

Issue 459

PS

February  
1991

TB 43-PS-459

# THE PREVENTIVE MAINTENANCE MONTHLY



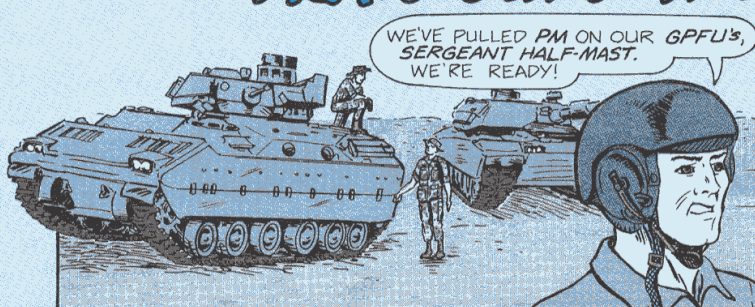
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Gas Particulate  
Filter Units...

# Make Sure the Air's Pure

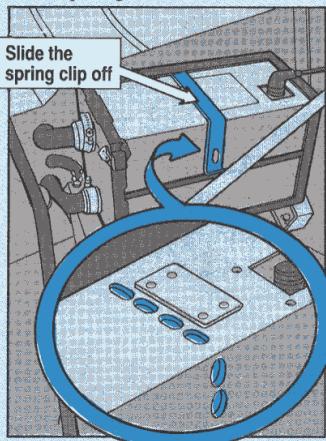


**T**he gas particulate filter unit in your combat vehicle cleans air for you to breathe when you're under chemical attack.

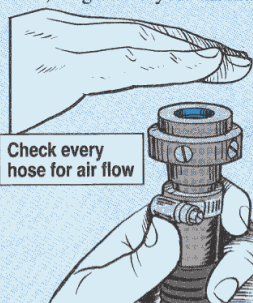
Give it the once-over to see if it's in working order.

★ Slide the spring clip off the air intake opening and turn on the GPFU.

Slide the  
spring clip off

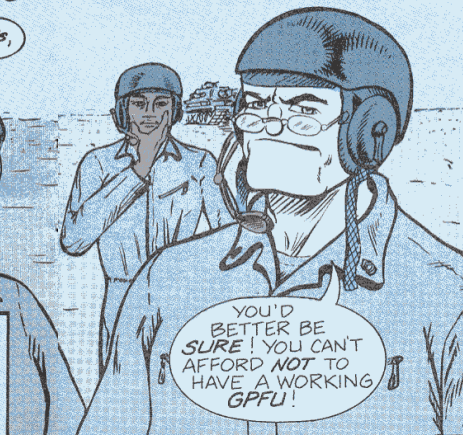
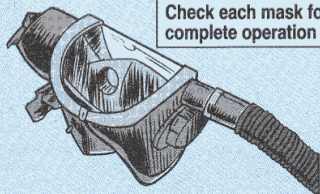


★ Check the air hose at each crew station for air flow. If there's no air flow, sing out to your mechanic.



★ Check your M25/M25A1 crewman's mask for air flow and for microphone operation. If anything's wrong, let your NBC folks know now.

Check each mask for  
complete operation



★ Turn on the GPFU air heater at each crew station. If the heater does not work, let your mechanic know about it.

★ Turn off the GPFU and slide the spring clip back in place. If you leave the air intake uncovered, sand, dirt or other garbage will clog the filters.

Know the filter element usage limits. The limits vary according to the agent to which the elements have been exposed. Check with your unit's NBC folks for any information you need. Do not change filters yourself.

Eyeball your vehicle's -10 TM for operation information and for crew maintenance.

Remember, the GPFU does not provide protection against carbon monoxide poisoning. Neither does your crewman's mask.

FEB 91

PS

THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY

TR 43 PS-459, 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.

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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

FAX: DSN 745-3855  
or Comm 606-293-3855

By Order of the Secretary of the Army:

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The Adjutant General

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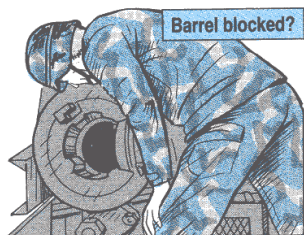
# Handle With Care



**A**mmo is dangerous. Its whole purpose is to explode, destroy, maim, and kill. You can't make ammo completely safe, but you can lessen its danger and help ammo do its job by targeting these points.

## Firing

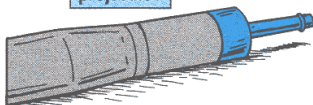
**Make** sure the weapon is working right and nothing is blocking its barrel. If a round isn't struck right by the hammer or firing pin or it's blocked in the barrel, you can have a dangerous situation.



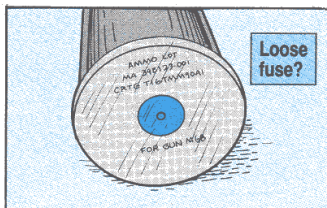
Double-check that you're using the right ammo. It's easy to make a mistake. Your weapon's -10 TM will list ammo OK to fire.

**Eyeball** the ammo for problems like loose projectiles and fuzes, exposed

Loose projectile?



explosives and defective links, and bad propellant. Report bad ammo.



Fire by the book. Follow all steps and precautions in the TM or FM. Wear required protective equipment.

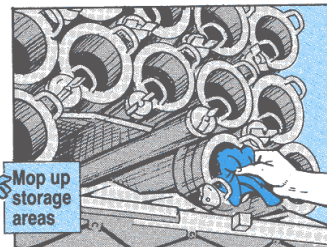
Leave things the way they are as much as possible in case of an accident. That will help the investigation of what went wrong.

## Handling and Storage

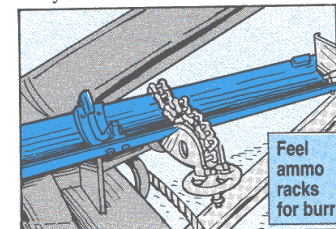
**Keep** ammo in its original case or pack as long as possible. The case was designed to protect the ammo.

Keep ammo indoors or covered as much as possible to protect it from the weather.

Avoid getting the ammo or its pack wet. Wet ammunition doesn't work too well. Mop up vehicle storage areas if necessary.



Feel ammo racks for burrs that could damage ammo during loading and unloading. Mechanics can stone or file away burrs.

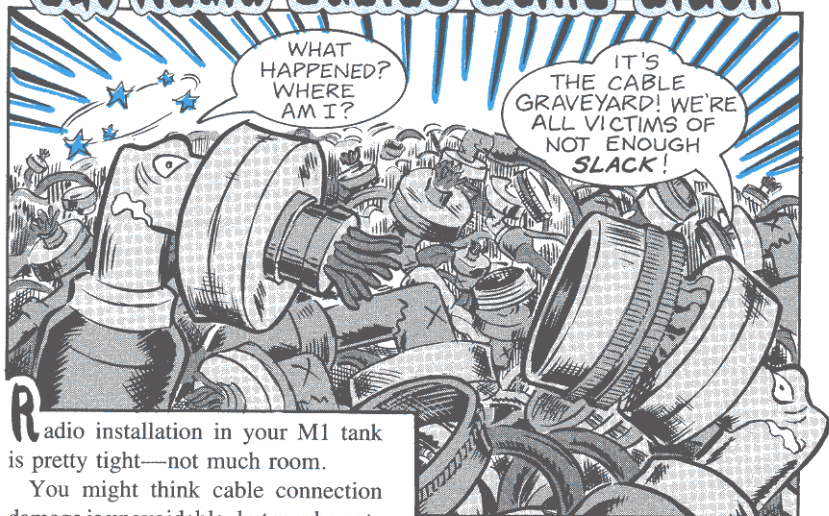


Block and brace ammo during transport so rounds are not bounced around or bounced out.

If ever in doubt about ammo, consult your local AMCCOM Logistics Assistance Representative or quality assurance specialist for ammo.

**SEE PAGE 60  
FOR INFO ON  
TB 43-0243,  
Ammo Operations  
in the Desert**

# Cut Radio Cables Some Slack

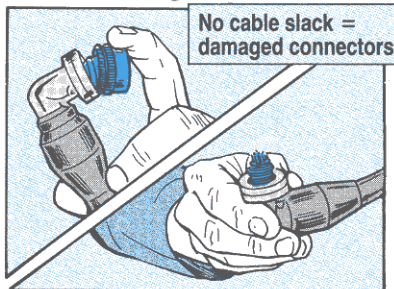


**R**adio installation in your M1 tank is pretty tight—not much room.

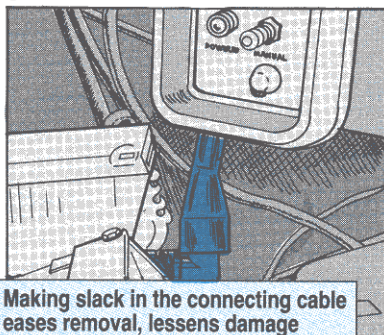
You might think cable connection damage is unavoidable, but maybe not.

Here's an example: Cable, NSN 5995-01-084-4865, mounts at the rear of the AN/VRC-64 or -12 radio. The rear mount makes connecting the cable a real chore for anyone except the small-handed. Disconnecting the cable is just as tough.

So some cable connectors get destroyed when frustrated mechs yank the radio out to get at the cable.



You can reduce the chances for this kind of damage by getting as much cable slack at the rear of the radio as possible.



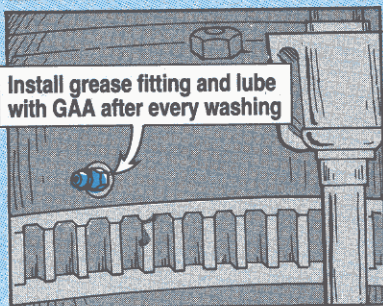
Almost all cables have some slack left when they're installed. Move as much as you need (or as much as is available) so the radio can be pulled out to reach the cable connection.



# Lube Turret Ring After Washing



So that the job can be done as easily as possible, replace the pipe plugs with lube fittings, NSN 4730-00-050-4208, and leave them installed.



**R**ust pitting is such a big problem with M60A3 turret race rings that the lubing schedule has been changed.

Used to be that you lubed the race ring every six months during the semiannual service. Vehicle washing removes so much lube that rust has plenty of time in six months to do real damage to the bearings.

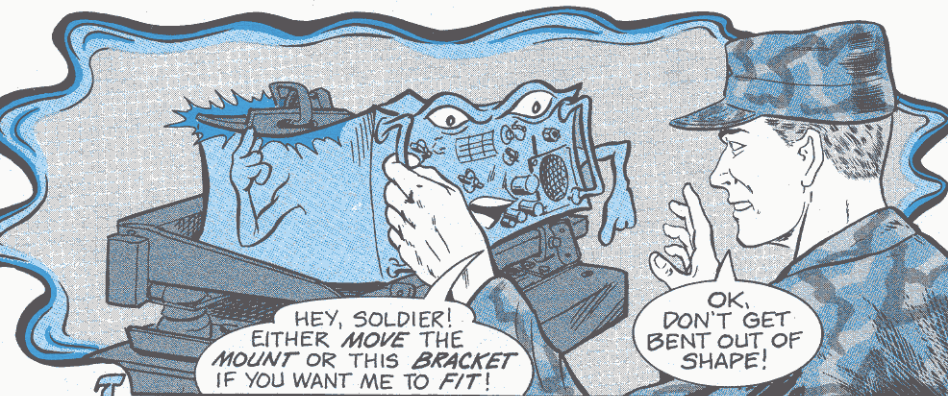
Now race bearing lube is required after every washing and at the six-month service.

Grab your grease gun and give the race ring a couple of shots of GAA while rotating the turret. Do this after—REPEAT—after every washing.

And, please keep the high pressure water or steam out of the turret and below the hull line.



# End Radio Interference

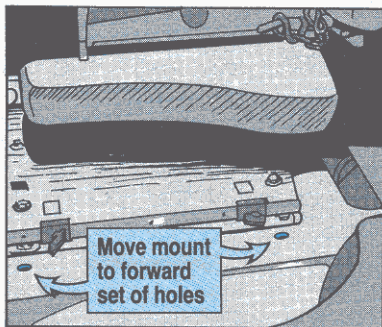


HEY, SOLDIER!  
EITHER **MOVE THE MOUNT** OR THIS **BRACKET**  
IF YOU WANT ME TO **FIT!**

OK,  
DON'T GET  
BENT OUT OF  
SHAPE!

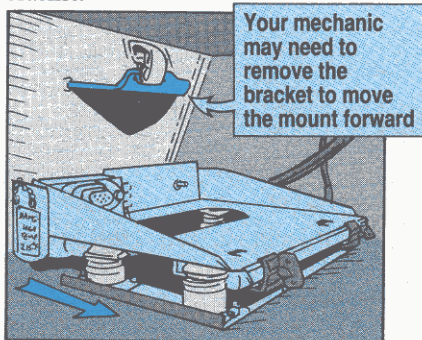
Take care of those radio mount interference problems on your Bradley with these tips:

Mount MT-1029 may not give enough clearance for an RT-524 or RT-246. If the radio hits the cleaning rod stowage bracket, move the mount forward.



When the mount is bolted through the rear set of holes, only an AN/GRC-160 will fit. Have your mechanic move the mount to the forward holes to mount the -524 or -246.

An RT-524 or RT-246 may not fit into MT-1029 if KY-57 secure equipment is installed. The radio transmitter will hit the cleaning rod stowage bracket.



If this happens, your mechanic can take out the rod stowage bracket. Store the cleaning rods in the stowage area at the commander's right foot. Make sure, however, that the rods cannot fall under the turret floor. That's asking for fuel cell damage or electrical problems when a rod hangs up.



## Easier Hub Bolt Loosening

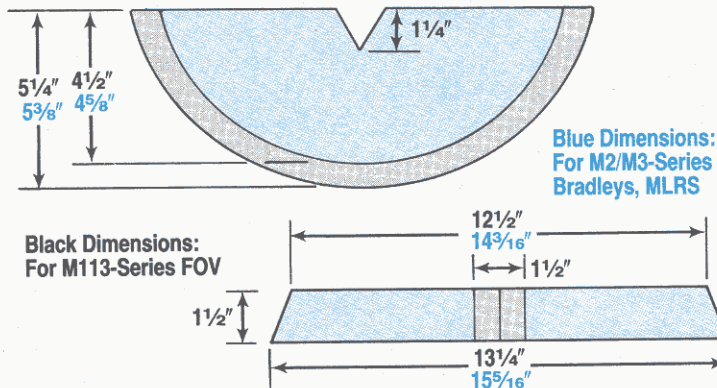
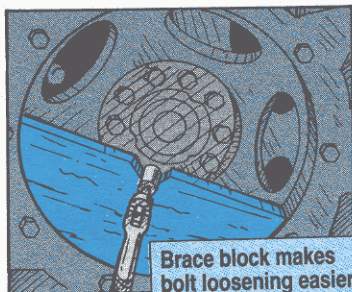
Dear Editor,

We've come up with an easier way to loosen the hub bolts on M113-series carriers and M2/M3-series Bradleys.

These bolts are very tight and the recommended way of loosening them just about always takes two soldiers. Our way lets one soldier loosen the bolts. Here's how:

Fabricate a wooden block insert to fit about half of the inside of the hub bowl.

With the block in place in the hub, the socket, socket



extension and pull handle assembly rests in the "V" of the wooden block. This brace makes loosening much easier.

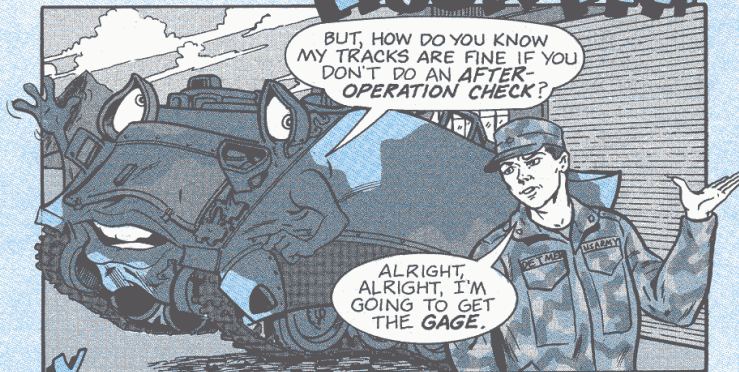
Remember, though, that the block must not be used when torquing the hub bolts.

Mr Arnold Herbert  
Mr James Thompson  
GAARNG  
Ft Stewart, GA

(Editor's note: There are no chips off that block, guys. Good work.)



# Track PM-



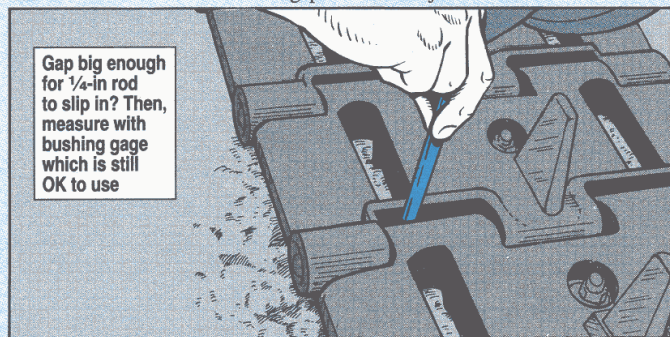
You can't "think" your M113-series FOV's track is in good working order; you must "know" it is.

That's why there's an after-operation check called for in both TM 9-2350-261-10 (M113A2-series) and TM 9-2350-277-10 (M113A3).

The information in your TMs is good. What you find on Page 3-33 of the -261-10 and Pages 3-30 through 3-32 of the -277-10 will do the job for you—including the use of the bushing gage.

Never mind what you have heard or read about the gage being no good. Use it and your eyes plus this added info:

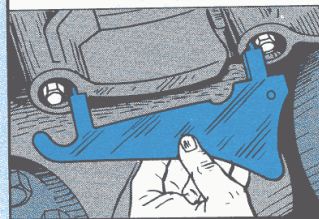
Look for unusual or uneven gaps between adjacent shoes.



# One More Time

Check suspect bushings with the gage. If you get a "NO GO" reading on either the outside or inside bushing, replace the shoe. It's unserviceable.

**NO-GO reading on either inside or outside bushing? Replace the shoe.**



Also, your carriers are now NMC if any one of these conditions exist:

Any one track shoe is bent, broken or cracked.

Any one track pin is bent, broken or missing.

Any one bushing is considered unserviceable.

**WHenever you find a TRACK COMPONENT THAT IS WORN, BROKEN OR MISSING, TELL YOUR MECHANIC RIGHT AWAY!**



MLRS, M2/M3-Series Bradleys...

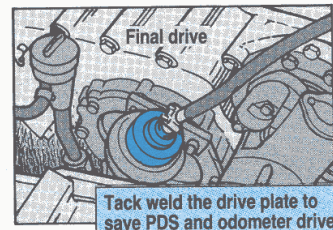
## Drive Plate Gets a Weld

A fix for those broken position determining system (PDS) and odometer drive pins and plates in your MLRS and Bradley vehicles is on Page 8-2 of TB 43-0001-39-2 (Jul 90).

The tack welds described in detail in the TB will keep the drive plate from slipping when the drive pins break.

This damage won't let the PDS encode the MLRS computer or the odometer register distance traveled.

If your unit does not have a copy of the TB, get with your local TACOM Logistics Assistance Representative or write to Half-Mast.





# Ammo... *Help for Fuze Practice*

Fill out a DD Form 1348-6 with these special notes. In the Stock Number block under FSCM, write "1390" in columns 8-11. In columns 12-15, write "N285" for M577-series fuze, "N286" for M582-series, "N335" for M557-series, "N340" for M739-series, or "N464" for M732-series.

FOLD LINE	5. TECHNICAL MANUAL NUMBER	6. NAME OF ITEM REQUESTED	FOLD LINE
	7. DESCRIPTION OF ITEM REQUESTED	7a. COLOR	

Questions? Call AMCCOM at DSN 793-6644/5634, Commercial 309-782-6644/5634, or write them at: 

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## X-Y Stacker Stopper Parts

**Y**ou can now get some replacement parts for the positive stop you added to the upper crossmember of your FAASV's X-Y stacker.

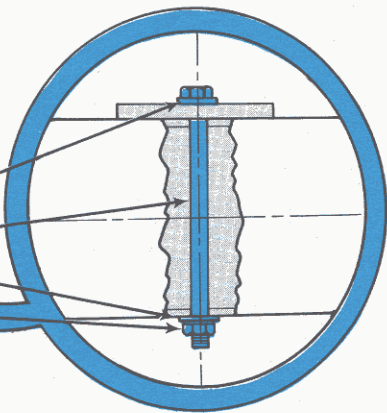
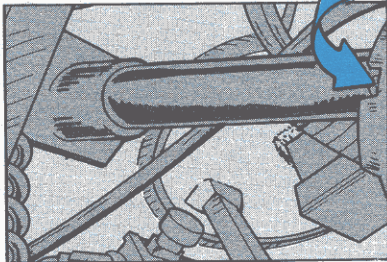
Available component parts include:

**Flatwasher, NSN 5310-00-809-4058**

**Cap screw, NSN 5305-00-071-2517**

**Lockwasher, NSN 5310-00-582-5965**

**Nut, NSN 5310-00-997-1888**



Information on the stop and how to install it is on Pages 3-10 through 3-13 of TB 43-0001-39-1 (Apr 90). If your unit does not have the TB, call your local TACOM Logistics Assistance Representative or write to Half-Mast.

## M88A1 Recovery Vehicles...

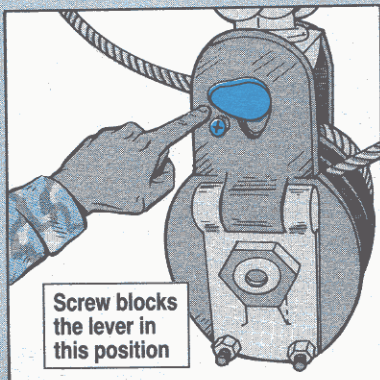
### Capscrew for Snatch Block

**M**ake sure the capscrew is in place on your M88's 25-ton snatch block before you use it.

If the screw is missing, the hinge can open when there's no load on the block, letting the block fall.

Get your mechanic to put in screw, NSN 5305-00-269-3231. If there's no hole in the snatch block for the screw, he'll drill a hole and tap it  $\frac{3}{8}$ -24UNF.

Always use the screw to block the hinge lever so it can't open unless you want it open.





# Fire



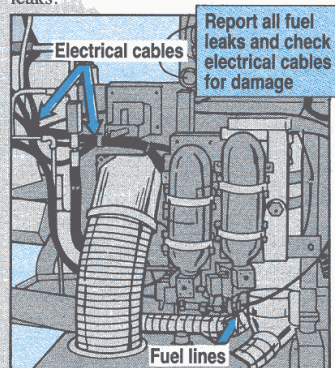
**T**here's been a rash of fires in the field artillery ammunition supply vehicles recently. Many of them could have been prevented.

With a load of live ammo aboard, it's in your best interest to prevent fires, too. Most fires started in the area of the personnel heater and its exhaust. If you overlook loose items that can lodge near the heater, or you stack items that will burn or explode near it, you'll increase the chances of fire.

Here's what you can do to prevent most ammo carrier fires:

Keep loose items like field jackets, gloves, rags, technical manuals and powder bags away from the personnel heater outlet. The heater gets hot enough to start a fire.

Report all fuel leaks as soon as you spot them. Look at fuel lines, connections, the fuel filter and hoses for leaks.

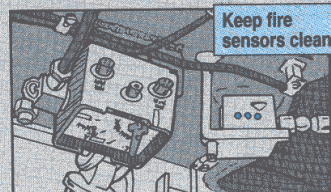


# Prevention

Look at all electrical cables for worn spots or damage. Arcing or shorting causes many fires to start.

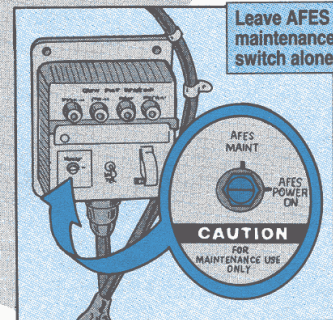
Keep the floor clean. Dust, dirt, sand and crud build up on the floor. Mix a little diesel fuel and you've got a fire waiting for a light. Clean the hull when the powerpack is removed and when projectile racks are out.

Keep fire sensors clean. They can't see when they're dirty. Be careful



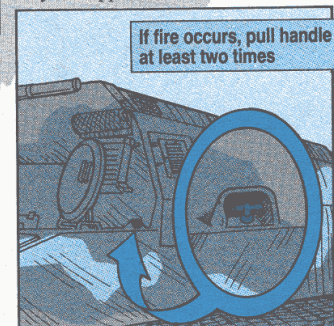
not to scratch or gouge the sensor face when you clean it.

Always make sure the automatic fire extinguishing system (AFES) maintenance switch is ON. It stays ON unless unit maintenance is working on



it. The AFES automatically shuts itself down two hours after the master power switch is turned to OFF. That protects your vehicle against any fire that might start after you leave the vehicle.

If a fire occurs and you see flames or smell smoke, you have to react fast. Pull the outside manual discharge handle for the fire extinguishers at least two times. That way all the manual fire extinguishers will discharge like they're supposed to



Practice fire prevention. Grab a copy of your -10 TM and read the dope about fire prevention. Then practice these procedures until they become second nature. Your life may depend on how well you perform them in case of fire.

Get a copy of TACOM Safety-of-Use Msg No. 90-19, AMSTA-M, 231815Z Jul 90. It has more info on FAASFV fires.

File an accident report DA Form 285 on all fires. Problems can't be fixed if they're not reported.

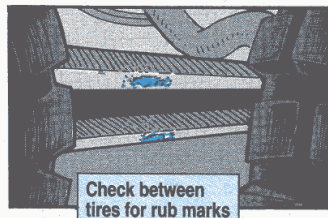


# Tire Rubs the Wrong Way



**B**efore you get in your HEMTT and head out for the day's run, take a look behind the front tires. See any wear marks on the front tires? If so, report it.

Front tires that rub against the frame when you turn can wear through... and cause a blow out.



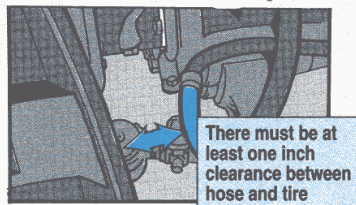
It's time for a wheel alignment. Have DS adjust the turn stop bolts.

While you're looking for rub marks, eyeball the air hoses to the front wheel

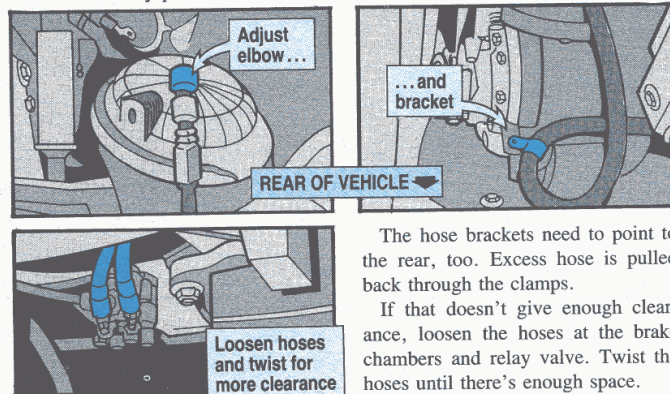
brake chambers. Look for wear marks on the hoses. Tires rub against the air hoses when you turn. Enough rubbin' will wear a hole in the air hose—causing a brake failure.

Before you drive off, get your buddy to watch those air hoses while you turn the wheels full right, and then full left. There must be an inch clearance between the hose and tire.

If you see a wear mark, or have less than one inch of clearance, report it.



Your mechanic will replace any hose that's worn through the cover. If there's less than one inch clearance, your mechanic will adjust the elbows on the brake chambers so they point directly toward the rear of the vehicle.



The hose brackets need to point to the rear, too. Excess hose is pulled back through the clamps.

If that doesn't give enough clearance, loosen the hoses at the brake chambers and relay valve. Twist the hoses until there's enough space.

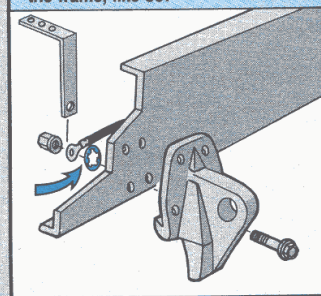
## Missing Washer Stops Crane

**I**f the crane on your HEMTT wrecker cuts out, it could be because a small star washer is missing from the ground wire.

The washer is illustrated on Page 14-13 of TM 9-2320-279-20-2 for axle No. 4, but it's shown in the wrong place.

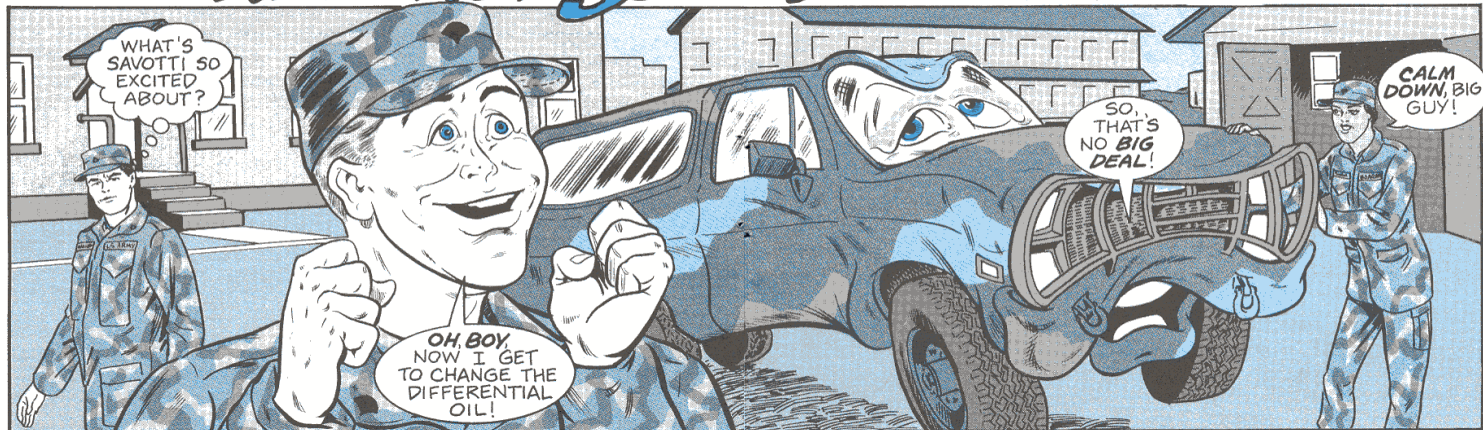
Put the washer on the next time the wrecker comes in for service. Take off the nut and ground wire. Scrape a spot of paint, about the size of a quarter, from around the bolt hole. Put on the star washer and then torque the nut to about 110 lb-ft.

Washer, NSN 5310-00-935-8984, goes between the ground wire and the frame, like so:





# Unit Changes Differential Oil



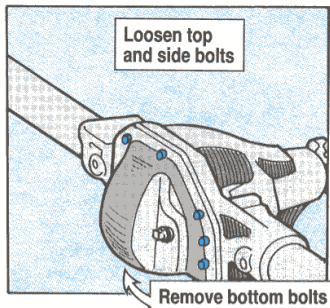
**Y**ou mechanics no longer need to send a CUCV to DS for differential service. Now every 2 years or 24,000 miles you can change the fluid yourself.

Here's what you need:

Item	NSN
RTV sealant	6850-01-159-4844
Rear differential gasket	5330-01-155-4399
Front differential gasket	5330-01-084-2410

Here's how you do it:

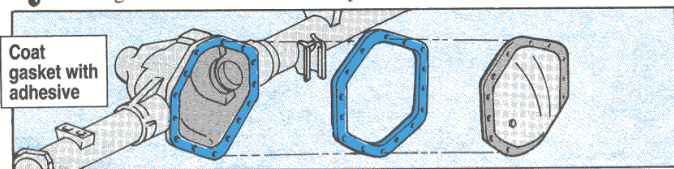
- ☹ Put a container under the differential to catch the fluid.
- ☹ Loosen the side and top bolts that hold the differential cover in place.
- ☹ Remove the bottom 3 bolts.



- ☹ Pry the bottom of the cover loose with a screwdriver.
- ☹ Let the fluid drain into the container.
- ☹ Remove the other bolts, then the cover.
- ☹ Scrape off the gasket and toss it.
- ☹ Clean the housing flange and

cover with P-D-680 drycleaning fluid. Let it air dry.

- ☹ Run a 3/8-in bead of RTV sealant on both sides of the new gasket.
- ☹ Fit the gasket on the cover. Line up the bolt holes.



- ☹ Line up the cover and housing. Put the bolts back in and torque 'em to 35 lb-in.
- ☹ Add gear oil and additives spelled out in your LO. Fill until oil comes out the plug hole.

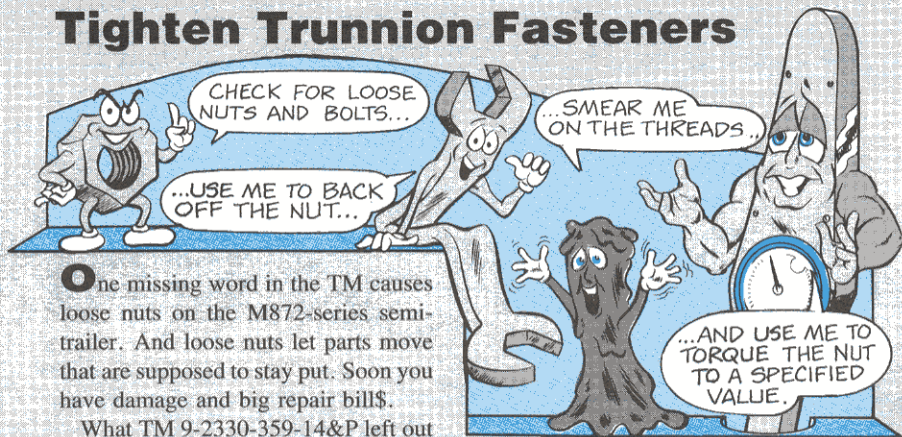
## Blackout Wire Tie-Up

**R**ear blackout marker light wiring on some CUCV's hangs below the bumper. It snags and gets ripped off as you drive over rough terrain.

You mechanics can stop that. Tie the wiring to the bumper bar brace with an electrical tiedown strap, NSN 5975-00-570-9598.



# Tighten Trunnion Fasteners



One missing word in the TM causes loose nuts on the M872-series semitrailer. And loose nuts let parts move that are supposed to stay put. Soon you have damage and big repair bill\$.

What TM 9-2330-359-14&P left out is the word **Lubricated** in Table 4-3, where the torque values for the suspension system are given.

There's also no mention in Para 4-50 that you need to remove the nuts—one at a time—lightly grease the threads, then torque the nuts on the bolts every six months.

Here's how you should retorque those nuts and bolts:

**1** Use a regular wrench to remove the nut.

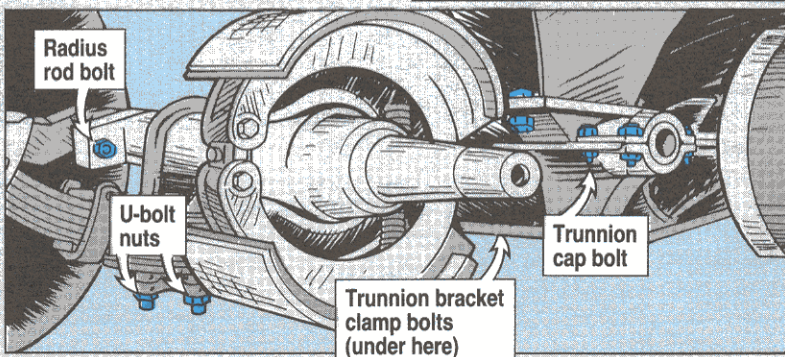
**2** Wire brush the threads to clean

them, then smear on a light coat of grease.

**3** Torque them to the specified value using a torque wrench—like the one in the No. 1 Common shop set.

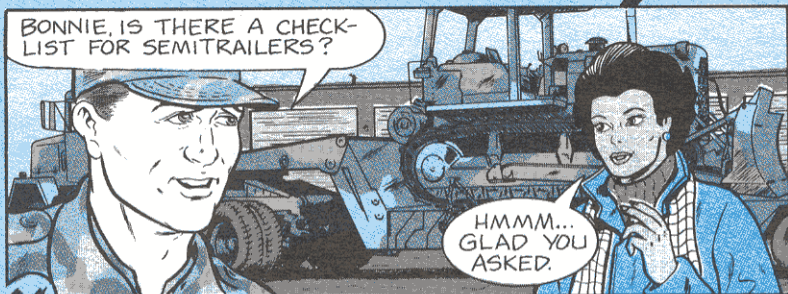
Torque these bolts (wet torque) to:

Bolt	Torque (lb-ft)
7/8-in U	550
3/4-in trunnion cap	250
3/4-in trunnion bracket clamp	250
1 1/4-in radius rod	600





# Salve for Sore Spots

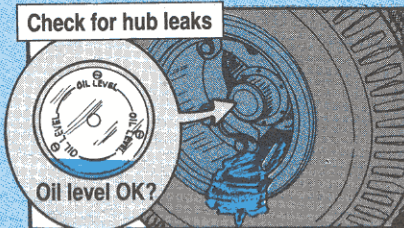


**Y**our M870A1 semitrailer has a few sore spots that need tending before you pull out of the motorpool.

Here's a checklist to go by. List anything you can't fix on your DA Form 2404.

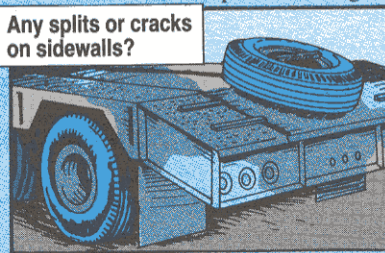
**WHEEL HUBS**—Oil level up to the mark. No oil leaks around caps.

## Check for hub leaks



**TIRES**—All there, none flat (including spare). No sidewall splits or cracks over 1/8-in deep or 3-in long.

## Any splits or cracks on sidewalls?



**AIR LINES**—No binds, kinks, splits or cracks. No leaks around fittings.

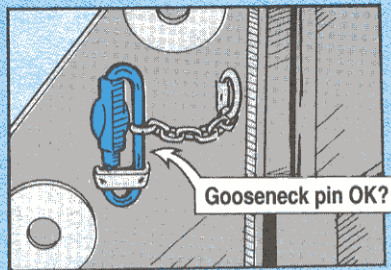
**FRAME**—No loose, broken or missing bolts or rivets. No welds or cracks in frame rails, gussets or supports.

**OUTRIGGER PLANKS**—In place and all there.

**AIR RESERVOIRS**—No leaks, dents or cracks. Drain cocks open and close easily.

**SPRINGS**—No breaks or cracks. No oil on leaves.

**GOOSENECK LOCKING PIN**—In place. Chain attached.



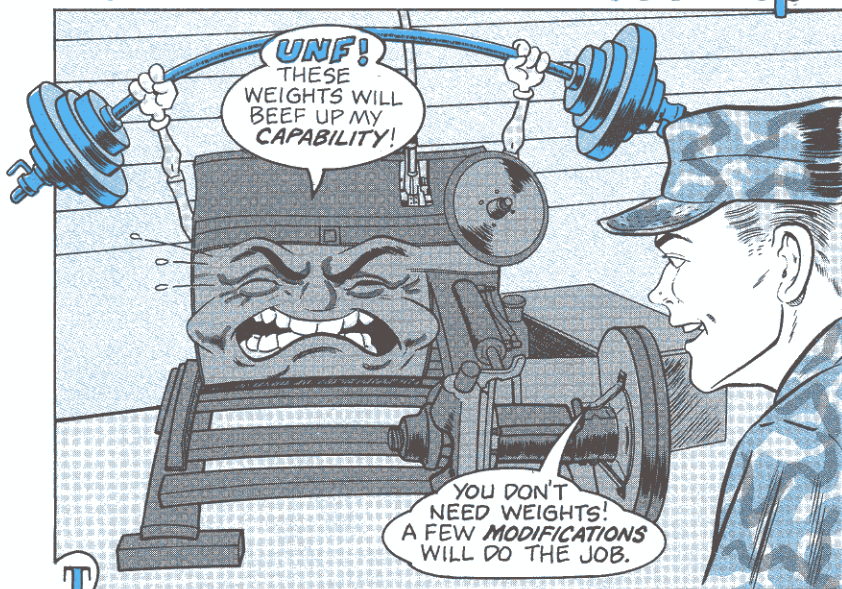
**REFLECTORS**—No cracked or broken lenses.

**SPLASH GUARDS**—No cracked brackets. Mounting hardware tight.



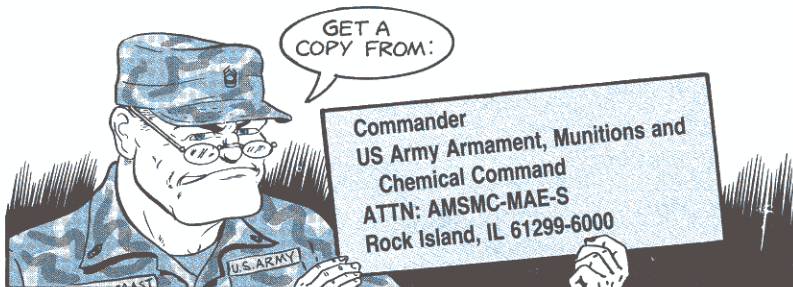
Tires...

# Bishman Mounter Beef-Up



The Bishman 931A tire mounter/demounter isn't tough enough to handle the Army's largest tires.

But you can get instructions from the headshed that'll increase the capability of the 931A and make your tire changing easier.



Once these modifications are made, be sure not to let the Bishman bind when mounting or demounting tires. If binding occurs, reverse your machine immediately. Otherwise, the increased force will break tools, damage the machine, or even hurt you!



# Tread Wear Guidelines


Dear Half-Mast,

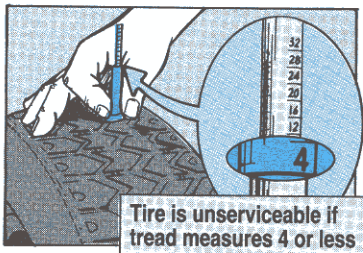
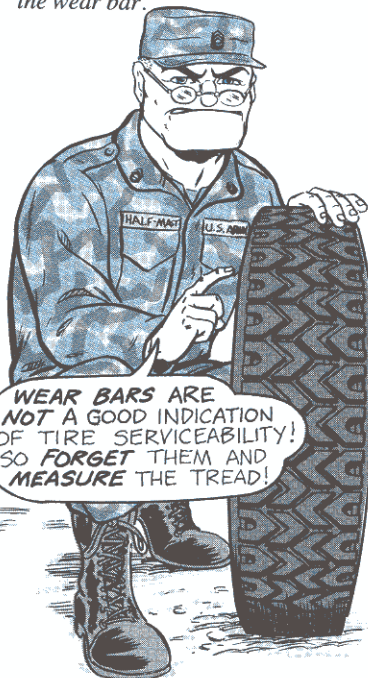
Some tires have wear bars and others don't. For tires with wear bars, should a tire be run until the tread is worn even with the wear bars? What's the rule on how much tread wear makes a tire unserviceable?


SSG M.T.

Dear Sergeant M.T.,

First check the PMCS table in your vehicle's TM for the word on tire wear. If there is no specific guidance, use the following info:

 Replace standard highway tread and light tactical vehicle tires when there is  $\frac{1}{32}$  inch or less of tread remaining, or when the tread is even with the wear bar.



 Tires on large trucks and trailers are replaced when there's only  $\frac{1}{32}$  inch of tread left, or when the tread is worn down to the wear bars.

If the tread looks worn, measure the tread depth with tread depth gage, NSN 5210-00-019-3050. It's part of the No. 1 and No. 2 Common shop sets. The gage is marked in  $\frac{1}{32}$ 's of an inch. Instructions on how to use it are in Para 2-8 of TM 9-2610-200-24.

*Half-Mast*



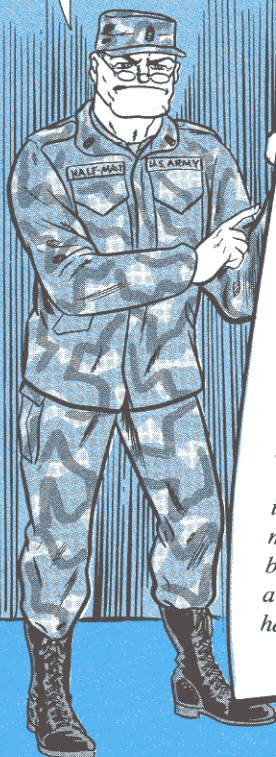
# Where's the Vehicle Number?

Dear Half Mast,

The paint shop covered the vehicle registration numbers of our 2½-ton trucks with camouflage paint. How can I find out what the numbers are and where they go?

SFC M.F.

HERE ARE A FEW TIPS THAT MIGHT HELP!



Dear Sergeant M.F.,

Here're a few tips that might help you out:

First, check the equipment folder and match up the serial number from the data plate to the vehicle registration number on DA Form 2408-9.

If this doesn't help, write the vehicle registration folks at:

**USAMC Materiel Readiness  
Support Activity**

**ATTN: AMXMD-MS**

**Lexington, KY 40511-5101**

Or call DSN 745-3957 or commercial (606) 293-3957.

They can provide the lost registration number. Just give them the NSN and serial number of your vehicle.

Vehicle registration numbers for non-tactical vehicles should be painted on both sides and in the rear in letters no larger than 4-in high. This info is found on Page C-11 in TM 43-0139 (Jul 88), Painting Instructions for Army Materiel.

Paint the registration number on the interior of trucks, construction and material handling equipment where it can be seen from the outside when looking into a locked vehicle. Page 4-5 of TM 43-0139 has this info.

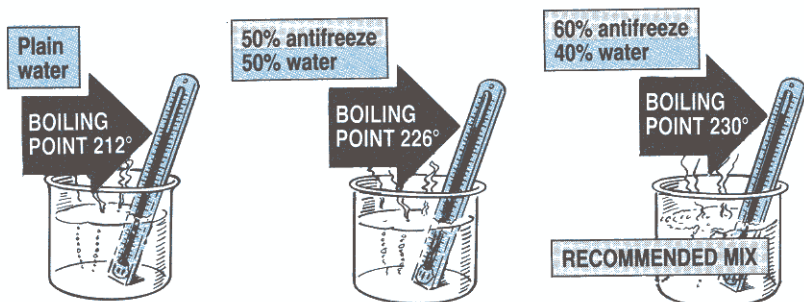
*Half-Mast*



# Antifreeze in the Desert?

**Y**ou bet!

Antifreeze in the coolant not only lowers the freezing point, it also raises the boiling point. The news is in the beakers!



M872-Series Semitrailers ...

## TM Correction

The info is confusing on Page E-79 of Change 4 to TM 9-2330-359-14&P. Figure E-36A shows 2 left rear corner stakes and none for the right side.

Here's how it goes:

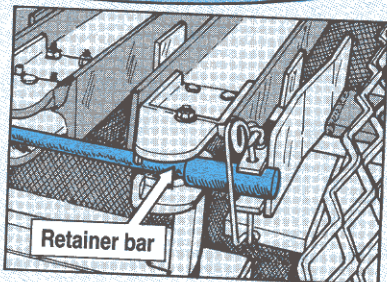
(1) ILLUSTRATION		(2) SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	(6) DESCRIPTION  USABLE ON CODE	(7) UM	(8) QTY INC IN UNIT
(a) FIG. NO.	(b) ITEM NO.							
GROUP 18—BODY—Continued								
E-36A	1	PAOOO	2510-01-096-9347	SW15254A1	L98255	GROUP 1801—CORNER STAKE ASSEMBLY AND PANEL SPLICE STAKE, VEHICLE BODY LEFT REAR CORNER (COMPONENT PARTS SAME AS STAKE ASSY, P/N SW15254A2, EXCEPT WHERE ANNOTATED)	EA	1
E-36A	1	PAOOO	2510-01-096-9349	SW15254A2	R98255	STAKE, VEHICLE BODY LEFT REAR CORNER <b>CURBSIDE</b>	EA	1
E-36A	2	PAOZZ	5310-00-088-1251	MS51922-1	96906	NUT, SELF-LOCKING	EA	1
E-36A	3	PAOZZ	5310-00-809-4058	MS27183-10	96906	WASHER, FLAT	EA	1
E-36A	4	PAOZZ	5305-00-988-1727	MS35206-283	96906	SCREW, MACHINE	EA	1
E-36A	5	PAOOO	4010-01-114-1333	SW15266A	98255	CHAIN ASSEMBLY	EA	1
E-36A	6	PAOZZ	4010-01-144-1734	SW11935P-1	98255	LINK, CONNECTING	EA	1
E-36A	7	PAOZZ	5340-01-102-5931	225-3/4	80874	SNAP HOOK	EA	1
E-36A	8	PAOZZ	4010-01-142-0450	SW10998P1-18	98255	CHAIN, LINK	EA	1
E-36A	9	PAOZZ	2510-01-096-9348	SW14659M1	L98255	STAKE, VEHICLE BODY CORNER STAKE ASSEMBLY (USED ON STAKE ASSY, P/N SW15254A1 ONLY—ROADSIDE)	EA	1
E-36A	9	PAOZZ	2510-01-096-9350	SW14659M2	R98255	STAKE, VEHICLE BODY CORNER STAKE ASSEMBLY (USED ON STAKE ASSY, P/N SW15254A2 ONLY—CURBSIDE)	EA	1
E-36A	10	PAOZZ	2510-01-096-9346	SW14658M	98255	STAKE, VEHICLE BODY SEMITRAILER	EA	19



# M796 Bolster Trailer Parts

Dear Half-Mast,  
I've looked high and low in  
TM 9-2330-287-14&P for  
NSNs for the bars  
that lock the portable  
bolsters in place and for the  
latch that goes on the access  
cover to the master cylinder.  
Can you help?

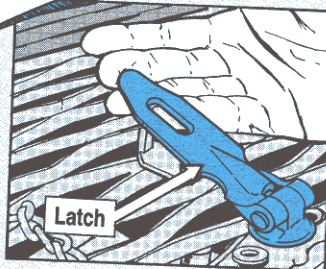
SGT J.E.



Dear Sergeant J.E.,

You bet! Here are the NSNs  
you need:

Item	NSN
Retainer bar	2590-01-137-8054
Latch	5340-00-374-3334



*Half-Mast*

## Trailer Wheelbrake Cylinder

The part number is wrong and the NSN is not listed for the wheel cylinder listed in TM 9-2330-213-14&P on the M103-, M105-, M107-series and M448 1½-ton trailers. The cylinder is PN F56114, and the NSN is 2530-00-741-2065.

2½- & 5-Ton Trucks...

## Rifle Mount Kit NSN

Get a rifle mounting kit for M44-series 2½-ton trucks and M39- or M809-series 5-ton trucks with NSN 2540-01-223-0041. The kit includes all the mounting hardware and instructions.



## 12-Volt Lead-Acid Battery

**H**old one before ordering a 6TN battery, NSN 6140-00-057-2554. That battery—used in most ground vehicles—is being replaced. Now, order the 6TL battery, NSN 6140-01-210-1964. That's an improved low-maintenance battery.

## M131 Tanker Tire Change

**Y**ou can use commercial highway tread tires for the M131-series fuel tanker. The tire with flap is NSN 2610-00-204-4091. The inner tube is NSN 2610-00-051-9450 and the flap is NSN 2640-00-158-5617.

## M911 Fuel Cap

**F**uel tank cap, NSN 2310-01-060-9651, replaces the NSN called out as Item 19, Fig 11 of TM 9-2320-270-20P. The new cap has safety plugs with a higher melting point (190°) for hot weather driving.

HERE'S A HANDY  
SIGN POST.

## M880 Wiper Bushing

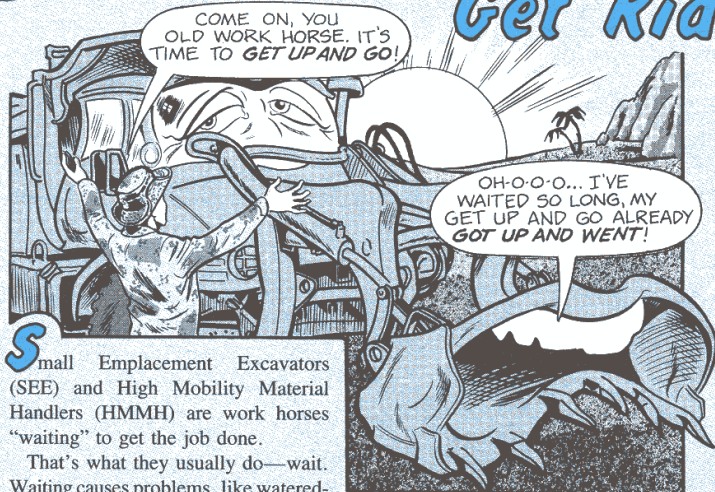
NSN 3120-01-227-1369 is for the plastic bushing that holds the windshield wiper arm to the pivot bracket on the M880. Jot down the number until TM 9-2320-266-20P is updated.

## Bum M880 Horn

**H**orn, NSN 2590-01-004-1905, for the M880-series trucks comes with only one electrical connector. The M880 takes a horn with two electrical hookups. Order that horn on a DD Form 1348-6 using CAGE 21003 and PN A010016 from RIC S9C.



# Get Rid of the Sputters

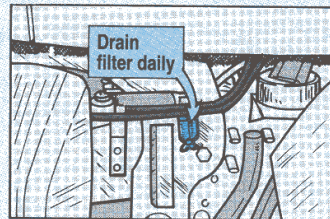


**S**mall Emplacement Excavators (SEE) and High Mobility Material Handlers (HMMH) are work horses "waiting" to get the job done.

That's what they usually do—wait. Waiting causes problems, like watered-down fuel from condensation in the tank. For them to be ready when called into service, you need to tend them right.

## Dry Fuel

To make starting and running easier for a vehicle that's been sitting idle for a while, clean the fuel prefilter before



you crank the engine. You'll need to do this daily in case there's water or gunk in the fuel tank.

Remove the prefilter bowl and strainer and dump out the contents. If you see rust, get your mechanic to clean the strainer with P-D-680 dry-cleaning solvent. Dry the strainer with compressed air under 30 PSI.

Your mechanic will check the tank for rust, too, if you find much rust in the prefilter.

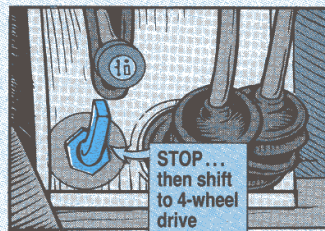
## Four-wheel Drive

You can engage the four-wheel drive or the four-wheel drive with differential locks while moving—but **ONLY** if all four wheels are moving at the same speed. You'll damage the differentials or the U-joints if you try to engage four-wheel drive or lock the differentials when a wheel is spinning.

The best idea is to engage four-wheel drive before you drive into sand, dirt

or mud. If you forget and the wheels start spinning, **STOP!** Then shift into four-wheel drive and move out.

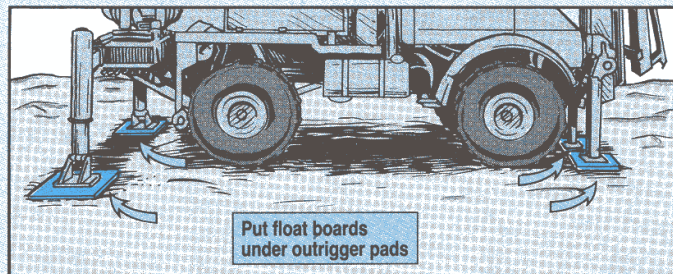
Never drive on a hard surface road when the four-wheel drive with differential



locks is engaged. That's hard on the differentials and U-joints, and makes the tires scuff on curves—even easy ones!

## HMMH Flotation Boards

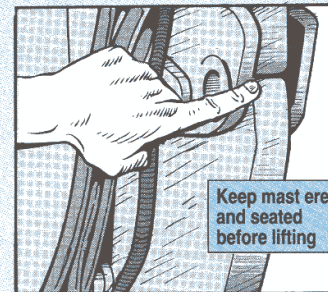
Soft or sandy soil lets the material handler's outrigger pads sink while you load and unload cargo. This can let your HMMH roll over!



To prevent that, put a ground jack board, NSN 2510-00-741-7585, under each pad as you lower the outriggers. Or use a couple of 2 x 12 x 24 inch boards under each pad. When you're not using the boards, place them in the stowage box.

## HMMH Crane Operating Tips

Operating the material handler's crane takes a steady hand and sharp eye. **ALWAYS** make sure the mast is erect and seated before lifting a heavy load. Otherwise, the pressure on the lift mast cylinder will break the cylinder mounting bracket, causing you to drop the load.



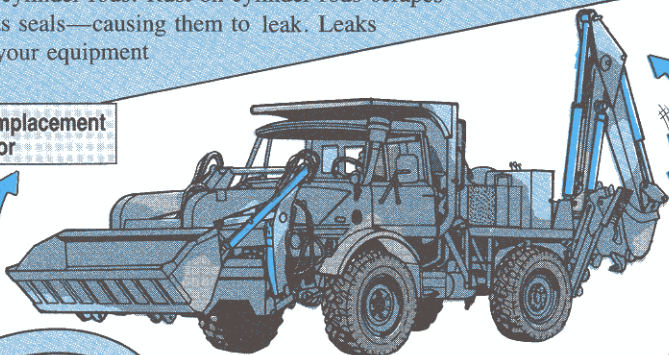


## Exercise Hydraulic Cylinders

**H**ydraulic cylinders on the Small Emplacement Excavator (SEE) and High Mobility Material Handler (HMMH) need exercise to keep rust off the cylinder rods. Rust on cylinder rods scrapes and cuts seals—causing them to leak. Leaks make your equipment

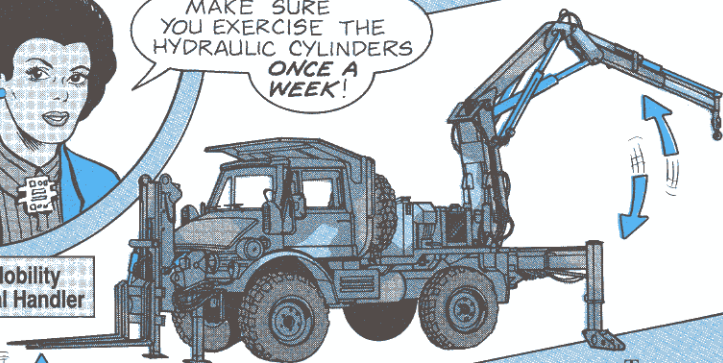
NMC

**Small Emplacement Excavator**



MAKE SURE  
YOU EXERCISE THE  
HYDRAULIC CYLINDERS  
**ONCE A WEEK!**

**High Mobility Material Handler**



To prevent rust, each week fully extend and retract the HMMH's forklift and crane, or the SEE's bucket and backhoe. This spreads a thin coat of oil on the cylinder rods. If you can't exercise the SEE or HMMH each week, smear a thin— $\frac{1}{16}$  to  $\frac{1}{8}$ -in thick—coating of GAA grease on the cylinder rods.

Before a SEE or HMMH sits idle longer than a month, coat the polished cylinder rod with grease, then wrap it with waterproofed paper, NSN 8135-00-753-4662. Then use preservation sealing tape, NSN 7510-00-852-8180, to hold the paper in place.

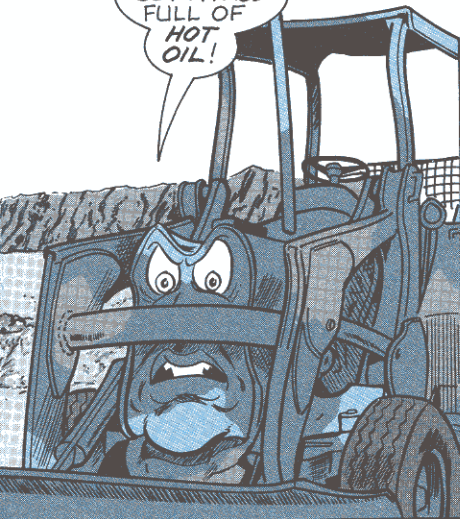


# Release Pressure, Then Switch Accessories

**H**old one, operator, before you switch the drill, shovel or impactor on your JD410.

IF YOU  
DON'T GET **RID**  
OF THE **PRESSURE** IN MY  
HYDRAULIC LINES **FIRST**,

YOU'LL  
GET A FACE  
FULL OF  
**HOT**  
**OIL!**

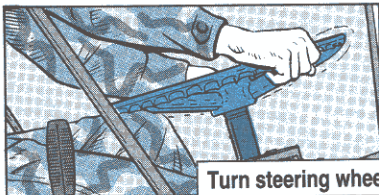


Here's the way to get rid of the pressure so you can unhook the quick disconnect couplings and lose only a small amount of fluid.

➊ Lower the loader bucket, backhoe bucket and outriggers to the ground.

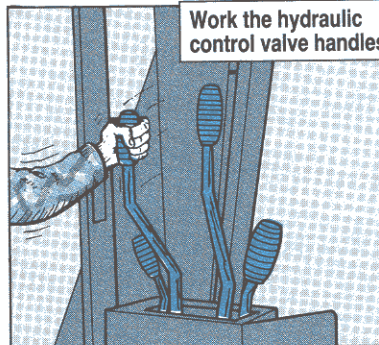
➋ Turn off the engine. This shuts off the pump and lets the oil drain back in the reservoir.

➌ Turn the steering wheel left and right several times.



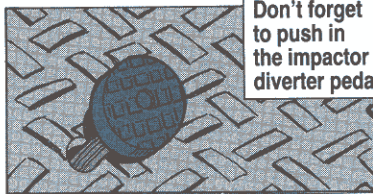
Turn steering wheel

➍ Move the hydraulic control valve handles for the bucket, backhoe and outriggers back and forth 2 or 3 times.



Work the hydraulic control valve handles

➎ Push in the impactor diverter pedal a few times.



Don't forget to push in the impactor diverter pedal

If you've done all of the above and still "feel" pressure—try again. Didn't work? Get your mechanic to take a look.



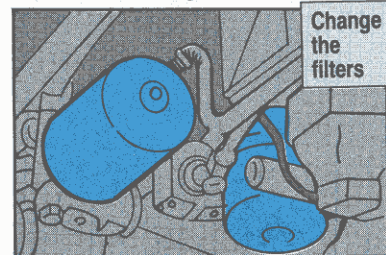
# Dirty Oil's Dastardly Damage



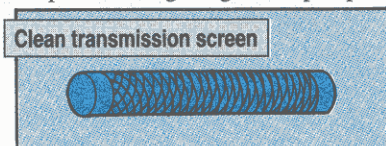
**W**hen your JD410 is sluggish, it's likely the hydraulic oil is dirty and the filters or transmission screens are clogged.

Dirty oil circulating thru the system scratches polished surfaces of parts and cuts seals. Once seals are cut, they leak...and Class III leaks make your JD410 NMC.

Report sluggish operation. Get your mechanic to change the oil, filter and



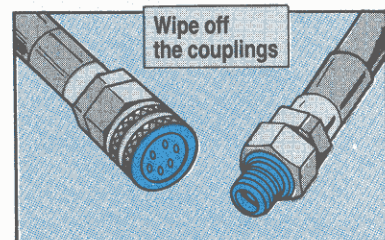
transmission screen. A dirty screen keeps oil from getting to the pump.



New oil can get dirty before you use it. Keep opened cans and drums tightly covered to keep out dust, dirt and water.

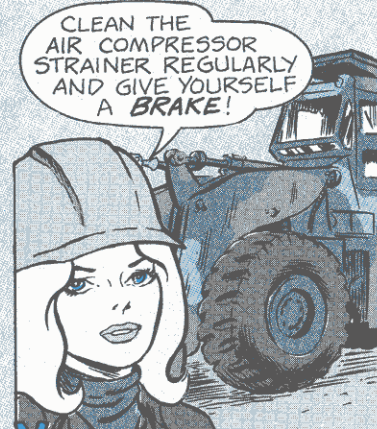
Dirt and water can get in if you forget to replace the filler cap, or if the cap works loose during operation. Keep an eye on it.

You can keep dirt out of the hydraulic oil by wiping off the couplings before



you disconnect or hook up accessories, like the auger or impactor. Always make sure the quick disconnect couplings are capped on both the loader backhoe and the accessories when the accessory is not attached.

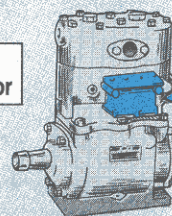
# Let Compressor Breathe Easy



**Y**our air compressor needs plenty of air and a clean filter. An air compressor running with a clogged filter is like a marathon runner trying to run with a head cold.

The air compressor on your 175B scoop loader cannot suck enough air to build up pressure in the air reservoir.

Air compressor



Low reservoir pressure means your brakes won't work right.

Eyeball the pressure gage. If it falls below 95 PSI or if it builds up pressure slower than it should, the strainer's probably clogged.

Here's what to do:

✓ Take the strainer apart every 100 hours—more often when there's lots of dust in the air.

✓ Clean it with soap and water or methyl alcohol, NSN 6810-00-597-3608. That NSN brings a gallon.

✓ After the strainer element dries, soak it in clean engine oil.

✓ Squeeze out excess oil.

✓ Reassemble the strainer.

If the strainer element's damaged, replace it with NSN 2940-00-537-0946.

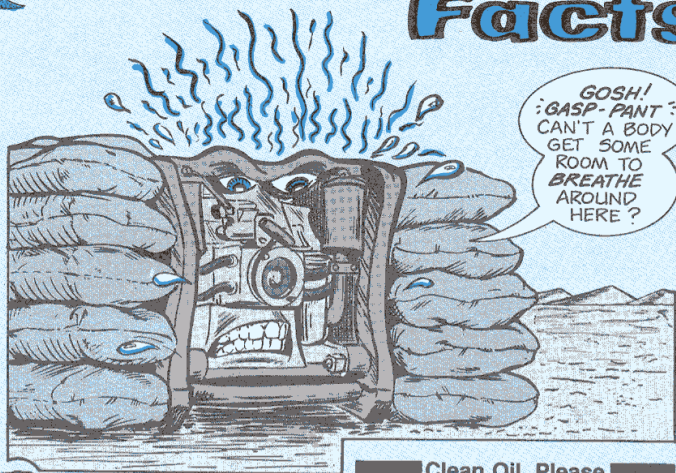


## Tire Chain NSN

**A** pair of 12.00 x 20 tire chains for the Small Emplacement Excavator (SEE) come with NSN 2540-00-933-6922. The swivel hook comes with NSN 2540-00-937-0404. Get the cross chains with NSN 2540-00-933-6915.



# Facts Are Facts



**O**ne cold, hard fact is that hot weather does a number on your generators. Heat plus the blowing sand of the desert add up to double trouble.

The main thing in the desert is to keep your generator cool. Here are some ways to beat the heat:

## Revetment Space

Give your generator set lots of breathing room.

A sandbag, log or earthen revetment helps reduce noise and block sand and dust. However, the revetment can also be an enemy if there's not enough room around the generator to keep it cool. Make sure there's at least four feet between the generator and walls. You lose power if the generator gets hot and fizzes out.

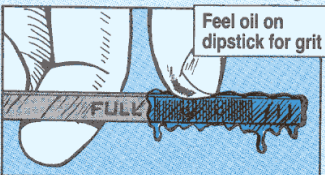
Check your operator's TM for other instructions on building a revetment.

## Clean Oil, Please

Make sure you wipe the sand and dirt away from the oil filter cap before you check the oil level.

Need oil? Before you stick that funnel in the fill opening, clean the sand and dirt from it. That also goes for the top of the oil can before you open it.

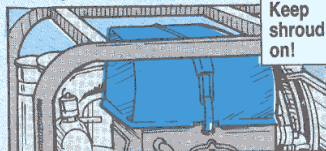
Check the engine oil daily. This means not only looking at but feeling the oil on the dipstick. Sand damages



the engine quicker than you can figure out what's what. If you feel grit on the dipstick, get your mechanic to change the oil and filter.

## Closed Doors

Keep shrouds and doors closed. Closed doors and shrouds help circulate the air to the parts that need cooling. They also keep sand away from the engine.

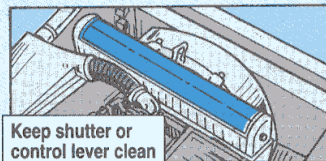


## Shutter Flip

A jammed shutter assembly won't let air flow to your generator set's engine.

Most generator sets have thermostatically controlled shutters. When the engine needs cool air, the shutter opens.

If the shutter or control jams, there's no cool air. Keep the shutter or control lever clean so it will open when it should.



On small generators, check the shutter often. Move the shutter back and forth. It should move easily, then spring back to its original position.

On larger sets, you can make sure the shutter is not binding by giving the control lever a smooth open-and-shut check.

FEB 91

## Change Shutter

Make sure your 6-HP Mil Std engine's air intake shutter is set for SUMMER.

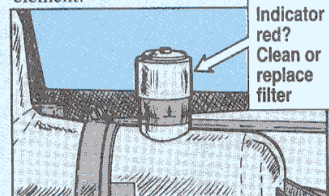
If set on WINTER, hot air is put directly from the exhaust manifold to the air intake filter. This extra heat can break down the filter. Filter pieces will be drawn into the carburetor, causing a number of problems, including fire.



Move lever to SUMMER

## Air Cleaner Clean?

Because of the fine dust and blowing sand, you'll need to service the air cleaner more often. Check the air restriction indicator daily. If the red signal is visible, clean or replace the filter element.



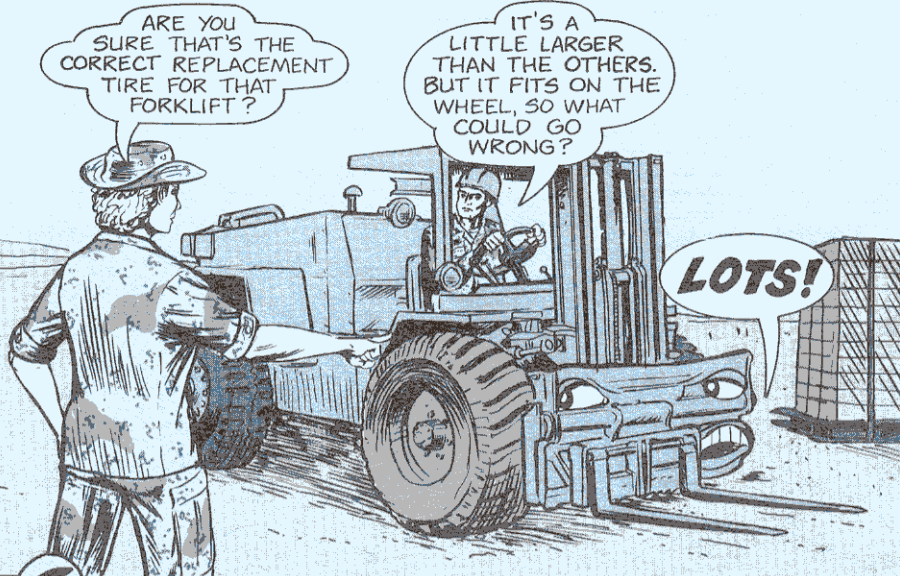
A dirty or clogged filter stops the flow of air and chokes the engine. It will shut down when you need it most.

Never run a generator engine without a filter. Sand or dirt in your engine will grind moving parts to bits.

33



# Use Right Tire



Tires take a beating from rocks and thorns in the desert. For best service, you've got to put the right tire on the right equipment. That goes for an M4K 4,000 lb forklift, too. Just because a tire will fit the rim is not a good reason to put it on. Most other tires are too stiff. The M4K relies on the flexibility

of its tires to absorb the shock of lifting and moving a load.

Use these NSNs for the M4K tires:

Item	NSN
Valve, extension	2640-00-242-7619
Valve	2640-01-078-1870
Tire	2610-00-177-7022

## 10-KW Generator Sets...

# Reduce Vi-i-bra-a-tion

The fuel return lines on the MEP-003A or MEP-112A 10-KW diesel generator set are taking a real beating! Vibration cracks the lines and causes them to leak.

A brass manifold can be attached to the engine to reduce fuel line vibration. Order the manifold kit on a DD Form 1348-6 by using CAGE 44940 and PN 502-1059 from RIC A12.



## Stuck Casing is Dangerous



If you hear an unusual pop while firing your M16...

Or have reduced recoil...

Or your rifle won't chamber a new round...

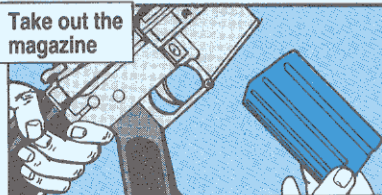
**STOP FIRING! WAIT!**

You could have a bullet stuck in the bore caused by a round with too little powder to push the bullet all the way thru the barrel. Or you could have a casing that didn't eject.

Here's what to do:

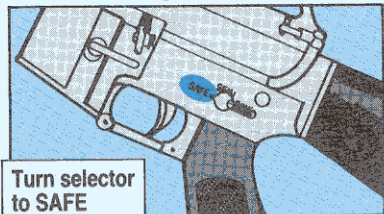
Make sure the bolt carrier assembly is forward.

Remove the magazine.

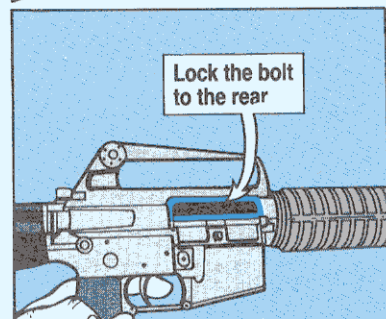


Point the barrel in a safe direction. If the rifle's hot from firing, wait 15 minutes for the barrel to cool.

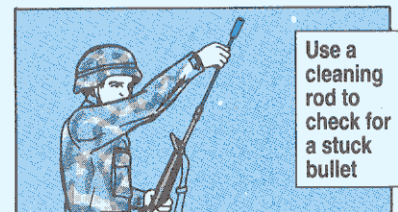
Turn the selector lever to **SAFE**. If the rifle is not cocked, the lever cannot be pointed toward **SAFE**.



Lock the bolt to the rear.



Put a cleaning rod into the bore from the muzzle end and feel for a stuck bullet.



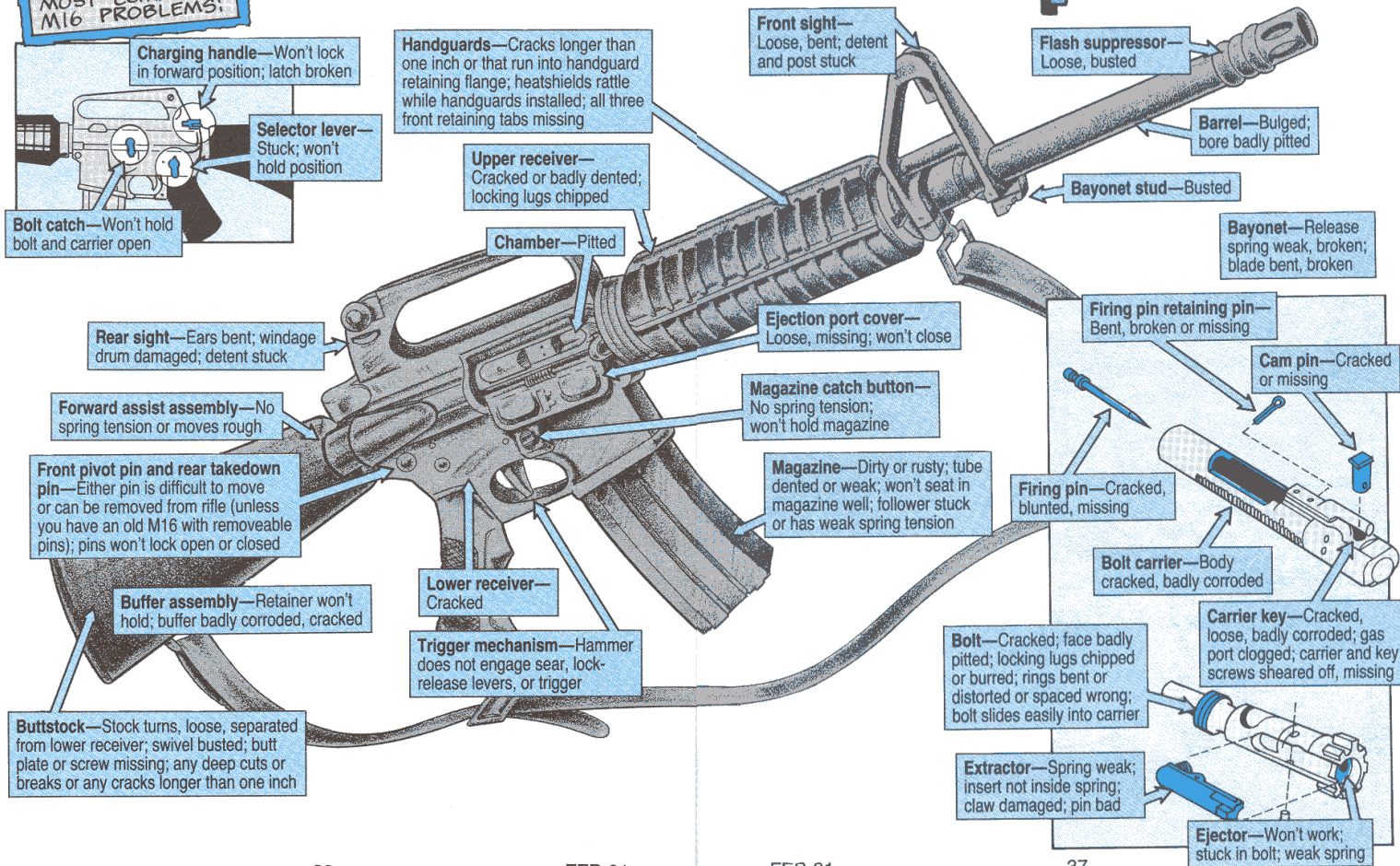
No bullet? Use the cleaning rod to poke out the spent casing.

Find a stuck bullet? Leave it alone. Your armorer removes stuck bullets.



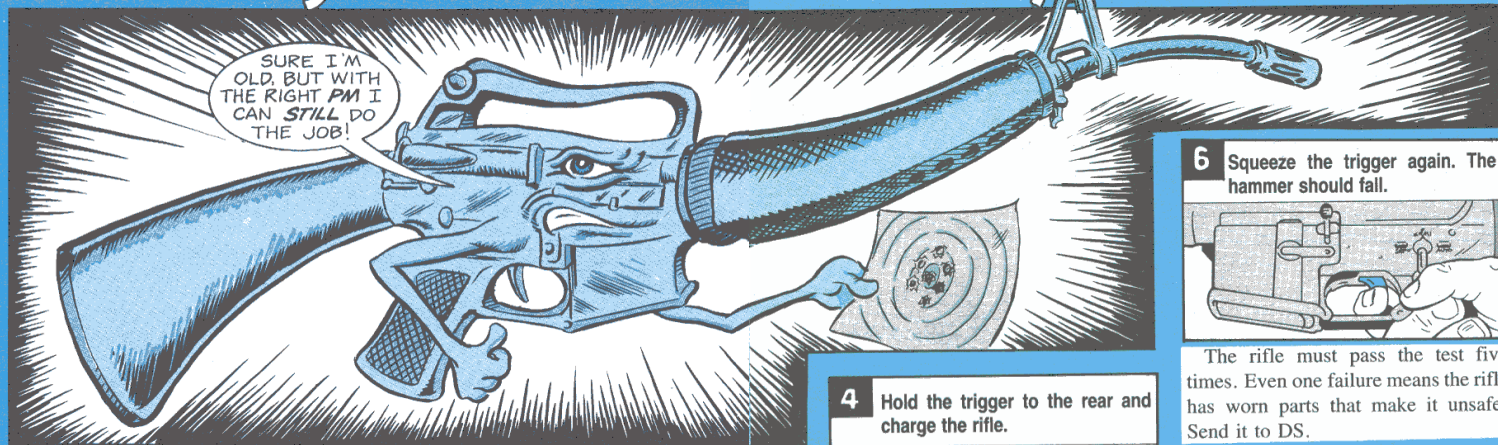
# Be Your Own Inspector

HERE ARE THE MOST COMMON M16 PROBLEMS:





# Age Makes PM More Important

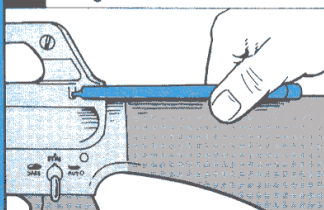


There are some M16A1 rifles in the field that have been banging away for almost 20 years. They can still do the job—if you give them attention.

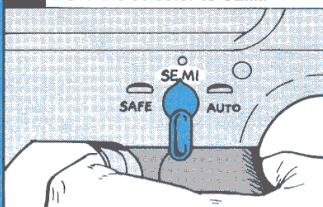
## Worn Trigger, Hammer Parts

If trigger and hammer parts become too worn, the rifle fires automatic or double-fires. Catch worn parts with this functional test:

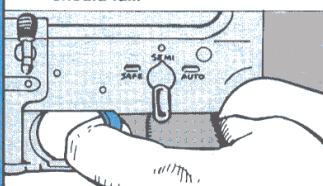
### 1 Charge the rifle.



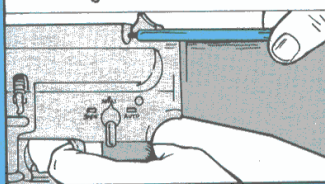
### 2 Move the selector to SEMI.



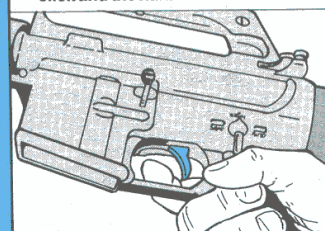
### 3 Squeeze the trigger. The hammer should fall.



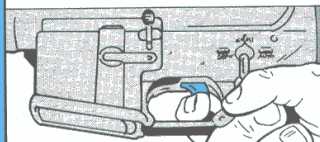
### 4 Hold the trigger to the rear and charge the rifle.



### 5 Slowly release the trigger (1/4 to 1/2 the normal release rate) without any hesitation. You should hear a click and the hammer shouldn't fall.



### 6 Squeeze the trigger again. The hammer should fall.



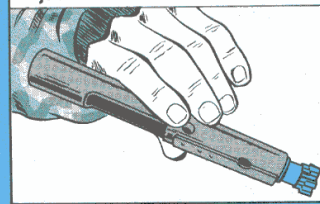
The rifle must pass the test five times. Even one failure means the rifle has worn parts that make it unsafe. Send it to DS.

## Worn Bolt Parts

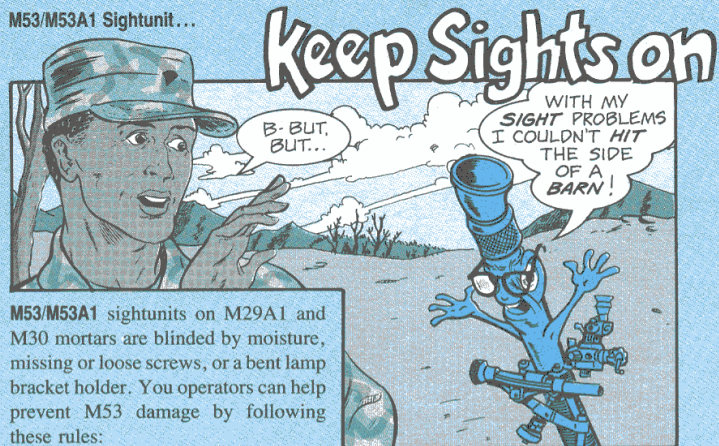
If the bolt's dirty or damaged, the rifle will fire poorly... or not at all. Work the bolt in and out of the carrier to check for binding. If cleaning the carrier and bolt doesn't cure binding, DS needs to check it out.

Turn the carrier so the bolt points down.

### 7 If the bolt falls out of the carrier, it probably needs new rings—a DS job.





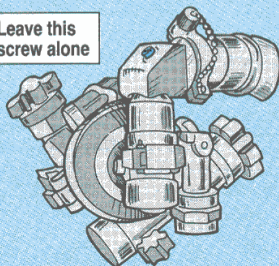


M53/M53A1 sightunits on M29A1 and M30 mortars are blinded by moisture, missing or loose screws, or a bent lamp bracket holder. You operators can help prevent M53 damage by following these rules:

✓ Always use the right screwdriver to turn screws. You're supposed to adjust the coarse elevation scale and elevation knob screws—that's an important part of boresighting.

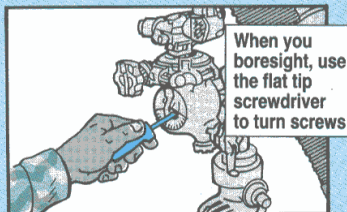
✓ But leave the elbow telescope screw alone. You can damage the telescope's seal.

Leave this screw alone



✓ When you boresight, turn screws only with the flat tip screwdriver that's part of your mortar's BII. Screwdrivers too small or big round out the screws'

slots. You can't boresight until the screw's replaced.



✓ Also, make sure screws are tight. If a screw's even a little loose, just a few shocks from the mortar can loosen the screw enough to throw off the M53's accuracy. A few more shocks and the screw falls out. No more boresighting.

✓ Stow it right. The M53 can seem to fit in its case, but if you don't do it by the numbers you'll damage the sightunit's lamp bracket holder... or more likely poke a hole in the case that dirt or moisture can come in.

# Sight Problems

✓ Also, take care stowing the M53E1 instrument light, too. If the M53E1 cables aren't positioned right, they'll damage the eyeshield or be pinched by the case lid.

Just follow the directions on the case's lid.

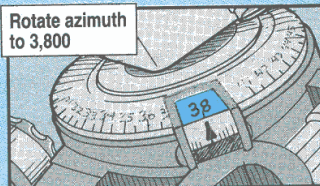
## CAUTION

### TO STOW INSTRUMENTS

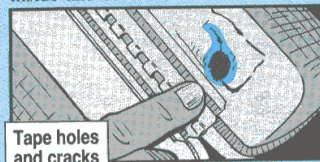
1. ROTATE AZIMUTH TO 3800 MILS (RED SCALE).
2. ROTATE ANGLE OF SIGHT TO "0" POSITION.
3. ROTATE TEL EYEPiece AGAINST LEVEL VIAL AND AZIMUTH INDEX AND LOCK.
4. STOW INSTRUMENT.
5. STOW INST. LIGHT WITH KNOB UPRIGHT, PLACE CORD ALONG SIDE OF LIGHT, THEN AROUND AZ KNOB OF INSTRUMENT AND CORD ENDS INTO CAVITIES.

Be especially careful to rotate the azimuth to 3,800... not 3,200. That's the easiest slip-up.

Rotate azimuth to 3,800



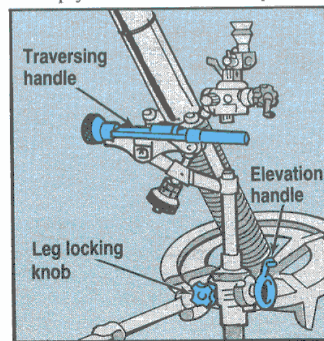
✓ If your case has a hole or is cracked, use duct tape to make a good temporary fix. Tape the hole or crack inside and out to seal it.



M252 Mortar...

## Staying Out of Binds

Help your M252 mortar stay out of binds by following two simple rules:



1 Tell your armorer if the traversing or elevation handles bind. Direct support takes care of M252 lubing, but normally only at semiannual maintenance. Sometimes M252s need lubing more often. Without lube, the elevation and traversing handles are damaged when they're forced to move.

2 Turn the leg locking knob only hand-tight—you'll see the knob's teeth mesh. If you force the knob tighter, it locks up and won't unlock. Your armorer has to use a strap wrench to free it.



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 1-1520-238-T-3** Oct Unit maintenance for AH-64A multiplex read codes

**TM 1-5855-265-23P** Aug Unit and intermediate maintenance for pilot night vision sensor (PNVS) assembly AN/AAQ-11

**TM 5-4120-387-24P** Oct Air conditioner, vertical, 66,000 BTU

**TM 5-4120-389-14** Sep MDL 3864 air conditioner, horizontal, compact, 36,000 BTU/HR, cooling and 31,200 BTU/HR, heating 208 volt, 3 phase, 50/60 hertz

**TM 5-4310-384-23P** May Air compressor, reciprocal, electric motor driven, caster mounted 5 CFM, 175 PSI

**TM 5-4930-230-10-HR** Sep Mil design tank and pump units

**TM 9-2320-280-20-1** Jan HMMWVs  
**TM 9-2320-280-20-2** Jan HMMWVs

**TM 9-2320-280-20-3** Jan HMMWVs  
**TM 9-2320-358-24&P** Jun M939A2 5-ton trucks

**TM 9-2330-213-14&P** Oct M103/M105/M107 trailers

**TM 9-2350-252-24P-1** Oct M2/M3, M2A1/M3A1 Bradley

**TM 9-2350-259-10-PMC** Oct M901 ITV



**TM 9-2350-264-24P-1** Dec M1A1 tank

**TM 9-2350-285-24P** Aug SUSV carrier

**TM 10-3510-220-24** Aug Laundry unit, trailer mounted, model M85-100

**IM 11-5820-1042-20P** Mar MK-2353/VRC installation kit

**TM 11-5820-1045-20P** Sep AN/GRC-193(V)1 radio set

**TM 11-5821-320-23P-1** Jun C-11746(V)3/ARC communication system control unit

**TM 11-5855-297-12&P** Sep AN/PAQ-4A aiming light

**TM 11-5895-1325-12&P-7-1** Sep AM/PSC-2 digital communications terminal

**TM 11-5895-1403-14&P** Jun AM-7353/G amplifier

**TM 11-5995-211-14&P** Jun Cable assemblies, power, electrical CX-13359/G, CS-13360/G, CX-13361/G and case

**TM 11-6625-3221-14&P** Jun Reference frequency oscillator (RFO) test set TS-4245/G

**TM 11-6625-3236-14&P** Aug TD-1436/G signal timing unit

**TM 55-1520-236-23-5** Jul AH-1P, AH-1E, AH-1F

**TM 55-1520-237-23-7** Oct Maintenance UH-60A, EH-60A, and UH-60L

**TM 55-1520-237-PMS-2** Aug UH-60A, UH-60L and EH-60A

## Maintenance & Safety-Of-Use Messages

**AMCCOM SOU-MSG-33-90—** Advisory, restrictions on using the 40MM MK19 Mod 3 grenade MG weapon system, AMSMC-DSM-MG 312310Z Oct 90.

**AMCCOM SOU-MSG-34-90—** Advisory, restrictions on firing M918 from M970 subcaliber ammo cartridge, AMSMC-DSM-MG 011520Z Nov 90.

**AMCCOM SOU-MSG-35-90—** Operational, handling residue from open air burning of single base propellant, AMSMC-DSM-D 061530Z Nov 90.

**AMCCOM SOU-MSG-38-90—** Advisory-Operational, M16/M16A1/M16A2 rifles, M231 firing port weapons and all other M16 series weapons, clearing barrel obstructions, AMSMC-MA 041600Z Dec 90.

**AMCCOM Maintenance Advisory MSG 90-43—**M2/M3 Bradley fighting vehicle, 2W10 cable repair at Direct Support, AMSMC-MA 100500Z Nov 90.

**AMCCOM Maintenance Advisory MSG 90-48—**M16/M16A1/M16A2 rifles, protective dust cap NSN for the muzzle end of the rifle and protective bag NSN to protect the magazine, AMSMC-MA 202150Z Nov 90.

**AMCCOM Maintenance Advisory MSG 90-47—**M2/M3 Bradley fighting vehicle, supersedes MSG 90-43 on 2W10 cable repair at

Direct Support, AMSMC-MA 211812Z Nov 90.

**AMCCOM Maintenance Advisory MSG 90-50—**CB protective mask repair, AMSMC-MAR(A) 301630Z Nov 90.

**AMCCOM Maintenance Advisory MSG 90-49—**Mobile-conduct of fire trainer (M-COFT) on M1 tank, M2A1/M3A1 fighting vehicles and M60A3 tank, RA60 disk drive head crash problems, AMSMC-MA 301830Z Nov 90.

**AMCCOM Maintenance Advisory MSG 90-52—**M1/M1A1 tanks, semiannual lubrication for turret race assembly, AMSMC-MA 101231Z Dec 90.

**AMCCOM Maintenance Advisory MSG 90-53—**M2/M3 Bradley fighting vehicle, updated info on 2W10 cable repair at Direct Support, AMSMC-MA 101500Z Dec 90.

**AVSCOM SOU-MSG-NVG-90-03—**One-time and recurring inspections of plunger contacts on the AN/AVS-6 visor mount and the power cable assembly, AMSAV-SXOF 052000Z Sep 90.

**MICOM SOU-MSG-91-01—**Advisory, safety hazard when hand tools are used on rocket motors for ballistic aerial target system (BATS), AMSMI-LC-AM 191500Z Nov 90.

**TROSCOM SOU-MSG-29-90—**Limited one-time inspection, 15KW quiet reliable generators, check ter-

minals in the select switch box, AMSTR-EOC-RP 011305Z Nov 90.

**TROSCOM SOU-MSG-30-90—**One-time inspection-limited, inspect M-1945 bakery ovens for asbestos contamination, AMSTR-MEP 292230Z Nov 90.

**USAHE CSA SOU MSG—**Maintenance on the bus metering transformer on MEP-2028A 750KW generator, CEHEC-SH 191710Z Nov 90.

**TROSCOM SOU-MSG-20-90—**One-time inspection, some of the inflatable landing boats manufactured by SMR Technologies (formerly B.F. Goodrich) under contract number DAAK01-86-D-C004 do not meet the bow height specification, AMSTR-MEP 031930Z Dec 90.

**TROSCOM SOU-MSG-31-90—**Emergency, medium chemical suits (overgarment) procured under contract number DLA100-89-C-0428 from Camel Manufacturing Co are defective, AMSTR-MEP 061530Z Dec 90.

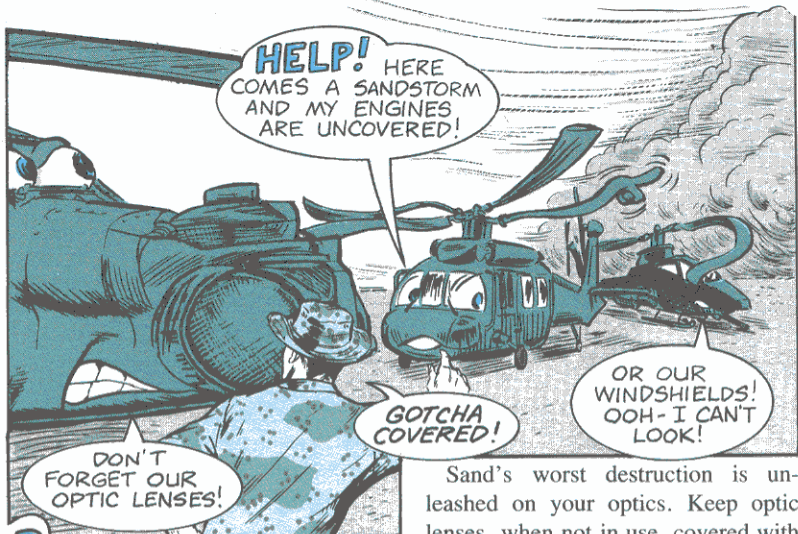
**TROSCOM Maintenance Advisory MSG 90-47—**PMCS of ground materiel involved in Operation Desert Shield, AMSTR-MEP 021800Z Nov 90.

**TROSCOM Maintenance Advisory MSG 90-45—**Battery maintenance on 10KW aviation generator set, AMSTR-MEPG 291130Z Nov 90.





# Keep Under Cover



**B**lowing desert sand will destroy aircraft windshields, optics, avionics and engines.

Minimize the damage by keeping your bird covered when parked.

Clean your windshields before you cover them. Even fine dust can scratch the windshield when the wind moves the cover. If possible, don't let the covers touch the windshield at all. Put down styrofoam, newspapers, cardboard or other non-abrasive material between the cover and the windshield. When you attach the cover, make sure it's snug. Otherwise, the wind will blow sand under the edges.

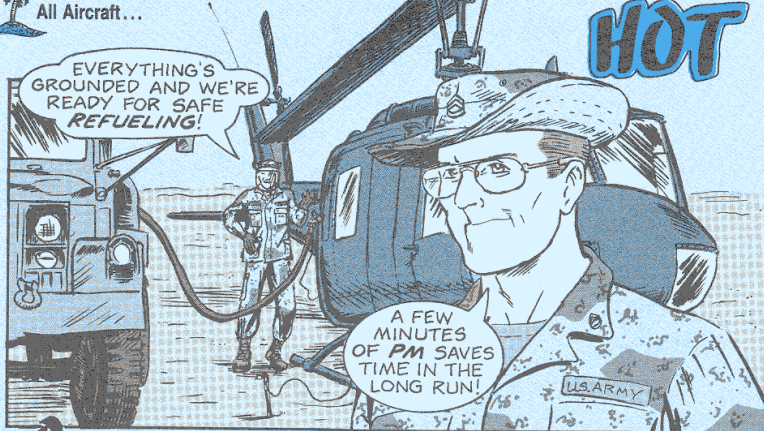
Sand's worst destruction is unleashed on your optics. Keep optic lenses, when not in use, covered with cling film, NSN 5330-00-766-0062.

If sand does its worst to your optics, its number 2 punch brings down your commo. When not in use, keep all avionics equipment covered. Just a little sand will grind delicate commo parts to a halt.

Your engine can also fall victim to the destruction of sand. Keep the engine inlet cover on and tight. If it blows off, or up, and the engine fills with sand, kiss that engine goodbye.

Also, tape all openings or seams around windows, chin bubbles and access panels. Be sure you don't stop airflow that is needed to cool the parts.



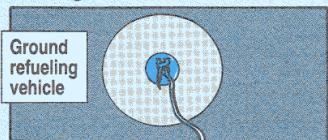


# HOT REFUELING

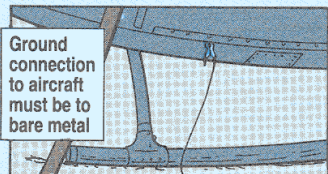
**D**esert heat and sand require additional safety and cleanliness procedures when re-fueling your aircraft.

Here are a baker's dozen steps to take:

1. Ground the refueling vehicle by attaching the ground rod clip to the nearest ground rod.



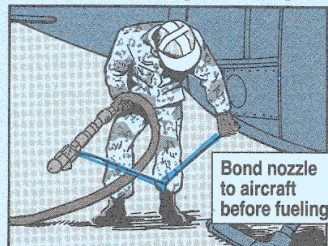
2. Ground the aircraft by attaching one end of a ground cable to the ground rod and the other end to a bare metal



part of the bird. Use the axle of the landing gear or some other unpainted metal part.

3. Wipe around the fuel receptacle with a clean cloth to remove sand and dust.

4. Bond the refueling nozzle to the bird before you take the dust cap off the nozzle and the fuel cap off the fill port.

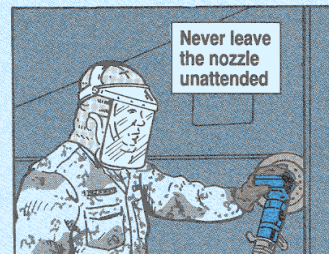


This bonding equalizes the electrical charges of the nozzle and the aircraft. If the bird has a receiver for the ground plug, use it. If not, clamp the clip to any bare metal part of the aircraft.

5. Remove the nozzle dust cap and the fuel cap off the fill port. Wipe off the nozzle and the port with a clean cloth.

6. Put the nozzle all the way in the fill port until it locks in place.

7. Never leave the nozzle unattended while refueling.



8. Stop the flow of fuel completely before unlocking the nozzle from the port.

9. Remove the nozzle and cap the receptacle.

10. Wipe off the nozzle dust cap and recap the nozzle. Wipe the nozzle clean.



11. Disconnect the nozzle bond and return the nozzle to standby away from the aircraft.

12. Disconnect the ground plug from the aircraft.

13. Follow all the info in FM 10-68, Aircraft Refueling.

Ground rods are easily bent and often left behind. Order new ones with NSN 5975-01-050-5707.

Leather gloves need to be disposed of when they become fuel soaked. Order new ones with:

Size	NSN 8415-00-268-
1 (sm)	7871
2 (sm/med)	7872
3 (med)	7869
4 (med/lg)	7870
5 (lg)	7868

## Aviation Messages

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

OV-1-91-01, SOF, OV-1D/RV-1D elevator trim tab attachment hinge brackets fluorescent penetrant inspection, 041800Z Oct 90.  
GEN-91-ASAM-01, ASM, Maint Mandatory, all aircraft, one time in-

spect of stock to purge discrepant P/N AN 320-6, NSN 5310-00-176-8110, nuts, 021800Z Oct 90.  
CH-47-91-ASAM-01, ASM, Maint Mandatory, CH-47D, aft transmission cooling fan vibration check,

222100Z Oct 90.  
OH-6-91-ASAM-01, ASM, Maint Mandatory, OH-6, change to overhaul and retirement schedule and update on maint info, 051800Z Oct 90.

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





# Using Solvent Safely



**M**any TMs say use drycleaning solvent P-D-680 to clean equipment. Because you use it frequently, it's easy to become complacent about safety . . . but don't!

The vapors from P-D-680 in a closely confined area can kill and the liquid can burn your skin.

Best advice: wear solvent-resistant clothing and gloves, and a face shield or goggles, when you use P-D-680.

If you get solvent on your skin, wash with soap and water ASAP!

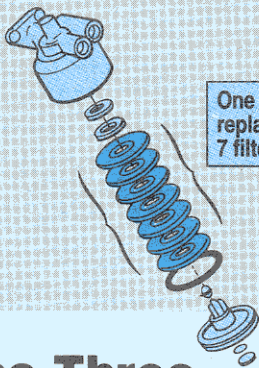
If you have to work in close quarters or in a poorly ventilated area, use a respirator. Get your local occupational safety and health or preventive medicine folks to show you the right one and how to use it. (One respirator does not fit all uses. Some respirators will not protect you from the P-D-680 fumes.)

UH-1, AH-1 T53 Engine...

## Power Plant Filter Update

**O**der the fluid filtering disk, Item 9 of Fig 47 of TM 55-2840-233-23P, with NSN 2945-01-115-9547 . . . and order just one!

The TM tells you to order 7 of the old disks, NSN 2945-00-736-3978. But the new disk is an assembly. One will do the job that it took 7 of the old disks to do.



One assembly  
replaces all  
7 filters

DA Pam 738-751...

## Note These Three

**H**ere are three noteworthy points about DA Form 2408-13:

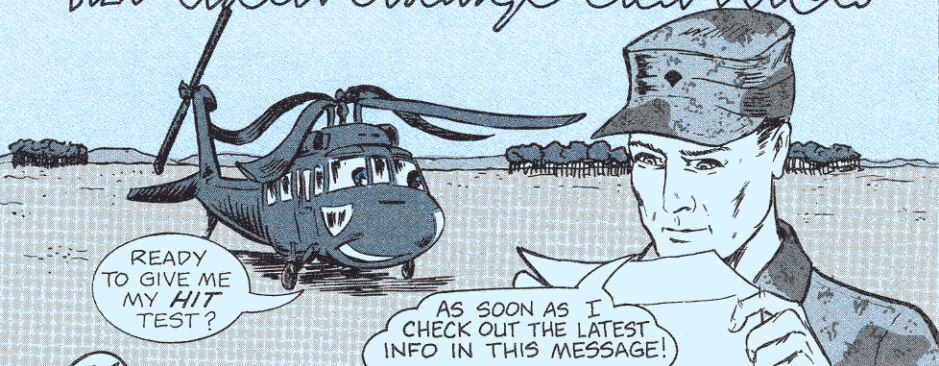
1. Flip to Para 3-7i(3) on Page 18 of DA Pam 738-751. The attention line on the Corpus Christi Army Depot (CCAD) address is now AMSAV-MRAT (STOP 55). Send completed DA Form 2408-13 to them by 4th class, book rate mail.

2. This office at the CCAD maintains all aircraft phase maintenance checklists. You can call them for information on completed phases. Dial DSN 861-2023/3414 or Comm (512) 939-2023/3414.

3. Remember to record completed phase maintenance on DA Form 2408-15, too.



# HIT Check Change Clarified



**H**ealth Indicator Test (HIT) procedures for your Black Hawk's T-700 engines are being changed to cut down on the number of aborted flights.

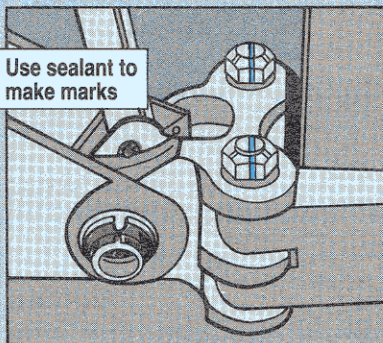
When you make the before-first-flight-of-the-day HIT check, you now have a 5-degree leeway on both ends of your Turbine Gas Temperature (TGT) acceptance limits.

Here's an example: If your TGT acceptance limits are 35 degrees and -5 degrees, you can still fly with readings of 31, 32, 33, 34 or 35 degrees and -1, -2, -3, -4 or -5 degrees.

Make sure you make the appropriate entry in the REMARKS block of DA Form 2408-13.

The word on this change is in AVSCOM Maintenance Information Message UH-60-89-MIM-11.

## Marking Slippage



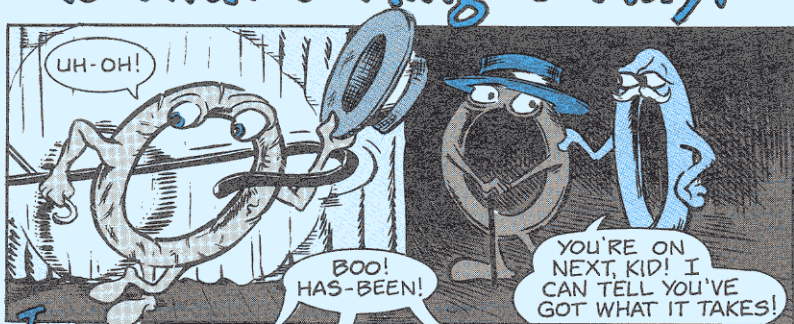
**A**pplying slippage index marks to nuts, bolts and adjoining surfaces can be messy and ineffective.

TMs say to use lacquer or other suitable marking material. Lacquer is thin and runs and takes a small brush and a steady hand to apply.

Instead, try an "other suitable marking material" such as sealant, NSN 8030-01-077-7674. It comes in a small squeeze tube, is white and won't run or drip.



# Is That O-Ring O-Kay?



**T**he ONLY O-rings you use on aircraft are those listed in aircraft TMs! The O-rings in assortment kits don't meet aircraft requirements and should never be used.

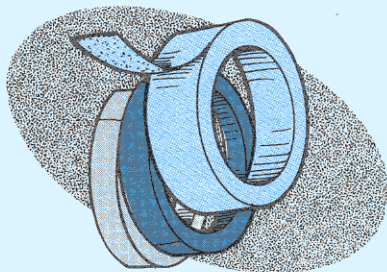
Remember, too, that aircraft O-rings don't have an expiration date. If one is stamped on the the O-ring package, ignore it.

O-rings used in aircraft maintenance have an indefinite shelf life. You determine whether they are good or not by a thorough visual inspection. If an O-ring is cut, nicked, brittle or flawed in any way, throw it out.

## Is It Clear?

**P**ilots can't see clearly if you mark instrument limitations on gages with opaque tape.

So always use semitransparent color tape to mark gages.



Color	NSN 7510-00-550-
Yellow	7125
Red	7126
Green	7129



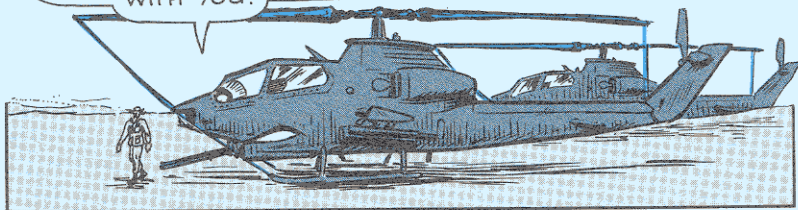
Cobra...

Keep  
a

LEVEL

Attitude

KEEP MY BLADES **LEVEL**  
AND I'LL BE ON THE LEVEL  
WITH YOU!

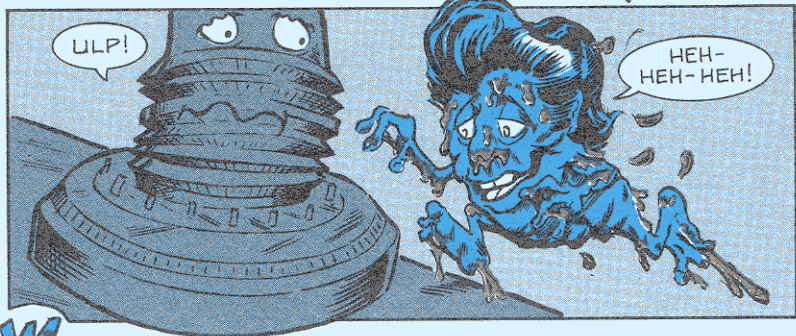


**A**lways tie down Cobra blades so they are level.

Less than level causes the rotor hub's elastomeric bearings to develop a set.

Your -23 TMs don't tell you to keep it on the level, but it's in Para 2-5.e. of TM 1-1520-250-23-1, General Tie-down and Mooring.

**NO GREASE BALLS!**



**W**hen you lube the Cobra's scissors and sleeve assembly, excess grease oozes down the sleeve and ruins the Teflon-lined bearings of the uniball.

To save the balls, cut the safety wire and raise the swashplate lower boot before you lube. Spread some paper towels under the boot to catch the grease.

After you've lubed, pick up the towels, clean the boot and wipe the grease from the uniball with a clean, lint-free cloth. Put the boot back in place and attach the safety wire.



# Stop Corrosion in It's Tracks

THOSE SMALL PIECES OF GEAR THAT GO EVERYWHERE YOU DO, LIKE BACKPACK AND SQUAD RADIOS, NEED PROTECTION FROM MOISTURE—**ESPECIALLY** IN WET WEATHER.

COME IN ALPHA LEADER, THIS IS **BRavo** REPORTING... COME IN!

HAVE ALL SQUADS CHECKED IN? WE'VE GOT TO MOVE OUT!

EVERYONE BUT **BRavo** SQUAD! I CAN'T GET THROUGH TO THEM! THEIR RADIO MUST BE OUT!



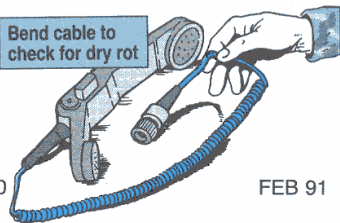
**A**fter you do everything your TM tells you, add extra moisture protection by wrapping your handsets, headsets, speakers and radios in plastic, such as garbage bags. Be careful with your AN/PRC-25 or -77 backpack radios, though. Make a hole in the plastic bag's bottom for battery gas to escape.

When the outside of your gear gets wet, wipe it dry. If water gets inside, get the set to support so they can dry it out.

If your gear is covered with canvas, remove it and inspect the gear for moisture every week.

Look at cords and cables for dry rot. Bend them over your finger. If you see

Bend cable to check for dry rot



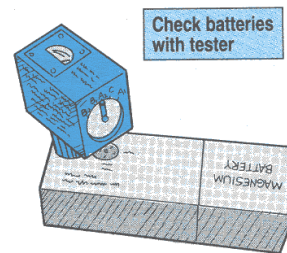
cracks, cables are dry rotted. Seal them with silicone grease, NSN 6850-00-880-7616.

## Battery Bits

Dry-cell batteries need to be removed when you won't be using your gear for a while. Corrosion is like weeds in a garden. It quickly takes over your batteries in humid areas. That corrosion KO's the gear that the batteries are in, too.

Batteries don't last long in the heat. Give them extra life by keeping them in a refrigerator when not in use.

In the field, test your batteries with the AN/PSM-13 battery tester. The



tester will tell you how much life the power pack has left.

The PSM-13 won't test all dry cell batteries, but it does test the most widely-used ones—like the BA-4386 in your backpack set. TM 11-6625-823-15 for the PSM-13 test gives details.

## Cover Up Connector

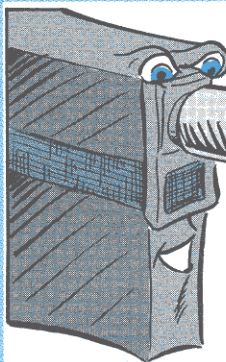
Protect connectors by using the covers. But watch it! Connectors corrode even when covered up, so you'll need to eye them often.

If you see corrosion, use a pencil eraser to clean it off. Sealed connectors corrode too. Keep the dust cover on when not in use.

By using common sense and these PM tips, you can stop corrosion in its tracks.



# DMD Battery Cable Fix




THIS CABLE PROTECTOR  
MAKES SURE THAT MY  
POWER IS FLOWING!

**T**he rubber-coated external battery cable on the AN/PSG-2A digital message device (DMD) kinks and cracks very easily. This leads to broken inside wires, which puts the system down unless there are either internal batteries or vehicular power available.

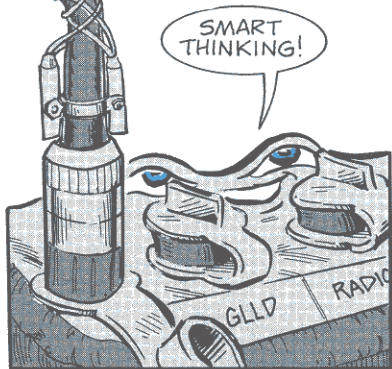
Here are some ways to protect this battery cable:

 Put safety wire on the connector clamp. Wrap the wire around the cable five or six times, then twist the wire ends tight.

 Use a cable grip. When you replace the DMD cable connector, slip a cable grip onto the cable end. Order the cable grip on DD Form 1348-6 with CAGE 81992 and part number 073-10-001.

Mount the cable grip tabs to the connector clamp with screws.

Make sure the cable grip is tight by using a clamp on the end. Order the clamp on DD Form 1348-6 with CAGE 06164 and part number QS200M6S.





# Fuse NSNs

TM 11-5805-304-24P  
SHORTCHANGES YOU ON  
FUSE *NSNs* FOR THE  
POWER SUPPLY AND *SB-86*  
SWITCHBOARD.

Here are the available NSNs:

Item	NSN 5920-00-
Power supply fuse	296-2439
Switchboard fuse	156-7375

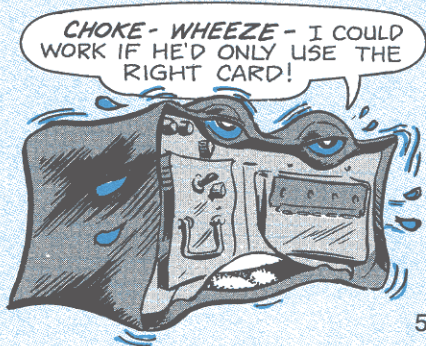
The power supply fuse NSN is not on the AMDF. Order on DD Form 1348-6 from S9E. In the Remarks block, put "NSN not on AMDF."

You might also need the lightning arrestor assembly, which comes with NSN 5920-00-510-7605.

IT'S A DEAL YOU CAN'T *RE FUSE!*

AN/TTC-39A Telephone Central...

## Play the Right Card

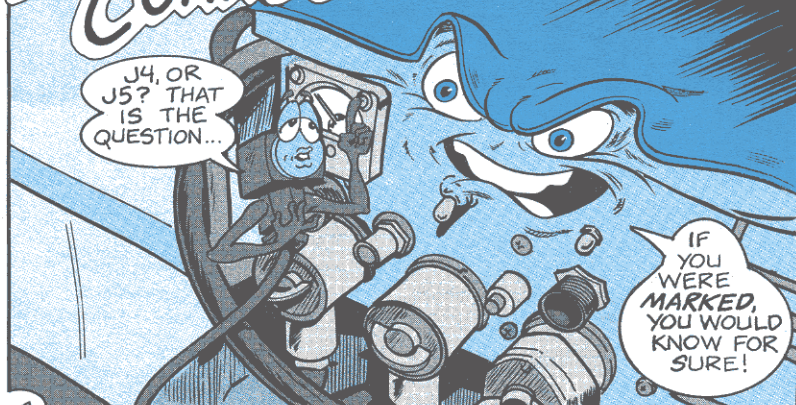


If you get transmission errors when you use the TD-1065/G High Speed Serial Data Buffer with an AN/TTC-39A telephone central, you're probably using the wrong circuit card.

The basic circuit card, NSN 5998-01-034-3901, will not work with the AN/TTC-39A. Replace it with the B model circuit card, NSN 5998-01-189-7995.

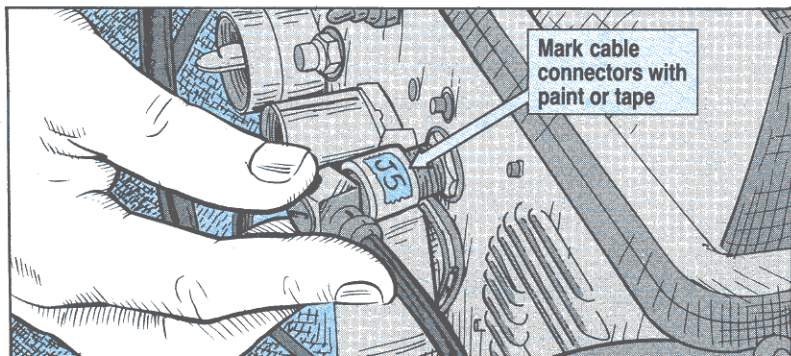


# Paint or Tape Marks the Connections



**I**t's easy to mix up the RF cables to the J4 and J5 jacks on the front panel of the AM-6545 power amplifier because the cable connections look alike. But if you connect the wrong cable to the jacks, the power amplifier gets damaged.

To get the right cable hook up, mark the connectors. Put a dab of red paint on the cable connector and the panel connector for the J5 jack. Then mark the J4 cable connector and panel connector with yellow paint.



Or, you can do like the folks at the 58th Light Equipment Maintenance Co at Ft Bragg and label the connections with tape.

Either way will help you make the right connections.



# Take it Easy

HERE  
ARE SOME  
DOs AND DON'Ts  
WHEN YOU OPERATE THE  
PATRIOT'S OA-9054 (V) 4/G  
HYDRAULIC-PNEUMATIC  
ANTENNA ON THE  
ANTENNA MAST  
GROUP.

## DOs

**DO** inspect the mast base tube collar for loose bolts before each use. If the bolts are loose, do not raise the mast. Notify your repairman.

**DO** tighten the pinch bolt on the mast tube restraint bracket when you do routine maintenance. This helps keep the cable from slipping out of the bracket.

**DO** monitor the mast regulator pressure gauges carefully to make sure they are operating properly.

**DO** put a temporary tag on the pressure regulator that reads: **CAUTION—DO NOT ADJUST REGULATOR** until permanent warning labels are distributed.

## DON'Ts

**DON'T** try to extend or cycle the antenna if the mast jams. Report it to your maintenance folks so they can stow or replace it.

**DON'T** exceed 35 PSI when extending the antenna.

**DON'T** leave the mast unattended while it's being raised or lowered.





# Smoking Satisfaction



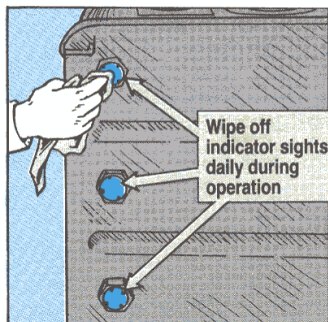
Light up on these tips for real smoking satisfaction for your M157 smoke generator:

Before you put the engine valve on the engine head, gently push up on the center of the valve so it has a slight rise where it fits on the head. That will

Push up center of valve slightly for better seal



even out the valve petals and make a better seal.



Wipe off the indicator sights on the fog oil tank every day that you operate.

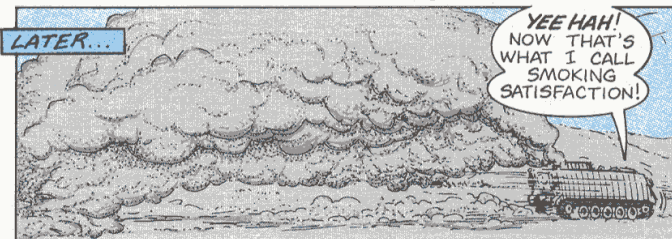
That saves you and your repairman the trouble of draining the tank to remove the sights for cleaning.

If fog oil's not getting to the generator, a clogged fog oil tank strainer is usually the problem. Make



No fog oil? Check tank strainer

that your first check. Clean it with drycleaning solvent, NSN 6850-00-281-1985.



M24, M25A1 Masks...

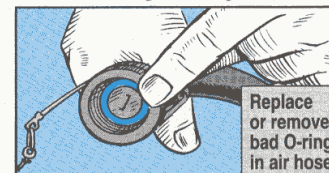
## Connect to Coupling Protection

The cannister coupling on the M24 and M25A1's carrier can easily get plugged up where it sticks through the carrier. That makes for hard breathing when you use the mask.

M16 rifle barrel caps make excellent coupling covers. They fit tight and your unit armorer probably has extras.

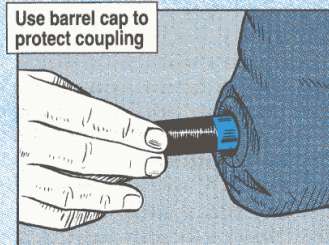
Uncap the coupling only to use the mask.

If the air compressor won't shut off, check the O-rings in the quick discon-



nects of the air hoses. A bad O-ring causes a bad seal. Remove the O-ring. That will improve the hose seal enough to operate. Get the O-ring replaced as soon as possible.

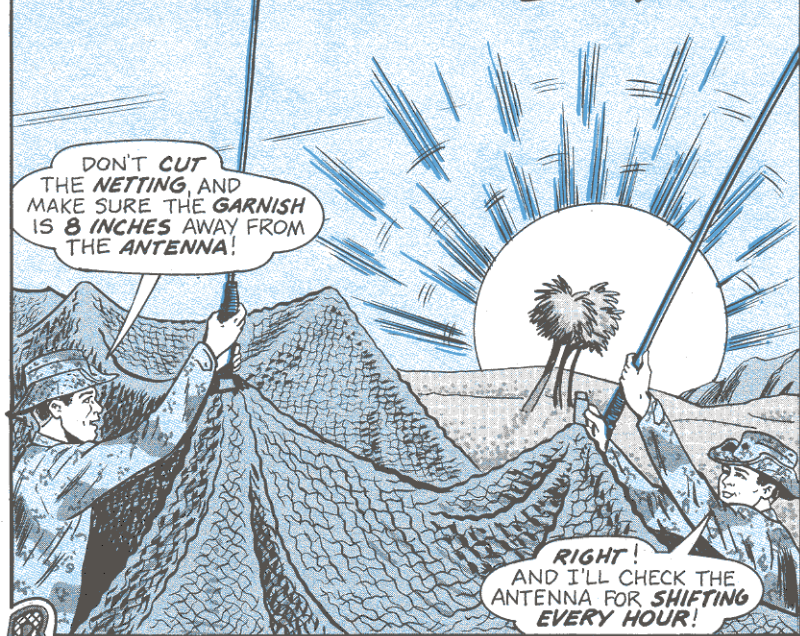
Use barrel cap to protect coupling







# Screening's Not Fireproof



Radar scattering screening can catch fire when you transmit if the garnish touches the antenna. Make sure the antenna is 8 inches away from the garnish by cutting a hole in the garnish and folding it back. Don't cut the netting.

Look at the screening every hour or so to be sure that the support poles don't sink into the sand or shift around. If they do, the screening could be touching the antennas.

Desert winds and sandstorms can also cause the camouflage screening to shift. The extra weight of sand makes

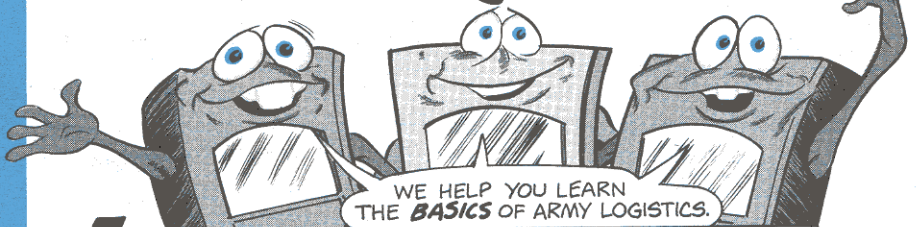
the poles shift and settle. Knock sand off the screening before it builds up.

If your camouflage screening gets damaged, order a screen repair kit that matches your type screening with these NSNs:

Desert Radar Transparent Kit	
NSN 1080-01-073-3220	Type I
Desert Radar Scattering Kit	
NSN 1080-01-075-4014	Type II
NSN 1080-01-266-1833	Type III
NSN 1080-01-266-1834	Type IV



# AMDF Training Video Tapes



**T**here's a set of 3 video tapes available to tell you all about using the Army Master Data File (AMDF). They're called: The Army Master Data File, Your Key to the Army Supply System, Production Identification Number (PIN) 706177DA (TVT 38-29). The video tapes can help you and your unit learn the basics of Army logistics and keep up-to-date with the supply system. Get them from your local Visual Information Support Center or Training Support Center.

Make sure you ask for the size tape that fits your VCR—either ½ inch or ¾ inch.

## Argon Gas Cylinder NSN

**G**et the argon gas cylinder for your inert gas welding outfit with NSN 8120-00-282-8077. It's authorized by Appendix A of CTA 50-970. When you get the cylinder, order gas to fill it with NSN 6830-00-290-4291. OCONUS units can initially order a filled cylinder with NSN 6830-00-985-7281. When it's empty, order gas just like CONUS units.

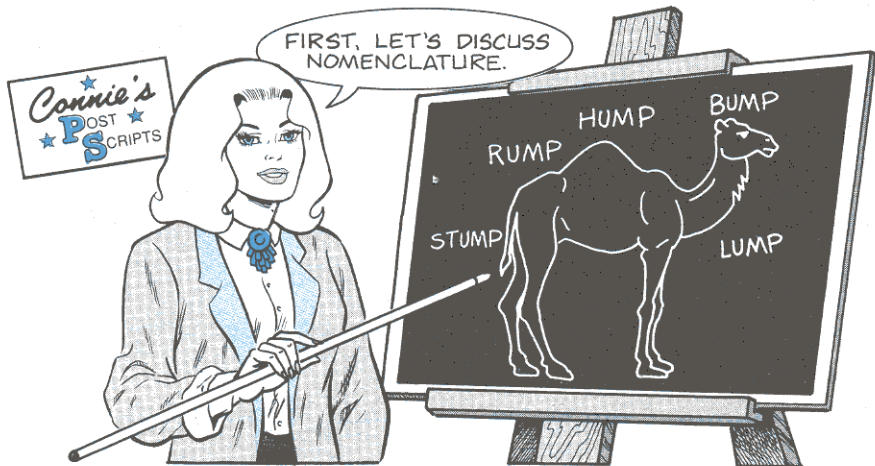
## PU-620/M Generator Knob

**TM** 5-6115-365-15 doesn't list the NSN for the knob on the distribution box to switch from generator to generator. Get the knob with NSN 5355-01-166-3672.

## Take Control of Your TPU

**G**et the remote control ON-OFF switch cable for your electric pump assembly tank and pump unit with NSN 6150-01-191-9732. The switch cable is shown on Page 1-5 of TM 5-4930-230-13, Fig 4 of TM 5-4930-230-23P and was added to the components of end items list on Page C-5 by Change 7.



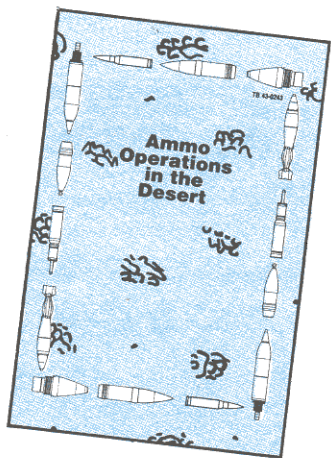
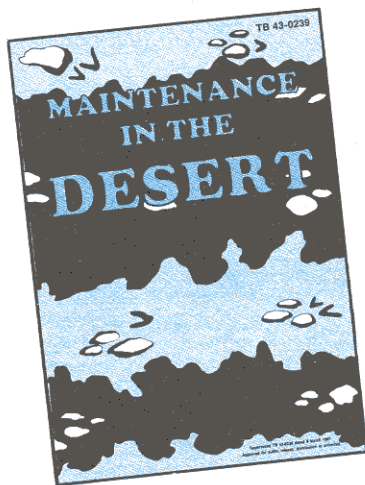


### Desert TBs Available

TB 43-0239, Maintenance in the Desert, has been updated with the latest Lessons Learned information.

TB 43-0243, Ammo Operations in the Desert, gives info on ammo handling, safety, movement and storage.

Get the TBs by having your pubs clerk order them on DA Form 4569. To get future changes to these TBs, your pubs clerk adds them to your 12-series requirements, using form number 12-34E and block number 0533 for TB 43-0239 and form 12-34E and block number 4221 for TB 43-0243.



### Practice Fuze NSNs

If your unit needs practice in setting mechanical time or superquick (MTSQ) fuses and putting together artillery rounds, order an M577 practice fuze with NSN 1390-01-M94-0120 and an M582 with NSN 1390-01-M94-0127. They are special NSNs you won't find on the AMDF, but they're good.

### Substitute Socket in M242 Repair

Use 4-mm, 1/4-in drive socket, NSN 5120-01-026-9406, as a substitute for the 5/32-in socket called for to remove the M242 gun feeder electrical connector. The 4-mm socket is part of both the No. 1 and No. 2 Common automotive shop sets.

### Prop Shaft NSN Correction

Hold one before ordering NSN 2520-00-040-2338 for the transfer to forward rear axle prop shaft on your M939, M939A1, -A2 trucks. That shaft's too long for the job. Instead, order NSN 2520-01-114-7690 for a propeller shaft that fits.

### M1A1 Tank MRS NSN

TM 9-2350-264-24P-2 doesn't show the right muzzle reference sensor (MRS) and its mounting bolts. Get the MRS with NSN 1240-01-276-6628. You'll need four bolts, NSN 5306-01-209-0631.

### AN/PRC-126 Radio Knob NSNs

Figure C-2 of TM 11-5820-1025-24&P doesn't give the NSNs for the channel selector knob or volume knob. Get the channel selector knob with NSN 5355-01-283-6567 and the volume knob with NSN 5355-01-283-6568. Make a note until the TM is updated.

### Aircraft Engine Hotline

Stumped by a problem with your bird's engine? Call the Corpus Christi Army Depot's Engine Service Center Hotline. Dial DSN 861-2651 or Commercial 512-939-2651. Give them the engine model and serial numbers; the time since new and since the last depot repair of the engine; and your name, rank, address and phone number. While you've got them on the horn, ask them to send you one of their Hotline decals. Stick it near your engine TMs.

### Longer CVC Cord

Need a longer cord from the radio and intercom junction box to your CVC helmet? Get the CX-13037, 23-ft retractable cord with NSN 5995-01-136-5973 if you have a DA-132A helmet with MK-1697/G headset-microphone kit. If you have a DH-132 helmet with the MK-1039/G kit, order the CX-10767/GR, 35-ft retractable cord with NSN 5995-00-434-5755. These longer cords let you move around without pulling out the connector.

### Welding Flux NSN

The welding flux listed in SC 4940-95-CL-B04 for the M887 contact maintenance truck has been dropped. But you can order flux, NSN 3439-00-255-4576. It works just as well. Make a note of this until the SC is updated.

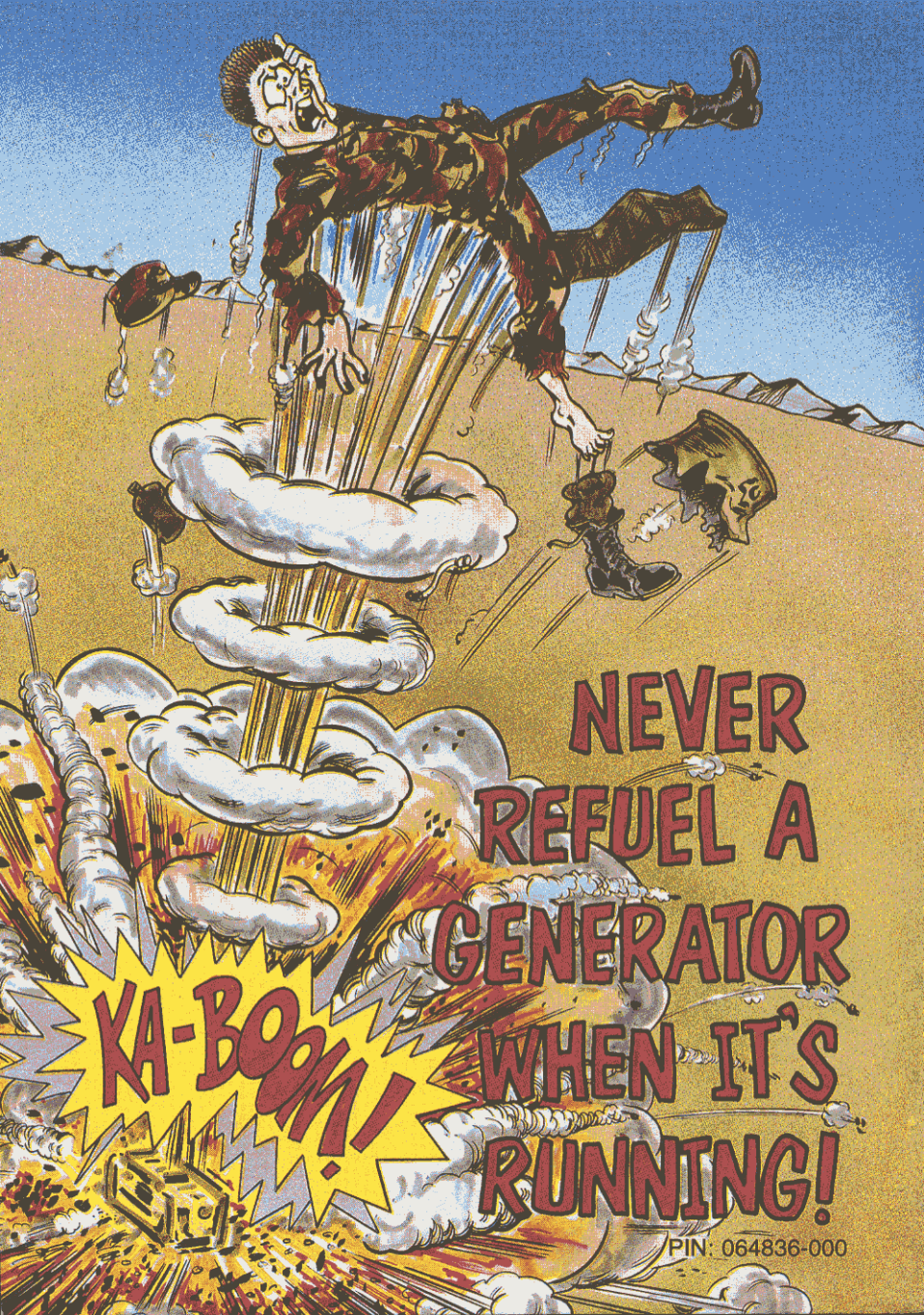
### New M13 Decon Trainer

There is a new plastic M13 decon trainer available that will eliminate rust problems. When your metal trainers become unserviceable, order the plastic trainer with NSN 4230-01-298-1044.

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?**





**NEVER  
REFUEL A  
GENERATOR  
WHEN IT'S  
RUNNING!**

**KA-BOOM!**

PIN: 064836-000