

Issue 452

PS

July
1990

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-452

*HOLD IT,
SQUIRES! THAT
SCREWDRIVER
COULD BE LIKE
THE NEGLECTED
NAIL THAT
CAUSED A
KINGDOM TO
BE LOST!*

FINISHED AT LAST!
HMM... DID I PUT THE
SCREWDRIVER BACK IN
THE TOOL BOX?

YEAH, I
GUESS SO.
C'MON LET'S
GO!

One Failure Leads To Another

ONE BOLT GOES... WE ALL GO!
JUST LIKE DOMINOES!

Each bolt, nut or screw on a vehicle is important. It's there for a purpose. Some are more critical than others, but each has a job to do.

Bolts are like dominoes lined up in a row. When one falls, it strikes another and another until they all fall. A similar

chain reaction happens when a bolt fails. More stress is put on the bolts around it. Another fails, and another until a truck or tank is stopped dead in its tracks. A piece of equipment breaks down—somewhere, everyday—because of a bolt somebody overlooked.

Never let that somebody be you. Check all bolts—even the ones that are hard to see—for shiny spots or corrosion around the head or nut. If a bolt is covered with dirt or grease, wipe it off. Call your mechanic if a bolt doesn't look right.

Suspension bolts and most brake system bolts are under the vehicle—out of sight and often out of mind. If these bolts fail, the driver and the vehicle are in trouble. Suspension bolts help with steering and control while brake bolts play their part in stopping the vehicles.

Bolts on top of a vehicle also get overlooked. If your truck has a machine gun mount, look close at the bolts in the supports. They vibrate loose and let the heavy mount rock the cab, causing cracks. The only fix for a cracked cab is an expensive replacement.

All it takes to check the bolts like every PMCS says is a good eye and a little time. It's worth the investment.

OH, MY!



THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-452, 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:

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Spotlight on

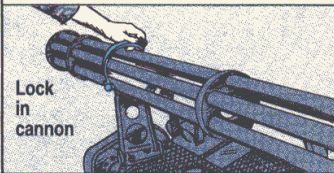
MOST SOLDIERS LEARN ABOUT VULCAN WEAK SPOTS THE HARD WAY-- THEY BREAK STUFF!

BUT I'M GOING TO GIVE YOU THE SHORT COURSE ON WHAT TO WATCH OUT FOR ON THE VULCAN!



Cannon

Same goes for the cannon. If you don't lock the cannon in stow before you go, the cannon waves back and forth and destroys the azimuth drive assembly. Make sure the brakes and travel lock hold during PMCS. Rough country can break the lock, so check during stops, too.



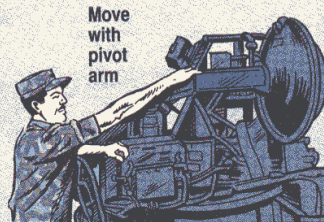
Lock in cannon

Radar

All the radar components—receiver-transmitter (RT), computer, power supplies—go down fast if water gets in their cases. Keep the seams of their cases taped to seal out water. Take extra rolls of tape, NSN 8315-00-253-6293, to the field in case any of the cases have to be resealed.

Dish

Hands off the dish. If you use the antenna dish as a handle to pull or push it in place, you ruin the brakes inside the servo mechanism. Move the dish with the pivot arm.

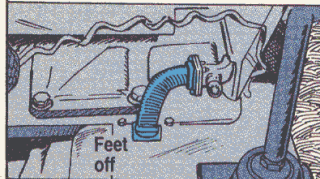


Move with pivot arm

Once you get the M167 antenna in the stow or operating position, lock it in place with the antenna stow bolt. If you forget, the antenna swings loose and bashes into something.

Weak Spots

Climb in and out of the gunner's compartment so your feet don't come near the wave guide. One good bump breaks it. Your Vulcan's deadlined until the wave guide's replaced.



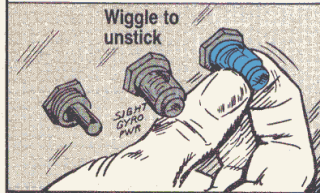
Watch the mount battery connectors, too. If you step on a connector, the battery arcs out.

Don't pile things like coats around the RT. That cuts off air to the RT and it overheats.

Be careful tightening the power supply cable connectors with your pliers. It's easy to knock off the power supply circuit breakers as you turn the connectors.

System Distribution Box

If you have no power to the inverter or sight gyro and troubleshooting turns up nothing, wiggle the circuit breakers on the system distribution box to see if they pop out. Sometimes they stick and all you need to do is push in the breaker.



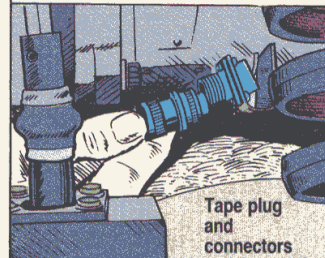
Wiggle to unstick

YOUR VULCAN IS A HIGHLY TECHNICAL, SOPHISTICATED WEAPON-- SO IT IS LOGICAL TO MAINTAIN IT!



W3P2 Cable

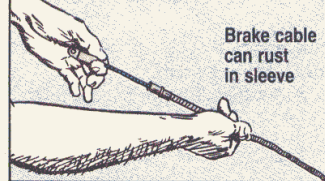
The W3P2 cable connector must be disconnected from the cannon after firing for safety. But that leaves the W3P2 connector and cannon plug open to sand and corrosion that will stop your Vulcan from firing. Tape the plug and connector with the tape used on the component cases when you're through firing to seal out sand and corrosion.



Tape plug and connectors

No Brakes

When you park your M167 Vulcan at the motor pool, chock the wheels instead of setting the handbrakes. If a Vulcan sits for a long time, the brake cable rusts in its sleeve. It's a tough job getting the brake unstuck.



Brake cable can rust in sleeve

Timing Is



If you don't take the time to time the cannon and drum, your Vulcan's in for a bad time. The feed chutes, DC feeder, exit unit and cannon suffer most. Everytime you load, time the M163 and M167's cannon like this:

Cannon and Feeder

▲ Hold the BRAKE-CLEAR and BRAKE switch to BRAKE, depress the cannon timing pin, and turn the cannon by hand until the timing pin catches.

▲ Make sure the feeder timing pin catches at the same time. That means the cannon and feeder are timed.

▲ Check that both timing pins pop out when released.

▲ Set the shift pin handle to F.

Drum

Time the M163's drum like so:

▲ Set the shift pin handle to N.

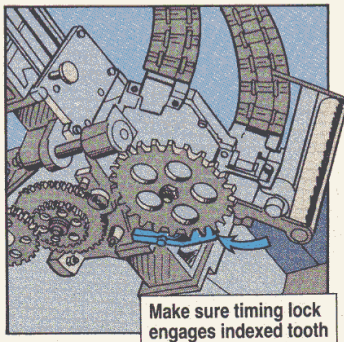
▲ Rotate the conveyor gear knob until its indexed tooth is opposite the notch in the timing lock.

▲ Pull up to unlock the conveyor unit locking handle.

▲ Pull the conveyor unit to the load position.

▲ Lock the locking handle.

▲ Make sure the timing lock notch engages the indexed tooth. If it doesn't, rotate the conveyor gear until it does.

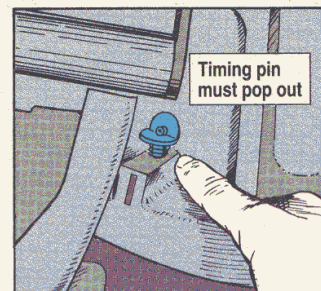


Everything

▲ Push in the round positioning pin once the drum's loaded and turn the takeoff gear clockwise until a round is against the pin.

▲ Push in on the drum timing pin while slowly turning the takeoff gear counterclockwise. Turn the gear until the round positioning pin pops out and the drum timing pin pops in.

▲ Let go of the takeoff gear knob, then the timing pin. Make sure the timing pin pops out.



M163A1/2 Vulcan...

Shortcut MILES Problems

Dear Editor,
If the Vulcan's W6 cable is left on the left side of the sight when you train with the Multiple Integrated Laser Engagement System (MILES), it gets ripped off when the cannon is elevated. But that's simple to prevent. Reroute the cable like this:



The cable's out of harms way.
SSG Gary Kuntz
SPC Phillip Picardant
SGT Michael Marcotte
Ft Stewart, GA

(Editor's note: You're on the right reroute. One other MILES point to remember:

MILES also can short out the distribution box, which prevents actual firing. Use a multimeter to check for 330 volts at the firing contact at the W3 cable. Do it after every training mission.)

OKAY SLOTTY BEAM ME UP!



Temperature Makes a Difference

Big temperature changes—over 50°F—make the pump for the hydraulic accumulator work hard and wear out fast.

If you're operating the M901 in the desert, keep track of temperature changes of more than 50°F. Adjust the accumulator's pressure according to the chart. Use the chart, too, to adjust the pressure as the seasons change. This chart is an update to the one in TM 9-2350-259-20:

Temp (F)	Pressure (PSIG)
Below 0	825
0-40	900
40-80	1,000
80-120	1,050
Above 120	1,125

The Image Transfer Assembly also needs temperature attention as the seasons change or you will be spending extra time purging it and changing its desiccant.

... THEN DROPS DOWN TO HERE, IT'S TIME TO ADJUST THE PRESSURE!

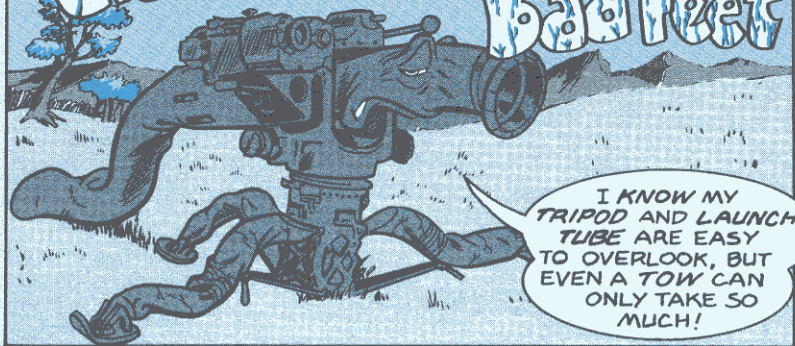
IF THE TEMPERATURE STARTS UP HERE...

Use this—also an update to the TM—for the ITA:

Temp (F)	Pressure (PSIG)
Above 110	4
85-110	3
55-85	2
30-55	1
5-30	.5
Below 5	0

Before you charge either the hydraulic accumulator or ITA, purge the charging lines by blowing pressurized nitrogen through them. That removes any contamination in the lines.

Crack Down on Cracks, Bad Feet

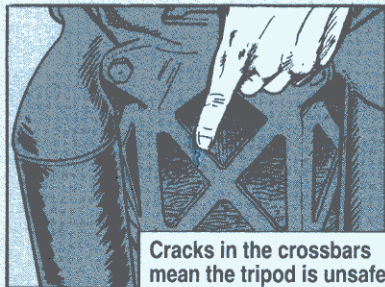


I KNOW MY TRIPOD AND LAUNCH TUBE ARE EASY TO OVERLOOK, BUT EVEN A TOW CAN ONLY TAKE SO MUCH!

Two TOW components that often get overlooked during PMCS are the tripod and launch tube, mostly because they seem so simple and basic. If you miss things like cracks or bad feet, though, they can cause the TOW system to shatter or collapse during firing.

But it's simple to keep the tripod and tube on their toes:

Eyeball the tripod for cracks in the crossbars on all four sides. If you spot any cracks, get a new tripod.

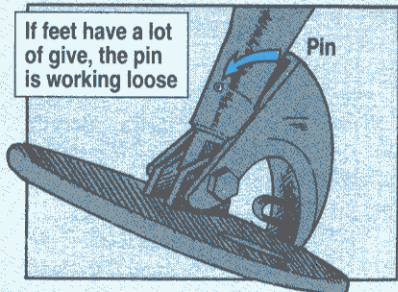


Cracks in the crossbars mean the tripod is unsafe

Test tripod feet by putting your foot on each tripod foot and gently pushing up on the tripod. If a foot gives, report

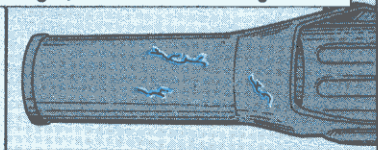
it. The foot's pin is working out and the foot could come off during firing.

If feet have a lot of give, the pin is working loose



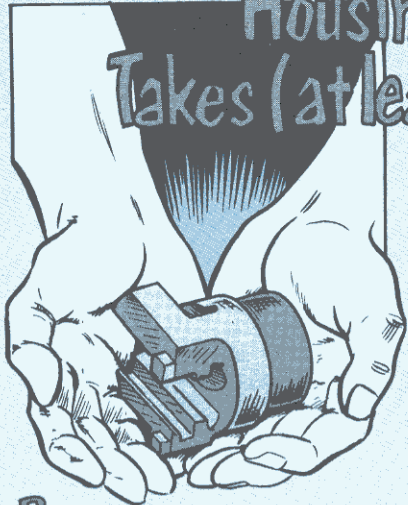
Eyeball inside and outside the launch tube for cracks. If you spot any longer than 1½ inches, report it. It's unsafe.

If you spot any cracks 1½ inches or longer, turn in the launching tube



Never use a tube with its ID number engraved, instead of painted. Engraving weakens the tube.

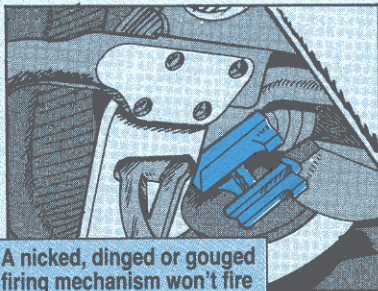
Housing Takes (at least) Two Hands



Removing the housing assembly that holds the spindle in the breech mechanism is no easy job. It's always a two-hand job.

That's because you must support the housing assembly with one hand while you rotate the spindle assembly with the other.

And if it's hard to rotate the spindle, one hand may not be enough to do all the work. What you don't want to happen is for the housing assembly to fall to the ground.



A nicked, dinged or gouged firing mechanism won't fire

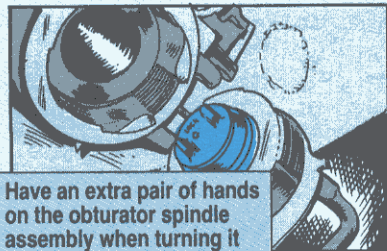
A dirty spindle assembly may not want to turn right off.

Here's how to handle it:

➤ To rotate a sticking spindle that has a 1/2-in square hole in the center, use a socket handle in the drive hole to start the rotation.

➤ For a spindle that has a round hole, wedge the socket handle between the bumps on the face of the spindle.

Remember in both cases to release the detent holding the spindle in place before rotating the spindle assembly.



Have an extra pair of hands on the obturator spindle assembly when turning it

If you need another set of hands to help with it, call your buddy. Just make sure that housing assembly stays in hand, safe from burrs, cracks and other damage.

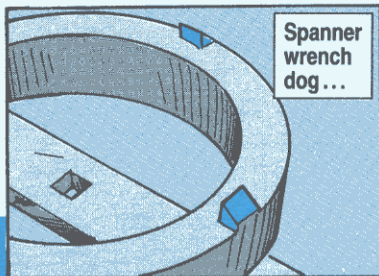


Keep firing mechanism well supported

Nip Dogs to Save Bearings

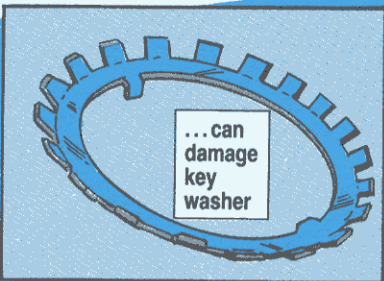
Too much of a good thing can turn bad real quick when you use the wheel spanner wrench for your M198 howitzer.

What's too much is the depth of the "dogs" on the outside edge of the spanner, NSN 5120-01-048-0641.




On some wrenches the dogs are so tall that, instead of turning just the machine thread plug, they also turn the key washer that holds the axle bearing in place.

That strips the washer tab that lines up with the spindle slot. When that happens, the washer and bearing loosen, eventually ruining the bearing. You won't know about the stripped tab until the bearing goes bad, which is too late.



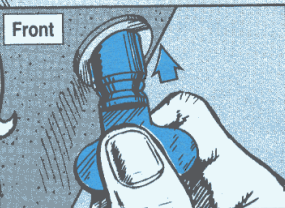
HAVE YOUR SUPPORT SHOP MODIFY THE SPANNER THIS WAY!

Turn the 7-inch outside diameter to 6 $\frac{3}{4}$ -inches, about $\frac{1}{2}$ -inch from the working edge.

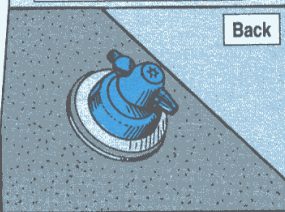
 Lug height should be 0.320–0.350-inch as measured from the inside base of the lug. Machine any lugs that are taller than 0.350-inch. The lug face angle should remain at 40 degrees + 1 degree.

Storage Door Lock Parts

YOU CAN NOW GET THE FASTENER ON THE CAB STORAGE BOX DOOR!



TURN LOCK FASTENER



Here's what you need:

- Stud assembly, NSN 5325-00-290-3820
- Fastener eyelet, NSN 5325-00-582-3839

Here's how you replace it:

1. Insert the eyelet in the storage box door.
2. Remove the cross pin from the stud assembly.
3. Push the stud through the eyelet, then replace the cross pin.

Target Acquisition...

Got Maintenance, Parts Problems?

You Redlegs know that without good target acquisition equipment you're not going to hit much of what you shoot at.

You can get maintenance or parts help for any of the following items:

- AN/TPQ-36 and -37—Firefinder radar
- AN/GYK-29—Battery Computer System (BCS)
- AN/MPQ-31—Meteorological system
- M90—Radar chronograph
- AN/USQ-70—Position Azimuth Determining System (PADS)

Contact your local Logistics Assistance Representative or call or write the Field Artillery School's Target Acquisition Department at AUTOVON 639-4925/4982 or Commercial (405) 351-4925/4982. The address is:

USA Field Arty School
Target Acquisition Dept
ATTN: ATSF-FR (CWO Johnson)
Ft Sill, OK 73503-5600

Extractor Storage Tips

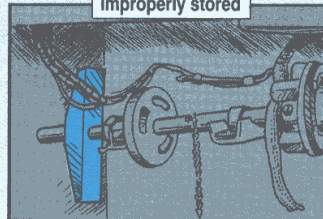
If you get careless when you store the COPPERHEAD extractor in your M109-series howitzer, you can break slipping wiring and leave the cab powerless.

Never leave the brace loose so it bangs into the wiring harness that powers the slipping contact arms. Banging wears away the harness cover and leads to arcing.

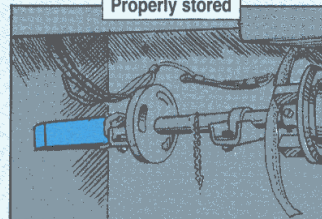
Slide the brace forward on the extractor shaft until it touches the end of the ratchet handle. Turn the drive nut (on the shaft end) counterclockwise until the brace is held firmly against the ratchet handle.

Turn the brace so that it is horizontal when stored in the cab rack. That way you avoid harness damage altogether.

Improperly stored



Properly stored



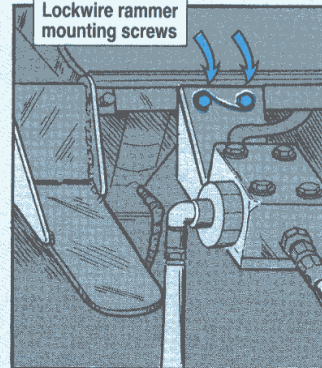
Rammer Screws Need Lockwire

Loose rammer mounting screws have been a problem on M109-series howitzers since the rammers were first installed.

You can solve most of those loose screw problems by getting your support shop to lockwire these two cap screws.

They'll use nonelectrical wire, NSN 9505-00-684-4843, to lockwire Item 20, Fig 62, in TM 9-2350-311-34P-2. These cap screws, NSN 5305-00-942-2196, already have lockwire holes drilled in the head. Some paint may have to be removed to find these holes.

Lockwire rammer mounting screws



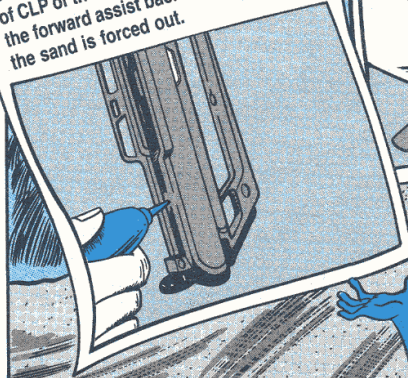
Beating Mr. Sandman

Sand gets into everything, as you quickly discover in sandy areas. It gets in your hair, ears, nose, mouth, clothes, and shoes. Your M16 has no better luck. Sand works its way into your rifle's moving parts and makes them bind. Soon you've got firing problems.

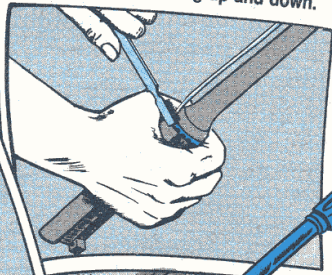
Help your M16 fight off sand. Keep the ejection port cover closed when you're not firing. Make sure ammo and the rifle's outsides are completely dry so they won't attract sand. Thoroughly clean your M16 at the end of the day.

For those hard-to-clean areas, try these tips:

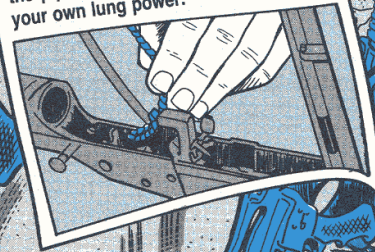
Forward Assist. Give the forward assist port inside the upper receiver one squirt of CLP or the other approved lubes. Work the forward assist back and forth until all the sand is forced out.



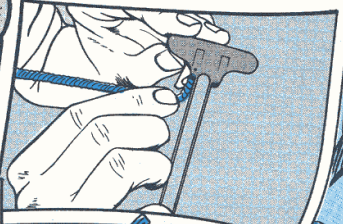
Slip Ring. After removing the handguards, gently pull the slip ring down. Use a pipe cleaner and tooth brush to work out sand from under the slip ring. Blow the sand away. Keep cleaning out sand until you can't feel any grit when you move the slip ring up and down.



Trigger Assembly. Gently clean—so you don't bend springs—around the trigger assembly with a pipe cleaner and CLP. Twist the end of the pipe cleaner into a circle so that you get more sweeping action. If you can't get at sand with the pipe cleaner, try blowing it out with your own lung power.



Charging Handle. Remove the charging handle from the upper receiver and clean it with a rag and CLP. Work a pipe cleaner dipped in CLP in the area where the handle moves in and out of the receiver until all the grit's gone.

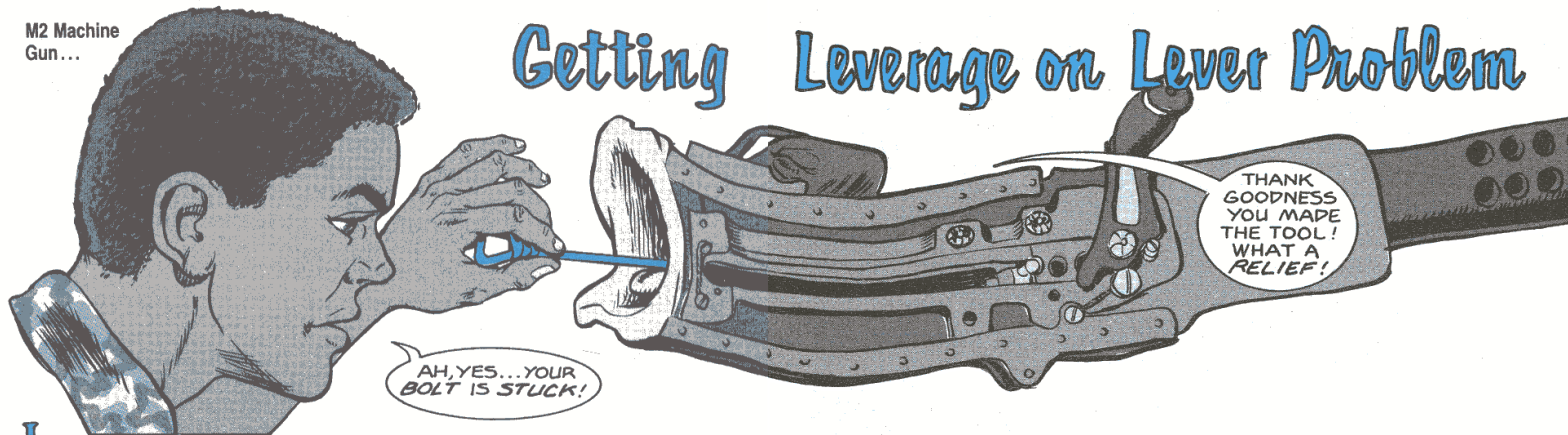


IF YOU CAN'T GET ALL THE SAND OUT, ASK YOUR ARMORER FOR HELP. HE CAN DISASSEMBLE YOUR RIFLE FURTHER TO CLEAN IT BETTER!

HEE, HEE, HEE!

HELP!

Getting Leverage on Lever Problem

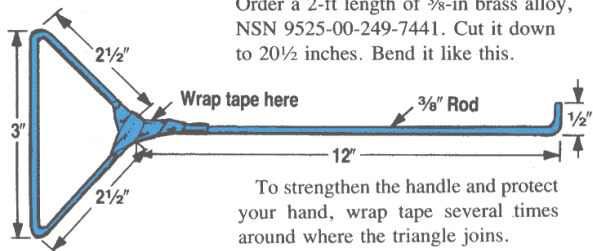


If you're an armorer, there's one other thing you can be sure of in life besides death and taxes. Someday, somewhere, you're going to have to deal with an M2 bolt stuck in the receiver with the cocking lever back.

The best way to get leverage on lever problems is with a tool you can make yourself.

Here's how:

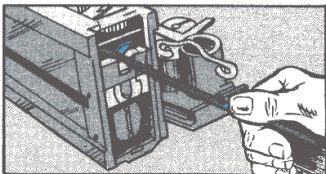
Order a 2-ft length of $\frac{3}{8}$ -in brass alloy, NSN 9525-00-249-7441. Cut it down to 20 $\frac{1}{2}$ inches. Bend it like this.



To strengthen the handle and protect your hand, wrap tape several times around where the triangle joins.

1. To use the tool, remove the backplate, driving rod spring, and bolt pin.

Hook the tool over the cocking lever, half-way up the lever. If you get it higher, the lever will jam.

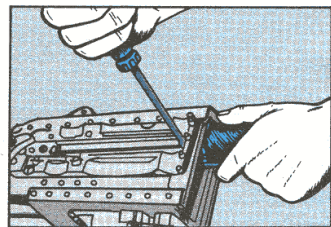


2. Press down hard on the lever as you pull back with several hard yanks of the tool. The bolt should come unstuck.

3. In the field, though, the tool may not be handy. But there still may be a way to unstick the lever.

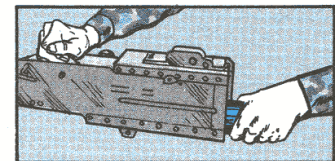
After you remove the backplate, driving rod spring, and bolt pin, retract the bolt as far as you can.

Press in on the buffer detent spring with a screwdriver as you slide out the buffer assembly about two inches.

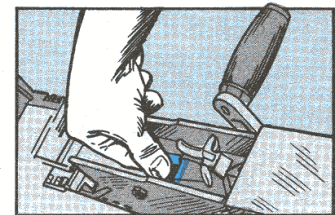


4. Slide the bolt forward as you pull the buffer to the rear. The bolt forces the

accelerator down and allows the buffer to be removed. You may need to slide the bolt back and forth several times before you can pull the buffer out.

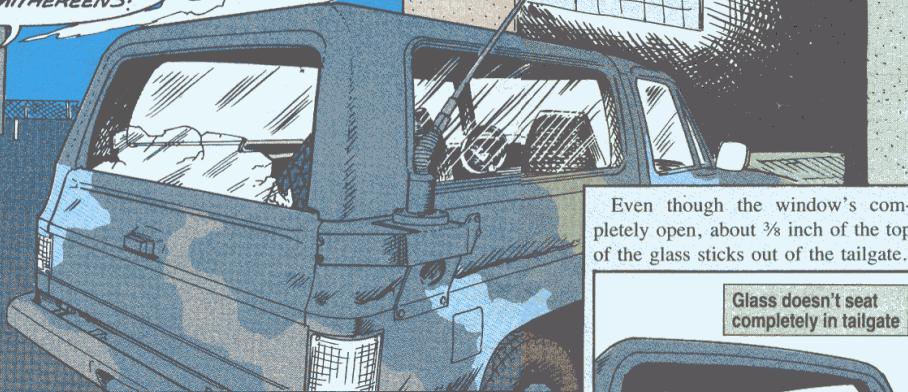


5. Push down on the front of the barrel extension. Slide the bolt out of the receiver. If the bolt hangs up, pull the extension forward and up until the bolt slides out.



Back to the Back Window

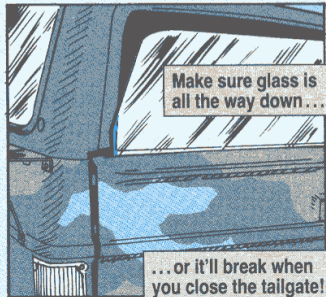
IF THE BACK WINDOW ON THE M1009 IS NOT ROLLED ALL THE WAY DOWN BEFORE YOU OPEN OR CLOSE THE TAILGATE, THE GLASS WILL BREAK INTO SMITHEREENS!



The rear window is tapered so it'll fit into the cargo cover. Rolling the window halfway down gets the bottom of the glass out of the way so you can open or close the tailgate, but then the glass doesn't have enough support. It'll shatter when the tailgate's slammed or dropped.

So make sure the window's all the way open before opening or closing the tailgate. To help jog your memory, stencil on both the inside and outside of the tailgate in one inch letters:

"FULLY OPEN WINDOW BEFORE OPENING/CLOSING TAILGATE"



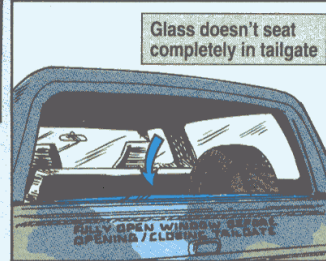
Make sure glass is all the way down...

...or it'll break when you close the tailgate!



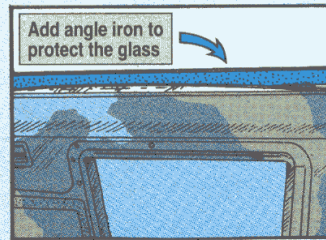
Stencil on tailgate

Even though the window's completely open, about 3/8 inch of the top of the glass sticks out of the tailgate.



Glass doesn't seat completely in tailgate

For protection, get your mechanic to pop rivet a 1/2-inch wide piece of angle iron across the top edge of the door. This will keep heavy objects away from it.



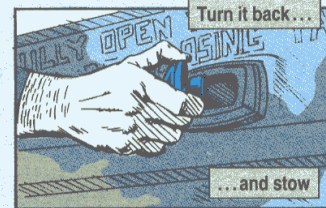
Add angle iron to protect the glass

When crank stops...



...you stop!

Then turn the crank backward (counter-clockwise) to the stow position—and stow it.



Turn it back...

...and stow



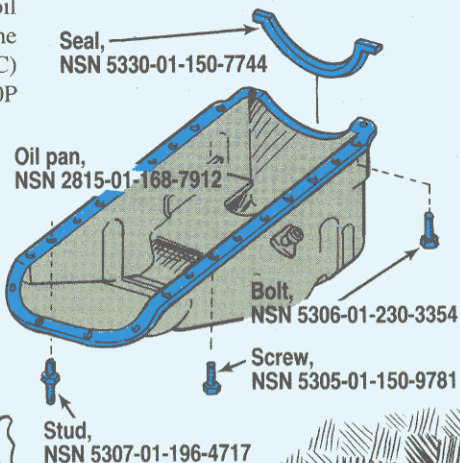
IT'S A SIMPLE OPEN AND SHUT CASE!

TM Corrections

You mechanics can change the oil pan on the HMMWV, according to the Maintenance Allocation Chart (MAC) in TM 9-2320-280-20. But your -20P TM doesn't list the parts you need.

Here they are:

USE RTV SEALANT,
NSN 8030-01-159-4844,
FOR THE
OIL PAN
SEAL.



Fix HMMWV Latch Knob to Fit



The replacement window latch knob looks like the old one, but it does not fit the HMMWV's crew doors. The knob, NSN 5355-00-437-4613, can be modified so that it works. **Here's how:**

- Drill the threaded insert 1/2 inch deep with 1 1/32-in drill bit, NSN 5133-00-227-9664.
- Rethread the insert with 3/8-24 tap, NSN 5136-00-555-8910.

HMMWV Decon Mounting Info

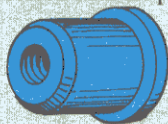
Mounting instructions for the M13 decon on all HMMWV's except the ambulances are in Para 3-9 of TB 43-0001-39-4 (Oct 88).

AMBULANCES
USE THE M17 DECON.
MOUNTING
INSTRUCTIONS
ARE ON
PAGES 3-39
THRU 3-41
OF THE
TB.



Grill Screen Nuts Screened

You're groping in the dark if you order the blind nut for the HMMWV's front hood screen with the part number



listed for Item 21 in Fig 106 of TM 9-2320-280-20P. It's wrong.

Order the nut on DD Form 1348-6 with CAGE 34623, PN 5591987 and RIC S91.

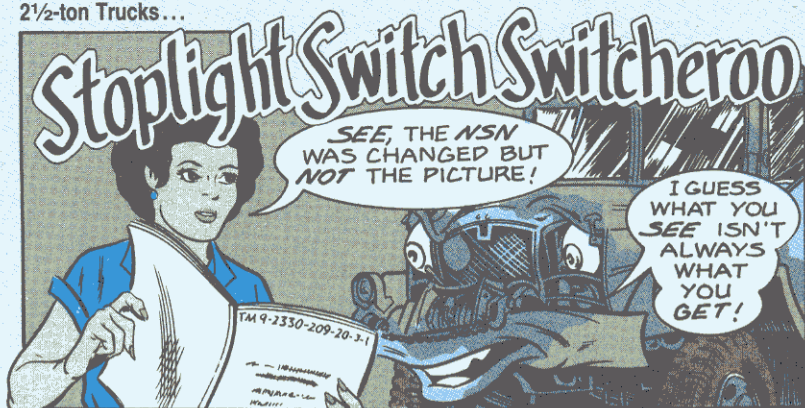
The part number and NSN are also wrong for the self-locking nut used on the screen bolts. The correct part number is 551957 for Item 22 in Fig 106. That crosses to NSN 5340-01-213-4662.

Break-ins Without Break Downs

It's better to be safe than sorry when you break in a new HMMWV. The break-in procedures in TM 9-2320-280-10 say no trailer towing for the first 500 miles. Trailer towing puts extra strain on the engine.

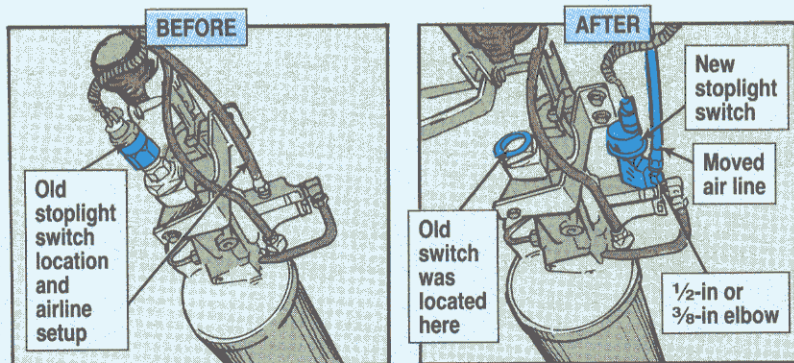
The engine runs hotter than normal. Rings do not seat right and piston walls can crack from the heat. You may ruin the engine before the vehicle is broken in and ready for full service.

The best thing to do when you get a new M1037, or other HMMWV that must tow a trailer to do its mission, is put it on the road. Follow all the break-in procedures in the -10 TM for the first two tanks of fuel. Two tanks will rack up the 500 miles needed to break in the truck.



What you see in the TM's not what you get when you order stoplight pressure switch, NSN 5930-00-789-6192. The switch was changed for the 2½-tonners, but the pictures in TM 9-2320-209-20P and TM 9-2320-209-20-3-1 were not.

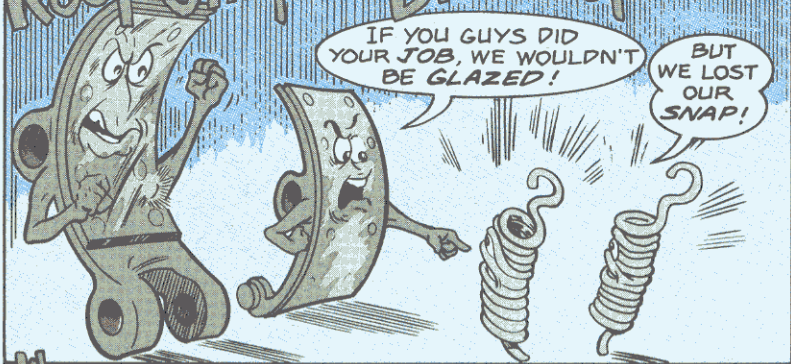
Change 1 of the -20P lists the new NSN, but Fig 65 still shows the old switch as Item 1. TM 9-2320-209-20-3-1 (May 81) shows the old switch mounted on the end of the hydraulic cylinder. That's wrong! The new switch does not go there. It's mounted on the side of the hydraulic cylinder in the air line.



So, when the pressure switch goes bad, forget what you see in the TM's. Order conversion kit, NSN 2530-01-105-5025, if your truck hasn't been converted to the new switch. The kit has the switch, mounting hardware and instructions.

Only one problem... the kit comes with a ½-in elbow. Some trucks take a ¾-in elbow. Find out which you need by measuring the tube shown as Item 12 in Fig 122 of the -20P. The ¾-in elbow comes with NSN 4730-00-289-0155.

Keep Snap in Brake Springs

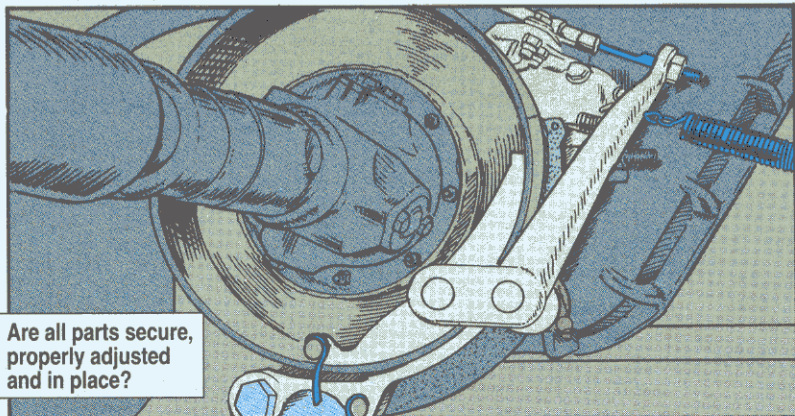


When a spring is sprung on the parking brake of your M44-, M39- or M809-series truck, it takes all the snap out of the brake's holding power.

The two return springs pull the brake shoes away from the brake drum. If they're bent, broken or missing, the brake shoes rub on the drum. Rubbing makes shoes hot, then they glaze over. They will not hold the truck.

The headshed is working on a semiannual inspection procedure, but in the meantime do this:

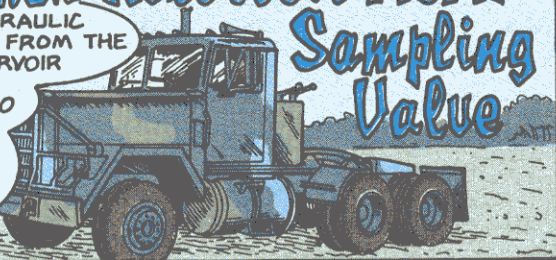
- Schedule your vehicle for an inspection of the handbrake components to make sure all parts are there, secure, serviceable, and properly adjusted.
- Make sure the handbrake works right during your PMCS. If it doesn't, notify your supervisor.



Winch Reservoir ADAP Sampling Valve



TAKING HYDRAULIC OIL SAMPLES FROM THE WINCH RESERVOIR ON THE M916/M920 TRACTOR TRUCKS IS A MESSY JOB!



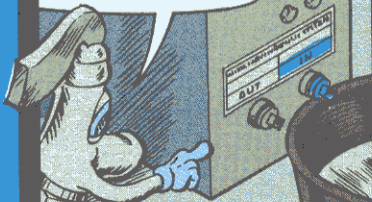
YOU MECHANICS CAN ADD A SAMPLING VALVE, WITH YOUR COMMANDER'S OK. THAT TAKES THE MESS OUT OF SAMPLING.



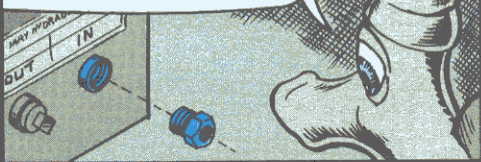
HERE'S WHAT YOU NEED!

Item	NSN
Pipe Bushing	4730-00-196-0930
Pipe Bushing	4730-00-828-8799
Drain Cock	2910-01-073-0080
Tape, Anti-seize	8030-00-889-3535

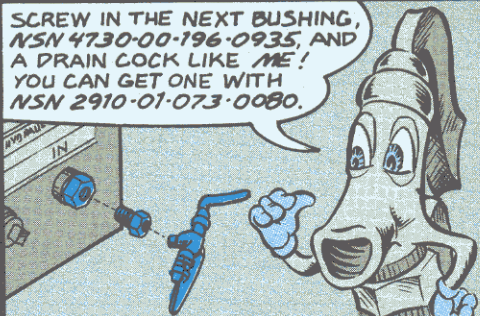
PLACE A DRAIN PAN UNDER THE "IN" PLUG AND DRAIN THE HYDRAULIC OIL. TOSS THE INLET PLUG.



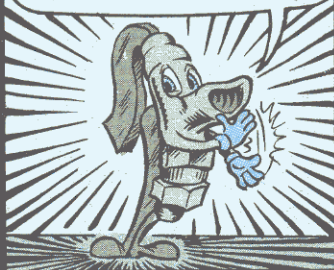
PLACE A NEW BUSHING WITH NSN 4730-00-196-0930 INTO THE WINCH CONSOLE RESERVOIR. REMEMBER TO USE ANTI-SEIZING TAPE, NSN 8030-00-889-3535 ON ALL CONNECTIONS.



SCREW IN THE NEXT BUSHING, NSN 4730-00-196-0935, AND A DRAIN COCK LIKE ME! YOU CAN GET ONE WITH NSN 2910-01-073-0080.



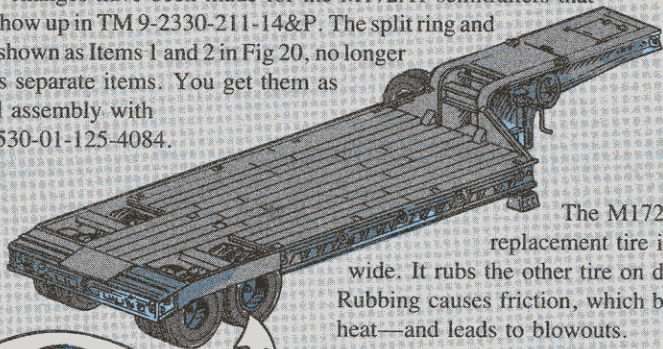
REFILL THE RESERVOIR AND YOU'RE FINISHED!



M172A1 Semitrailers...

Wheel and Tire TM Update

Some changes have been made for the M172A1 semitrailers that do not show up in TM 9-2330-211-14&P. The split ring and wheel, shown as Items 1 and 2 in Fig 20, no longer come as separate items. You get them as a wheel assembly with NSN 2530-01-125-4084.



The M172A1's replacement tire is too

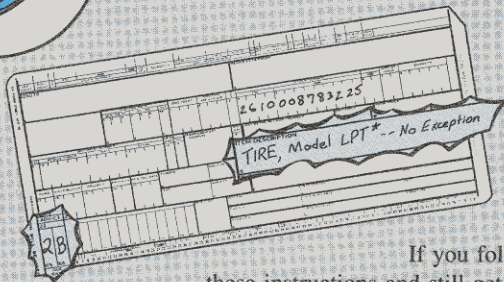
wide. It rubs the other tire on duals. Rubbing causes friction, which builds heat—and leads to blowouts.

A skinnier tire is available, but it has the same NSN as the wider tire. You can identify it by the letters "LPT" and a five-point star printed on its side.

To get the skinnier tire, order it with NSN 2610-00-878-3225. Use Advice Code 2B in card columns 65 and 66, and write in the supply request, "Model LPT*—No Exception."



Get both of these with NSN 2530-01-125-4084



If you follow these instructions and still get the wider tire, report it on a Report of Discrepancy (ROD), SF 364.

M332 Trailer Brake Cable NSN

NSN 2530-00-566-1674 gets the hand brake cable for the 1½-ton ammo trailer. Jot down the NSN until TM 9-2330-231-14&P is updated.

Seating Arrangement

The driver's seat no longer comes as an assembly for the M44-, M39- and M809-series trucks. You have to order it by parts. Here are the NSN's you need:

Item	NSN 2540-
Cushion, seat back	00-460-5826
Cushion, seat	00-460-5815
Seat Adjuster, right	01-117-3025
Seat Adjuster, left	01-117-4882
Base assembly	00-472-2733

Horn Kit 'n' More

All 2½- and 5-ton trucks now use the same horn button kit, NSN 2590-01-093-4152. But you need a couple extra parts to get the horn to sound off on your 2½-tonner. Here they are:

Button cable	NSN 2590-00-752-1492
Bushing	NSN 5365-00-693-4174

Windshield Hinge

The windshield hinges wear out on an M44-, M39- or M809-series truck. It's hard to find replacements because the NSN is not in the -20P TM's. You can order the two hinges with NSN 5340-01-158-7091 and the screws with NSN 5306-00-059-4001.

Splash Guard NSN

NSN 2540-00-626-1359 for the splash guard on your 5-ton truck is no longer available. Now you get the splash guard with NSN 2540-00-715-7407, and the retainer with NSN 2540-00-857-6344.

Fuel Tanker TM Update

Some things have changed on the M967, M969 and M970 5,000 gallon tankers. Here's an update of NSN's to keep handy until TM 9-2330-356-12&P is revised:

Item	TM Reference	NSN
Tachometer	Item 17, Fig 1	6680-01-167-8117
Manhole cover	Item 1, Fig 46	2510-01-261-0531
Vent valve	Item 9, Fig 46	4820-01-121-1533

M939 Rubber Boot

The rubber boot that fits over the 5-ton truck's parking brake cable is not in TM 9-2320-272-20P. You can order the boot with NSN 2530-01-177-4544. Since this NSN is not on the AMDF, order on DD Form 1348-6 from RIC AKZ. In the Remarks block write "NSN not on AMDF." You also need two tie straps, NSN 5975-00-074-2072, to hold the boot in place.

M915 Lock Cylinder

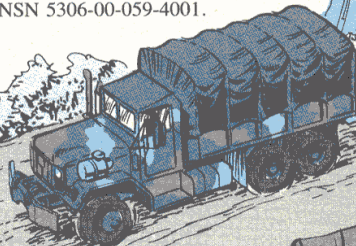
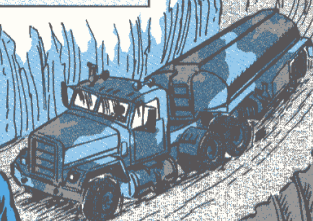
The lock unit cylinder and key doesn't come with the ignition switch like it shows for Item 5, Fig 36 of TM 9-2320-273-20P. Nor is the lock unit cylinder or key listed in the TM. Get the cylinder and key with NSN 2540-01-155-3601.

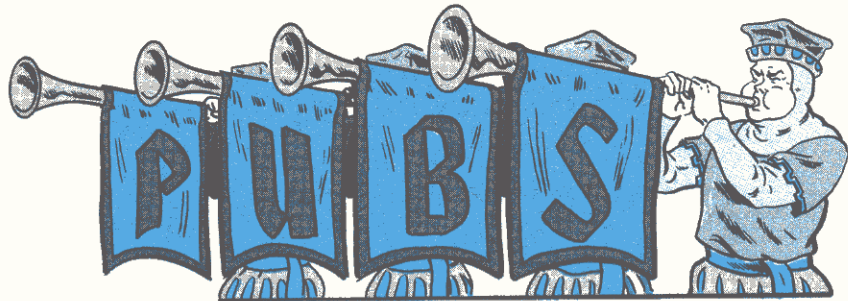
JUL 90

F5070 Truck Tire

The NSN for mine and quarry tires, PN ZZ-T-1083E/, for the dual wheels is missing from Fig 79 of TM 5-3805-254-20P. Order the tires with NSN 2610-00-294-9485. And scratch NSN 2610-00-275-8013 for the pneumatic tire. That tire's no longer available.

JUL 90





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

TM 5-1940-278-12&P Oct 89 3 person inflatable reconnaissance boat, 7 person C02 inflatable assault boat and 15 person inflatable landing boat

TM 5-4320-309-14 Jan 125 GPM water pump unit

TM 5-4320-313-14 Nov 89 100 GPM flammable liquid pumping assembly

TM 5-4930-238-12&P Jan Forward area refueling equipment, NSN 4930-01-301-9201

TM 9-1005-286-20P May Towed Vulcan

TM 9-1095-209-10 Mar M138 mine dispenser

TM 9-1095-209-23&P Mar M138 mine dispenser

TM 9-2350-264-24P-1 Jan M1A1 tank

TM 9-4935-473-24P Dec 89 Test set (TOW airborne system)

TM 9-6115-654-14 Nov 89 Model CTMGSA-5 5 KW, commercial trailer-mounted generator set

TM 9-6115-656-14 Nov 89 Model CTMGSA-30 30 KW commercial trailer-mounted generator set

TM 11-5820-961-20P Feb MK-2173/VRC electronic equipment installation kit

TM 11-5820-1023-23P Feb AN/TRC-190 series line-of-sight multi-channel radio terminal

TM 11-5820-1043-20P Mar MK-2356/VRC electronic equipment installation kit

TM 11-5820-1056-20P Mar MK-2330/VRC electronic equipment installation kit

TM 11-5820-1057-20P Feb MK-2331/VRC electronic equipment installation kit

TM 11-5820-1061-20P Feb MK-2296/VRC electronic equipment installation kit

TM 11-5820-1079-20P Feb MK-2360/VRC electronic equipment installation kit

TM 11-5820-1092-20P Mar MK-2390/VRC electronic equipment installation kit

TM 55-1520-238-23P-2 Jan RPSTL for AH-64A

TM 55-1520-238-23P-5 Jan RPSTL for AH-64A

TM 55-1520-240-23P-4 Nov 89 RPSTL for CH-47D

TB 710-5 Oct 89 Unit commander's supply handbook

TB 55-1520-238-20-74 Feb AH-64A main rotor strap pack inspection

TB 55-1520-240-20-43 Feb CH-47D ungrounding requirements of "fan eaters"

TB 55-1520-244-20-28 Jan Inspection gap between spline plate and extension on main rotor mast, AH-1 series

DOD 6050.5-L Nov 89 DOD hazardous materials information system: hazardous item listing

Maintenance & Safety-Of-Use Messages

AMCCOM SOU-MSG-09-90—Emergency one-time inspection, M16/M16A1/M16A2 rifles and M231 firing port weapon, AMSMC-MA 261915Z Mar 90.

AMCCOM SOU-MSG-11-90—Operational, Restricts use of the equipment on the truck mounted organizational repair shop equipment. AMSMC-MA 112145Z Apr 90.

CECOM SOU-MSG—Second follow-up to SOU-MSG 90-02-01, OA-9054(V)4/G Hydraulic-Pneumatic Mast Group, part of the Patriot missile system antenna mast group OE-349/MRC. AMSEL-SF-SEC 051800Z Mar 90.

TACOM SOU-MSG-90-07—Operational, Crossing restrictions for Armored Vehicle Launched Bridge (AVLB), AMSTA-M 272424Z Mar 90.

TACOM SOU-MSG-90-11—Advisory, Technical/Maintenance, on M151-series 1/4-ton trucks with ROPS, AMSTA-M 040600Z Apr 90.

TROSCOM SOU-MSG-06-90—Advisory, Hot refueling of generator sets, AMSTR-MES 302100Z Mar 90.

TROSCOM SOU-MSG-07-90—Advisory, Technical deadline of Army diving equipment due to chemical contamination, AMSTR-MES 072005Z Apr 90.

TROSCOM Maintenance Advisory MSG-90-05—Position and Azimuth Determining System (PADS), AN/USQ-70, battery maintenance, AMSTR-MES 021630Z Apr 90.

TROSCOM Maintenance Advisory MSG-90-07—Straight adapter used on 1.5-KW GED generator sets, AMSTR-MES 052100Z Apr 90.

TROSCOM Maintenance Advisory MSG-90-09—Rotate generator sets 180 degrees on trailers, PU-405A/M, PU-406B/M, PU-650B/G, PU-707A/M, PU-732/M, PU-760/M, AN/MJQ-10A, AN/MJQ-12A, AN/MJQ-15, and PU-495B/G, AMSTR-MES 182200Z Apr 90.

Your Direct Support or Logistics Assistance Office (LAD) can provide you with more information.

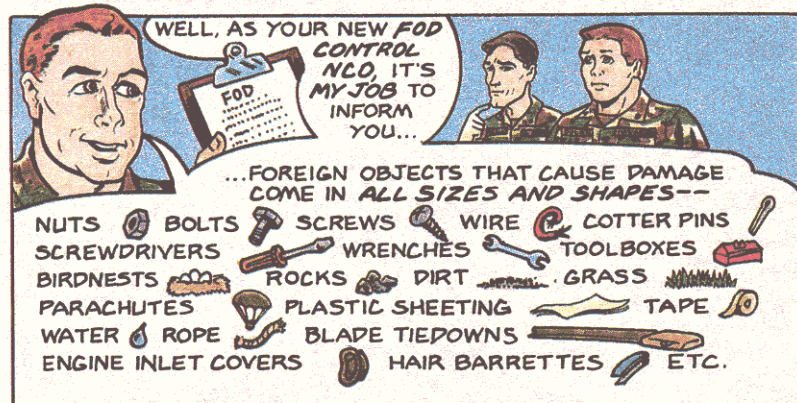
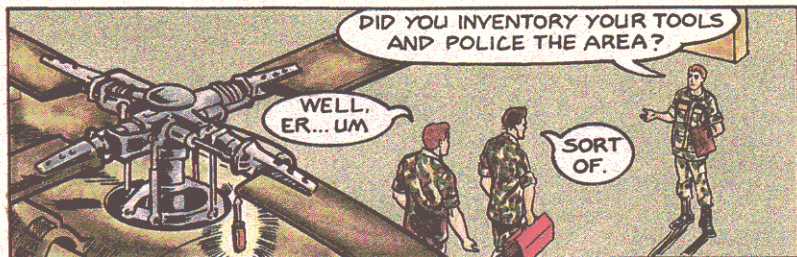
For No Want of FOD

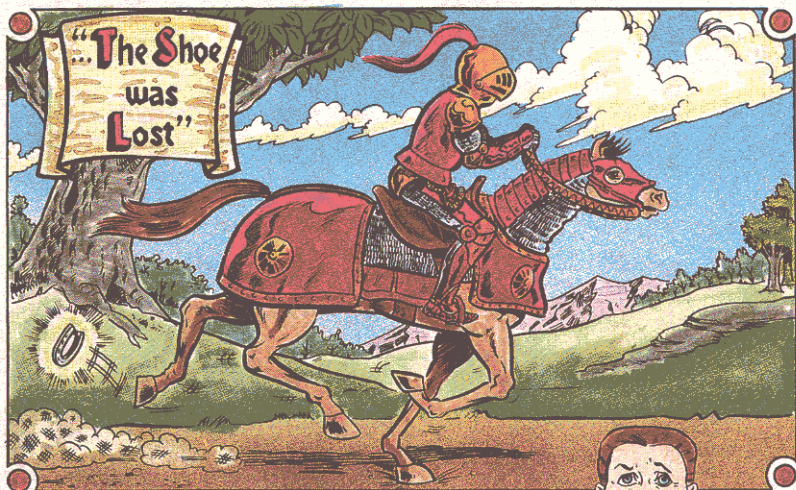
THERE--
ALL DONE!
LET'S GET OUT
OF HERE!

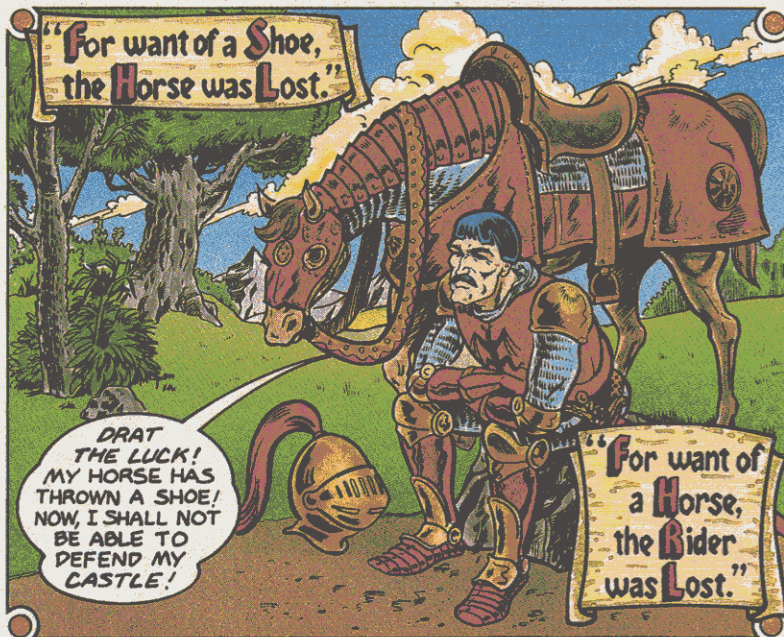
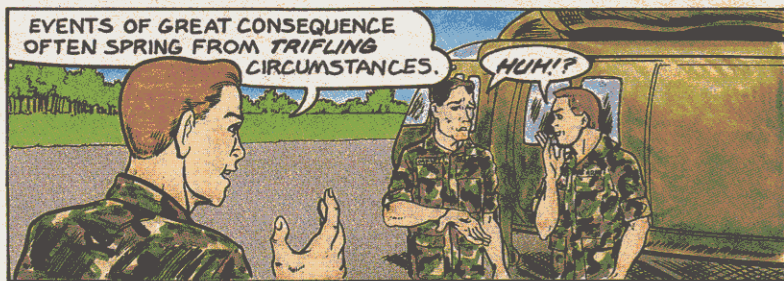
SHOULDN'T
WE CHECK THE
AREA FOR FOD AND
INVENTORY
OUR TOOLS?

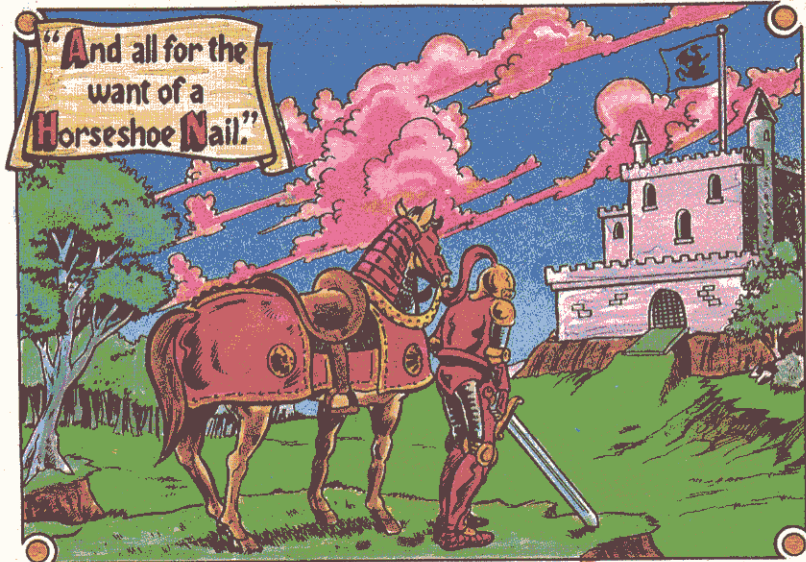
WHY? WE ONLY
USED A COUPLE OF
WRENCHES. BESIDES, A
FEW BITS AND PIECES
CAN'T HURT
ANYTHING!

HI, I'M
SERGEANT
FRANKLIN,
YOUR NEW FOD
CONTROL
NCO!









I GET IT! MANY STROKES
OVERTHROW THE
TALLEST
OAKS.

OAKS? WE MAINTAIN
HELICOPTERS!

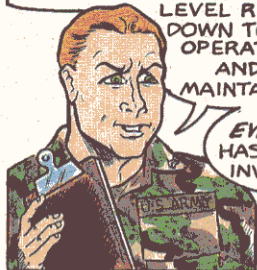
GO ON
SOLDIER,
I THINK
YOU'VE
GOT
IT!

ONE PIECE OF FOD CAN DOWN AN ENGINE,
ONE LESS ENGINE CAN DOWN A BIRD,
ONE LESS BIRD
MEANS ONE
LESS CREW
AND...

...ONE LESS
CREW CAN KEEP
OUR COMMAND
FROM
COMPLETING
ITS MISSION.

RIGHT!
ULTIMATELY
ONE PIECE OF FOD
COULD LEAD TO THE
LOSS OF PERSONNEL...
PERMANENTLY!

FOD CAN BE REDUCED OR EVEN ELIMINATED BY ATTACKING THE PROBLEM FROM TOP TO BOTTOM—FROM COMMAND LEVEL RIGHT DOWN TO THE OPERATORS AND MAINTAINERS.

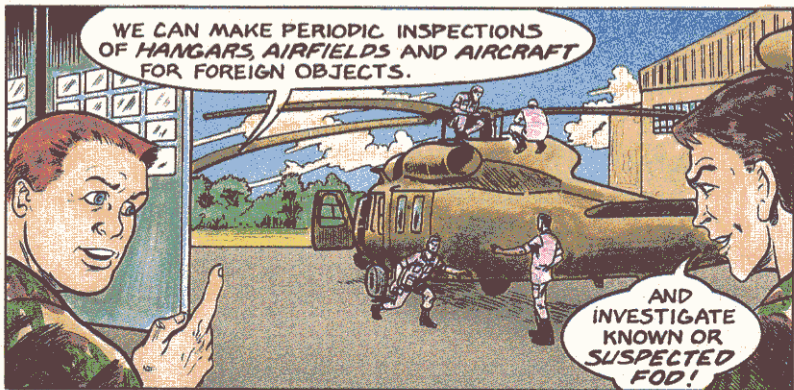


EVERYBODY HAS TO GET INVOLVED!

I HAVE AN OUTLINE OF WHAT AN AGGRESSIVE FOD PREVENTION PROGRAM MUST INCLUDE. STARTING WITH THE APPOINTMENT OF QUALIFIED OFFICERS AND NCO'S AS FOD CONTROL PERSONNEL.

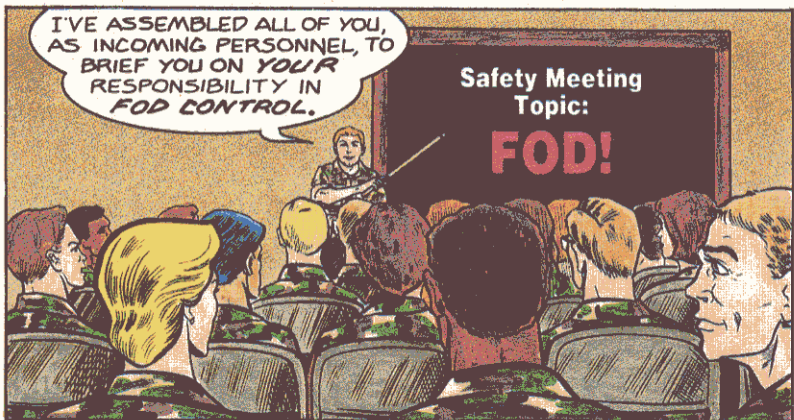


WE CAN MAKE PERIODIC INSPECTIONS OF HANGARS, AIRFIELDS AND AIRCRAFT FOR FOREIGN OBJECTS.



AND INVESTIGATE KNOWN OR SUSPECTED FOD!

I'VE ASSEMBLED ALL OF YOU, AS INCOMING PERSONNEL, TO BRIEF YOU ON YOUR RESPONSIBILITY IN FOD CONTROL.



Safety Meeting
Topic:
FOD!



MAKE DAILY INSPECTIONS OF ALL AREAS AROUND AIRCRAFT FOR OBJECTS THAT COULD CAUSE FOD!

...AND INSPECT ALL AIRCRAFT AREAS PRONE TO FOD DURING DAILY AND PREFLIGHT INSPECTIONS.




DEVELOP TOOL CONTROLS!

SECURE CARGO ONLY IN AREAS AUTHORIZED FOR CARGO!




PLACE RECEPTACLES IN CONSPICUOUS PLACES FOR DISPOSING OF HARDWARE AND TRASH.



YOU'LL FIND A GOOD EXAMPLE OF FOD PREVENTION SOP IN APPENDIX C OF THE AR. CHECK IT OUT, THEN ASK TO SEE YOUR OWN UNIT'S SOP!

IF YOU HAVE ANY QUESTIONS ABOUT FOD PREVENTION, CALL THE AVIATION MISHAP PREVENTION OFFICE AT THE ARMY SAFETY CENTER, FT RUCKER, ALABAMA-- AUTOVON 558-4198 OR COMMERCIAL 205-598-4198.



WHAT HAVE YOU GOT THERE?

IT'S A HORSESHOE NAIL IF I'VE EVER SEEN ONE!

Ground Support Equipment...

A Step in the Right Direction

Dear Windy,

We need a work platform to inspect the tail rotor of our Apaches when we're in the field. What do you suggest?

CW4 R.B.

Dear Mr. R.B.,

Stepladder, NSN 5440-01-048-8638, and detachable work platform, NSN 5440-01-092-1812, are what you need. The 17-ft ladder's lightweight and can be folded up neatly. The detachable work platform fits onto any of the ladder rungs. Both the ladder and platform were added to your AVUM No. 2 Tool Set, SC 4920-99-CL-A92, years ago.

Windy

THIS IS PERFECT, WINDY!

I'M GLAD IT WORKED OUT!



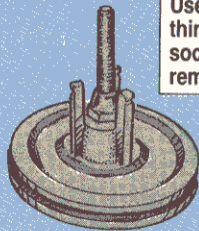
T53 Engines...

Foil Filter Foulups

Some mechanics try to use a regular 1/4-in drive socket when they disassemble the T53 engine lube oil filter for cleaning.

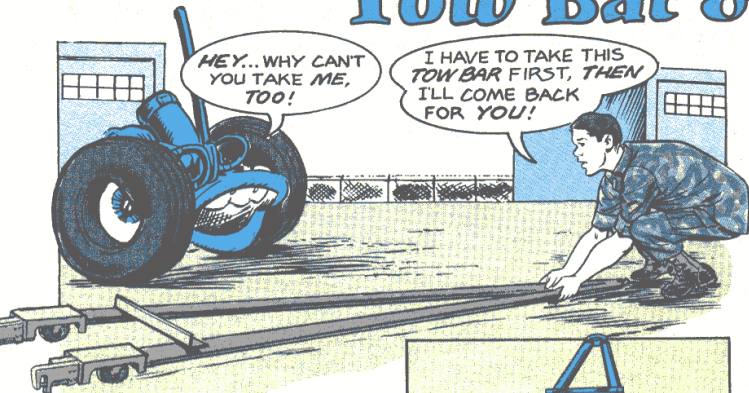
But there's not enough room between the nut and the tangs on the filter cover for a regular socket. If you force the socket on the nut, it'll break the tangs.

Use only a 1/4-in drive, 7/16-in thin wall socket, NSN 5120-00-935-7490. Nothing else will work.



Use only a thin-wall socket to remove nut

Tow Bar & Wheels Deal



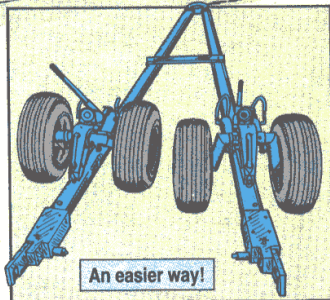
Gearing up to tow a Huey or Cobra can be a hassle. You have to:

- Lug the ground handling wheels to the aircraft.
- Wheel the tow bar to the aircraft.
- Find a tug and drive it to the aircraft.
- Hook up the tow bar to the bird's skids and the tug.
- Hook up the wheels to the bird's skids and pump 'em up.

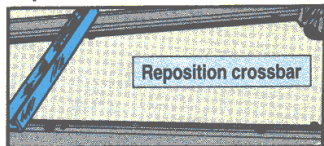
SSG Ed Peterson at Fort Hood found a way to ease the pain. He modified an old tow bar so he could mount two sets of Cobra ground handling wheels on it.

That way, he moves both the tow bar and ground wheels to the aircraft at the same time—and with less effort.

The only parts you need to modify a tow bar are four eye bolts, NSN 5306-00-883-4462, four concave washers, NSN 5310-00-888-9553, and four nuts to fit the bolts.

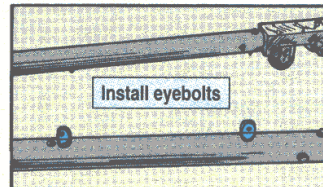


Remove the crossbar from the legs of an old tow bar and reinstall it 66 inches from the tow bar wheel housings. That keeps the ground handling wheel assemblies from rubbing together when they're installed on the tow bar legs.

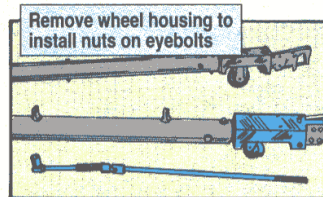


Install two eye bolts, exactly 18 inches apart, in each leg of your tow bar. You have to drill one 1/2-in

hole in each leg because you can use one of the existing holes in each leg for the other eye bolt.

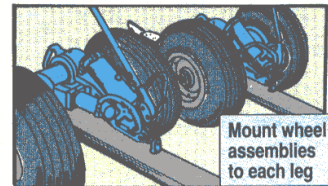


You'll have to remove the wheel housing from each leg to install the hardware.



To fasten the eye bolts to nuts inside each leg, place the nut in the appropriate size socket, attach the socket to a breaker bar. The whole thing's got to be at least 30 inches long to reach the holes. Then thread each bolt through the hole into the nut and tighten.

When you've installed the eye bolts, simply mount your Cobra wheels to each leg of the tow bar.



Next time you need to tow a Huey or Cobra, just wheel your modified tow bar out to your bird and hook it up.

Aviation Messages

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

UH-1-90-02, SOF, Technical, Inspect washplate outer ring assembly, 01200Z Mar 90.
OH-58-90-01, SOF, Maint Mandatory, OH-58A/OH-6, T63-A-700 engine governor recall, 062100Z Mar 90.
OH-6-90-01, SOF, Maint Mandatory, OH-58A/OH-6A, T63-A-700 engine governor recall, 062100Z Mar 90.
OH-58-90-02, SOF, Maint Mandatory, OH-58A/OH-6A, T63-A-700 engine governor recall, 081630Z Mar 90.

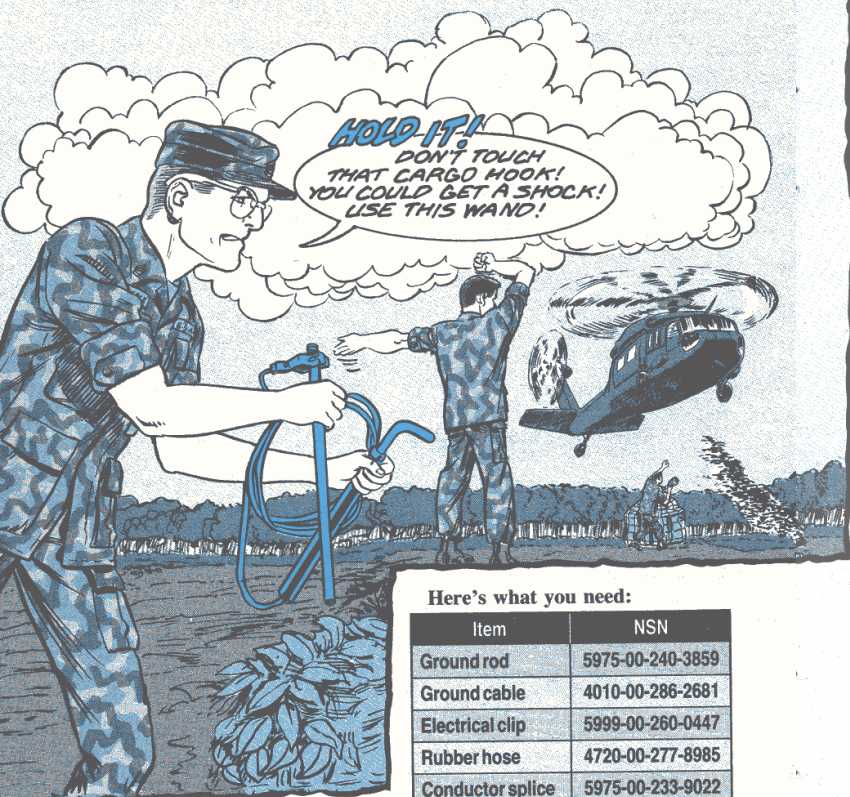
OH-6-90-02, SOF, Maint Mandatory, OH-58A/OH-6A, T63-A-700 engine governor recall, 081630Z Mar 90.
AH-1-90-03, SOF, Maint Mandatory, Inspection of AH-1P, AH-1E, and AH-1F power transformers, 121830Z Mar 90.
OV-1-90-02, SOF, Maint Mandatory, Elevator trim tabs and rudder trim tab, 132230Z Mar 90.
CH-47-90-04, SOF, Maint Mandatory, CH-47C, cargo hook/winch control load release button guard, 142130Z Mar 90.

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

SOU-OH58-90-01, SOU, Operational, GSE, use of sling assembly, 151500Z Mar 90.
OH-58-90-03, SOF, Operational, OH-58D, update to fuel boost pump procedure change, 281800Z Mar 90.
UH-1-90-ASM-01, ASM, Rotary stabilizer assembly mount bolts, 052200Z Mar 90.
UH-1-90-ASM-02, ASM, Improved particle separator, 202303Z Mar 90.
GEN-90-ASM-02, ASM, General, cotter pins, 291600Z Mar 90.

Protect Against

Static Discharges



Here's what you need:

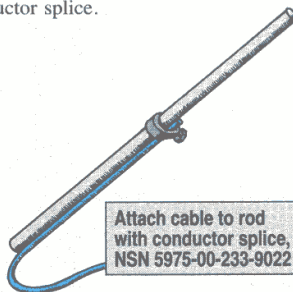
Item	NSN
Ground rod	5975-00-240-3859
Ground cable	4010-00-286-2681
Electrical clip	5999-00-260-0447
Rubber hose	4720-00-277-8985
Conductor splice	5975-00-233-9022

You can't get a static discharge wand for external air transport (EAT) operations through supply, but you can make one real easy.

If you don't want to order the 1,000-ft roll of ground cable, scrounge what you need from your local fuel handling or ground power outfit.

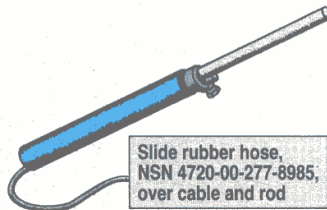
Here's how to make your static discharge wand:

- Strip 1 inch of insulation from both ends of a 20-ft section of grounding cable.
- Cut a 20-in and a 16-in section from the ground rod.
- Clamp one end of the cable to the 20-in section of rod about 11 inches from one end of the rod, using the conductor splice.



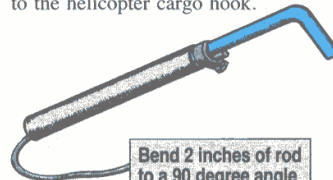
Attach cable to rod with conductor splice, NSN 5975-00-233-9022

- Slide a 12-in piece of rubber hose over the cable and ground rod so that the clamp touches the end of the hose.
- Fill the end of the hose with silicone sealant to provide insulation protection from the bare end of the rod.



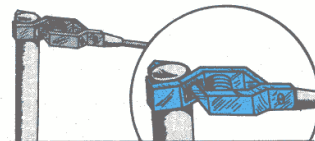
Slide rubber hose, NSN 4720-00-277-8985, over cable and rod

- Bend the last 2 inches of the rod 90 degrees to form a hook to connect to the helicopter cargo hook.



Bend 2 inches of rod to a 90 degree angle

- Sharpen one end of the 16-in rod into a point to make it easier to drive into the ground.
- Attach an electrical clip to the other end of the 20-foot cable and connect the clip to the ground rod.



Attach electrical clip, NSN 5990-00-260-0447, to ground rod

- Use a multimeter to do an electrical continuity check between the hook end of the static discharge wand and the electrical clip on the ground rod. Lack of continuity can be a safety hazard to the hookup team.


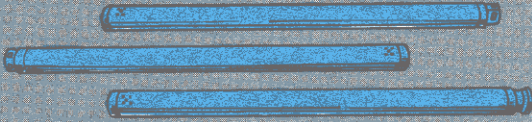


When you use the static discharge wand on the cargo hook of a hovering helicopter, keep your hands away from the bare metal part of the wand. If you touch bare metal, you could get a severe shock.

RIGHT EXTENSION

You need the MK-1009 mast extension kit to boost your AN/GRC-103 radio set's antenna to its full 50 feet.

Some of the items in the kit are listed by NSN in TM 11-5820-540-20P (Mar 89). You can get the rest of them with these NSN's:

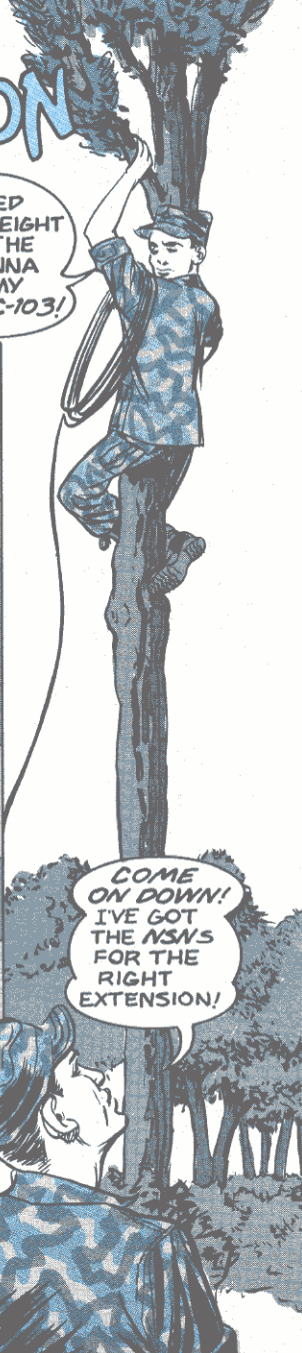
I NEED MORE HEIGHT FOR THE ANTENNA ON MY AN/GRC-103!

Mast Extension Case	NSN 5985-01-070-5542
	
AB-1071 Mast Section	NSN 5985-00-089-8994
	
Guy	NSN 5975-01-070-5521
	
Guy Plate	NSN 4030-00-155-8507
	
Shoulder Bolt	NSN 5306-00-138-9969*
Flat Washer	NSN 5310-00-402-5797
Self-locking Nut	NSN 5310-00-483-8792 (Unit of issue is HD)

*Order shoulder bolt from B16 on DD Form 1348-6. In the REMARKS block, put "NSN not on AMDF."

To get the guy anchor, order on a DD Form 1348-6 using CAGE 80063 and PN SM-B-551426. The RIC is B16.

COME ON DOWN! I'VE GOT THE NSNs FOR THE RIGHT EXTENSION!



FOLLOW THE BOOK

You need a book plan to follow if you want to know which radio installation kit your vehicle needs and the repair parts for each kit.

SB 11-131 (Apr 88) has the latest installation kit info for vehicles, including the CUCV, HMMWV, Abrams and Bradley.

Section 3 of the SB gives the radio set, installation kit NSN and type number, and the book plan number.

3-50. VEHICLE, COMMERCIAL, UTILITY, CARGO, M1008A1

SINGLE INSTALLATIONS

Radio set	Installation kit Type no.	Installation kit NSN	Installation instructions
AN/VRC-12	MK-1814/VRC	5820-01-022-6293	Book Plan Ref. No. 845
AN/VRC-43	MK-1811/VRC-43	5820-01-022-3332	Book Plan Ref. No. 566
AN/VRC-160 AN/VRC-46, -64	MK-1817/G	5820-01-022-3328	Book Plan Ref. No. 840

Section 5 shows the component listing for each kit.

SB 11-131

Table 5-1. Component Listing - CONT

NSN/PPL	Component	End Item	Vehicle
5820-01-022-3332 PPL 5129	Installation Kit	MK-1811/VRC-43	M882, M892 M1008A1
	Book Plan Ref. No. 566	Installation Instructions for AN/VRC-43 in M882, M892 or M1008A1	Ea 1
5995-00-823-2990	SM-D-415563	Cable Assembly, CG-1773B/U (8 ft)	Ea 1

For example, you're using an AN/VRC-43 in an M1008A1 CUCV. You need an MK-1811/VRC-43 installation kit, NSN 5820-01-022-3332. The book plan for this kit is 566.

Now you use the kit NSN, in this case 5820-01-022-3332, and go to Section 5. This section is set up like the AMDF. It's in NIIN sequence (the last 9 digits of the NSN).

If you don't have a copy of SB 11-131 (Apr 88), have your pubs clerk order one on DA Form 4569. To make sure you get future changes to the SB, get the clerk to add it on your 12-series pubs account at the Baltimore Pubs Center. The clerk requests the number of copies you need on DA Form 12-99 using 12-34 for the form number and 952 for the block number.

REPLACEMENT NSN'S

When the Controlled Cryptographic Item (CCI) label on your security equipment gets torn or damaged, order replacement labels from S9G with these NSN's:

Item	NSN 7690-01-	PN
KG-27	229-4269*	ON397091
KG-84	215-9375	ON385077-1
KY-38	215-5889	ON385080-1
KYK-13	229-7516*	ON386224-1
KYV-2	215-9366	ON385072-1
KIR-1A	215-6929*	ON385100-2
KOI-18	229-9555	ON386224-5
KG-84A	215-9374	ON385077-2
KW-7 (except KW-7D)	215-6930	ON385075-1
KG-45	215-9365*	ON385091-1
KG-82	215-9376	ON385079-2
KY-28	215-5888	ON385081-1
KY-67	229-7515	ON385111
KYB-78	215-9378	ON385102-1
KYX-15	229-7517	ON386224-3
KYV-2A	215-6928	ON385072-2
KIT-1A	215-6931*	ON385100-1
KG-81E1	230-7211	ON385108-3
KG-81E3	230-6259	ON385108-4
KYX-15A	229-7518	ON386224-4
KG-81CASE	230-6261	ON385112
KG-84CASE	229-6867	ON385099-1
KY-57/58	215-9367*	ON385103-1

GET A REPLACEMENT LABEL FOR THE *KY68EI* WITH *NSN 7690-01-215-9377*. USE *NSN 7690-01-263-9757* FOR THE *KG84/84A* PCB LABEL.

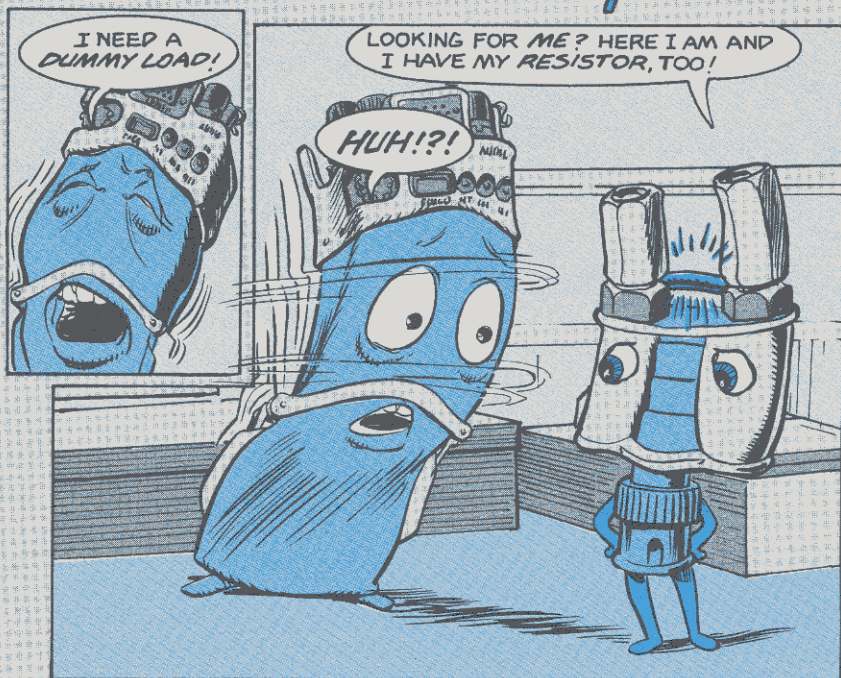
WHEN YOU ORDER THESE TWO LABELS, SEND THE REQUEST TO:

CONTROLLED
CRYPTOGRAPHIC ITEM
US GOVT PROP
SN
KY-68 EI

Commander
USACCSLA
ATTN: SELCL-LO-A
Ft Huachuca, AZ 85613-7090

*AAC on the AMDF is "Y." Order on DD Form 1348-6 from S9G.

SUBSTITUTE DUMMY LOAD



When you do the AN/PRC-126 radio set operational checkout procedure, you normally use a DA-437 dummy load, NSN 5985-00-089-8990, like it says in TM 11-5820-1025-24&P.

If you don't have this dummy load, you can use a substitute in a pinch.

Here's what you need:

- Adapter connector, NSN 5935-00-410-1399
- 50 ohm, 1 watt resistor, NSN 5905-00-106-9349

All you need to do is put the resistor across the adapter connector terminals and connect the adapter to the antenna terminal.

NSN for Connector Cap

Keep dust and dirt out of your AN/MJQ-10A power plant's power cable connector. Use the dust cover. If it's missing, replace it with NSN 5935-01-172-1004.

Make Terminal

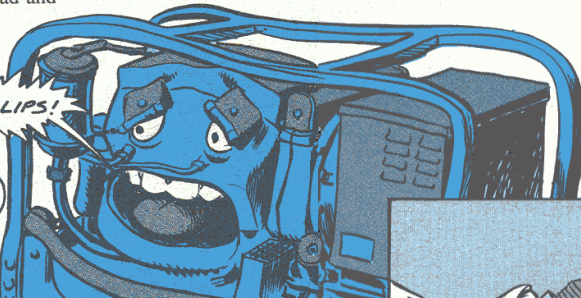
Safety Clips

You can't get ready-made safety clips for the load and ground terminal nuts on your 10-KW and smaller generators. But you can make your own clips.



I WANT MY SAFETY CLIPS!

THERE ARE NO SAFETY CLIPS IN THE SUPPLY SYSTEM, BUT HERE'S ONE QUICK AND EASY WAY TO MAKE THEM!

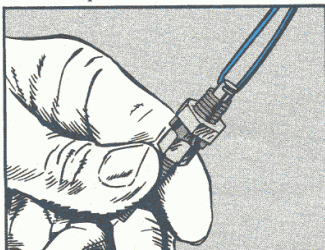


First, pick the wire you need from this chart:

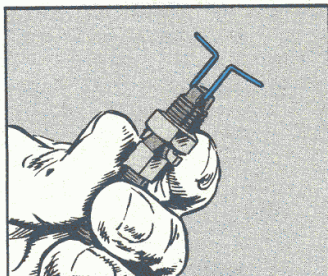
NSN 9505-	002A	003A	015A	016A	017A	018A	021A	022A	023A	025A	026A	112A
00-804-3814 .042 inch	G	G	L-G	L-G			L-G			G	G	G
01-049-0144 .050 inch	L	L				L			L	L	L	L
00-596-1668 .051 inch						L-G	G		L-G	G		

L = Load Terminal G = Ground Terminal

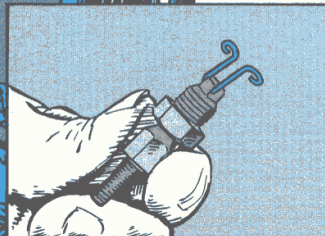
Now, cut off about 3 inches of the wire. Be sure the wire is short enough to keep the clips from touching another terminal or the generator frame in the open or closed position. Put the wire through the hole in the terminal.



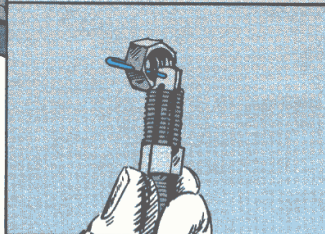
Hold the terminal so you can bend both ends of the wire straight up. Try to keep the wire in as straight a line as you can with the terminal body.



Next, bend the wire into back-to-back 90° angles. The legs of both angles would be about 1/2-in long.



Bend the ends of each 90° angle down and around into a U-shape.



The homemade clip should hold the nut when you unscrew it to install the cable.

To make safety clips on larger generators, use wire, NSN 9505-00-596-1662.

No wire? As a temporary fix, you can straighten an ordinary paper clip to make the safety clip.

Install Starter Kit

THERE'S AN EASIER WAY TO GET ME STARTED!

OUCH!

SNAP



Starting your 3-KW gasoline generator engine manually can be more than a nuisance—it can be dangerous. Each time you tug on the rope to start your generator, the knotted end of the rope comes off the starter pulley. That free-flying end of the starter rope can pop you in the eye.

Make starting your generators easier and safer by installing an electrical starter kit, NSN 2920-00-075-1710. It's authorized by TM 5-6115-271-14.

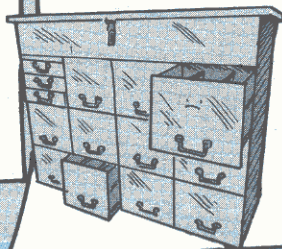


PLL Storage Cabinets

Dear Half-Mast,
Most unit MTOE's
do not authorize
storage cabinets
for PLL parts. How
can we get them?
SFC K.W.K.

Dear Sergeant K. W. K.,
Table 63 of CTA 50-909
authorizes a number of cabinets that
can be used for parts storage.

Commanders
can use the
CTA to get
the cabinets
needed.



Half-Mast

Rescue Saw ...

Blades to the Rescue

Dear Half-Mast,
We have gasoline-powered rescue cutting saws,
NSN 420-00-134-8954. We need saw blades for them.
Can you find the NSN's?
SFC G.L.P.

Dear Sergeant G. L. P.,
Sure thing. The blades you need
are:

Carbide tipped 3455-00-482-5686
Steel cutting 3455-00-482-5683
Concrete cutting 3455-00-482-5685

Half-Mast

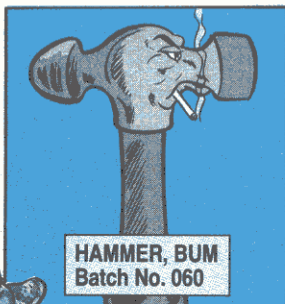


REPLACE BUM HAMMERS

The ball peen hammer, NSN 5120-00-061-8543, in some Automotive General Mechanic's tool kits, NSN 5120-00-177-7033, is too brittle. It could shatter and slivers of steel could fly off and hit you in the eye.

Check your hammer now! If it's made by Plumb and has a red fiberglass handle and black head, look for the batch number stamped on the head. Don't use the hammer if the the batch number is 060.

NOT WANTED



Send in a Quality Deficiency Report on an SF 368 to:
(QDR)

GSA/FSS/4FQC
Rm 366, ATTN: Jean Clark
75 Spring Street, SW
Atlanta, GA 30303

Cite TROSCOM message AMSTR-MES 121500Z Oct 89 and GSA message 061400Z Sep 89 in the REMARKS block of the QDR.

You'll get the word on ordering a replacement hammer from GSA.

I'D SURE HATE TO RUN INTO HIM IN A DARK SHOP!




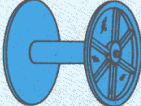
DON'T WORRY. WE'LL SPOT HIM AND PUT HIM OUT OF BUSINESS PERMANENTLY!

Mark Up


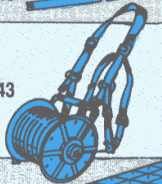
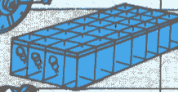







TM 5-9905-200-10 comes up short when it comes to giving NSN's for the components for the minefield marking set, NSN 9905-01-019-0140. And SC 9905-97-CL-E02 is on microfiche, so it's tough to use in the field.

Here's a list of what makes up the set, the NSN and the quantity needed in the set.

Name	NSN	Quantity
Lights	6230-01-081-0592 	72
Poles	9905-01-068-8638 	70
Marking tape	9390-01-066-9542 	2 (3600-ft rolls)
DR-8 reel	8130-00-407-7859 	2

Component NSN's

Name	NSN	Quantity
Pole driver	9905-01-066-9543 	1
RL-39 reel assembly	3895-00-498-8343 	1
Light Box	6220-01-081-0593 	1
Light bag	8105-01-066-9544 	1
Pole bags	8105-01-066-9545 	2
Chest	8145-01-082-1132 	1
Drive plate	9905-01-066-9546 	2
Signs	9905-01-066-9547 	70
Wire, nonelectrical (1-lb roll)	9525-01-031-1086*	1
Vapor-proof bag	none	1
Sign bag	none	2

*This NSN replaces the one listed in the SC.

There are no NSN's for the bags. If they are damaged or lost, you don't need to replace them.

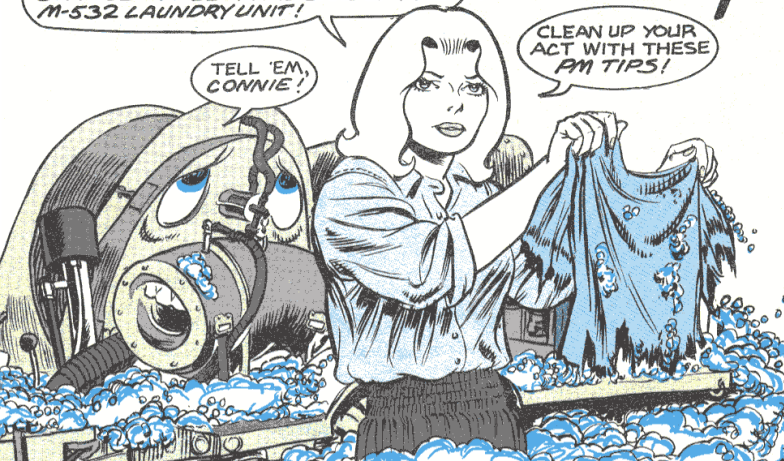
Use the wire to attach the drive plate to a pole. This wire is not mentioned in the TM.

POOR PM WON'T WASH WHEN YOU'RE SUPPOSED TO BE TAKING CARE OF YOUR M-532 LAUNDRY UNIT!

TELL 'EM, CONNIE!

CLEAN UP YOUR ACT WITH THESE PM TIPS!

Clean Up Your Act.



Generator

Keep your 20-HP Mil Std engine TM 5-2805-259-14 handy when you work on the generator set. The generator's engine has to put out 3,600 RPM when the extract cycle begins.

To keep the engine RPM steady at 3,600, follow the procedures in Figures 3-13, 3-16, 3-17 and 3-17.1 of TM 5-2805-259-14. You might have to adjust or replace the carburetor or the governor or time the magneto.

Do not run the engine at idle. If you do, the frequency drops below 60 cycles and the exciter field voltage increases. This makes the regulator operate at maximum output and overloads the power transistor.

Towing

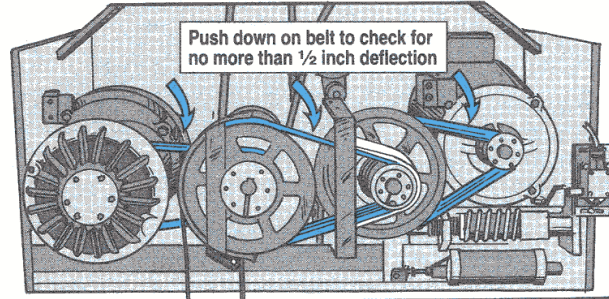
Before towing your laundry unit, be sure to put cushioning material, such as soft sponge rubber or packing paper, around the mercury bulbs in the air temperature control. This prevents broken or damaged bulbs.

The washer-extractor tiedown mounting bolts vibrate loose during towing. To prevent this, add an additional locknut, NSN 5310-00-045-1029,* on each nut on each mounting bolt. Torque the tiedown mounting bolts to 170 lb-ft, + or - 10 lb-ft.

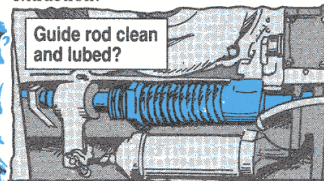
*Order on DD Form 1348-6 from S91.

Hodgepodge

USE Keep main drive belts for the washer extractor adjusted to 1/2-in deflection midway between pulleys. This is in Paragraph 3-12 of TM 10-3510-208-12 (Sep 77).

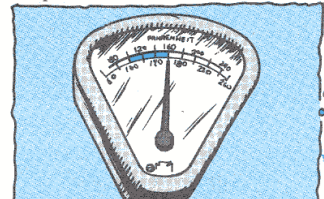


USE Keep the motor base guide rod clean and well lubed. Any binding here stops the washer motor base from moving into the extract position. The motor base has to travel 1/4-inch during extraction.



USE Never overload your washer. The maximum load limit is 60 pounds. Use the information in Table 2-2 of TM 10-3510-208-12 to get the weight of certain items. Of course, there's no law that says you can't decrease the washer load to give the generator some overload relief during the extract cycle.

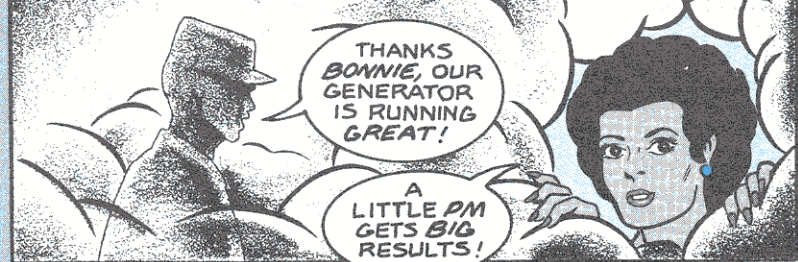
USE Put the right amount of hot water in your washer. Follow Tables 2-3 and 2-4 of the TM for the water level and temperature limits.



USE Follow every step in Paragraph 2-3d(1)(b) when you operate the unit manually.

USE Whenever possible, use electrical power from sources other than the generator.

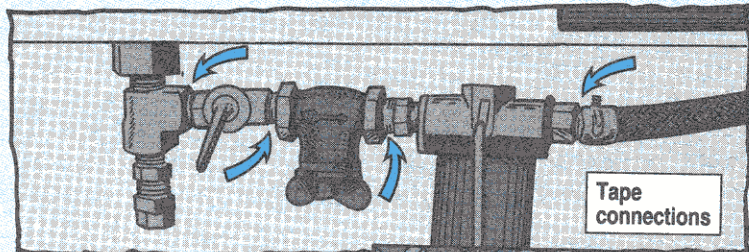
Keep Fuel Flowing Freely



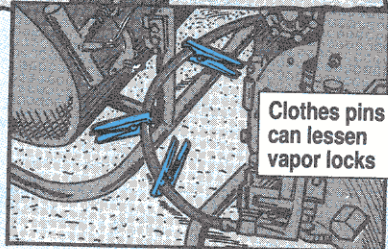
Dear Editor,

Leaking fuel hoses and vapor locks stop the M3A4 smoking cold turkey. We've come up with a couple of tips to help the generator's smoking habit.

Fuel leaks at the fuel sediment bowl and the carburetor. To stop those leaks, disconnect the hose, the carburetor and fuel sediment bowl. Wrap antiseize tape, NSN 8030-00-889-3535, around the connections. Put the hose back.



When it's real hot—above 90°F—the M3A4 develops a vapor lock in the fuel line. We've found if you space three wooden clothes pins along the fuel line they can help stop vapor locks.



(Editor's note: Glad to plug your tips. You've pinned down some good solutions.)

SGT Mickey L. Humble
Ft Polk, LA

CLEANING HELP

Dear Half-Mast,
We've not found a way to clean off fog oil from either the HMMWV or the M1059 carrier. Steam cleaning won't work at all. Any suggestions?

CPL M.C.

Dear CPL M.C.,

A 50-50 mixture of ammonia and water and lots of elbow grease would be your best bet.

Half-Mast

ISN'T THERE ANYTHING YOU CAN DO ABOUT THAT ICKY FOG OIL?!

I'VE GOT A SOLUTION RIGHT HERE!



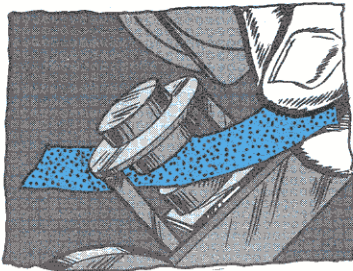
Magneto Boost

Dear Editor,

Sometimes corroded or pitted magneto contact points prevent the magneto from sparking. In the field, mechanics can't always replace the points.

A good temporary fix is to run a piece of fine emery paper or a point file between the contacts. That cleans the contacts enough so that they spark. Then adjust or replace the contact points when you get back to the shop.

SGT Santos Santoni-Rios
APO New York



(Editor's note: You've smoothed out that problem. Way to go.)

HERE'S THE LATEST SCOOP ON THE M17 MASK!



There are no more M13 or M13A1 filter elements. Order M13A2's, NSN 4240-00-165-5026, for both training and chemical protection.

The climate chart for M13A2's on Page 2-55 in TM 3-4240-279-10 is only for combat zone, rapid deployment, and special mission units. Everyone else should use the criteria in Para B on Page 2-55 for replacing filters.

Banana Oil Test

When you're testing masks for leaks with banana oil, wait 10 minutes after the operator smells the oil before checking again with the mask on. The banana oil's smell is strong enough that it will linger. The operator thinks he still smells the oil—even though the mask seals it out.



HELP FOR

Dusting Hoods

If you have trouble with hoods sticking, dust them with talcum powder. Making sure hoods are dry before they're put in their carriers helps, too. It's OK to leave the powder on the hoods when they go to the field.



Order TM's

If you get an M17-series mask without TM 3-4240-279-10, turn in an SF 368 and tell your pubs clerk to order replacement TM's. You're supposed to have them.



NBCNCO'S

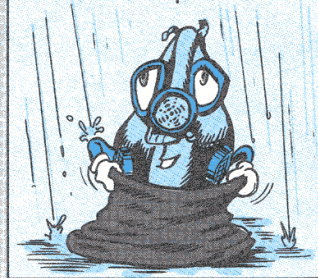
Semiannual Maintenance

Confused about who pulls semi-annual maintenance? The operator does, but only under your supervision. That's why you must schedule it on DD Form 314. The word's on Page 2-11 in Change 2 in TM 3-4240-279-20&P.



M1 and M1A1 Bags

M1 and M1A1 bags protect the M17 from water. But unless you're in the tropics or in water, the carrier is enough protection. The bags damage the facepieces if M17's are left in the bags too long. Operators outside the tropics need only use the bags when fording. Then remove the masks as soon as possible.

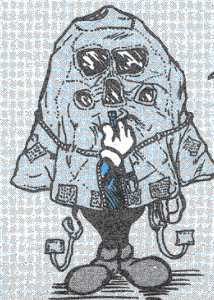


Zipper Ease

To keep hood zippers from hanging up, use zipper lubricant, NSN 9150-01-112-9412. One tube's enough for all your unit's M17's.

With the zipper open, put a drop of lubricant on the zipper teeth about 2 inches from where the zipper opens. Rub the lubricant in. Run the zipper up and down until it moves easily. Wipe off excess lube.

You can also run a bar of soap or a candle up and down the teeth. Open and close the zipper several times to spread the soap or wax.

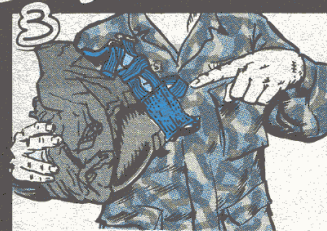


PUT LUBE ON ZIPPER AND WORK THE ZIPPER UP AND DOWN!

NO RHYME

BUT A REASON

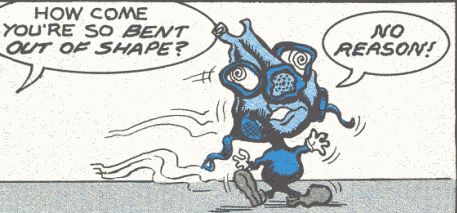
3 Sometimes it may seem like there's no rhyme or reason for doing things the way you're told. It may not rhyme, but there's definitely a reason to store your M17 mask in the carrier like you're taught. Otherwise, your mask will be out-of-shape or out-of-position.



Let the head harness hang free when you put the mask in the carrier. If the harness is pulled to the side, it loses its snap and can't hold your M17 on tight.

Put the mask in the carrier so the lenses face up and out of the carrier opening. That's so the mask will already be in the right position to be put on when you pull it out of the carrier.

LATER...



Hold the hood away from the facepiece before you fold it over the facepiece. That smooths out the hood so it won't be so waddled that air can't keep it dry and prevent dry rot.



Fold the hood so it doesn't cover the chin opening. That way when you jerk your M17 out of the carrier the hood will naturally fall in place.

Size Solution

With so many things stamped on an M17 mask, it can be a real mystery to figure out the mask's size. But it's a simple solution. Use this chart with the embossed letters on the facepiece and nosecup:

Size	Facepiece	Nosecup
XS	XS	X
SM	S	M
MD	M	M
LG	M	L



Get New Look

Good news! Some supply catalogs (SC's) now give the components list and hand receipt in one publication.

THE NEW *HARD COPY SC'S* HAVE A PICTURE AND THE *DESCRIPTION* OF EACH TOOL, PLUS THE *NSN!*

SECTION 8 ILLUSTRATED COMPONENTS LIST (HAND RECEIPT)

TOOL KIT, BODY AND FENDER REPAIR

ITEM DESCRIPTION

QTY

UNIT

X

C

D

NSN

TOOL KIT, BODY AND FENDER REPAIR 50 5180-90-CL88A (LN 10288)

BLADE, HAND JACKSAW 15 IN. LD. 0.035 IN. THK. 24 TEETH PER IN. 10 BLADES PER BOX

5110-00-277-4581

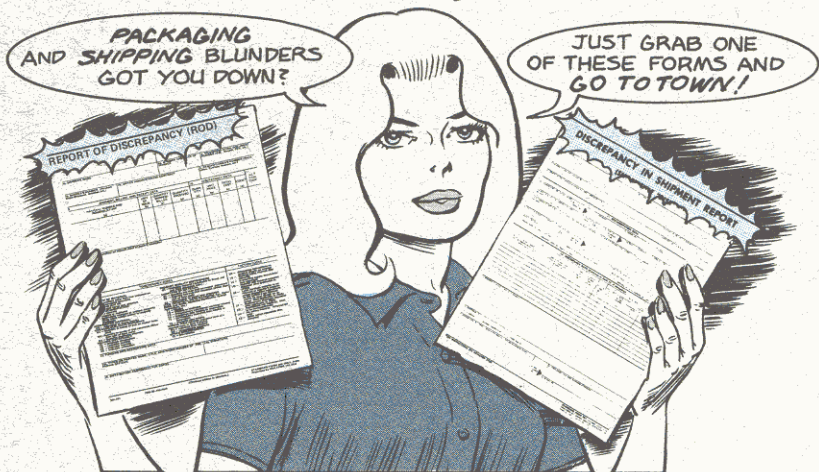
Here are some of the SC's that are available in hard copy:

Supply Catalog	Title
4940-95-A88	Power Line Maintenance Service Kit
4940-95-B06	Electronic Repair, Semi-trailer Mounted, Less Power, Shop Equipment
4940-95-B14	Cutting and Welding, Set 2, Shop Equipment
5180-90-N34	Body and Fender Repair Tool Kit
5180-92-A03	Guided Missile (Hawk), Maintenance, Electromechanical Tool Kit
5180-92-A06	Electrical Repairer's, Army Aircraft, Tool Kit
5180-92-A30	Electronic Repairman (Hawk) Tool Kit
5180-92-A60	Guided Missile (Hawk) Tool Kit
5180-99-A01	General Aircraft Mechanic's Tool Kit
5180-99-A07	Power Plant, Army Aircraft, Tool Kit
5180-99-A09	Aircraft Inspection Tool Kit

To find other SC's that are available in hard copy, check out DA Pam 25-30.

Since you use the SC for hand receipt checks, be sure to have your pubs clerk order a replacement copy when you've used most of the inventory spaces.

DIFFERENT FORMS-DIFFERENT USES



Hot ROD

SF 364, Report of Discrepancy (ROD), is for reporting shipping or packaging discrepancies. Like when you get the wrong item or a substitute that won't work or the package doesn't protect the item. Get help on the SF 364 from AR 735-11-2, Reporting of Item and Packaging Discrepancies.

Never use the 364 form when requesting supply status. If you haven't received an item, send a follow-up through your supply channels instead.

However, you do use SF 364 to report nonreceipt of an item when you

receive a supply status of "BV" and the scheduled delivery date has been exceeded by 60 days and the item was shipped directly from the contractor, manufacturer or vendor.

If your follow-up shows that the item was shipped but you haven't received it, send in a tracing form.

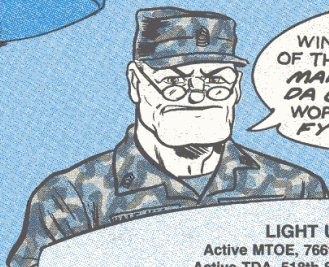
Racer Tracer

SF 361 is for tracing items that were shipped by transportation other than parcel post. AR 55-38, Reporting of Transportation Discrepancies in Shipments, gives more information on SF 361.

Rawhide Mallet NSN Wrong

The wrong NSN is listed for the rawhide mallet on Page 6-4 of FM 10-16, General Fabric Repair, dated 13 June 1984. The mallet, part of the tentage repair kit, is NSN 5120-00-222-2220.

Maintenance Excellence Awards



HERE ARE THE WINNERS AND RUNNERS-UP OF THE FY89 ARMY AWARD FOR MAINTENANCE EXCELLENCE! DA CIR 750-90-1 HAS THE WORD ON THE FY90 AND FY91 COMPETITIONS!

LIGHT UNIT WINNERS

Active MTOE, 766th MI Det, Berlin (INSCOM)
Active TDA, 518th Sig Co, Linderhofe (USAISC)
Reserve MTOE, HHD, 520th Maint Bn, St Louis, MO (FORSCOM)
Reserve TDA, 2/322d Cav, 5th Bde (Tng), Great Bend, KS (FORSCOM)
National Guard, 70th General Supply Co (GS), Woodstock, MD (ARNG)

LIGHT UNIT RUNNERS-UP

Active MTOE, B Battery, 2/20th FA Regt, Hanau (USAREUR)
Active TDA, 2042d Civ Spt Group (Ordnance), Miesau (USAREUR)
Reserve MTOE, 275th Supply Co, Ft Pickett, VA (FORSCOM)
National Guard, HHD, 109th Medical Bn, Iowa City, IA (ARNG)

INTERMEDIATE UNIT WINNERS

Active MTOE, 513th Trans Co, Ft Lewis, WA (FORSCOM)
Active TDA, Consolidated Maintenance Center, Augsburg (USAREUR)
Reserve MTOE, 346th Ordnance Co (Ammo), Jonesboro, AR (FORSCOM)
National Guard, 1133d Medium Trans Co, Mason City, IA (ARNG)

INTERMEDIATE UNIT RUNNERS-UP

Active MTOE, C Battery, 1/9th FA (Pershing), Neu Ulm (USAREUR)
Active TDA, 178th Sig Co, Heidelberg (USAISC)
Reserve MTOE, 801st Engr Co (PC), Oakland, CA (FORSCOM)
National Guard, 1729th Maint Co (DS), Havre De Grace, MD (ARNG)

HEAVY UNIT WINNERS

Active MTOE, 2/7th Cav, Ft Carson, CO (FORSCOM)
Active TDA, 1/29th Inf Regt, Ft Benning, GA (TRADOC)
Reserve MTOE, 417th Maint Co, Fairbault, MN (FORSCOM)
Reserve TDA, Equipment Concentration Site 153, Anniston, AL (FORSCOM)
National Guard, HHC, 2d Bn, 102d Armor, West Orange, NJ (ARNG)

HEAVY UNIT RUNNERS-UP

Active MTOE, 69th Sig Co, Ft Huachuca, AZ (USAISC)
Active TDA, 6941st Guard Bn, Berlin (USAREUR)
Reserve MTOE, B Battery, 841st Engr Bn (CBT), Orlando, FL (FORSCOM)
National Guard, D Co, 234th Sig Bn, Clinton, IA (ARNG)

60

JUL 90

Cosmoline Out for M1 Wheels

Some new M1A1 tanks roadwheels and compensating idler wheels come with Cosmoline preservative on the mounting surface. Wheel nuts will not hold torque unless the mounting surface is dry. Remove the preservative with a wire brush, drycleaning solvent and rags. Take a look at your new M1A1 tank's wheels too. If you see Cosmoline, remove the wheels and clean it off.

Connie's POST SCRIPTS

PLEASE ELIMINATE FOD AND SAVE YOUR KINGDOM!

M1A1 Evacuator Seal Confusion

Make sure you use the right semiannual service kit and the right bore evacuator seals on your M1A1 tank, mechs. The bore evacuator won't work with the wrong seals. M1A1s use service kit, NSN 2530-01-255-3347, which contains packing, preformed, NSN 5330-01-280-6787, for the bore evacuator. M1s use service kit, NSN 2530-01-117-7942, which contains packing, preformed, NSN 5330-00-298-6188, for the bore evacuator. Even though the packings are similar, there's a big size difference—which shows up in poor evacuator performance. Make sure only the right packing is installed on your tank.

Ammo Chute News for Bradleys

Do not dispose of HE and AP ammo chute exit end fittings if they have broken or missing latch components. They are much too valuable to throw away. Hang on to them until a repair kit is available.

M40 Target Warning

Before you pull maintenance on the M40 Small Arms Night Flight Target Mechanism, turn it off and unplug its cable. Some M40s have bad grounds and are shocking repairmen.

M1009 CUCV Handle Parts by NSN

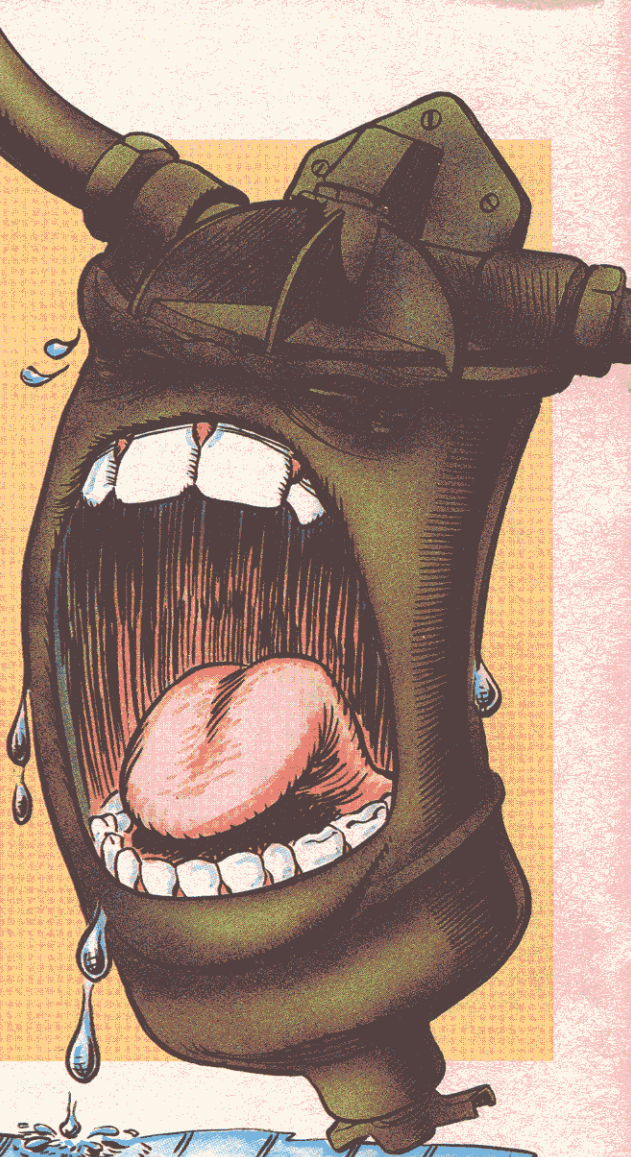
You no longer have to replace the complete window handle when the crank is broken on the tailgate. Now, instead of ordering handle assembly, NSN 2540-01-158-4602, order the crank with NSN 2540-01-211-4621. Get the base with NSN 2540-01-218-6833.

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

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



**DRAIN
FUEL
FILTERS
DAILY-
TWICE
a DAY
in HOT,
HUMID
PLACES**



**Water Corrodes and Damages Fuel Injection Metering Pump.
Sludge Forms and Clogs The Fuel System.**

PIN: 064836-000