-193-3440, to mail AOAP samples. The kit includes 24 each of the following: non-aeronautical sampling bottles, mailing cartons and plastic shipping sacks.

If you hand-carry your oil samples to a local lab, use sampling bottle, NSN 8125-01-082-9697. Appendix A of CTA 50-970 is your authority to order.

# Usage Reporting's a Must

Now that you've got the hang of putting the equipment usage information on DD Form 2026, here are some other things you need to make sure get done:

- Verify the odometer reading. When a new odometer was installed under DA Form 2408-9 reporting, you added the current odometer reading with the total usage from the previous meter. In AOAP usage reporting, you put only the number showing on the new odometer in the Remarks block of the DD Form 2026.

- Indicate whether the odometer reading shows miles (MI) or kilometers (KM). There's no need to convert the readings from miles to kilometers or vice versa.

If the end item you're reporting has no odometer but does have an hourmeter, show the total number of hours (HR) from the hourmeter.

Some items have both an odometer and an hourmeter. Use the odometer reading to report equipment usage on the DD Form 2026.

OIL ANALYSIS REQUEST		KEYPUNCH CODE
TO	OIL ANALYSIS LAB <i>FT KNOX</i>	1-3
FROM	MAJOR COMMAND <i>TRADOC</i>	4
	OPERATING ACTIVITY (Include ZIP Code/AFPO DODAAD) <i>C TRP, 1/12 CAV (W81 EYH)</i>	5-10
	<i>Ft Knox, KY 40121 624-2860</i>	
EQUIPMENT MODEL/APL	<i>Engine AGT-1500C</i>	11-14
EQUIPMENT SER. NO.	<i>A 0612</i>	15-20
END ITEM MODEL/HULL NO.	<i>Tank, M1</i>	
END ITEM SER. NO./EIC	<i>DSCW-6777</i>	
DATE SAMPLE TAKEN (Day, Mo., Yr)	<i>8-8-88</i>	21-24
HOURS/MILES SINCE OVERHAUL	<i>373</i>	25-29
HOURS/MILES SINCE OIL CHANGE	<i>76</i>	30-33
REASON FOR SAMPLE LAB	<input checked="" type="checkbox"/> ROUTINE <input type="checkbox"/> REQUEST <input type="checkbox"/> TEST <input type="checkbox"/> OTHER	34
OIL ADDED SINCE LAST SAMPLE (Pt, Qt, Gal)	<i>1 Gal</i>	35-36
ACTION TAKEN		
DISCREPANCY ITEM		
HOW MALFUNCTIONED		
HOW FOUND		
HOW TAKEN	SAMPLE TEMPERATURE	TYPE OIL
<input checked="" type="checkbox"/> DRAIN <input type="checkbox"/> TUBE	<input checked="" type="checkbox"/> HOT <input type="checkbox"/> COLD	<i>OE 30</i>
REMARKS <i>MI 5026</i>		
FOR LAB USE ONLY		
SAMPLE RESPONSE TIME		39-40
PE 41-43	AG 44-45	AL 47-49
CR 50-52	CU 53-55	MG 56-58
NI 59-61		
PB 62-64	SI 65-67	SN 68-70
TI 71-73	MO 74-76	
LAB RECOMMENDATION		
77-78		
SAMPLE NO.	SIGNATURE	FILE MAINT
		79
		DATA SEQ
		80

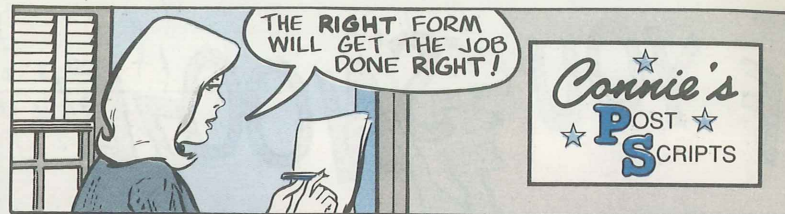
DD FORM 2026 1 NOV 77 PREVIOUS EDITION WILL BE USED

- Be sure to give the complete end item serial number. Some folks are putting the last four or five digits of the serial number, the bumper number and even the registration number in place of the serial number. Equipment usage information taken from the DD Form 2026 is tracked by the end item serial number.

Since the DD Form 2026 is now the only means of reporting usage for combat and selected tactical vehicles, it's important that you get the serial number and odometer reading right.

The data gathered through usage reporting is used to determine unit requirements for POL products, repair parts and budget needs. This is why it's so important that you give accurate information on usage reporting.

Remember, if you're not reporting equipment usage through AOAP, you still report annual usage data on DA Form 2408-9.



### Jack for 2½-Ton Trucks

There's a goof on Page B-8 of TM 9-2320-209-10-1 (Sep 1980). It shows a 3-ton hydraulic jack for the 2½-ton truck. That's wrong! You need the 8-ton jack, NSN 5120-00-595-8396, that's in the BIIL (Basic Issue Items Lists) for the 5-ton trucks.

### Wrong Screw NSN Printed

DO NOT use NSN 5305-00-821-3869 as the screw for the blow-off panels on the M1A1 tank. Use only Grade 5 screws, NSN 5305-00-269-3215. The -3869 screw shown in PS 432, Page 13 is Grade 8 and is too strong.

### M203 TM Correction

There's a mistake on Page 4-2 in TM 9-1010-221-10 for the M203 grenade launcher. The Note should read: "The M781 Practice Round has an inert projectile; however, it does contain a propelling charge. No dummy ammunition is supplied for this weapon."

### M353 Trailer Bearing NSN

Get the roller bearing for the 3½-ton trailer's landing gear with NSN 3110-00-040-9768. The correct PN is MS19081-6 CAGE 96906 for Item 24 of Fig 22 in TM 9-2330-247-14&P.

### M101A1 Monthly Lubes Are Crew's

Contrary to what TM 9-1015-203-12 tells you on Pages 3-14 through 3-19, the monthly lubes for the M101A1 towed howitzer are performed by the crew, not organizational maintenance. The lubes have always been crew-level, and the TM error will be corrected later.

### M249 Spring Change

The length requirement for the M249 machine gun drive spring is being deleted from TM 9-1005-201-23&P. Change Step 1 on Page 2-22 to read: "Replace the driving spring if more than one broken strand is found on the same coil, or if more than two strands are broken, regardless of location on the entire spring."

### FAAR NSN Wrong

The part number and NSN listed for the FAAR drill—Item 40, Fig 1, TM 9-1430-588-24P (Jun 86)—are wrong. The correct part number is 10291841, NSN 5130-01-030-2171.

### 2½-Ton Tie Rod NSN

The NSN is wrong for the steering tie rod that's listed as Item 2 of Fig 137 in TM 9-2320-209-20P. Get the tie rod with NSN 2530-00-752-1599.

Distribution: To be distributed in accordance with DA Form 12-34-C-R, for TB-43-series.

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





IF YOU **SNOOZE**

**YOU LOSE!**  
**EXHAUST FUMES KILL**

Carbon monoxide is a silent killer.  
Never idle a truck with the cab  
windows closed, or run the  
engine in an enclosed area.