

Issue 432

# PS

November  
1988

## THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-432

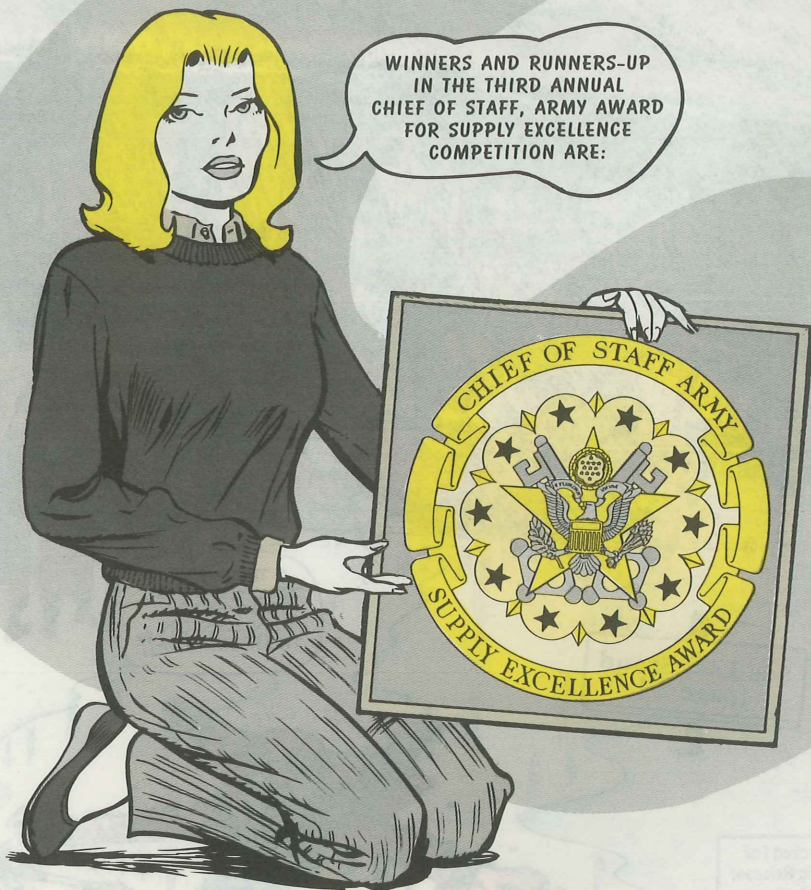


See Last Stand  
(page 27)

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# Supply Excellence

# Awards



WINNERS AND RUNNERS-UP  
IN THE THIRD ANNUAL  
CHIEF OF STAFF, ARMY AWARD  
FOR SUPPLY EXCELLENCE  
COMPETITION ARE:

## ★ ACTIVE ARMY MTOE UNITS

### Company, Battery or Troop

*Winner*—21st Trans Co, Yong San, Korea (EUSA)

*Runner-up*—56th Aircraft Maint Co, Schofield Barracks, HI (WESTCOM)

### Battalion or Squadron

*Winner*—3d Bn, 325th Inf, Vicenza, Italy (USAREUR)

*Runner-up*—3d MI Bn, Pyong Taek, Korea (INSCOM)

## ★ ACTIVE ARMY TDA ORGANIZATIONS

### Company, Battery or Troop

*Winner*—A Co, Army Spt Cmd, Schofield Barracks, HI (WESTCOM)

*Runner-up*—D Btry (MLRS), 1/78th FA, Ft Sill, OK (TRADOC)

### Battalion or Squadron

*Winner*—Army Field Station, Kunia, HI (INSCOM)

*Runner-up*—Army Medical Dept Activity, Ft Lee, VA (HSC)

## ★ ARMY NATIONAL GUARD UNITS

### Company, Battery or Troop

*Winner*—HHC, 228th Sig Bde, Spartanburg, SC

*Runner-up*—1137th MP Co, Kennett, MO

### Battalion or Squadron

*Winner*—1st BN, 129th FA, Richmond, MO

*Runner-up*—4th Bn, 114th FA, Newton, MS

## ★ ARMY RESERVE MTOE UNITS

### Company, Battery or Troop

*Winner*—883d Maint Co, Honolulu, HI (WESTCOM)

*Runner-up*—HHC, 561st Spt Gp, Omaha, NE (5th Army)

### Battalion or Squadron

*Winner*—980th Engr Bn, Wichita Falls, TX (5th Army)

*Runner-up*—448th Engr Bn (Combat Heavy), Ft Buchanan, PR (2d Army)

PS

THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY

TB 43-PS-432. 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 432 NOVEMBER 1988

## GROUND MOBILITY

CUCV's Diesel & Multifuel Engines	2, 3	2½- & M39-, M809-Series 5-Ton Trucks	6
M939/M839A1-Series Trucks	4-5	M915-Series Trucks	7
		HEMTT	8
		M880-Series Trucks	9
		Trailer Hose Tie	9

## FIREPOWER

Track Vehicle Caution	10-11	M180/M181 Gun Training Mount Device	16
Battery Maintenance	11	Stinger Tracking Head	16
M109A3	11	Trainer	16
M113	11	M2/M3 Series Bradley	17
Commo Interference	12	M240/M240C MG	18-20
M1-Series Tanks	13	M60 MG	20
M48A5/M60-Series Tanks, AVLB's	14	M16 Rifle	20, 21
M548/M548A1	15	M901 Tow Vehicle	22-23
PMCS M113 FOV	15	M3/M3A1 Submachine Gun	24-25
MLRS	16	M128 Mine Dispenser	25

## AIR MOBILITY

UH-60A	35, 36-37	Aircraft Antennas	41
AH-1 Series	38	OH-58A	42
Lifting Devices	39	Safety Posters/Decals	43
Closed Circuit Refueling	40	Aviation Messages	43
CH-47	40		

## COMMUNICATIONS

AN/VRC-12 Series Radio Set	44	AN/TPQ-36 Radar Set	45
AN/MRC-127	45	Antenna Danger	46
		MT-1029 Radio Mount	47

## TROOP SUPPORT

New Pubs, Audio-Visuals	26	EMD Tank & Pump Unit	51
Last Stand	27-34	Fuel Filters	52-53
PU-618 Generator	47	M13 Decon	54-55
15-, 30-KW Generators	48	Drill Chuck Key	56-57
60-KW Generator	49	AOAP	58-59
50,000-lb RTCH	50	Storage Items	60
		Cold-Weather Clothing	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:

MSG Half-Mast  
The Preventive Maintenance Monthly  
Lexington, KY 40511-5101

By Order of the Secretary of the Army:

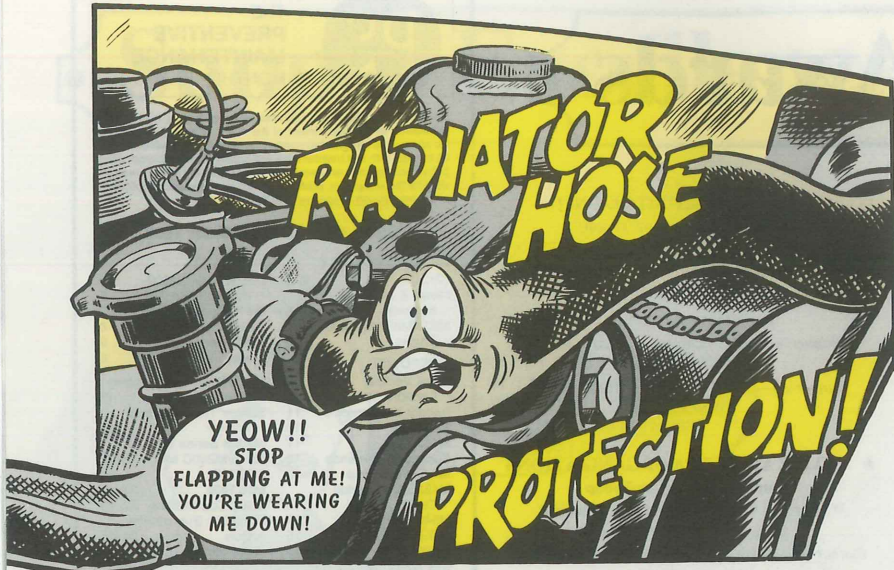
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Brigadier General, United States Army  
The Adjutant General

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**A** flapping alternator or compressor belt on a CUCV will wear thru an unprotected upper radiator hose quick. And a hose with a hole in it is bad news!

So take a look-see at that upper hose before you leave the motor pool. If you see any sign of rubbing, make sure the belt is not loose.

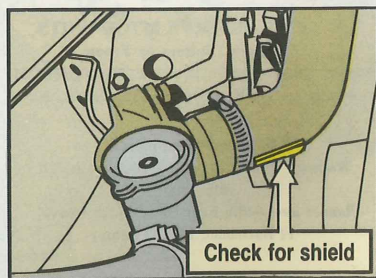
With the engine off, press on the belt midway between the two pulleys. If you can press it more than 1/2- to 3/4-in, report it.

Your mech will check tension with a tensiometer, NSN 6635-01-093-3710. New belts are tightened to 175-lb. Used belts—any belt that's been operated on the engine more than 15 minutes—should be 60-100-lbs. He'll check new belts after 15 minutes operation, too, and adjust tension to that of a used belt.

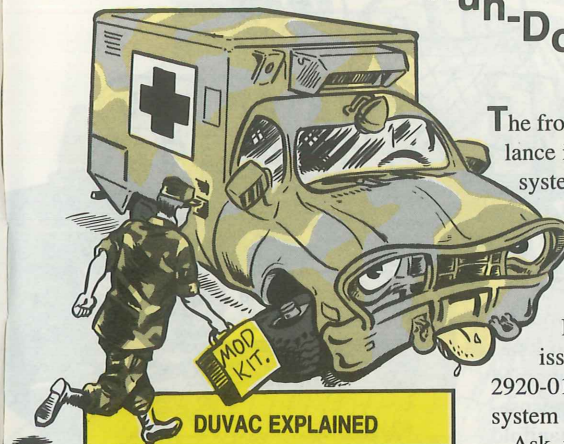
### Keep Your Shield Up

Even a properly adjusted belt comes close to the hose. Your truck needs to be protected. If the hose clamp at the thermostat housing has no shield, replace it with clamp, NSN 4730-01-194-2002.

The shield is needed on all models, not just the M1010. This updates the CAUTION on Page 7-11 of TM 9-2320-289-20.



## Stop That "Run-Down" Feeling



The front battery on the M1010 ambulance is not hooked into the charging system correctly so it doesn't get charged. When it discharges, you can't get the truck started—a bad situation for an ambulance!

But your support can get a free issue modification kit with NSN 2920-01-260-7504 for the charging system that solves the problem.

Ask them to order enough kits to modify your ambulances. Support will need to know each ambulance's vehicle identification number (VIN), date of manufacture, and the mileage to include in the REMARKS block of a DD Form 1348-6. Then they will send the completed form to:

**USA TACOM  
ATTN: AMSTA-FDRA  
Warren, MI 48397-5000**

Authorization for this modification is TACOM Msg AMSTA-MTA 181445Z Dec 87.

Installing the kit is covered by the CUCV's warranty, so support will also fill out a DA Form 2407 so the Army is reimbursed for the labor.

That form is sent to:

**USA TACOM  
ATTN: AMSTA-MSW  
Warren, MI 48397-5000**

### DUVAC EXPLAINED

There are scant procedures in your -20 TM for troubleshooting the Dual Voltage Alternator Control (DUVAC) on M1010 ambulances. But the headshed's finally come to the rescue. They sent detailed troubleshooting procedures to the TACOM representative at your local Logistic Assistance Office (LAO).

See them for a copy of the "CUCV Ambulance Charging Circuit Diagnosis" handout. This little dude makes it easier to troubleshoot the electrical system in your M1010.

If your LAO is short of handouts, write:

**USA TACOM  
ATTN: AMSTA-MTA  
Warren, MI 48397-5000  
or MSG Half-Mast.**

# PUT A RIB ON ENGINE SLOBBER

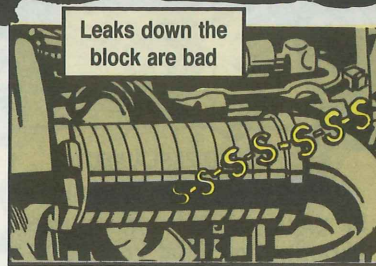
## BUBBLE PUDDLE, OILY TROUBLE...

that's the mess you make when you idle a diesel or multifuel engine too long. These engines "slobber" unburned fuel, oil and moisture from condensation all around the exhaust manifold after about 5 minutes of slow idle.



Some drivers mistake slobber for a Class III oil leak or busted head gasket and deadline their trucks. Wrong! Small bubbles, seepage or a hissing sound MAY mean the gasket is bad, or a cylinder head is loose. But chances are it's only slobber.

Engine slobber is like a fever—it's a symptom, not a disease. It's your engine's way of saying, "Move out!"



or, "Speed up the idle so I can warm up to normal operating temperatures."

The multifuel engines on 2½ and 5-ton trucks are just as messy as the diesel engines. Both slobber like a mad dog during long idles on days with high humidity and low temperatures. They should never be idled for more than 10 minutes.

It's easy to tell the difference between slobber and a serious oil leak. Slobber will go away but an oil leak won't.

Engine slobber will stop when the engine warms up. Increase the idle speed to 1,000 to 1,200 RPM's and watch the TEMP gage until it reaches



BURP!!  
OH!  
PARDON  
ME.

THINK YOU'VE GOT  
A FUEL LEAK?  
IT MAY BE  
ENGINE  
SLOBBER!

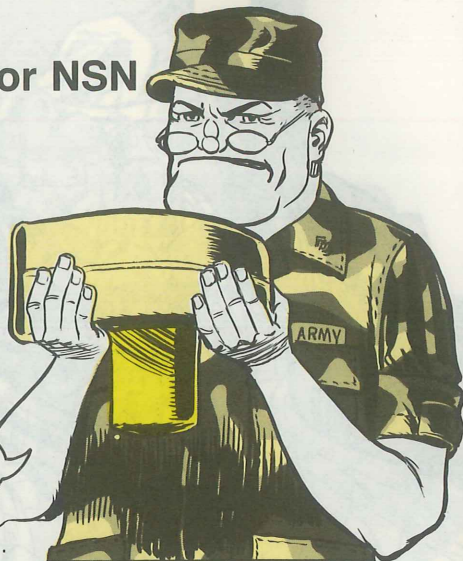
normal. Let the engine idle fast for a couple more minutes, and then look at where the exhaust pipe meets the engine exhaust system. The wetness should be dried up. Or, you can take the truck out on the road for a 4- or 5-mile drive and do the same thing.

If the slobber is gone, you don't have a leak. On the other hand, if the engine is running rough, misfiring, or there is oil or coolant running down the engine, you probably have a head gasket leak. Park your truck and call a mechanic.

## Heater Blower Motor NSN

Dear Half-Mast,  
 TM9-2320-272-20P does  
 not give an NSN for the  
 blower motor. Do I have to  
 order the whole heater  
 assembly to get the  
 blower motor?  
 SGT J.A.R.

NO, YOU CAN GET  
 THE BLOWER MOTOR WITH  
 NSN 6105-00-512-9225.



2 1/2- & M39-, M809-series 5-Ton Trucks...

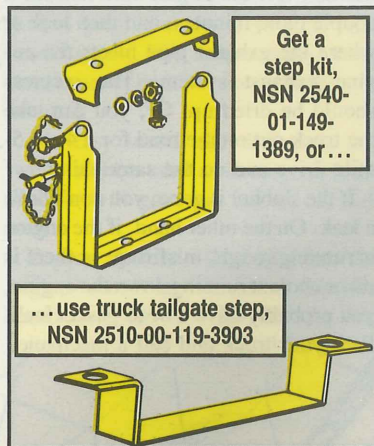
## One Small Step for PM



Climbing on your truck's front bumper to do PM checks on your engine can get you hurt.

Take one step at a time by using a bumper step. NSN 2540-01-149-1389 gets a step kit with installation instructions. Or use truck tailgate step, NSN 2510-00-119-3903. It'll save you \$27.59.

Paint the step and the top of the bumper with skidproof paint, NSN 5610-00-141-7838. If your truck has been painted with CARC, apply a layer of matching CARC over the skidproof paint.



## Steppin' Up



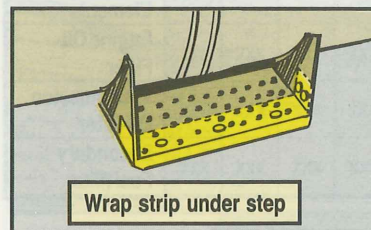
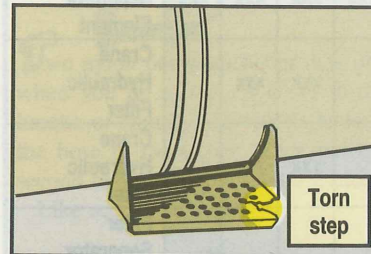
You can get your DSU to replace the step, which will take 2 to 3 weeks... or you can repair and reinforce the step yourself.

### Here's What You Need:

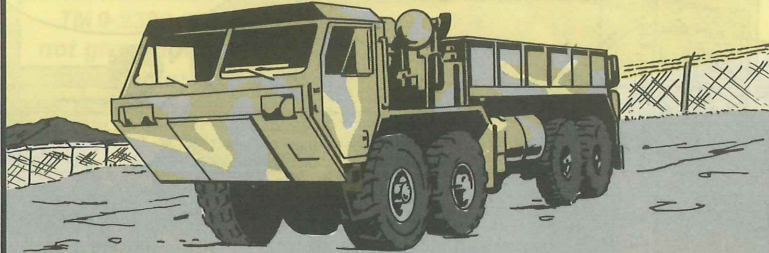
- 1 steel strip, 18 1/2 inches long, 1 1/2 inches wide, 1/4 inch thick.
- 7 bolts, 5/16-in diameter, 3/4 inch long, NSN 5306-00-226-4825.
- 7 nuts, NSN 5310-00-880-7744.
- 7 lock washers, NSN 5310-00-167-0721.

### Here's How You Do It:

- 1 Bend the steel strip so it fits across under the leading edge of the step and up the sides.
- 2 Drill holes for the bolts.
- 3 Install the bolts, nuts and washers. Then paint the repaired step with skidproof paint. NSN 5610-00-141-7838 gets a gallon. If the truck is painted with CARC, you must cover the skidproof paint with CARC.



## Filters for Semiannual Service



SEMIANNUAL SERVICE REQUIRED REPLACEMENT PARTS	977	978	983 PAT	984	984A1	985	985E1	TYPE OF FILTER
Filter Element NSN: 4330-01-217-8184	xxx					xxx		Main Hydraulic Filter
Filter Element NSN: 4330-01-163-7326		xxx	xxx	xxx			xxx	Main Hydraulic Filter
Filter Element NSN: 4330-01-232-8305					xxx			Main Hydraulic Filter
Filter Element NSN: 4330-01-046-3399	xxx	xxx	xxx	xxx	xxx	xxx	xxx	Fuel-Water Separator Element
Filter Element NSN: 4330-01-192-8832	xxx				xxx	xxx		Crane Hydraulic Filter
Screen, Bypass Filter NSN: 4330-01-192-7664	xxx				xxx	xxx		Crane Hydraulic Filter
Filter Element NSN: 4330-00-983-0998		(15) xxx						Filter Separator Elements
Filter Element NSN: 2940-00-580-6283	xxx	xxx	xxx	xxx	xxx	xxx	xxx	Engine Oil Filter
Filter Element NSN: 2520-01-132-4842	xxx	xxx	xxx	xxx	xxx	xxx	xxx	Transmission Oil Filter
Filter Element NSN: 2910-01-022-8183	xxx	xxx	xxx	xxx	xxx	xxx	xxx	Secondary Fuel Filter

## Hang on to M880 Lug Wrench

If you've got an M880-series 1¼-ton truck and it's missing the lug wrench, NSN 5120-00-293-1404, it's OK to pull one out of an M880 that's being turned in. The Tank-Automotive Command has dropped the lug wrench from the Basic Issue Items (BII) list and added it to the Additional Authorization List (AAL) in Appendix B of TM 9-2320-266-10. That means that wrench no longer goes with the truck.

## M939 Stoplight Switch NSN

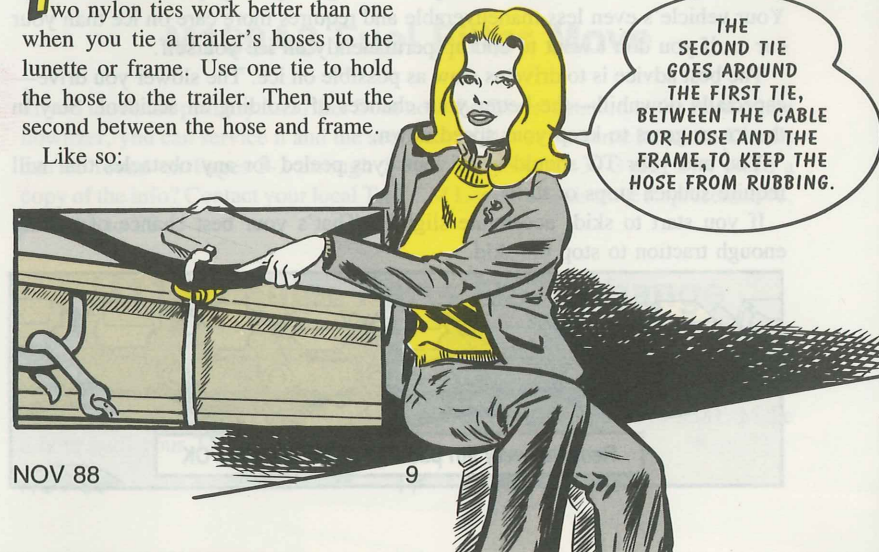
The NSN and part number are wrong for the stoplight switch shown as Item 9 of Fig 56 in TM 9-2320-272-20P. The right numbers are NSN 5930-00-789-6192 and PN 11602160.

Trailers...

# 2 TIES BETTER THAN 1

Two nylon ties work better than one when you tie a trailer's hoses to the lunette or frame. Use one tie to hold the hose to the trailer. Then put the second between the hose and frame.

Like so:



THE SECOND TIE GOES AROUND THE FIRST TIE, BETWEEN THE CABLE OR HOSE AND THE FRAME, TO KEEP THE HOSE FROM RUBBING.

# SLIPPIN' and a SLIDIN'



**E**xperience has taught you the importance of caution when you drive your car on ice.

Caution pays when you drive your tracked vehicle on ice, too. This is because your tracked vehicle's flat, smooth pads can't get a good grip on a slick surface. Your vehicle's even less maneuverable and requires more care on ice than your car... if you don't want to end up permanently on ice yourself.

The best advice is to drive as slow as possible on ice. The slower you drive—especially downhill—the better your chances of avoiding an accident. Stay in the lower gears to keep your speed down.

You and your TC should keep your eyes peeled for any obstacles that will require sudden stops or turns.

If you start to skid, accelerate slightly. That's your best chance of getting enough traction to stop the skid.



For vehicles with removable track pads, take off every fifth pad to improve traction. But get your unit CO's approval first. And when roads clear up, put the pads back on.

Make sure the steering and braking controls are working right before you leave the motor pool. If your vehicle has trouble stopping or turning, tell your mechanic. With controls that are out-of-adjustment, a normal stopping or turning reaction turns into a disastrous overreaction on ice.

## Battery Maintenance...

### Felt Washers Stop Corrosion

**T**hose felt washers you find under the cable clamps on your car's battery will work just as well on Army batteries at preventing corrosion. What's even better, they're in the supply system.

If your local commander approves it, order the felt washers using NSN 5970-01-101-4147.

### M109A3 Fuel Filter Move

**I**f you move the primary fuel filter from near the driver's station to the front of the howitzer, you can service it and the secondary filter at the same location. Details can be found on Pages 3-2 through 3-9 of TB 43-0001-39-3 (Jul 87). Need a copy of the info? Contact your local TACOM Logistic Assistance Representative, or write to PS.

### M113's Filter Parts NSN Change

**U**se NSN 2910-00-287-1912 to get the secondary fuel filter element shown as Item 10 of Fig 34 in TM 9-2350-261-20P. Also, the hydraulic line tube tee shown as Item 12 in Fig 279 now comes under NSN 4730-00-618-5381. Make a note until your TM is changed.

# They Come From Inner Space

WHERE'S THAT NOISE COMING FROM?

BRR--COLD IN HERE!

**N**oticed any strange commo interference in your tank, CEV or Bradley when you use the M3 heaters on the gas particulate filter unit?

Some M3 heaters, part of lot SKK85L 010-007 and made by S and K, are the culprits. They cause a lot of interference both in the intercom and external transmission modes.

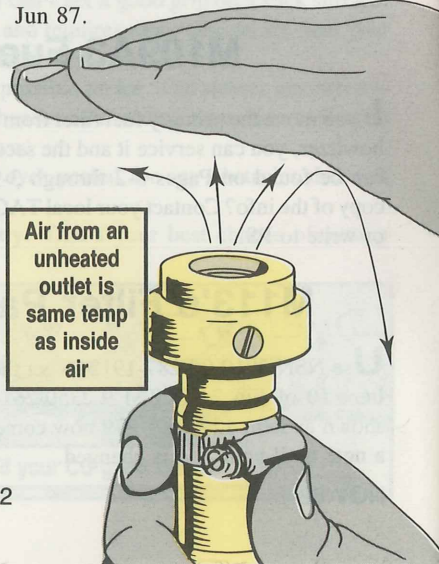
member that the air coming from an unheated outlet is the same temperature as the air inside the vehicle. If it's real cold, frostbite is a real possibility if you hook up to the system before the turret heats up.

For all the info, use AMCCOM SOU Msg AMSMC-MAR-EC, 251400Z Jun 87.

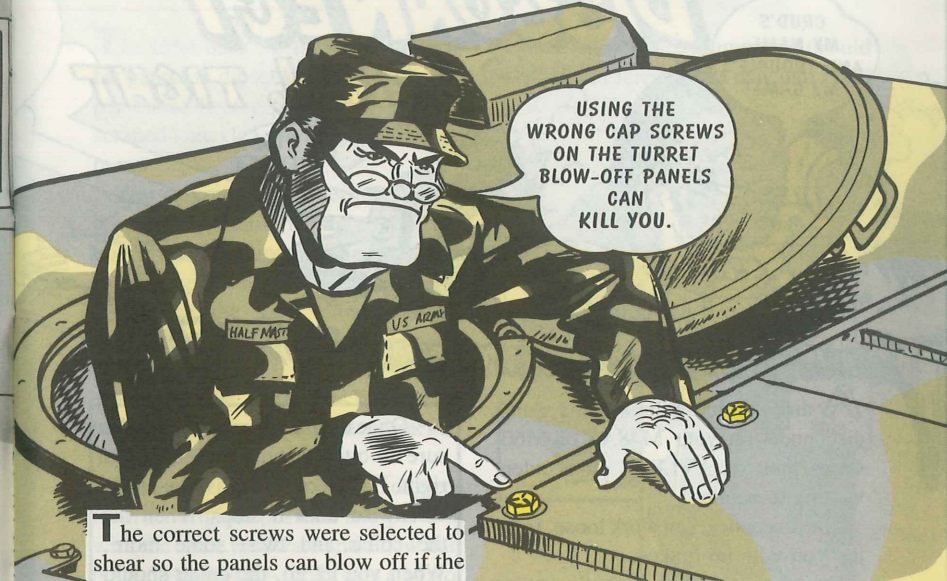


To isolate the bad heater, turn all of them on. Then turn them off one at a time as you operate the commo system. When the interference stops, the heater you just turned off is bad.

Until you can get a replacement for the bad heater, operate the GPFU without turning on that heater. Just re-



# Wrong Screws Could Be Deadly

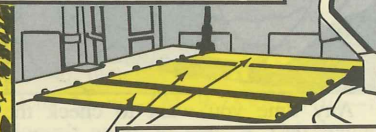


**T**he correct screws were selected to shear so the panels can blow off if the ammunition in the turret bustle explodes. If the wrong screws are used, the panels may not blow. The blast goes into the turret instead.

3214, shown as Item 3 in Fig 99 of TM 9-2350-255-24P-2.

For M1A1's, use only Grade 5 screws, NSN 5305-00-821-3869 shown as Item 1 in Fig 105 of TM 9-2350-264-24P-2.

If grade 8 screws are used...



For M1's and IPM1's, use only Grade 5 screws, NSN 5305-00-269-

3 dashes = SAE Grade 5





# KEEP DISCONNECT CLEAN, TIGHT



A dirty or loose brake line quick disconnect on your M48A5 or M60-series tank or AVLB is an accident waiting to happen.

The disconnect can work loose, leaving you with no brakes.

Dirt gets into the quick disconnect during hull cleaning when the pack is out. Debris keeps the connector from seating right, and then it's just a matter of time until the disconnect separates.

A loose quick disconnect presents the same problem. Here's what to do to keep your brakes:

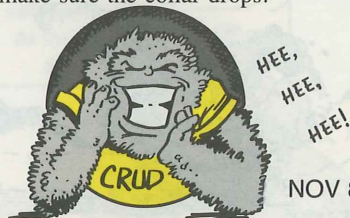
- Any time the pack is removed, cover the quick disconnect ends with plastic wrap and then tape them.



- Once the pack is replaced, make sure the quick disconnect is installed right. Push it on and twist the collar clockwise until it stops. Then lift the collar and twist some more. When you let go, the collar should snap back into place.



Any time you want to check the quick disconnect, grasp the brake line and move it back and forth. If the disconnect backs off, twist and lift and make sure the collar drops.



## Reverse Bracket for Dipstick Move

The filler neck for the M548's transfer gearcase dipstick is so close to the personnel heater fuel pump you get scraped knuckles when you service the pump.

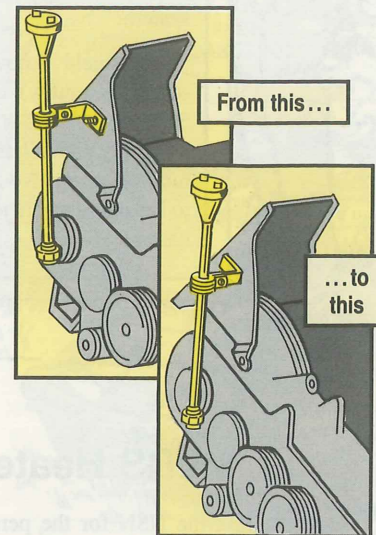
You can move the filler neck out of the way by simply reversing the support bracket that mounts the filler neck to the engine oil filter bracket.

Remove the loop clamp and its hardware from the filler neck. Toss the self-locking nut.

Remove the angle bracket and its hardware from the oil filter bracket. Toss the nut.

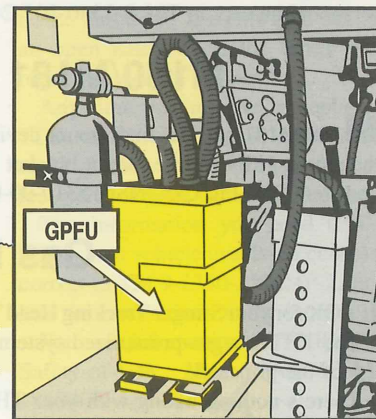
Rotate the angle bracket 180 degrees from its original position and put it in with the same hardware and a new nut, NSN 5310-00-088-1251 (gets a box of 100). That'll get the filler tube out of the way.

Reinstall the loop clamp with the old washer and screw and a new nut, NSN 5310-00-877-5797.



## PMCS Change for GPFU in M113 FOV

If your M113-series carrier does not have a gas particulate filter unit installed, then pay no attention to PMCS Item 51 in TM 9-2350-261-10—it doesn't apply to you. A TM change will make it clear that readiness criteria apply only to vehicles with the GPFU.



## Blast Shield for Antennas

**T**here's a replacement "blast shield" for your MLRS antennas in the supply system.

The shield (known as a safety restraint assembly) comes under NSN 5985-01-119-9258. It's a two-piece assembly which lets you install and remove it easily. No longer do you have to break the shield to get at the antenna base or spring.



## MLRS Heater Glow Plug

**Y**ou won't find the NSN for the personnel heater glow plug in MLRS TM 9-1450-646-24P. You will find the glow plug, NSN 2540-12-167-3599, and other repair parts and maintenance information for the MLRS and most other personnel heaters in TM 9-2540-205-24&P.

## M180/M181 NSN Wrong

**M**180/M181 gun training mount device TM 9-6920-441-12&P (Jun 82) gives the wrong NSN for the mount bracket lock washer shown as Item 8 in Fig C-1 and Item 2 in Fig C-3. NSN 5310-00-004-5033 is correct.

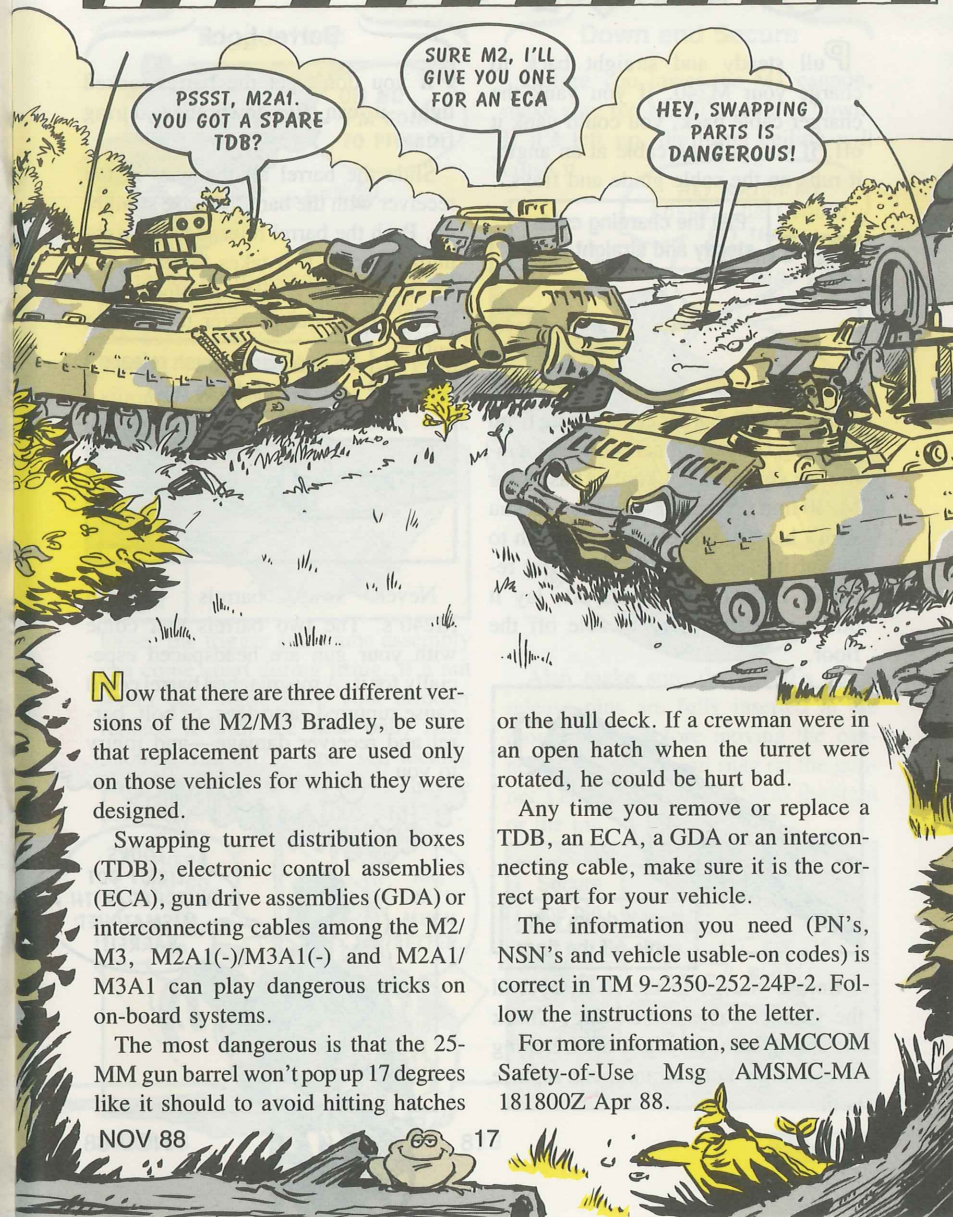
## Gas Is OK

**I**t's OK for your Stinger Tracking Head Trainer (THT) to exhaust a little gas.

The THT is a gas-pressurized system. When it's activated, gas comes out the top of the gripstock.

There's nothing wrong with your THT.

## PARTS SWAPPING CAUTION



**N**ow that there are three different versions of the M2/M3 Bradley, be sure that replacement parts are used only on those vehicles for which they were designed.

Swapping turret distribution boxes (TDB), electronic control assemblies (ECA), gun drive assemblies (GDA) or interconnecting cables among the M2/M3, M2A1(-)/M3A1(-) and M2A1/M3A1 can play dangerous tricks on on-board systems.

The most dangerous is that the 25-MM gun barrel won't pop up 17 degrees like it should to avoid hitting hatches

or the hull deck. If a crewman were in an open hatch when the turret were rotated, he could be hurt bad.

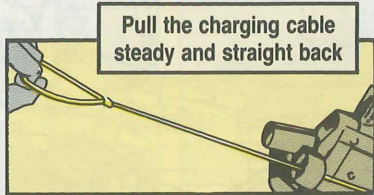
Any time you remove or replace a TDB, an ECA, a GDA or an interconnecting cable, make sure it is the correct part for your vehicle.

The information you need (PN's, NSN's and vehicle usable-on codes) is correct in TM 9-2350-252-24P-2. Follow the instructions to the letter.

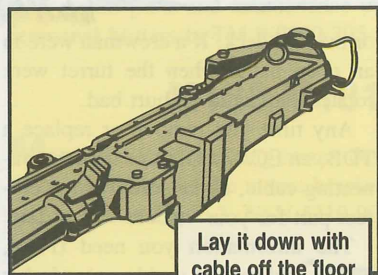
For more information, see AMCCOM Safety-of-Use Msg AMSMC-MA 181800Z Apr 88.

# CHARGING AND

**P**ull steady and straight back to charge your M240. If you yank the charger cable back, you could yank it off. If you pull the cable at an angle, it rubs on the cable guide and frays.



Protect the charger cable spring from catching on the gunner's control handles or sight control knobs. Pass your M240 into the turret barrel first, so you won't have to maneuver it as much to mount it. Take it out of the turret receiver first. During transport, lay it down with the charger cable off the floor.

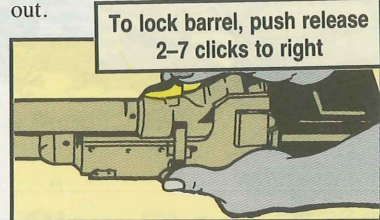


Before you go to the field, eyeball the charger cable for fraying. Check the spring, too, for signs of stretching or breaking. Your armorer can replace both.

## Barrel Lock

If you don't get the barrel locked tight, it can fly downrange during firing.

Slide the barrel all the way in the receiver with the barrel release straight up. Push the barrel release to the right until it locks. If it takes fewer than 2 or more than 7 clicks, something's wrong. Get your armorer to check it out.



Never swap barrels between M240's. The two barrels that come with your gun are headspaced especially for it. A mismatched barrel could cause ruptured cartridges, or bolt, barrel and receiver damage—and injury to you.

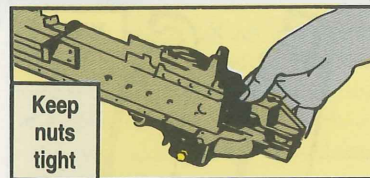


# OTHER TIPS

## Trigger Help



Tighten the trigger and frame assembly nuts before and after firing. Use the adjustable wrench that's part of your M1, M60 or Bradley's BII. Firing vibration loosens the nuts and wears out their washers. If the nuts work

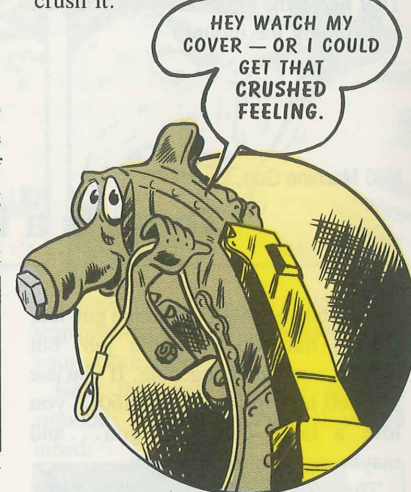


loose, the trigger and frame assembly can come apart during firing. If a nut won't stay tight, have your armorer replace it with the new bolt, NSN 5306-01-192-0677, and self-locking nut, NSN 5310-00-956-4549. They're being added to TM 9-1005-313-23P.

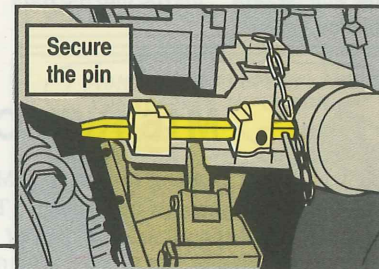


## Down and Secure

Before you lower the M1 cannon, make sure the M240's cover is down. If it's left up, the turret ceiling will crush it.

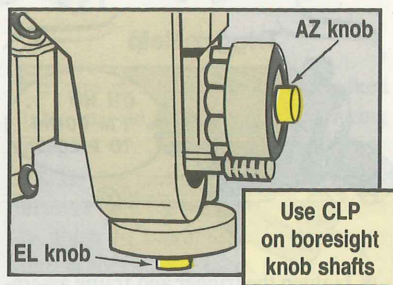


Also make sure the M240's quick release pins are fully inserted in the mount holes before moving the cannon. A loose pin can snag on the gunner's auxiliary sight and break the sight or the pin.



### CLP on Knobs

Whenever you remove the M240, lube the mount's AZ and EL boresight knob shafts with a few drops of CLP. That keeps the knobs from freezing up and ruining the mount.



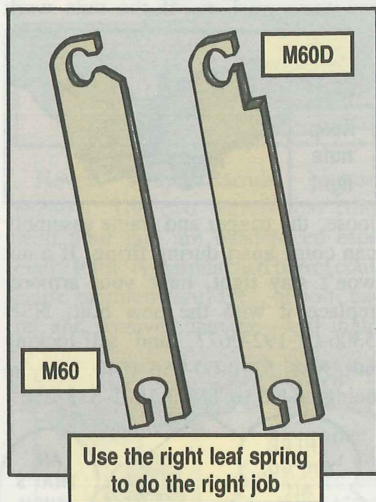
PS END

### There Is a Difference

The M60 and M60D machine gun leaf springs may do the same job, but they're not interchangeable. If you use an M60 leaf spring on an M60D, you lose a large chunk of gun... and maybe put an aircraft down.

The M60D leaf spring, NSN 5360-00-909-3021, has a smaller notch that won't fit on an M60.

The M60 spring, NSN 5360-00-975-8595, fits both models. But then it works loose on the M60D and parts of the gun fly off... maybe into the rotor blades.



### M16 Rifle Cleaning Kit

If you need a cleaning kit for your M16-series rifle, you'll need to order the kit's parts and supplies individually. There no longer is an NSN for the entire kit. The NSN's you'll need are part of the AAL and expendable supplies in TM 9-1005-249-10 and TM 9-1005-319-10.

### TAP IT DON'T ZAP IT!



It's been a long, hot day in the field. All you have to do before you head home is clean your M16. Then it's time for a hot shower and a cold drink.

But you can't budge the blasted takedown and pivot pins to take your rifle apart. Frustration builds.

So, you hammer on the pins.

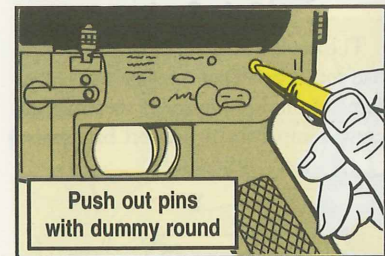
Result: Broken pin or cracked lower receiver. And you have to explain why you damaged your M16. It's going to be a while before you get that shower and drink.

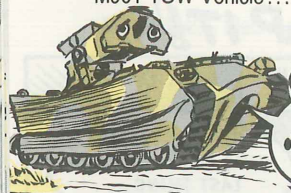
Stay out of that picture by disassembling your rifle like this:

Use hand pressure and a dummy round—or other blunt object—to push out the takedown and pivot pins. Quit pushing when the pin clears the upper receiver. That way you won't break off the pin's detent or damage the lower receiver.

If hand pressure won't budge a pin, stop pushing. Something's wrong! Tell your armorer.

Help the pins move in and out smoothly by keeping them clean and lubed.



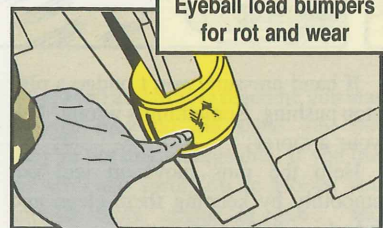


I'VE GOT THE 9-0-1 BLUES FROM MY HEAD TO MY SHOES.

## FIGHTING THE

Keep your M901 humming along happily instead of singing the blues in the shop with these tips.

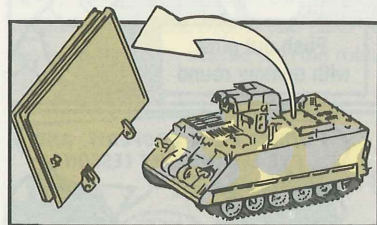
Eyeball the load bumpers for signs of rot and wear. Heat, humidity, paint, or cleaning solvents cause the bumpers to rot, plus the weight of the loader wears them down. If the load bumpers are shot, so is TOW accuracy. Report bad bumpers.



Eyeball load bumpers for rot and wear

### Safe Seals

The seal on the cargo hatch can go bad quickly. That means dangerous fumes from fired missiles seep into the crew compartment. Report bad seals.

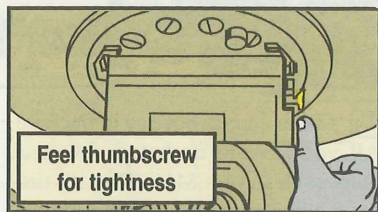


Open the hatch and look at the seal for cuts, tears, and spots where it's pulled loose

Make sure the hatch closes tightly, too. Test it by closing the hatch on a piece of paper. If the hatch can't hold the paper in place, your repairman needs to adjust its latches.

### Periscope Scoop

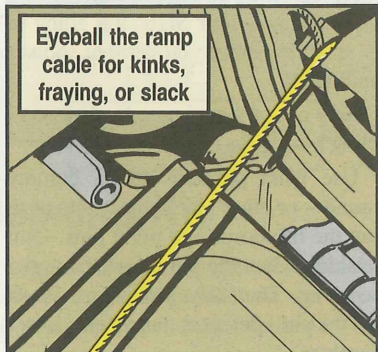
If you've traveled through rough country, feel the M19A1 periscope's locking thumbscrew for tightness before you open the driver's hatch. Vibration will loosen the thumbscrew and let the periscope fall off.



Feel thumbscrew for tightness

### Ramp Cable

Eyeball the ramp's cable for slack, kinking, or fraying before you release the ramp lock. There should be no slack, kinks, or broken wire strands. If the cable's not connected or it



Eyeball the ramp cable for kinks, fraying, or slack

## 901 BLUES

breaks, the 400-lb ramp falls down hard. That breaks the rear periscope and crushes anyone standing behind the ramp.

### Launcher Movement

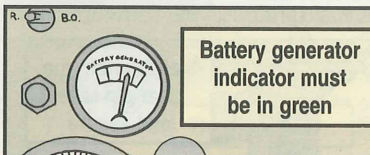
Watch the loader for jerky movement when you're lowering the launcher from ERECT to STOW. The launcher should move smoothly with no sudden drops of more than 1/2 inch. If the launcher drops, report it. Operating with slack chains can bust the chains and the launcher's gears.



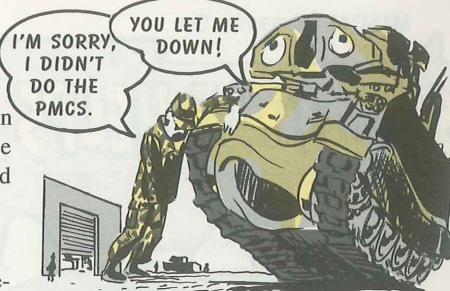
Launcher should move smoothly

### Battery Power

When you're operating the launcher in the field without the engine running, keep an eye on the BATTERY GENERATOR indicator. If its needle dips into the yellow zone, start the engine, let it warm up 3 to 5 minutes, then run it at high idle—1,000–1,200 RPM—until the needle goes back to the green zone. This usually takes 20–30 minutes.



Battery generator indicator must be in green



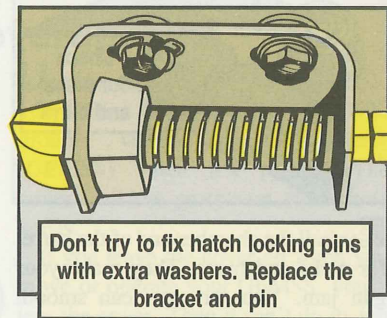
### Hydraulic Fluid

Eyeball the hydraulic fluid level every day. M901 hydraulic lines tend to leak. If you add fluid every few days, report it. You have a serious leak.

### For Repairmen Only

When you replace the floor boards, tighten the turret guard bolts snug only. If you use too much muscle, it's impossible to get the bolts out.

Forget about making the cargo hatch locking pin fit by adding lots of washers. If you have to add more than



Don't try to fix hatch locking pins with extra washers. Replace the bracket and pin

four washers, the hatch probably won't seal tight. Replace the locking pin, NSN 2540-00-040-1120, and bracket, NSN 2510-00-084-2989, to insure a good seal.

# SO LITTLE HELPS SO MUCH!

JUST A LITTLE ATTENTION WHEN YOU'RE PUTTING TOGETHER YOUR SUBMACHINE GUN WILL PUT YOU IN GOOD SHAPE WHEN YOU GET TO THE FIELD.



Pull ratchet spring back just far enough to clear the barrel collar



Check for nicks and burrs

Eyeball the chamber end of the barrel for nicks and burrs. They make your gun jam. Your armorer can smooth them out.

When you put on or take off the barrel, first press down on the barrel retaining spring... then turn the barrel collar. That way you don't chew up the notches on the barrel and receiver.



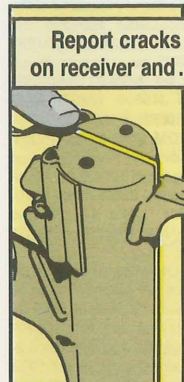
Make certain the sear pin is in and secure

But don't press the barrel retaining spring way back... just enough to clear the collar. If you muscle it back, the spring loses its spring and can't lock the barrel in place.

Any time the barrel retaining spring feels weak or loose, tell your armorer. A bad spring lets the barrel unscrew.

Keep an eye on the sear pin. It tends to work out. If it does, the trigger won't work.

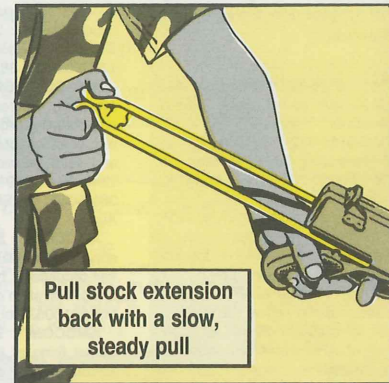
Eyeball the welds on the rear of the receiver, on the magazine well, and on the gun stock extension for cracks. If you see any cracked welds, tell your armorer.



Report cracks on receiver and...



... magazine well welds to your armorer



Pull stock extension back with a slow, steady pull

M128 Ground Vehicle Mine Dispenser...

## No Coverup



NO! THE COVER WILL TEAR IF IT'S WORN ON THE GO.

Then later on...

Use the fitted cover, NSN 1095-01-166-0206, to protect your M128 ground vehicle mine dispenser (GEMSS) when it's parked. The cover's all the protection the system needs.

If you leave the cover on when you move or operate your GEMSS, you'll tear the cover. Then it can't do its job... protecting the GEMSS.



NOW YOU CAN COVER ME.

# PUBS

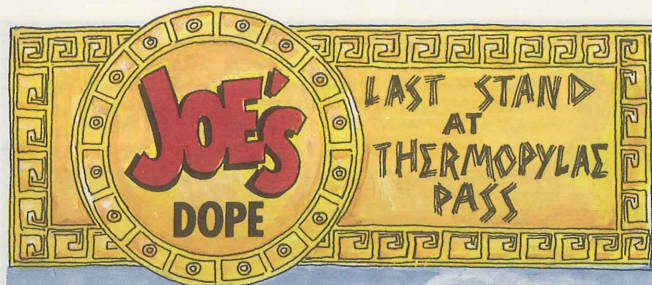
# PUBS

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 5-6115-629-14&P Jun AN/AMJQ-12A power plant (60-KW generator sets)
- TM 5-6115-632-14&P Jun PU-753-M power unit (10-KW generator set)
- TM 9-2350-264-24-1 Jun M1A1 tank hull schematics
- TM 11-6130-458-24P May PP-6224B/U power supply
- TM 55-1915-200-24&P-1 Jun Logistics support vessel (LSV)
- TM 55-1915-200-24&P-2 Jun Logistics support vessel (LSV)
- TB 55-1520-237-20-98 Jul Initiation of APU maximum allowable operating time in terms of operating hours and starts
- TB 55-1520-237-20-99 Jul Overhaul life for the transmission oil cooler blower
- TB 55-1520-238-20-38 Jul Inspection for slipping main rotor head droop stop ring liner and lower seal retainer ring
- TB 55-1520-240-50-1 Jul Combining transmission oil cooler fan
- TB 55-1520-244-20-21 Jul K747 main rotor blade drag strut serial number check
- SB 740-98-1 Sep Storage serviceability standard: tracked vehicles, wheeled vehicles, and component parts (48X microfiche)
- LO 9-1440-600-14 Feb 86 Patriot launching station
- CTA 8-100 Oct Army medical department expendable/durable items
- CTA 50-900 Oct Clothing and individual equipment
- CTA 50-970 Oct Expendable/durable items (except: medical, class V, repair parts and heraldic items)

## Maintenance & Safety-Of-Use Messages

- AMCCOM SOU-MSG-11-88—Advisory, Operational, Follow procedures on Page 2-311 of TM 9-2350-264-10-2 before firing the 120MM cannon, AMSMC-MA 171300Z Aug 88.
  - AMCCOM SOU-MSG-10-88—Advisory, Operational, Inspection and cleaning procedures for M190 w/subcaliber 35MM rocket launcher and M73 practice rocket, NSN's 1340-00-143-6911 and 1340-00-360-5050, AMSMC-MA 182130Z Aug 88.
  - AMCCOM SOU-MSG—Advisory, Screw failures on the M109 self-propelled howitzer's equilibrators elevation cylinder, AMSMC-MA 201805Z Jul 88.
  - AMCCOM SOU-MSG—Accidental firing of 60MM and 81MM Mortar training devices, AMSMC-DSM 262000Z Aug 88.
  - TACOM SOU-MSG-88-35—Advisory, Operational, Make sure air line shutoff valves are open when connected to a trailer and to check trailer brakes operation, AMSTA-M 111900Z Aug 88.
  - TACOM SOU-MSG-88-36—Wear seat belt harness when in M151A2, ¼-ton truck, NSN 2320-01-264-4819, with ROPS, AMSTA-M 192130Z Aug 88.
  - TACOM SOU-MSG-88-31—Corrosion control of M998 HMMWV NATO slave receptacle, AMSTA-M 231630Z Aug 88.
  - TACOM SOU-MSG—Keep tires removed because of SOU-MSG 88-27 at installation until final disposition instructions are received, AMSTA-FHC 231404Z Aug 88.
  - TACOM SOU-MSG-88-33—Operational, Update on ban on swimming and fording procedures for M113 family of vehicles (FOV), AMSTA-M 241300Z Aug 88.
  - TROSCOM MSG-88-24—Maintenance Advisory, Operational, Phantom voltages measured at the duplex receptacle between the neutral and the ground on the MEP-016A, 3-KW gas engine driven generator set, NSN 6115-00-017-8237, LIN J45699, AMSTR-MES 222200Z Jul 88.
  - TROSCOM MSG 88-27—Maintenance Advisory, Replace tires on fire fighting truck, 1000 GPM multi-purpose, model 2500L, NSN 4210-01-193-3621, LIN's X44735 and X44941, AMSTR-MES 261700Z Jul 88.
  - TROSCOM MSG 88-26—Maintenance Advisory, Spin-on type oil filter element, NSN 2940-00-832-6054, cannot be used on the 6-HP Mil Std engines used with the 4.2-KW generator set and the 15 CFM compressor, AMSTR-MES 272200Z Jul 88.
  - TROSCOM MSG 88-29—Maintenance Advisory, Page E-416 of TM 5-4210-231-14&P gives an incorrect description of tires for fire fighting truck, 1200 gallon tank, model CM-KFT-7, NSN 4210-01-159-4823, LIN T67209, AMSTR-MES 112100Z Aug 88.
  - TROSCOM SOU-MES-18-88—One time inspection, PH test on the chute, pilot, NSN 1670-01-009-3491, P/N 11-1-2503, NSN 1670-01-008-7767, P/N 11-1-2564 and NSN 1670-00-365-2308, P/N 53J7205, AMSTR-MES 031445Z Aug 88.
- Your Direct Support or Logistic Assistance Office (LAO) can provide you with more information.



In 480 BC (our staff historian tells us) Greece was basking in quiet garrison when suddenly the balloon went up.

Xerxes, an ornery bloke, pressed the red button and sent two hundred thousand men pouring around from Asia Minor and down the peninsula like molten lava toward Athens...



MAN, DIG THE SCENE...  
15 PERSIANS  
OLTNMBER THE  
GREEKS THIRTY-TO-ONE!  
WE GOT IT MADE IN THE  
SHADE. ...EH, WHAT'S  
THE FLAP, KIDDO?!

WELL, XERXES,  
SIR, WE HAVE A  
MAINTENANCE  
PROBLEM!



MAINTENANCE!  
WHAT'S THAT?

WELL, NOT COUNTING OUR OWN PERSIAN REGULARS  
WE GOT MEDES, SCYTHIAN AXMEN, A RABS WITH  
CAMEL MOBILITY, THRACEIANS, INDIANS, ETHIOPIANS,  
PHOENICIANS, AND BACTRIANS.... THEY ALL GOT  
FANCY EQUIPMENT BLT WE DON'T KNOW WHAT  
CONDITION IT'S IN!!



SO?? ... THEY CAN FIGHT  
CAN'T THEY??

SURE, BLT THIS  
AIN'T A BARE KNUCKLE  
BRAWL. THIS IS MODERN  
WARFARE — SWORDS,  
ARROWS, SHIELDS,  
FLAME THROWIN'  
CATAPULTS!!  
THE WORKS.



WE DON'T EVEN KNOW WHAT  
KINDA MILEAGE CO. E CAN GET ON  
THOSE CAMELS... FOR INSTANCE,  
DO THEY GET A THOUSAND MILE  
CHECK-UP... HAVE THEY BEEN  
FILIN' ACCURATE **EIR'S** OR  
WHERE DOES DIRECT SUPPORT  
STAND ON **MWO'S!** IT'S A  
"SNAF," SIR!!



WHO NEEDS ALL  
THAT CHICKENFAT  
... WE GOT THIRTY  
TIMES MORE MEN  
THAN THE GREEKS  
GOT... **RIGHT?**

RIGHT!



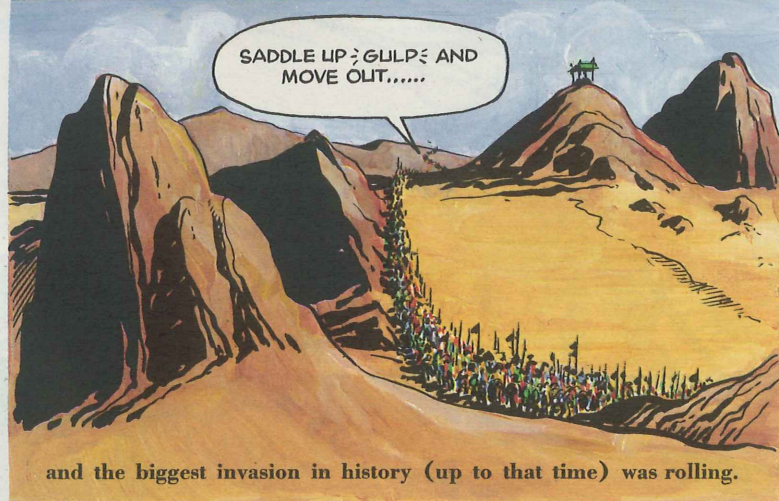
COMBAT  
IS NO TIME TO  
START WORRYIN'  
ABOUT MAINTENANCE  
... **RIGHT?**

RIGHT!



**SO, YOU GO  
WITH WHAT  
YOU GOT...  
RIGHT?**

YES, SIR!

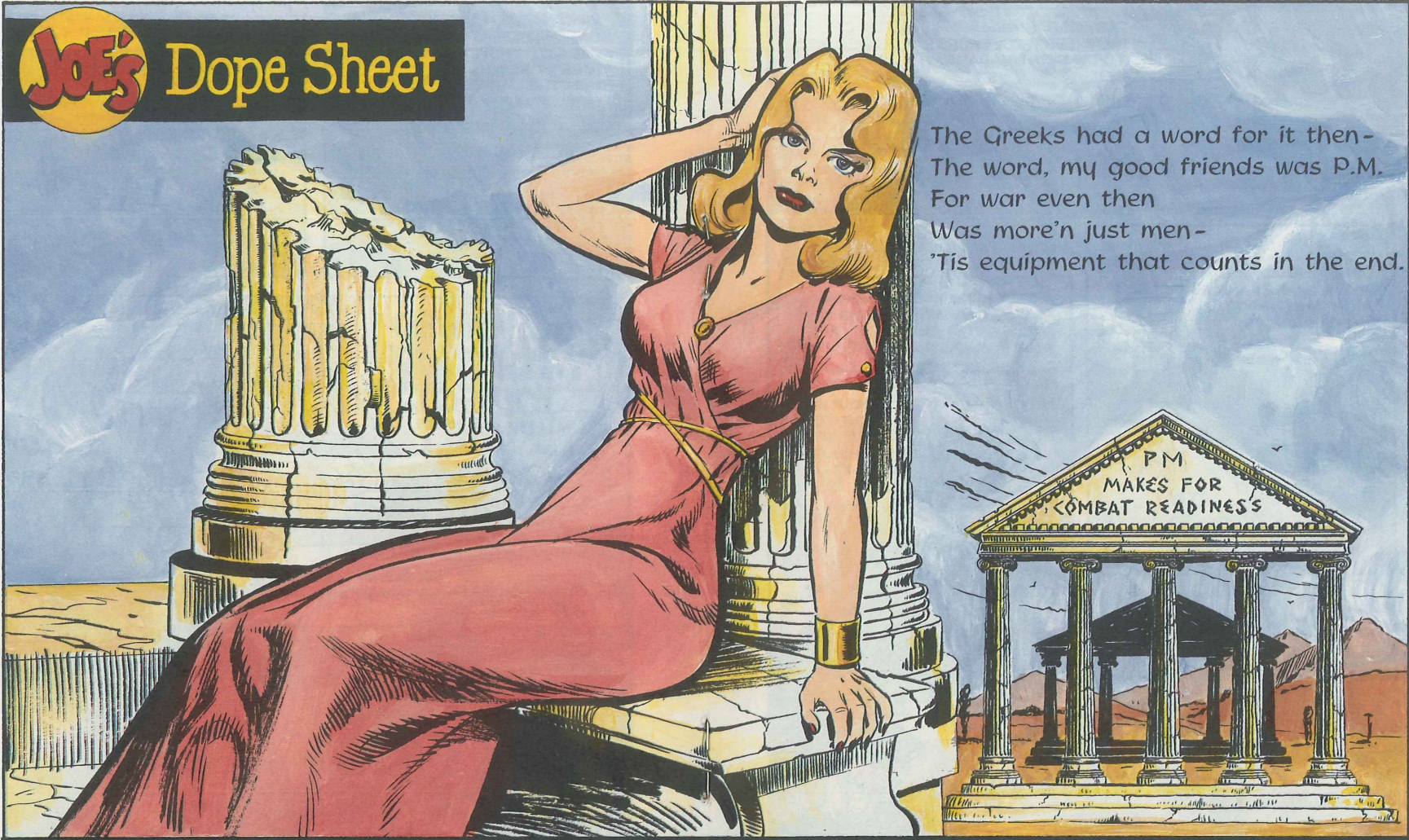


SADDLE UP & GULP & AND  
MOVE OUT.....

and the biggest invasion in history (up to that time) was rolling.



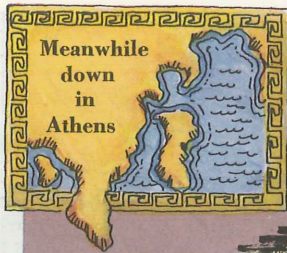
# Joe's Dope Sheet



The Greeks had a word for it then-  
The word, my good friends was P.M.  
For war even then  
Was more'n just men-  
'Tis equipment that counts in the end.

WE HAVE THE WORLD'S BEST EQUIPMENT... *Take care of it*

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.



Meanwhile  
down  
in  
Athens

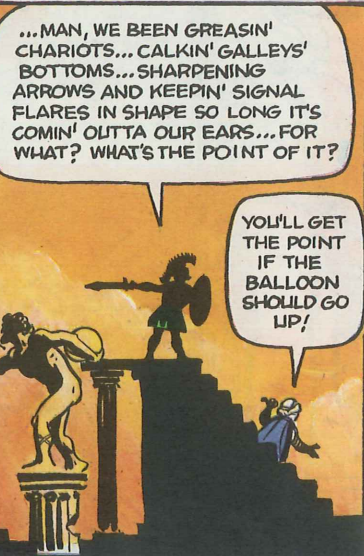
AWRIGHT NOW—  
LEMME SEE THOSE SWORDS!  
PREEZHENT HAAAMS!

AW, C'MON  
SARGE, NOT  
ANOTHER  
INSPECTION!!



I WANNA SEE IF YOU'RE  
COMBAT READY...HMM  
BLADE SHARP, HANDLES  
TIGHT, YES, GOOD...  
GOOD...GOOD!!

WADDAYA  
BUCKIN'  
FOR?  
WE'RE  
ON  
GARRISON  
DLTY...



...MAN, WE BEEN GREASIN'  
CHARIOTS... CALKIN' GALLEYS'  
BOTTOMS... SHARPENING  
ARROWS AND KEEPIN' SIGNAL  
FLARES IN SHAPE SO LONG IT'S  
COMIN' OLTTA OUR EARS... FOR  
WHAT? WHAT'S THE POINT OF IT?

YOU'LL GET  
THE POINT  
IF THE  
BALLOON  
SHOULD GO  
LIP!



**ALERT!!  
ALERT**

THE PERSIANS  
IS COMING.

Well,  
hardly  
had he  
uttered  
the words  
when...



WHAT'S  
NEW FROM  
G-2?

OH, GENERAL  
LEONIDAS—  
THE PERSIANS  
OLTNUMBER LIS  
30-TO-1.

AHA, THEY  
ADVANCE ALONG  
THE COAST.

READY  
THE SHIPS  
FOR AN  
EVACUATION.



HMM... WAIT... IF WE CAN HOLD 'EM  
AT THERMOPYLAE PASS FOR JUST  
SIX DAYS IT'LL GIVE US THE TIME  
WE NEED TO DEPLOY OUR TROOPS,  
SEND OUT OUR SHIPS AND LICK  
THE BEARDS OFF 'EM.

WE ONLY GOT  
300 SPARTANS  
TO SPARE... IF  
WE ONLY HAD  
A SECRET  
WEAPON!

HMM...  
WONDER  
HOW THEIR  
EQUIPMENT  
SHAPES UP?



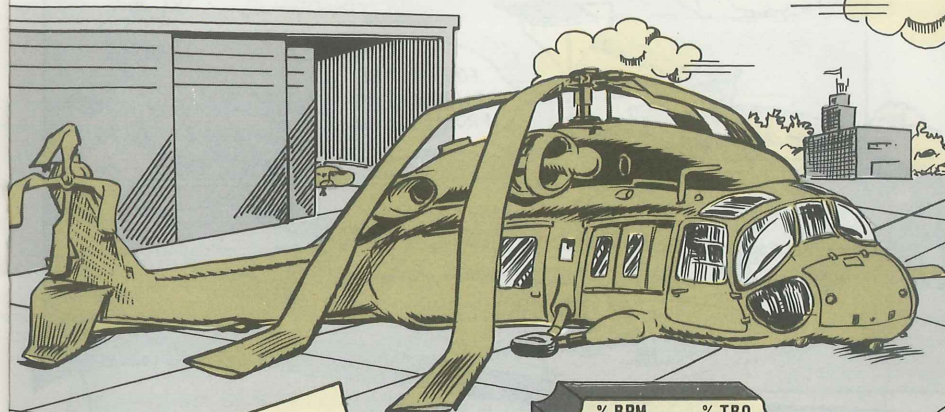
I DON'T KNOW--- BUT  
WE'VE HAD YEARS OF  
PREVENTIVE MAINTENANCE.  
ALL OUR GEAR IS A-OKAY—IN  
**COMBAT READY-  
TO-GO SHAPE!**

THAT'S OUR SECRET WEAPON...  
**PREVENTIVE  
MAINTENANCE!!**  
GO, MAN, GO!!

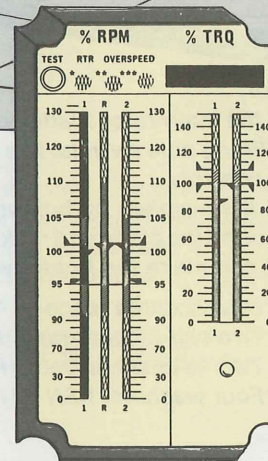
Well, the 300 Greeks did it, they held 'em at the pass . . . by the time they finally got overrun their buddies were ready and kicked the daylights out of the Persians.



# The Burnout Blues



Dear Windy,  
Some of the bird's  
bulbs in our bird's  
vertical instrument  
display system are  
burned out.  
Should our bird  
be grounded until  
the bulbs can be  
replaced?  
CW2 L.W.



Dear Mr. L.W.,

If two or more adjacent lamps on one scale don't work, or if one lamp between color ranges does not work, your bird is grounded until the lamps are replaced.

The same rule applies to the digital readouts. The word's in troubleshooting chart, Fig 46-2, TM 55-1520-237-23-3. See Task 21 of TM 55-1520-237-23-9 for guidance on replacing display lamp driver modules.

*Windy*

# LIFTING the



Dear Editor,

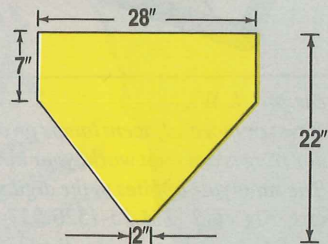
Folding the main rotor blades on our UH-60A's is a pain. The tip of the blade lifting pole swivels. The blade is heavy and the swivel makes it hard to control.

I solved the problem by bolting a blade holder to the lifting pole. It slides around the blade and makes it easier to maneuver the blade.

Support can make the holder with these materials:

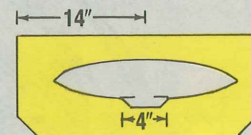
- One 22x28-in piece of  $\frac{3}{4}$ -in plywood,
- Two self-locking nuts, NSN 5310-00-126-5754,
- Two  $\frac{1}{2}$ -in shear bolts, NSN 5306-01-014-1732,
- Four washers, NSN 5318-00-149-9130.

Measure and cut the plywood like this:



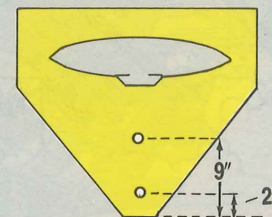
# BLADE BURDEN

Cut a hole in the wood the shape of the blade.



Put a strip of rubber around the edge of the hole. That keeps wood splinters from damaging the blade.

Drill two  $\frac{1}{2}$ -in holes in the wood, 2 inches and 9 inches from the bottom of the V.



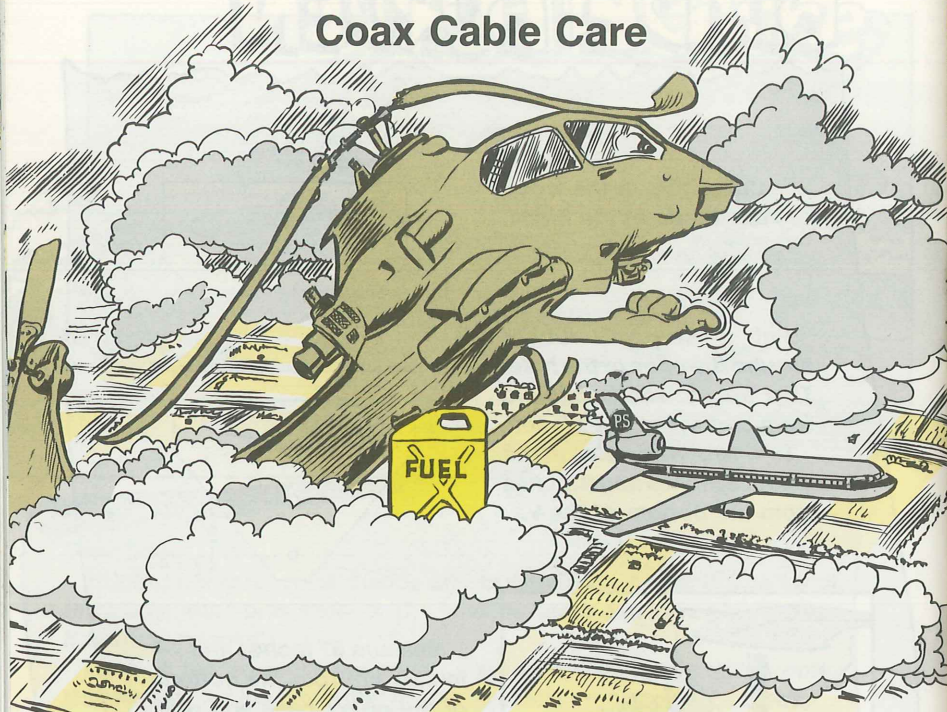
Measure 67 inches and 74 inches up from the bottom of the pole's base and drill a  $\frac{1}{2}$ -in hole at each location.

Attach the blade holder to the lifting pole. Now the blade won't be a burden.

CW2 Barent Johnson  
Ft Irwin, CA

(Editor's note: Thanks for the back-saving idea.)

## Coax Cable Care



One thing you want to be sure about when you're up in the air is that your fuel gage is 100 percent accurate.

If you run out of fuel 200 feet up, you can't just pull over to the side and wave down another flyer for a lift to the nearest fuel station.

So be extra careful when you're working around the fuel quantity transmitter. Never step on it, bump it, or even touch it unless you have to.

That goes for the coaxial cables from the transmitter to the fuel gage.

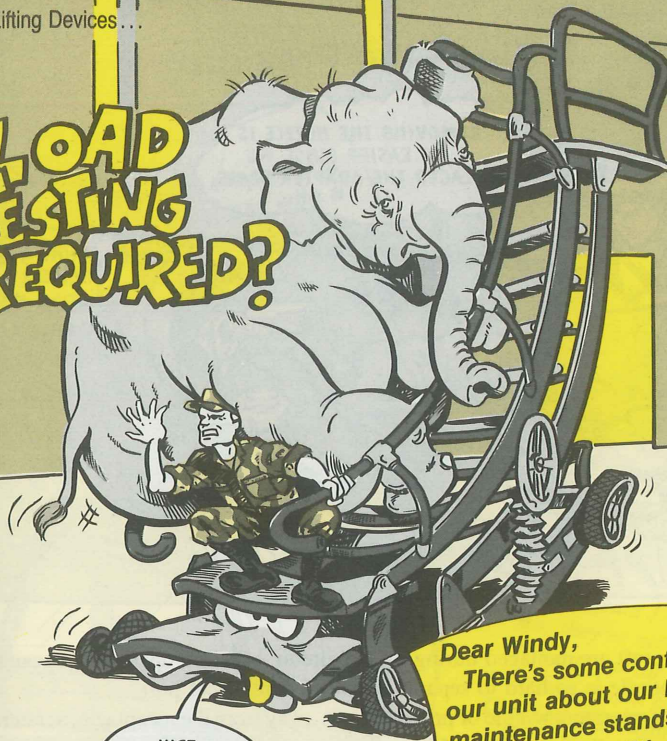
If you step on 'em or bend 'em too sharp, you'll flatten the cable and ruin it.

If you find a broken or cracked coax cable, report it. AVIM needs to replace it soonest.

Never try to splice it back together or replace it yourself. A spliced coax cable shorts out easy unless it's done exactly the way it says in TM 55-1500-223-24.



## LOAD TESTING REQUIRED?



Dear Windy,  
There's some confusion in our unit about our hydraulic maintenance stands. Some of us say they're lifting devices and should be load-tested periodically. Others say they're not lifting devices and don't need to be load-tested. What do you say?  
SFC S.J.M.

Dear Sergeant S.J.M.,

No need to load test 'em. TB 43-0142 does not define hydraulic maintenance stands as lifting devices, so they don't have to be load-tested. But they do have load limits that you never exceed. The B1 maintenance platform, for example, has a load capacity of 500 pounds. So make sure you know and observe the load limits for your unit's stands and platforms.

Windy

## Relieve the Pressure

REMOVING THE NOZZLE IS A LOT EASIER SINCE WE REPLACED THE ADAPTER SEALS.

WHAT A RELIEF!



Some aircraft are damaged during closed circuit refueling operations because the CCR nozzle is so hard to separate from the bird's fuel port.

Refueling operators wiggle or pry the nozzle away from the receptacle, scratching and denting the bird's thin skin or popping receptacle rivets.

You can now relieve the pressure and make it easier to remove the CCR nozzle by replacing one of the nozzle's adapter seals, Item 44 of Fig 5-7 in TM 5-4930-234-13&P, with NSN 4930-01-275-7908.

Detailed instructions on how to remove the old seal and install the new one are included with each new seal. You don't need any special tools for the job.

The new seal reduces the disengagement force from an average of 48-lbs to 26-lbs.

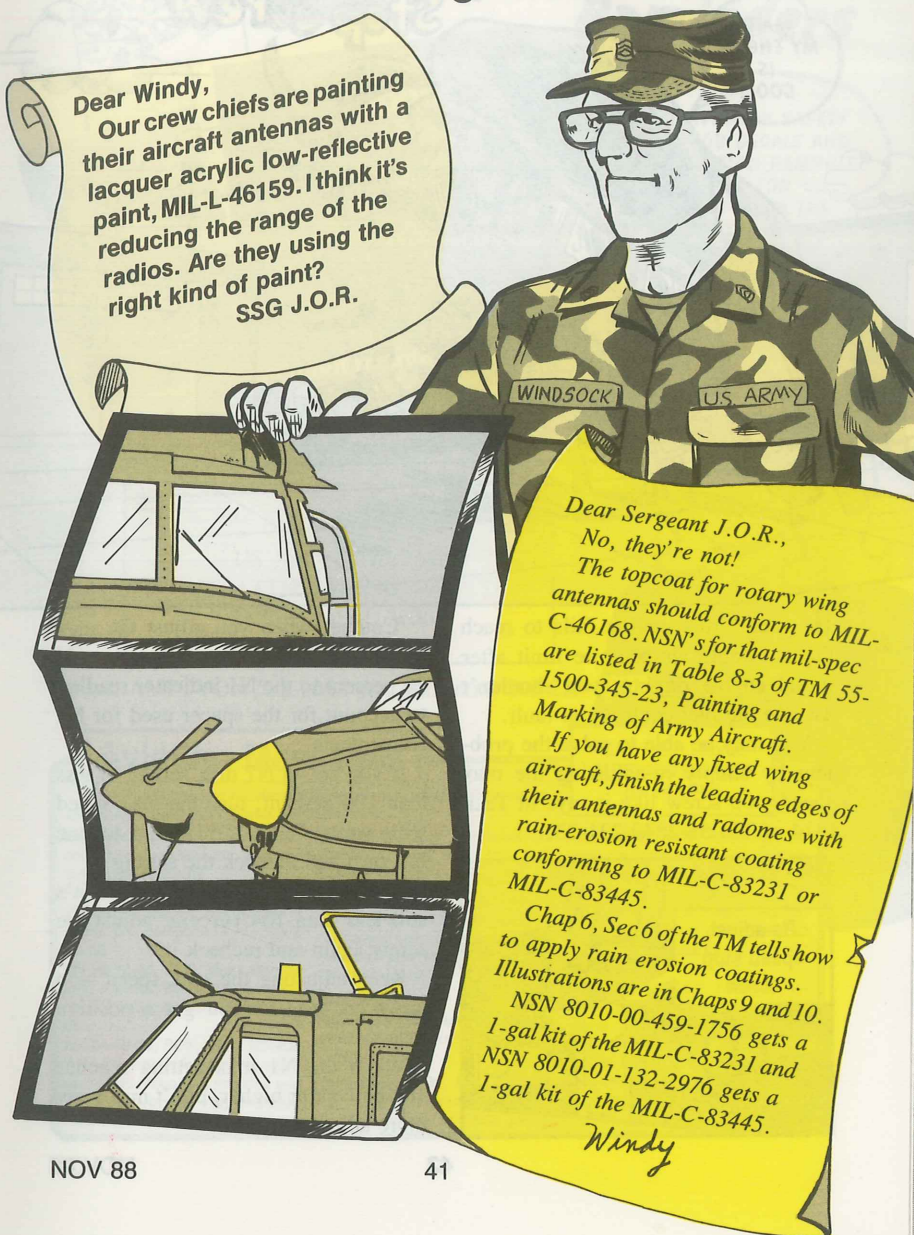
You can help reduce damage even more by firmly pulling straight away from the aircraft when you remove the nozzle.

## Added Inspection for Chinooks

Be sure to check the retainer nut of your CH-47's sync shaft assembly daily for the presence of its cotter pin. The inspection is being added to TM 55-1520-227-PMD and TM 55-1520-240-PPM. The word is in AVSCOM maintenance information message CH-47-88-MIM-02.

## Use the Right Paint!

Dear Windy,  
Our crew chiefs are painting their aircraft antennas with a lacquer acrylic low-reflective paint, MIL-L-46159. I think it's reducing the range of the radios. Are they using the right kind of paint?  
SSG J.O.R.



Dear Sergeant J.O.R.,  
No, they're not!  
The topcoat for rotary wing antennas should conform to MIL-C-46168. NSN's for that mil-spec are listed in Table 8-3 of TM 55-1500-345-23, Painting and Marking of Army Aircraft.  
If you have any fixed wing aircraft, finish the leading edges of their antennas and radomes with rain-erosion resistant coating conforming to MIL-C-83231 or MIL-C-83445.  
Chap 6, Sec 6 of the TM tells how to apply rain erosion coatings. Illustrations are in Chaps 9 and 10.  
NSN 8010-00-459-1756 gets a 1-gal kit of the MIL-C-83231 and NSN 8010-01-132-2976 gets a 1-gal kit of the MIL-C-83445.

Windy

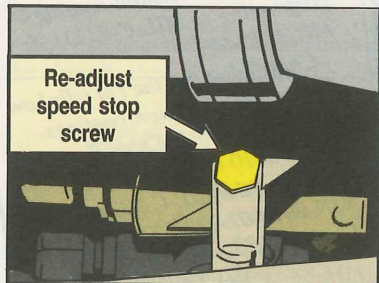
# Adjust Max Speed Stop Screw

MAN, MY ENGINE IS COOL!



If your bird's engine fails to reach the allowable temperature limit after initial engine rigging, you shouldn't assume the fuel control's at fault.

You may be able to solve the problem by simply re-adjusting the max speed stop screw like it says in Task 6-14 of TM 55-2840-231-23.



'Course, when you adjust the max speed stop screw, you've got to add 20 percent to the N1 indicator reading to account for the spacer used for N1 adjustments.

If you get an N1 max setting of less than 104 percent, turn the max speed stop screw **CLOCKWISE** up to one full turn and recheck the setting.

If you get a higher reading but it's still less than 104 percent, adjust the screw again and recheck it.

Keep adjusting the max speed stop screw as long as you get a positive response.

When the N1 max setting reaches 104 percent or higher, don't make any more adjustments.

# Safety Reminders



SEVERAL AVIATION SAFETY POSTERS, FOD DECALS AND A FOD PREVENTION PAMPHLET ARE FREE FOR THE ASKING FROM THE ARMY SAFETY CENTER.

Write to:

US Army Safety Center  
ATTN: CSSC-M  
Ft Rucker, AL 36362

Or call AUTOVON 558-2062 or commercial 205-255-2062.



## Aviation Messages

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

**CH-47-88-13**, SOF, Technical, combining transmission oil cooler fan, 012307Z Jul 88.

**F/W-88-02**, SOF, Technical, U-8F and BE65 series, inspection of tracks and components, 062000Z Jul 88.

**UH-60-88-06**, SOF, Maint Mandatory, overhaul life for the transmission oil cooler blower, 112300Z Jul 88.

**AH-64-88-10**, SOF, Maint Mandatory, inspection for slipping main rotor head droop stop ring liner and lower seal retainer ring, 112000Z Jul 88.

**OH-6-88-05**, SOF, Technical, inspection of tail rotor fork bolt, 121423Z Jul 88.

**UH-60-88-07**, SOF, Maint Mandatory, revisions to SOF UH-60-88-05 concerning operating time/start calculations and forms information, 131914Z Jul 88.

**AH-1-88-08**, SOF, Maint Mandatory, K747 main rotor blade drag strut serial number check, 132050Z Jul 88.

**UH-1-88-04**, SOF, Maint Mandatory, inspection for non-conforming machine screws, 141600Z Jul 88.

CAT 1 EIR Phone:  
AUTOVON 693-2066  
(24 HOURS)

**OV-1-88-02**, SOF, Maint Mandatory, inspection of de-ice generators, recently overhauled, 192130Z Jul 88.

**OV-1-88-03**, SOF, Maint Mandatory, life extension of the MK-J5D ejection seat rocket motor, 202100Z Jul 88.

**CH-47-88-14**, SOF, Technical, inspection of pivoting and swiveling servo cylinders, expanded coverage, 212200Z Jul 88.

**UH-60-88-08**, SOF, Maint Mandatory, revision to overhaul life for the transmission oil cooler blower, 272100Z Jul 88.

# BEAT THE HEAT



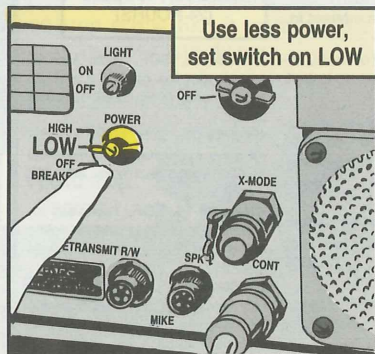
Here're a few things you operators can do to keep your FM radio from overheating:

Keep it clean. Dirt and dust hold heat.

Hold down transmission time. Only key your receiver-transmitter when you're talking.

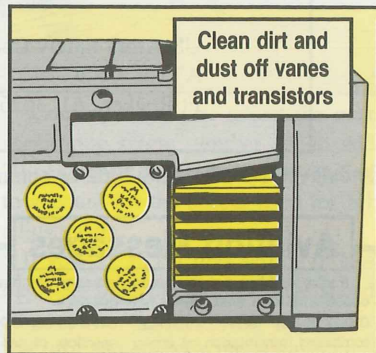
Use less power. When you're transmitting within 15 miles, set the power switch to LOW.

You repairmen can help beat the heat, too.



Use less power,  
set switch on LOW

Keep the air flowing. Brush off the heat exchanger vanes and power transistors monthly, like the TM 11-5820-401-20 series says.



Keep the radio set aligned. A misaligned radio heats up. It also allows too much RF output, which will damage the set, as in power amplifier tube burn-out.

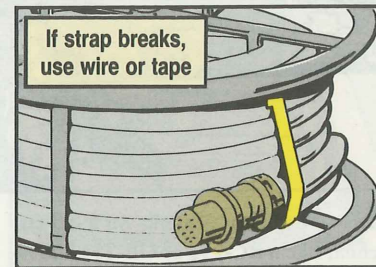
Test the radio's output with an AN/PRM-34 wattmeter. This will show if the radio is transmitting within the forward and reflected power limits.

## Tie Connector to Reel



To keep the connector out of the way, secure it to the reel with a strap, like it shows in Fig 1-3 of TM 11-5895-694-14.

If the strap is broken or missing, tie the connector to the reel with a piece of wire or tape it to the reel with electrical tape.

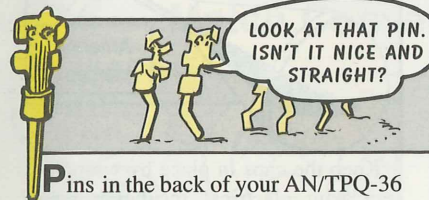


Tying down the power cable assembly reel on your radio terminal set is not enough. You have to tie down the cable connector, too.

A loose connector is deadly on meters and switches on the power distribution panel.

FIREFINDER...

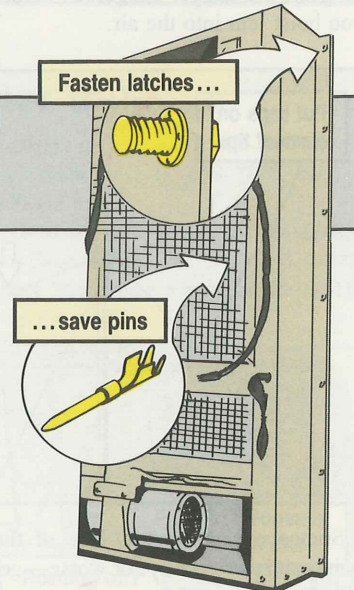
## Keep Card Pins Safe



Pins in the back of your AN/TPQ-36 radar set's processor panel get bent or broken when you fail to fasten the screw latches.

When the shelter is moved, the panel door gets wedged behind the circuit cards and the door jams against the pins.

Guard against this damage. Tighten the latches. Then, give the panel a little pull to make sure the latches are holding.



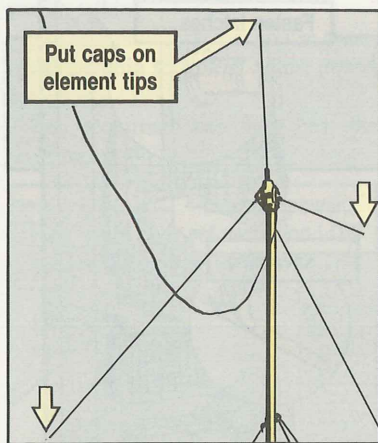


## Cap Danger Points



Those exposed elements on a tall antenna, like a RC-292 or OE-254 antenna gear, are dagger dangerous before you hoist 'em into the air.

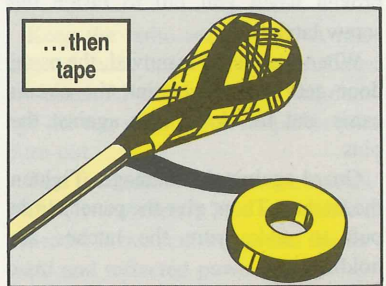
So, dull the element tips with caps, NSN 5985-00-930-7223



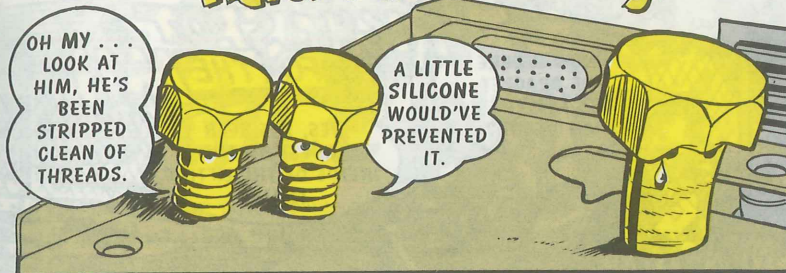
Someone can run into one of the points and pierce an eye or worse—get killed!



Keep the caps in place by wrapping 'em with electrical insulation tape, NSN 5970-00-816-6056.

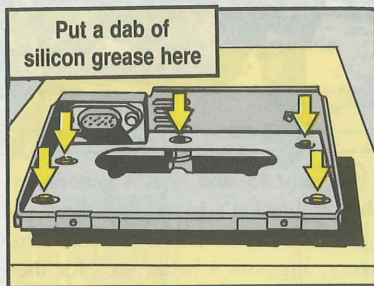


## Prevent Bolt Damage



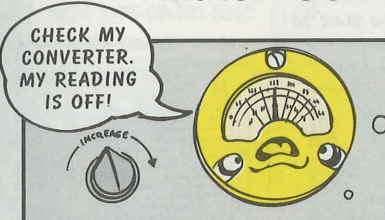
Bolts will “freeze” on the MT-1029 radio mount after being exposed to rain, humidity and changing temperatures. Then, when you have to take them out, you’ll strip the threads or damage the mount.

To keep this from happening, coat the bolts with silicone compound, NSN 6850-00-880-7616, before putting them in the mount.



PU-618 Generator...

## Match Converter to Meter



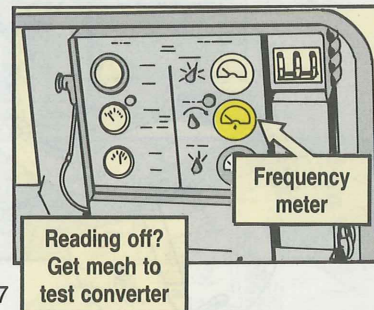
a 60-Hz meter, and a 400-Hz converter, NSN 6115-00-659-2786, with a 400-Hz meter.

Both converters have the same NSN on Page 38 of TM 5-6115-332-24P (May 86). Make a note of the 60-Hz converter NSN.

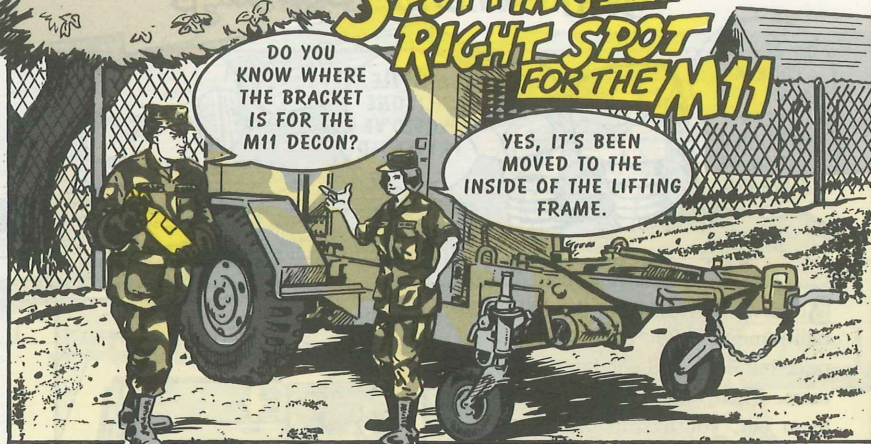
When you fail to get the expected reading on your generator’s frequency meter, get your mechanic to take a reading on the frequency converter.

The equipment your generator’s powering, as well as the generator, will be damaged by a mismatched converter.

So, make sure there’s a 60-Hz converter, NSN 6115-00-940-0175, with



# SPOTTING THE RIGHT SPOT FOR THE M11



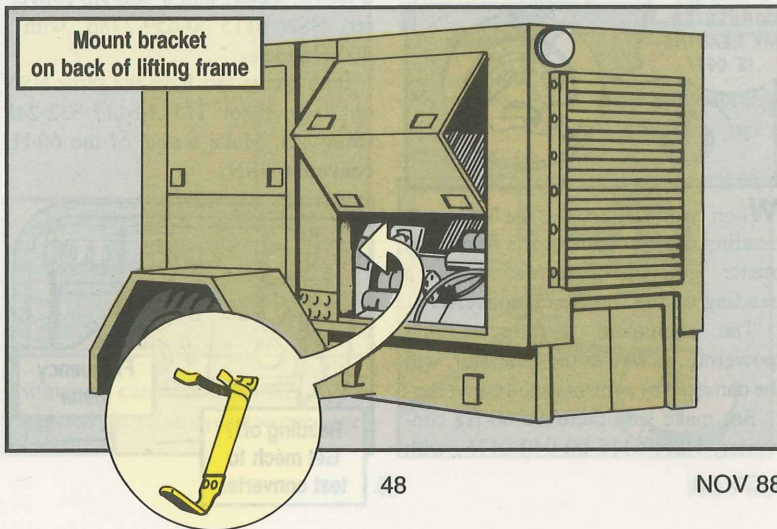
DO YOU KNOW WHERE THE BRACKET IS FOR THE M11 DECON?

YES, IT'S BEEN MOVED TO THE INSIDE OF THE LIFTING FRAME.

On most 15- and 30-KW generators, the M11 decon is mounted on the fender. But the bracket's in the way there and often gets stepped on and broken.

SSG Debra Savatone of the 563rd Ordnance Company in Wiesbaden, Germany, suggests a better spot for the bracket. In her SMART suggestion, she points out that if your generator has an all-electric governing system, you can screw in the bracket where the hydraulic sump tank used to be on the lifting frame. The bracket's holes fit those for the tank.

Up there, the bracket's out of the way of feet, but still easily reached. But get your CO's OK before you move your M11.

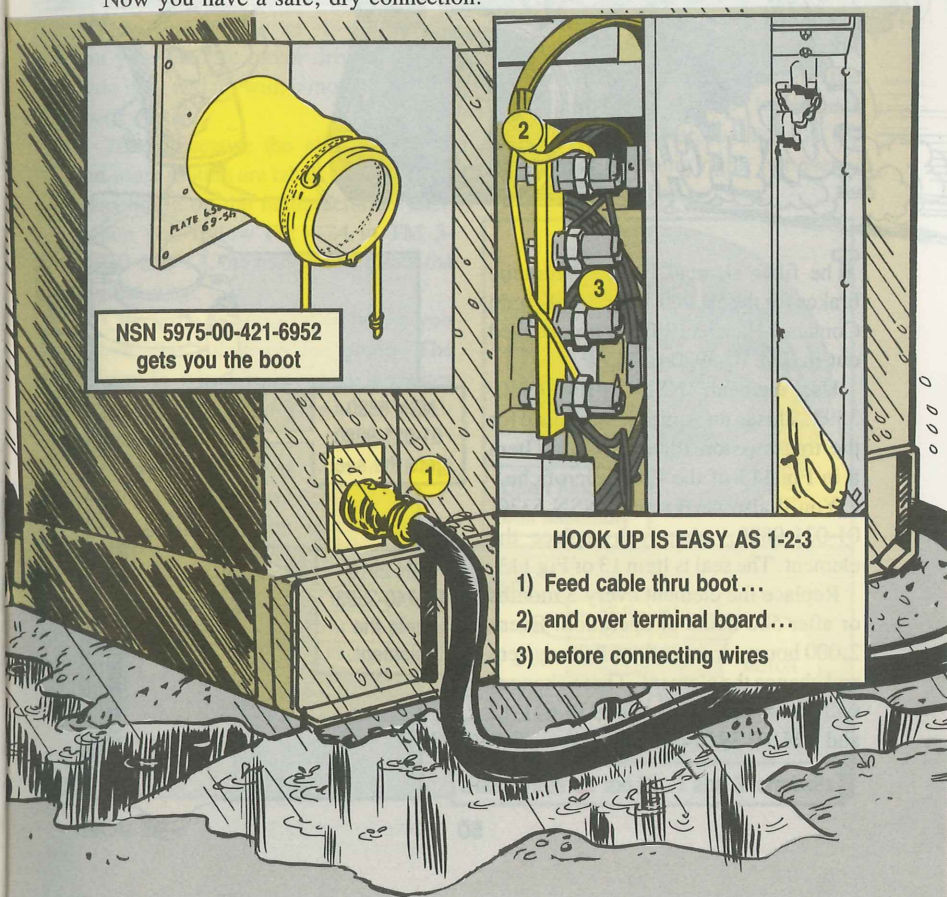


Mount bracket on back of lifting frame

# KEEP OPEN END OF CABLE INSIDE!

If you hook up the power cable on your 60-KW generator wrong, water can get in and cause a short. That can damage electronic or other gear being powered by the generator.

The insulation is skinned back about 18 inches on the pigtail end. Make sure this open end is inside the generator housing when you hook up the cable. Now you have a safe, dry connection.

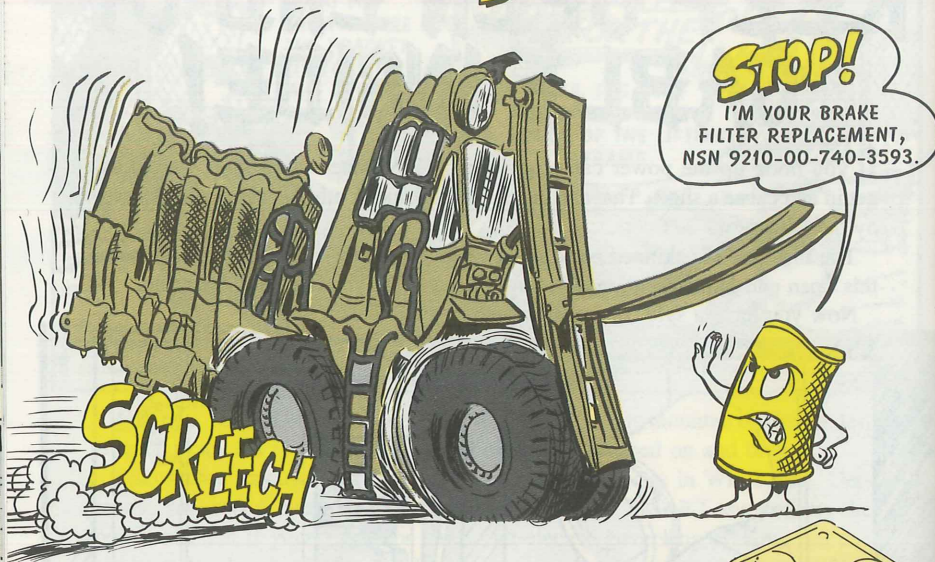


NSN 5975-00-421-6952 gets you the boot

HOOK UP IS EASY AS 1-2-3

- 1) Feed cable thru boot...
- 2) and over terminal board...
- 3) before connecting wires

# BRAKE FILTER NSN

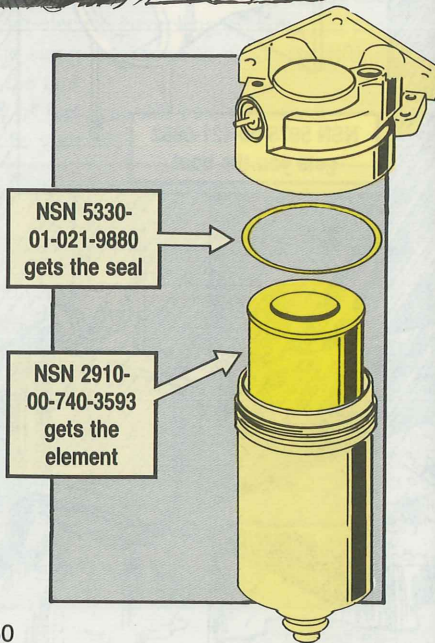


The filter element for the hydraulic brakes for the 50,000-lb Rough Terrain Container Handler (RTCH) is not called out in TM 10-3930-641-20P.

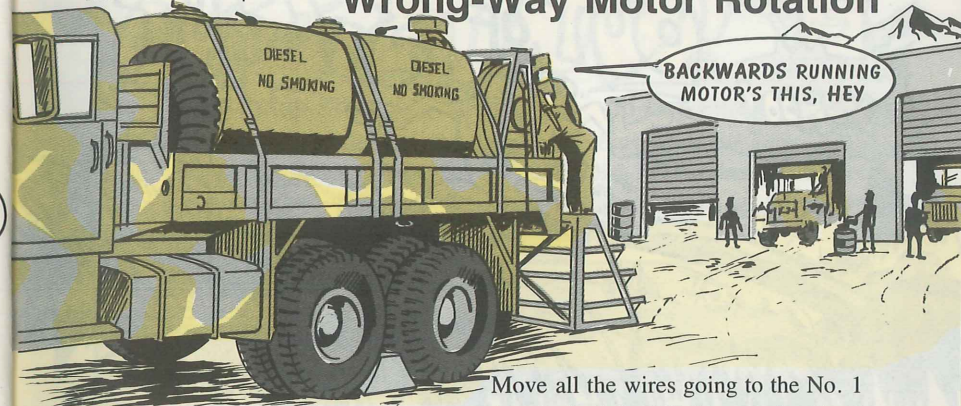
Use element, NSN 2910-00-740-3593. This is the same element used for the transmission filter shown as Item 8 in Fig 113 of the -20P microfiche.

You'll also need a seal, NSN 5330-01-021-9880, when you replace the element. The seal is Item 13 of Fig 113.

Replace the element every 3 months or after 500 hours of operation. Every 2,000 hours, drain and refill the system and change the element. These changes will show up in LO 10-3930-641-12 and TM 10-3920-641-20.



# Wrong-Way Motor Rotation



Move all the wires going to the No. 1 terminal of the RF filter to the No. 3 terminal, and move the wires—except the wire marked “TH”—already on the No. 3 terminal to the No. 1 terminal.

Hook up the power, re-check the rotation. If it's turning right, put everything back together.

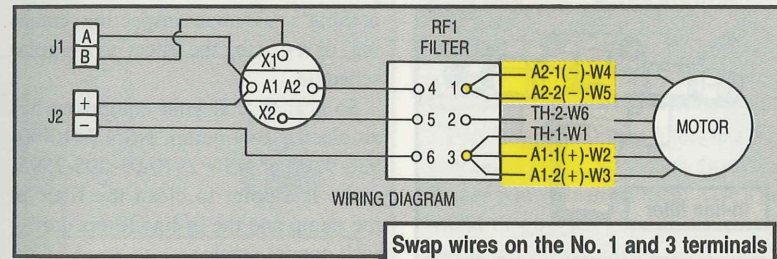
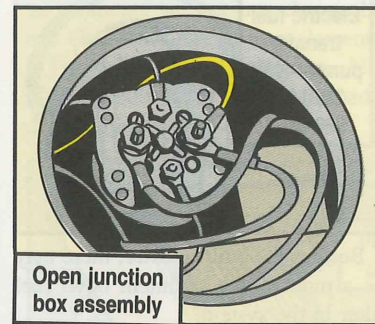
When you replace an electric motor on your electric motor driven TPU's, you may end up with a motor that runs backward.

That's because the electrical leads on some motors are labeled differently, depending on the manufacturer. Then when you follow Fig 4-24 in TM 5-4930-230-13, the motor may rotate the wrong way.

Check the motor rotation before you install the volute on the pump. The motor is wired right when it rotates counterclockwise looking at the impeller end.

If it runs clockwise, shut it off and disconnect the power cable.

Open the junction box assembly.



# BRUSH AWAY PROBLEMS

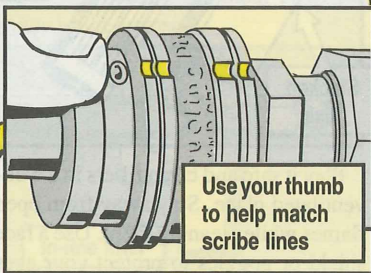
WOW! AFTER PM . . . I WORK WELL AND LOOK GOOD, TOO.

IF YOU CAN'T CONNECT YOUR M13'S HOSE, OR THE HOSE IS DAMAGED BY DS2 OR POOR STORAGE, YOUR M13 WILL BE ABOUT AS MUCH GOOD AS A RIFLE WITHOUT A FIRING PIN.

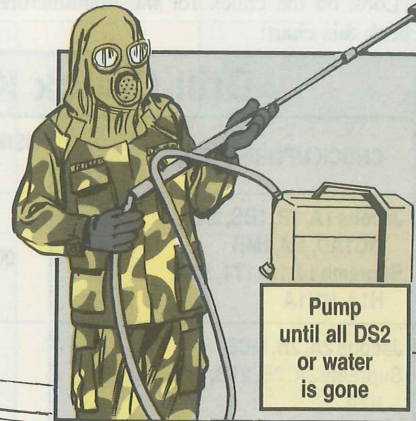
Give the brush to hose problems like this:

• To connect hose, line up the scribe lines on the hose coupling and the coupling plug. You can push and yank till your arm falls off, but the hose won't go on or come off until you line up the lines.

A time-saver is to put your thumb on the hose coupling's line. That makes it easier to line it up with the plug's line when you push the coupling on.



Use your thumb to help match scribe lines



Pump until all DS2 or water is gone

• Be sure to get all DS2 or water out of the hose and pump assembly when you're ready to shut down. Pump the pump and hold the hose and wand sections upside-down until all liquid is gone. DS2 can eat away at the hose in the storage compartment and water causes corrosion.

• Store M13 parts in the storage compartment just right. Otherwise, they won't fit.

Fold the hose and put it in the compartment first with its quick-disconnects down.

Put the wand sections big-end down on the left-side of the compartment and the pump in on the right with its valve up.

The brush goes in last with the spray end up and the bristles to the rear.



Store brush and wand sections like this

# DRILL CHUCK KEYS

You can't use an electric drill that's missing the chuck key.

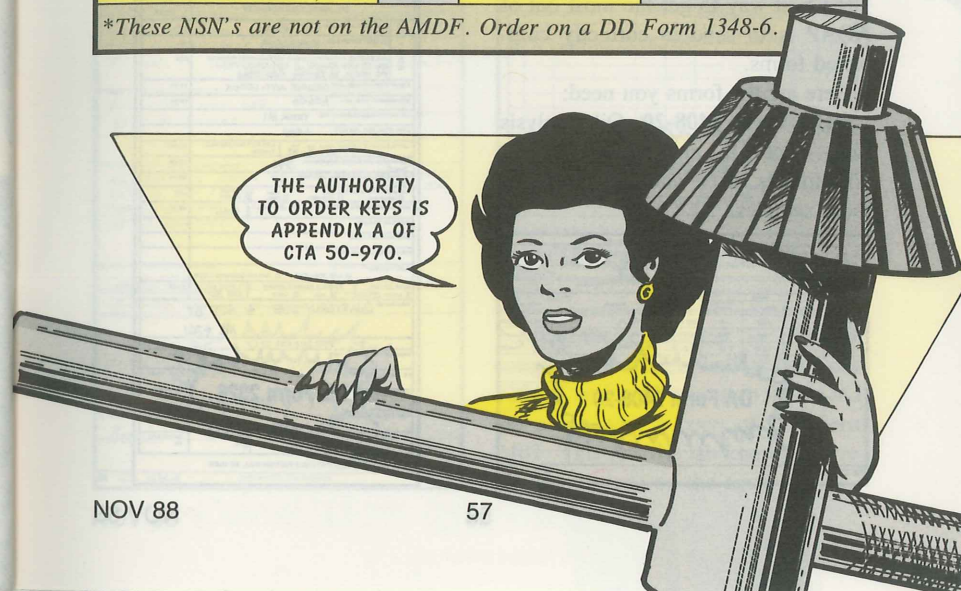
Depending on the chuck, you can get either a standard or self-ejecting key.

Look on the chuck for the manufacturer's name and model number. Then check this chart:

Drill Chuck Key NSN's			
CHUCK MFGR/NUMBER	KEY #	NSN, STANDARD 3460-	NSN, SELF-EJECTING 3460-
Jacobs 1A, 1B, 1BS, MC1, MC1AD, 1M, 1MB Supreme 1J, 1A, 1T1, S1A, H1A, HM1A	K1	00-264-5577	01-018-4217
Jacobs 2A, 2B, MC5 Supreme 2A, 2B, 2TB, 2T2, H2A	K2	—	01-018-4218* [GSA, \$4.20]
Jacobs 3, 3A, 3B, 3AE, 3KD, 3PD, 34, 34B, 34KD, 34KP, 6A, 6B, 6AE, 6A-2A, 6A-33, 14N, 55B, 56B, 58B, 75A	K3	00-264-5580	—
Jacobs 633C, 633D Supreme 6T33E	K3C	—	01-018-4220
Jacobs 16N, 18N, 36, 36B, 36E, 37, 37KD, 37PD, 59B	K4	00-144-2048	—
Jacobs 20N Supreme 26T5	K5	00-144-2049	01-018-4226
Jacobs 7, 7B, 7BA, 7-1A Supreme 4A, 4B, 4C, 4T1, 4T2	K7	00-293-1623	01-018-4221
Jacobs 30, 30A, 30B, 31B, 31BA, 8½N, MC4 Supreme 7A, 7B, 7T1, 7T2, H13A, H13B, B14T33	K30	—	01-018-4222
Jacobs 11N, 32, 32B, 32BA, 33B, 33BA, 33F, 3326A, 33KD	K32	00-203-6660	—

CHUCK MFGR/NUMBER	KEY #	NSN, STANDARD 3460-	NSN, SELF-EJECTING 3460-
Jacobs 3333C Supreme 5T33C, 15T33C	K32C	01-014-8626* [S9G, \$5.98]	01-018-4224
Jacobs 72G, SM4G61, MC2, H1, H4, U4, MC1, MC51, DC1, DC4, MC1G61, MC1G41, U4G61, U4G41, U4G60 Supreme BM1A, B1A, B80A, BM80A	KG	—	01-018-4227
Jacobs 74K, 76K, 77K, MC33, MC3326, H8, U8, MU8, MC8, SM8, DC8, MC4K61, MC4K01, MC4K41, MC8K64, MC8K33, KC8K61, U8K61, U8K64, U8K33 Supreme B13A, BM13A, B14B, B14T33, B16A, B16B, B16T33	KK	00-552-9438	01-018-4228* [GSA, \$4.19]
Jacobs MC10R64, MC33R33	KR	—	01-018-4229* [GSA, \$5.30]

\*These NSN's are not on the AMDF. Order on a DD Form 1348-6.





# GET THE JOB DONE

• **DD Form 2026**, Oil Analysis Request—used by the TAMMS clerk to send in an oil sample to the AOAP lab. Remember, put the odometer reading in the REMARKS block.

The best way to get the most out of AOAP is to send in correctly completed forms.

Here are the forms you need:

• **DA Form 2408-20**, Oil Analysis Log—kept at the unit to record AOAP oil samples taken and lab results of those samples.

DATE	END VIEW	ODOMETER	LAB TEST	REMARKS	SIGNATURE
4 AUG 87	150	0	ROUTINE	NORMAL	Sgt W J Sample
13 AUG 87	150	30	ROUTINE	REQ OIL CHG. RESAMPLE	Sgt W J Sample
17 AUG 87	150	0	ROUTINE	NORMAL	Sgt W J Sample

**DA Form 2408-20**

OIL ANALYSIS REQUEST		KEYWORD CODE
TO	OIL ANALYSIS LAB	FT HOOD
MAJOR COMMAND	FORSKOM	
OPERATING ACTIVITY	Include ZIP Code and DODDAD	
EQUIPMENT MODEL/AF	ENGINE PART-1500C	
END ITEM SER. NO./EN	TANK M1	
DATE SAMPLE TAKEN	TIME	LOCAL TIME SAMPLE TAKEN
ODOMETER SINCE OIL CHANGE	346	
REASON FOR SAMPLE	OTHER	
ACTION TAKEN	DISCREPANT ITEM	
HOW MALFUNCTIONED	HOW FOUND	
REMARKS	QUARTERLY DUE 4 SEP 87 MI 4761	
SAMPLE REPORT NO.	NI 8961	
LAB REQUEST NO.	7776	
DD FORM 2026	PREVIOUS EDITION WILL BE USED	

**DD Form 2026**

THEN YOU'LL TEAR FROM ME.

THE JOB STARTS WITH US.

DA 2026

DA 3254-R

DA 2407

BE ACCURATE, BE COMPLETE AND, IF NEEDED, I'LL FINISH THE JOB.

If the oil sample is normal, the lab will stamp the 2026 form with the date the sample was processed, "Results—NORMAL" and return it to the unit.

• **DA Form 3254-R**, Oil Analysis Recommendation and Feedback—top half is used by the lab to report abnormal findings and suggest what work the unit can do to correct the problem.

OIL ANALYSIS RECOMMENDATION AND FEEDBACK		REQUIREMENT CONTROL SYMBOL
HQ, CO 1/66 ARMOR, 2AD ATTN: MAINTENANCE OFFICER FT HOOD, TX 76544 (685-3986)		87-109
FT HOOD OIL LAB BLDG #17082-A1 FT HOOD, TX 76544		6486
OIL ANALYSIS SHOWS HIGH SILICON. RECOMMEND INSPECT AND REPAIR AIR INDUCTION SYSTEM, CHANGE OIL AND FILTER, AND RESAMPLE AFTER REARTEST.		150 HES
DA FORM 3254-R		17-8-87

**DA Form 3254-R**

• **DA Form 2407**, Maintenance Request—used to request support from a higher level of maintenance for an AOAP maintenance recommendation. Attach the DA Form 3254-R that the lab sent you to the request. Enter "See Attached DA Form 3254-R" in Block 16a (Remarks) of DA Form 2407.

MAINTENANCE REQUEST		DATE OF ISSUE	REQUIREMENT CONTROL SYMBOL
SEE ATTACHED DA FORM 3254-R		87-109	
OIL ANALYSIS SHOWS HIGH SILICON.			
DA FORM 2407			

**DA Form 2407**

After the equipment is repaired, complete the bottom half of DA Form 3254-R and send it back to the AOAP lab along with a copy of DA Form 2407. This lets the lab know what repairs you made on the equipment.

# Need Bins, Cabinets, Racks?

**N**eed to store unserviceable batteries for turn-in, or store repair parts for future use? You can order pallets 'n' bins 'n' cabinets for free... almost.

The AMC Packaging, Storage and Containerization Center (AMCPCSC) at Tobyhanna can furnish these and other storage items to you as they become excess at other installations. All you pay is the shipping costs.

Not only does AMCPCSC issue storage items, but they'll also accept excess storage items for redistribution to other units.

Cold-Weather Clothing...

IF YOU NEED STORAGE ITEMS, CALL OR WRITE.

Call AMCPCSC at:  
AUTOVON 795-7684  
COMM 717-894-7684

Write to

Director  
AMCPCSC  
ATTN: SDSTO-TP-S  
Tobyhanna, PA 18466-5097

They receive all sizes and shapes of bins and racks, so give 'em the dimensions of the item you need and tell 'em how many of each. If they don't have them, they'll try to get them.

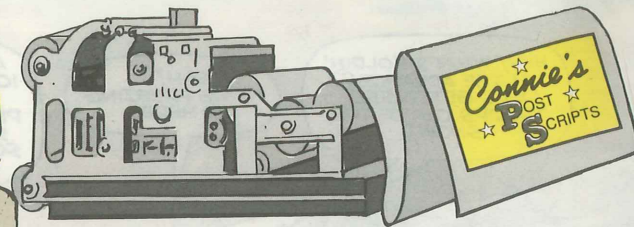
## Temporary Rip Repair

TO PROTECT CAMOUFLAGE PATTERN PUT DUCT TAPE INSIDE CLOTHING. GET PERMANENT REPAIRS BACK HOME. REPAIR INFO IS IN CHAPTER 15 OF TM 10-8400-201-23.

**A** rip in your extreme cold-weather camouflage parka and trousers can put a dead stop to your protection.

You can make a temporary repair to cold-weather clothing while you're in the field by using duct tape, NSN 5640-00-103-2254, or green pressure sensitive tape, NSN 7510-00-266-5016.

STOP THE PRESSES! I'VE GOT THE LATEST POST SCRIPTS.



### MPL Item Challenge

SMART Message No. 81 gives you the right to challenge whether a repair part should be included on your Mandatory Parts List (MPL) in DA Pams 710-2-117 through 710-1-120. When you challenge an item, you need not request the item for six months or until you receive a response, whichever comes first. Submit your challenge on a DA form 2028 with supporting information to:

USAMC  
Materiel Readiness Support Activity  
ATTN: AMXMD-SE  
Lexington, KY 40511-5101

They'll evaluate the item and let you know whether to drop or order it.

### Fan Blade Screen Gets NSN

Get the protective fan blade screens for your M109-series howitzer and M992 ammo carrier that were on Page 10 in PS 427 with NSN 2510-01-247-2976. The \$37 it'll cost is a cheap way to keep fingers away from spinning blades during maintenance run-ups.

### Vulcan Towing Changed

The procedure for towing a disabled M163A1 Vulcan has been changed. Info's on Page 3-108 in TB 43-0001-36-4 (Jan 88). If you don't have a copy, see your friendly AMCCOM Logistic Assistance Representative.

### NSN List for M10A Forklift

Some folks didn't get the word. Change 3 to TM 10-3930-643-14&P for the M10A forklift cross-references part numbers to NSN's.

### Crane Lattice Booms

Hold one! If there are ANY bends in the chords (main angles) of your crane's lattice boom, stop using it! Bends in the chords can only be repaired at the depot. No straightening is allowed at any lower maintenance level!

### Now 4-Level Maintenance

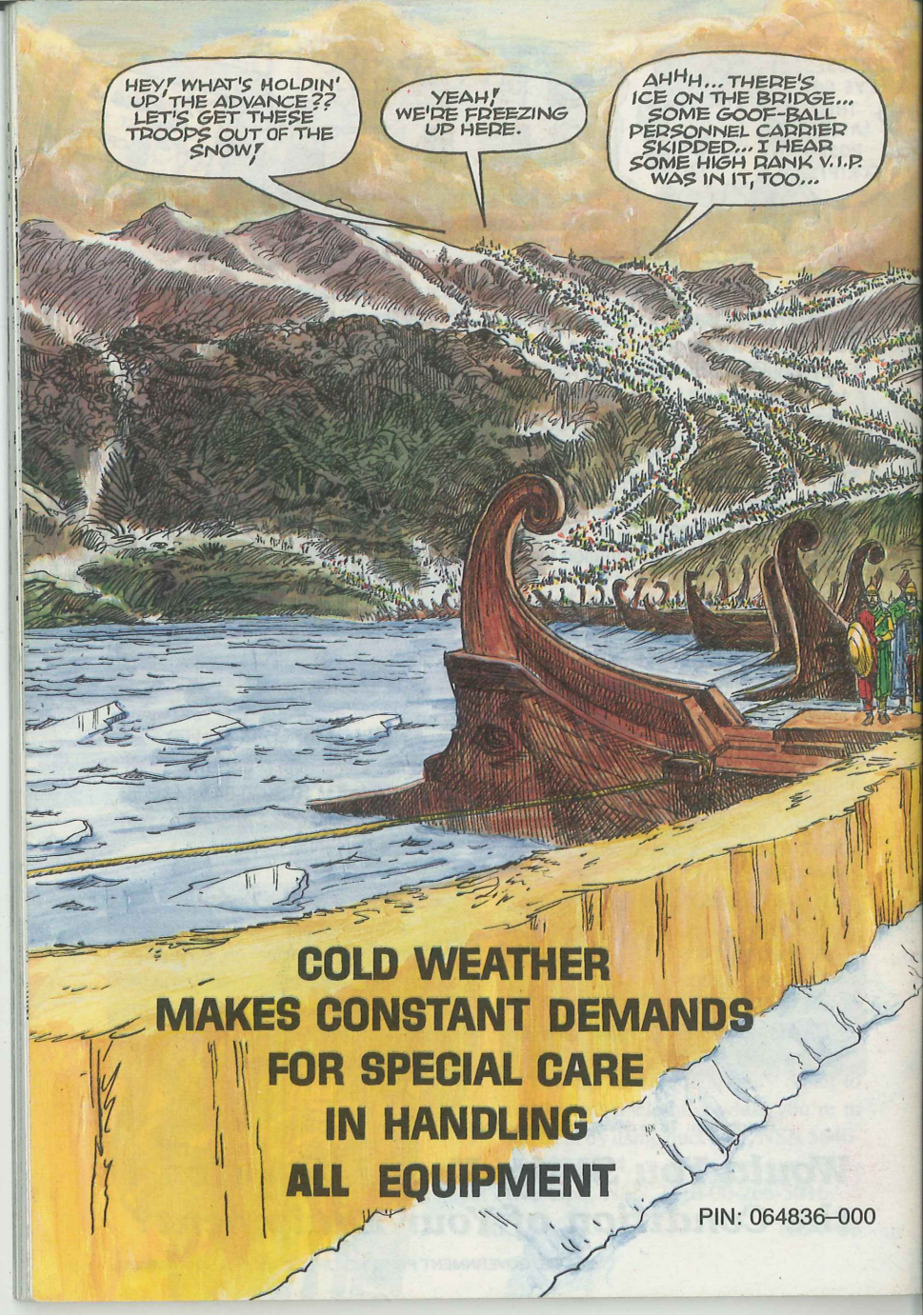
The current 3-level maintenance system of organizational, intermediate and depot has been changed back to a 4-level system:

- Unit (operator/crew and organizational)
- Direct support
- General support
- Depot

DA Msg DALO-ZA 021538Z Sep 88 has the word.

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

**Would You Stake Your Life <sup>right now</sup> on the Condition of Your Equipment?**



HEY! WHAT'S HOLDIN'  
UP THE ADVANCE??  
LET'S GET THESE  
TROOPS OUT OF THE  
SNOW!

YEAH!  
WE'RE FREEZING  
UP HERE.

AHH... THERE'S  
ICE ON THE BRIDGE...  
SOME GOOF-BALL  
PERSONNEL CARRIER  
SKIDDED... I HEAR  
SOME HIGH RANK V.I.P.  
WAS IN IT, TOO...

**COLD WEATHER  
MAKES CONSTANT DEMANDS  
FOR SPECIAL CARE  
IN HANDLING  
ALL EQUIPMENT**

PIN: 064836-000