

Issue 464

PS

July
1991

TB 43-PS-464

THE PREVENTIVE MAINTENANCE MONTHLY



WISHING IS
GOOD... BUT PM
IS BETTER!

High Temperature Changes...
See Page 27

Battle Damage Repair TMs

PS

THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-464, 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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DON'T WORRY, OUR BATTLE DAMAGE REPAIR TM TELLS US EXACTLY HOW TO FIX IT!

BATTLE DAMAGE ASSESSMENT AND REPAIR TMs ARE AVAILABLE THROUGH THE BALTIMORE PUBS CENTER.

TO GET THESE TMs, HAVE YOUR PUBS CLERK ORDER THEM ON DA FORM 4569. TO MAKE SURE YOU GET FUTURE CHANGES YOUR PUBS CLERK ADDS THEM TO YOUR 12-SERIES FORMS.

TM 3-251-BD Chemical Defensive Material
TM 5-3835-222-BD POL Equipment
TM 5-4120-394-BD Environmental Control Units
TM 9-6115-624-BD Generators
TM 9-1000-257-BD 105-mm Howitzer Series
TM 9-1000-258-BD 155-mm Howitzer Series
TM 9-1005-321-BD PIVADS
TM 9-1425-485-BD Lance Missile
TM 9-1425-646-BD MLRS
TM 9-1425-1586-BD Chaparral Missile
TM 9-1450-646-BD MLRS Carrier
TM 9-2320-356-BD Tactical Wheeled Vehicles
TM 9-2350-252-BD M2/M3 Bradley
TM 9-2350-255-BD M1 Abrams Tank
TM 9-2350-273-BD M48/M60 Tanks
TM 9-2350-274-BD M109
TM 9-2350-275-BD M113
TM 9-2350-276-BD General Combat Vehicles
TM 11-5800-215-BD Commo/Electronics Equip
TM 55-1520-210-BD UH-1H/V Helicopter
TM 55-1520-228-BD OH-58A/C Helicopter
TM 55-1520-237-BD UH-60A/L, EH-60A Helicopters
TM 55-1520-244-BD AH-1S/P/E/F Helicopters

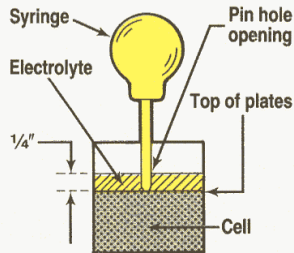
Beating the Heat with Battery PM

There's only one way Vulcan batteries can beat the heat in the desert. And that's with your help.

High temperatures suck out a battery's electrolyte and drain its power. Gas pressure—evaporation—makes it more likely batteries will explode if they're not vented. And then there are the usual problems like corrosion to fight.

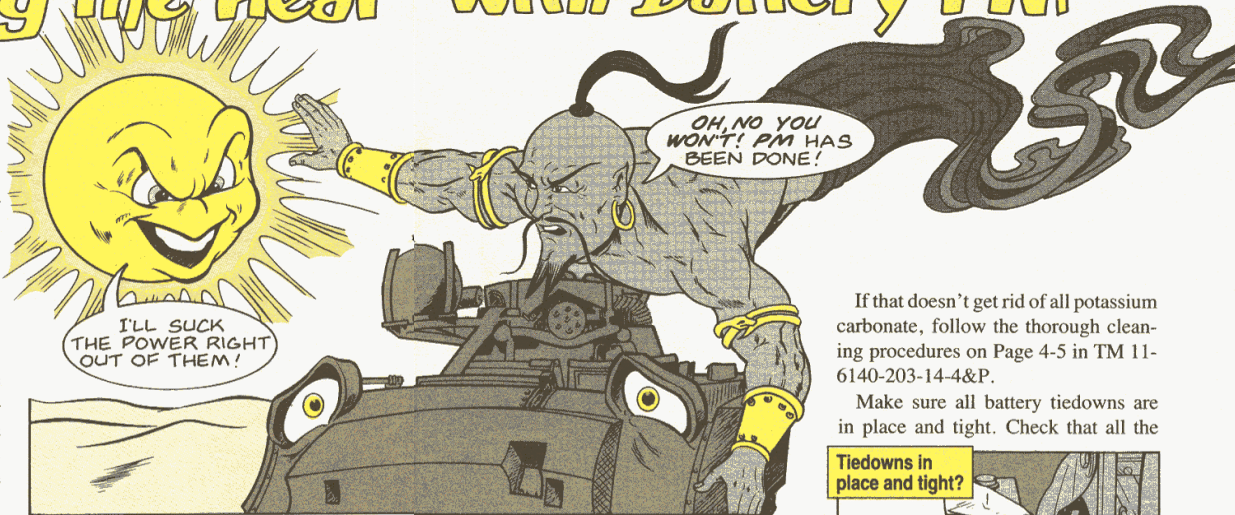
Give batteries a fighting chance. Make these points part of your PM battle plan:

Check the electrolyte levels in the system batteries daily—not weekly—in the desert. Remember the system batteries must be fully charged—27-28 volts—to get a valid electrolyte reading.

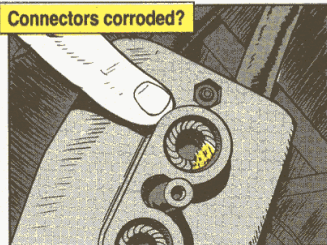


Add distilled water, NSN 6810-00-682-6867, if necessary with a syringe until 1/4 inch of water covers the cell plates.

Unscrew the connectors and eyeball the sockets. Clean out any corrosion with soap and water and a nylon brush.



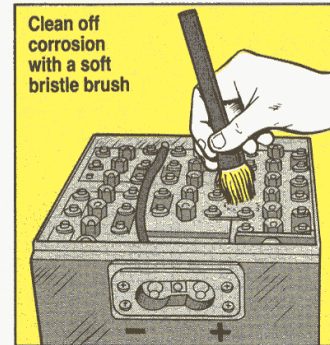
Clean off any corrosion on the terminals, holddown clamps, and battery box the same way.



Never use a wire brush. It can cause short circuiting.

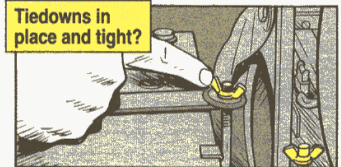
Pull the battery case cover and check for potassium carbonate powder—the white stuff—on the outside of cells and

on the case. If you spot any, tighten the vent caps to keep powder out of the cells. Then use a nylon brush to brush away the powder.

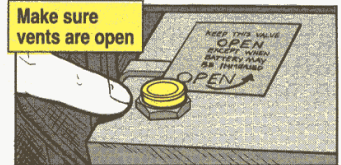


If that doesn't get rid of all potassium carbonate, follow the thorough cleaning procedures on Page 4-5 in TM 11-6140-203-14-4&P.

Make sure all battery tiedowns are in place and tight. Check that all the

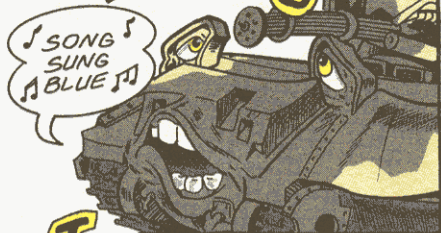


battery case vents are open. Encourage Vulcan crews to do the same before they go to the field. If a battery



explodes in the desert's heat, the tiedowns help contain the explosion. If the vents are clogged, the battery will explode.

Getting the Right Tune

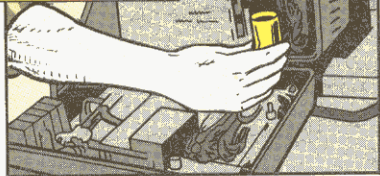


Tuning the klystron power amplifier on the Vulcan's receiver-transmitter can turn into a sad tune if you tune wrong. The amplifier's fried and your Vulcan hasn't any radar. Tune like this:

Remove all jewelry. You're dealing with 30,000 volts that can give a deadly jolt.

Test the tuning tool in the frequency adjuster before you tune. If the tool doesn't read 6, it's bad. Tuning with a bad tuning tool burns out the power amplifier.

Test the tuning tool before tuning



Turn the POWER indicator OFF.

Push in on the tuning tool as you adjust cavities 1, 2, 3 and 5 to 3 on the dial indicator. Don't force the cavities' screws hard against their stops. That damages the klystron. If you can't get a 3 reading, tell your mechanic.

Adjust cavities 1, 2, 3, and 5 to the new operating frequency. The power amplifier's now coarse-tuned.

Press in for coarse tuning

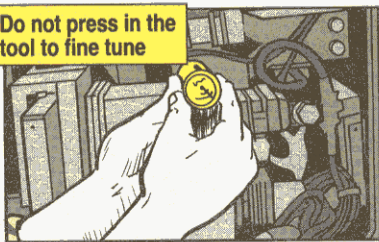


Make sure the antenna is aimed toward open space.

Energize the receiver-transmitter. Set SERV RAD CONT switch to ON. You're ready to fine tune.

Gently now. Do not press in on the tuning tool as you fine tune. If you press in, you burn out the klystron.

Do not press in the tool to fine tune



Adjust cavity 3 until you get a peak reading on the RF POWER meter. Adjust cavity 3 down until the RF POWER is cut in half.

Tune cavities 1, 2, and 5 to their peak RF POWER readings.

Adjust cavity 3 up to peak RF POWER.

The klystron power amplifier's tuned.

Unbolting Double Bolting

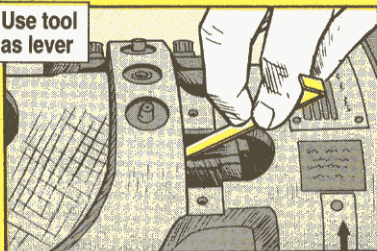
If the Vulcan cannon is accidentally double-bolted, it can be a real headache getting the cannon unstuck... unless you know about the special tool for the job.

And you won't unless you've found the fabrication instructions for the tool on Page C-1 in TM 9-2350-300-20-1 or Page C-1 in TM 9-1005-286-20-1.



To use the tool, insert its shorter end into the firing contact access area between the roller shaft and bolt body. Use the tool as a lever to push up the shaft assembly and unlock the bolt. The cannon should now rotate backwards.

Use tool as lever



HAWK Missile System...

Link Up to Better PCP Links

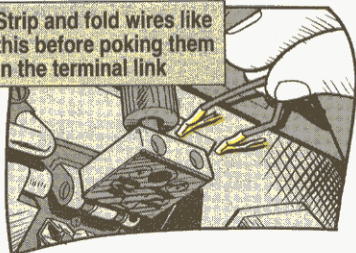
Dear Editor,

On the HAWK's Platoon Command Post, most crews just stick the wires into the data terminal link and figure that takes care of that. It sometimes doesn't. The wires don't make a good connection and that affects the Intra Battery Data Link.

For a good connection, strip no more than 1 inch of plastic off the wires and fold the wires back before you stick them in the data terminal link. Be careful not to let the wires touch each other or metal. That shorts them out.

SGT Peter Charboneau
USMC
Redstone Arsenal, AL

Strip and fold wires like this before poking them in the terminal link



(Editor's note: The HAWK won't fly with weak links. You've just strengthened one of them. Thanks.)

Down the Tubes...

Tubes...

DON'T LET SLACK PMCS SEND ME DOWN THE TUBES!

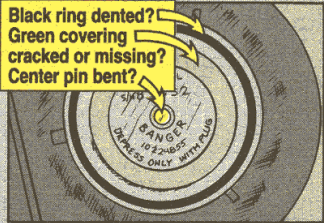
Loading a TOW round—real, MILES, or simulated—with a bad tube will send your TOW system down the tubes.

A bad tube causes everything from a hang fire to a shorted-out missile guidance set (MGS) to a damaged umbilical connector or fire control computer.

But just a few minutes of eyeballing rounds before loading keeps your TOW on track.

• Look at the electrical connector. It's bad if the black ring's dented or out-of-round, the center pin's bent or the green covering's cracked or missing. Turn in the round.

**Black ring dented?
Green covering
cracked or missing?
Center pin bent?**



On training rounds, peel off every bit of aluminum label on the connector. Push down on the rubber detent cover to make sure the detent spring and

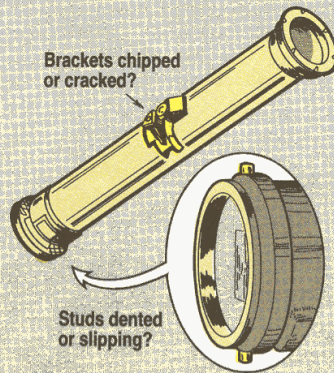


sheared plunger have been removed. If the cover doesn't spring back, they've been removed.

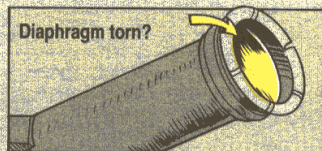
Labels and sheared plungers prevent a good electrical connection and can cause damage to the launcher, the pillow blocks on the Bradley, the MGS or TOW simulator.

• Eyeball the mounting brackets in the middle of the tube for chipping and the alignment studs at the tube's ends for dents or slippage. Problems? Turn in the tube. The tube has to fit in the launcher tight or the missile and launcher electrical connections can't mate for firing.

Without PMCS



• Inspect the front and rear diaphragms on live rounds for tears that will let in moisture. Moisture causes short circuits.



On training rounds, look for the shorting wire on the front end. If it's missing or dangling, the round won't simulate firing.

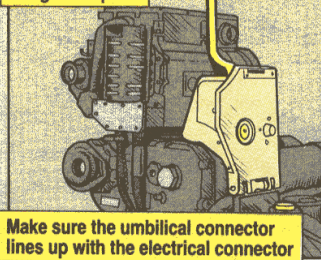
• Make sure the humidity indicator is blue. If it's pink, moisture's already gotten in the tube.

• Protect the missile rounds. Keep the electrical connectors' protective covers, NSN 1440-00-444-0563, on. Keep rounds strapped in their racks during transport.

All of this PMCS will be for nothing if you don't carefully align the round in the launcher. If the round's not positioned right, components like the umbilical connector on the traversing unit or the Bradley's pillow blocks will be damaged... and you won't be firing.

With the traversing unit, never slam down the bridge clamp. As you slowly lower the clamp, check that the umbilical connector is mating with the round's electrical connector. If it's not, reposition the round and try again. If that doesn't do the trick, get another round. Something's wrong with the round's alignment studs or mounting brackets.

Don't slam down bridge clamp

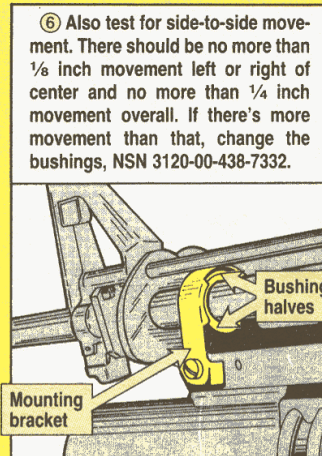
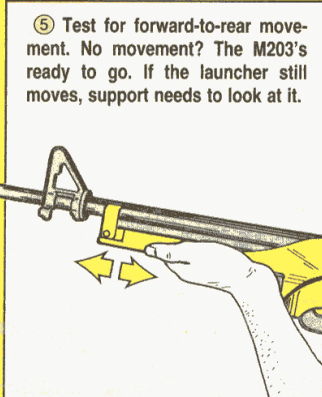
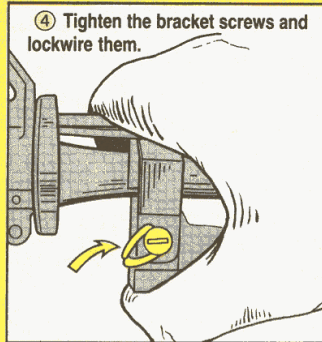
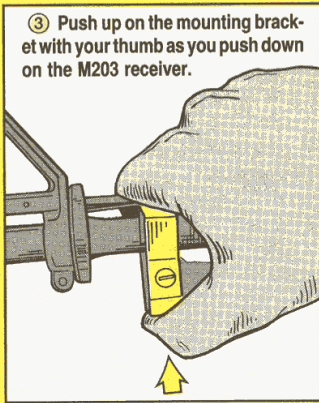
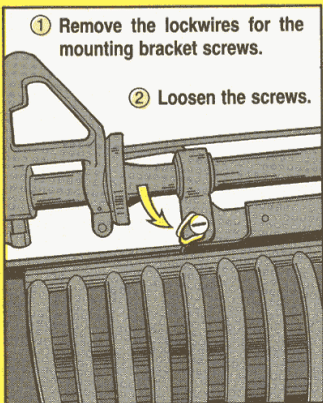
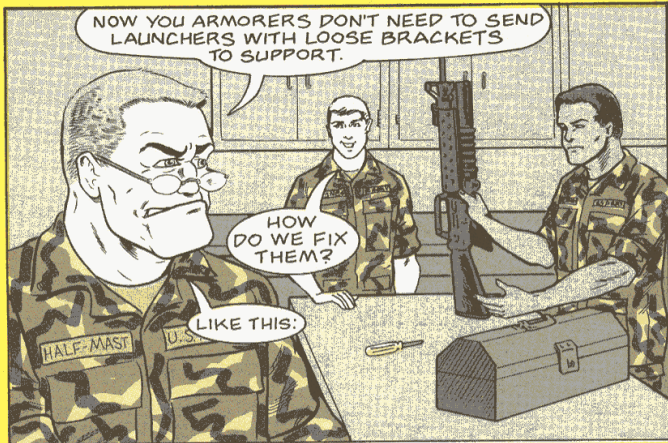


With the M901A1 ITV, just tug on the missile after it's installed in the launcher. If it's snug, it's seated OK.

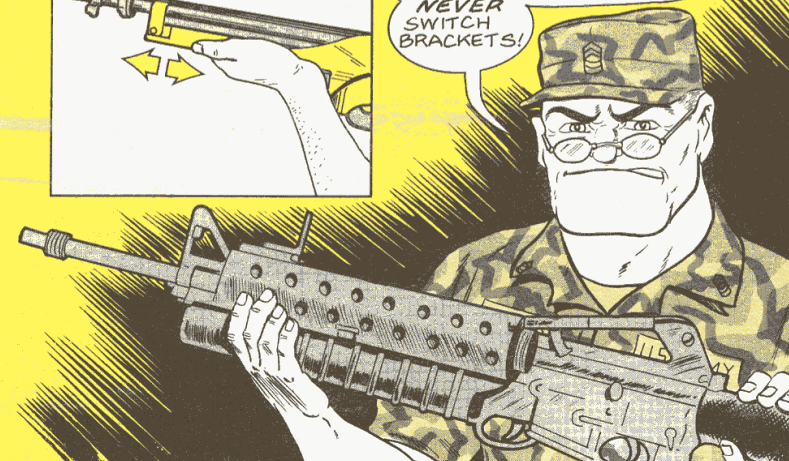
Listen when arming TOWs on the Bradley. If you hear the umbilical drive motor run longer than two seconds, the missile's not aligned. Reset the launcher and reposition the missiles.

Mounting Bracket Fix

Normal firing of the M203 grenade launcher causes mounting bracket screws to loosen and leaves the entire M203 with forward-to-rear movement. Any such movement makes an M203 NMC.

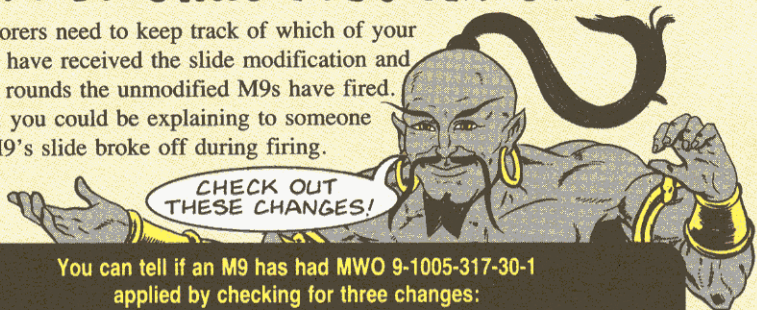


REMEMBER THAT THE M203'S BRACKET HAS BEEN ESPECIALLY FITTED TO THE M16 RIFLE BY SUPPORT. NEVER SWITCH BRACKETS!



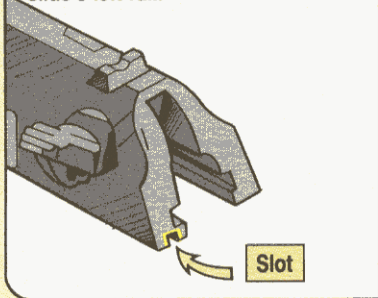
Don't Let Slide Problem Slide

You armorers need to keep track of which of your M9 pistols have received the slide modification and how many rounds the unmodified M9s have fired. Otherwise, you could be explaining to someone why the M9's slide broke off during firing.

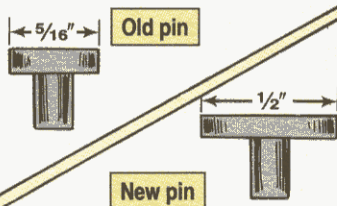


You can tell if an M9 has had MWO 9-1005-317-30-1 applied by checking for three changes:

1. A slot cut in the underside of the slide's left rail.



2. A 1/2-in hammer pin head, instead of the old 5/16-in head.



3. A recessed area in the left grip for the hammer pin head.

If all three modifications don't check out, the pistol wasn't modified correctly. It's unsafe to fire. Turn it in to support.

Support should send the old slide and left pistol grip to:

**Anniston Army Depot
ATTN: SDSAN-DSP-WD
Anniston, AL 36201-9998**



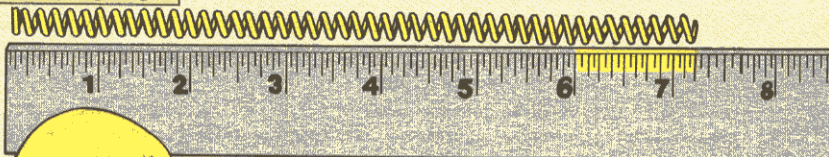
Once the modification's been done, you don't need to worry about the 1,000-round firing limit. But until then, keep track of the rounds fired by each M9 on DA Form 2408-4s (Weapon Record Data Card). After 1,000 rounds, send in the M9 along with its DA Form 2408-4 to support for a slide replacement.

Spring Standard Still Standard



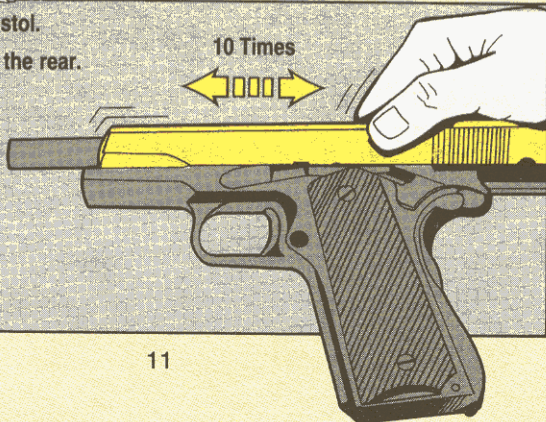
You won't find it in TM 9-1005-211-12, armorers, but there is a standard for .45-cal recoil springs. To be usable, a spring must be at least 6 inches long and no more than 7¼ inches free length. If a spring's not within those limits, it's no good.

Measure spring length



SOMETIMES, THOUGH, YOU CAN SAVE SPRINGS THAT ARE SLIGHTLY LONG WITH THIS FIX:

- Put the spring in a pistol.
- Pull the slide fully to the rear.
- Let the slide slowly go forward.
- Do that 10 times.
- Remeasure the spring. If it's now within standard, it's good to go.



Lube the Turret Race



Too many M1-series tank turrets come to a grinding, screeching halt in the desert because there's no lube on the race ring assemblies.

Race ring lubing is at least a semi-annual requirement. If you haven't lubed one in who knows when, then make sure it gets done pronto. This applies especially to tanks in desert environments, but is good for all M1s, no matter where they are.

Sure, you've got to have a special tool made by your support shop. Sure, you have to remove a plug, install the

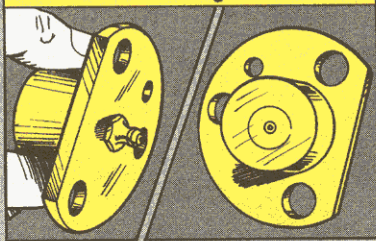
But would you really want your crews facing an enemy with a tank turret that can't be traversed?

Directions for making the tool are found on Page D-2 of TM 9-2350-255-20-2-4 (for M1/IPM1) and on Page D-8 of TM 9-2350-264-20-2-4 (for M1A1).

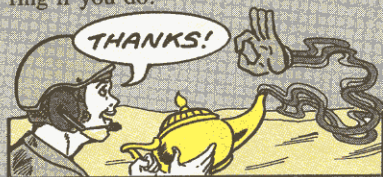
Then do what the semiannual PMCS requires. For M1/IPM1, it's Item 16 on Page 2-23, TM 9-2350-255-20-2-1. For M1A1, it's Item 16 on Page 2-19, TM 9-2350-264-20-2-1.

Make sure the turret moves freely after lubing. Do not leave the tool in place in the inner race bearing ring, thinking it'll be a shortcut for next time. The original plug is machined for its race ring and must be used for smooth operation. Also, *do not* lose the plug. It'll mean a brand new race ring if you do.

You need this tool to keep turret race rings lubed



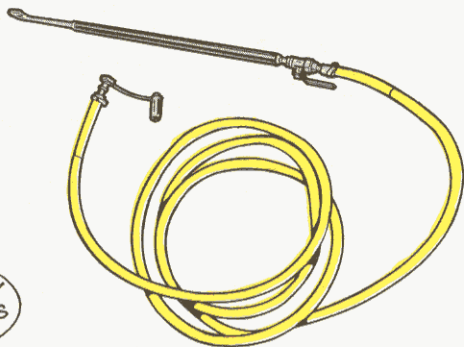
tool, then remove the tool and reinstall the plug.



M1-Series Tanks...

V-pack Cleaning Wand Kit

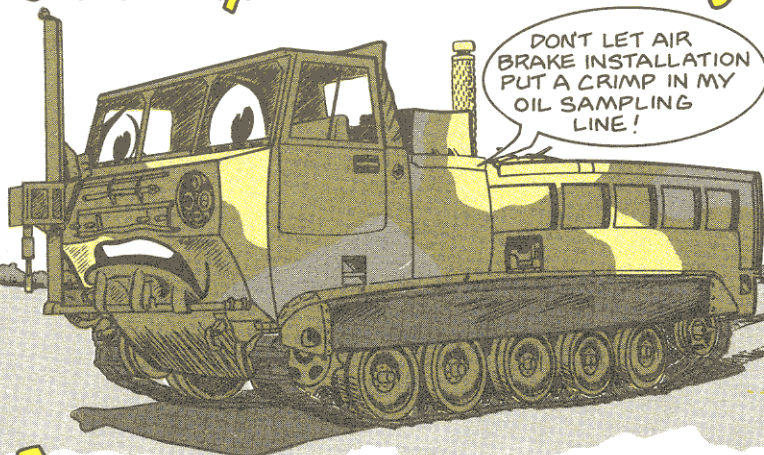
If you need the entire V-pack cleaning wand kit for your M1-series tank, order with the BII information in your -10 TM, using NSN 7910-01-259-4408.



If you need repair parts for the wand, use the info in Fig 321 of TM 9-2350-255-24P-1 or Fig 322 of TM 9-2350-264-24P-1. You will not get all the items in the kit by ordering Item 2, distribution nozzle, NSN 4730-01-246-1231.

What you will do is spend a lot of Class IX money unnecessarily. If you need the kit, order with the BII NSN.

Oil Sample Bracket Change

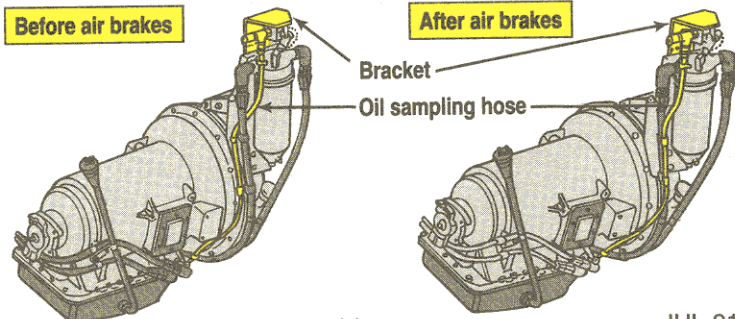


The installation of air brakes on these cargo carriers also means changing the oil sampling system bracket and rerouting the oil sampling hose.

Details on the bracket change and hose move are in TB 43-0001-39-3 (Oct 90) on Page 3-13, available from your TACOM Logistics Assistance Representative.

You'll need bracket, NSN 5340-01-309-7781, and two new nuts, NSN 5310-00-087-4652, to fix the interference problem.

Rerouting the oil sampling hose straightens some sharp bends and prevents chafing on metal surfaces. You don't need new hardware for this. Just unhook the hose from the drain cock, twist the clamps 180 degrees and reinstall the hose. Done right, the sampling hose runs up the outside of the engine oil filter-to-engine return hose assembly, instead of up the inside.



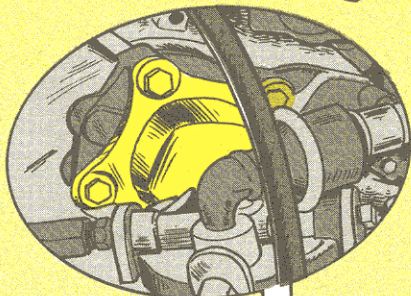
Mechs Replace Blower Drives

Blower driveshaft replacement is now an organizational level job, even if the Maintenance Allocation Chart (MAC) says it's DS work.

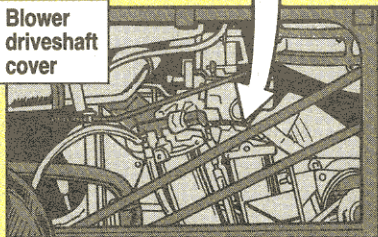
Because of a SMART suggestion by SGT Gene Baldwin and PV2 Robert Garrison of Ft Lewis, WA, the Source, Maintenance and Recoverability (SMR) code for the driveshaft on 6V53/6V53T engines is now PAOZZ.

Vehicles affected include the M113-series family of vehicles, M730A2s and M551 Sheridans.

Details on how to do the driveshaft replacement are in TB 43-0001-39-5 (Apr 91). See your local TACOM Logistics Assistance Representative for the info or write to PS.



Blower driveshaft cover



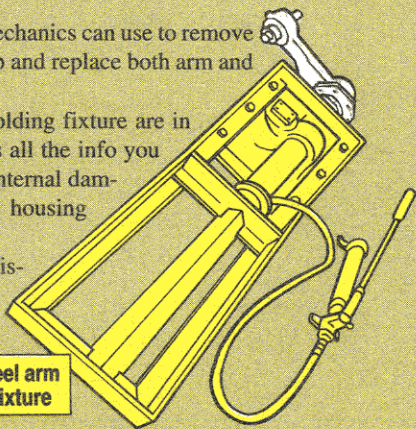
M88A1 Recovery Vehicle...

Frozen Roadwheel Arm

There's one more little trick you "88" mechanics can use to remove a frozen roadwheel arm before you give up and replace both arm and housing.

Plans for making this roadwheel arm holding fixture are in TB 43-0001-39-4 (Jan 91). Para 3-8 gives all the info you need to make this special tool. If there's internal damage, you'll have to replace the arm and housing assembly.

Try your local TACOM Logistics Assistance Representative for a copy of the plans in the TB, or write to Half-Mast.



Roadwheel arm holding fixture

Turret Hatch Sealing



Keeping the rain out of HMMWV weapons carriers is tough if the seal around the turret hatch is damaged or missing.

What you need to stay dry is seal, NSN 5330-01-213-1312. It's listed as Item 26 in the bulk materials list in the back of TM 9-2320-280-20P. You'll get enough for two hatch covers.

Mounting instructions in Para 11-46b of TM 9-2320-280-20-3 are a little skimpy, too. Install the seal like so:

- Thoroughly clean the edge of the turret hatch opening.
- Measure and cut the required length of seal.
- Apply a $\frac{1}{16}$ to $\frac{1}{8}$ inch bead of silicone adhesive, NSN 8040-00-865-8991, to the seal lip.
- Starting somewhere other than at a corner, press the seal over the lip of the weapon station tray hatch opening.
- Allow the seal to sit undisturbed for at least one hour to allow the adhesive to set and cure.

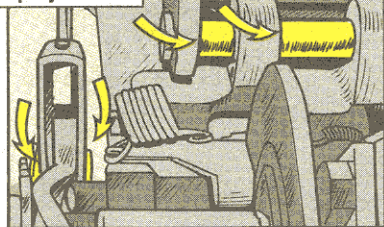
Relief for Sticky Linkages



Take a SMART suggestion from CW2 David W. Kesel at Ft Ord, CA, and use lithium spray grease, NSN 9150-01-064-6511, to keep linkages moving free.

When you have linkage—like that on

**Clean, then
spray on lube**



the HMMWV's parking brake—that binds from lack of lube, give it a spray of the grease. Work the linkage back and forth and the grease will work itself into the joints.

This lube is handy for quick lubing after fording or operating in mud, where water gets into the joints.

If you're operating in a sandy area, clean sand, grit and debris from the linkages and mechanisms. Spray on the lube, work the linkage back and forth to let the grease penetrate, then wipe off the excess. That'll prevent it from catching sand or grit that can damage the linkage.

DRIVING IN THE DESERT

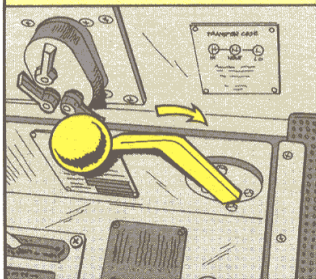
Here're some tips to keep you from getting stuck in the sand:

CHECK TIRE PRESSURES BEFORE LEAVING A ROAD AND OPERATING IN DESERT SAND CONDITIONS—EVEN IF THE TIRES ARE HOT. THESE PRESSURES ARE REQUIRED:

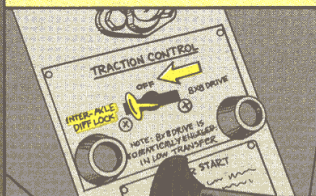


Tires	Pressure (PSI)
Front tires (All models)	30
Rear tires on M977, M978, M983 & empty M984A1	35
M985 & M985E1	40
M984A1 towing another vehicle	80

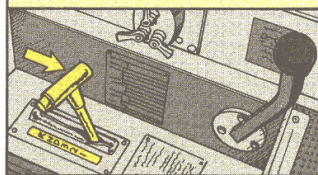
When you're starting from a dead stop...shift transfer lever to LO...



...set the traction control lever to INTER-AXLE DIFF LOCK...



...set the transmission range selector to 2 or 1.



- Start slowly on sand so you don't spin the wheels. Spinning the wheels will dig holes you'll have problems getting out of.
- Keep the throttle steady after you reach the desired speed.
- Turn slowly and wide when on loose sand.
- Steer straight up and down hills and sand dunes when possible.

Getting Unstuck

You may get stuck no matter how careful you are. Here are some tips on getting out:

- Make sure the transfer is in LO and the traction control is in INTER-AXLE DIFF. LOCK.
- Shift into reverse.
- Press the throttle LIGHTLY and move straight back about 20 feet, then stop.
- Shift to 1 and move forward, turning gradually, and continue your mission.

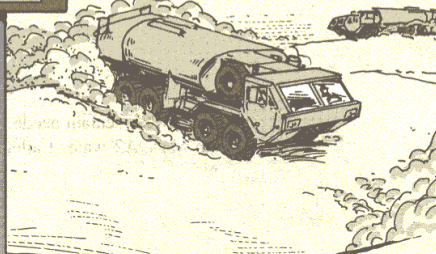
If you can't back yourself out of trouble, STOP! Spinning your wheels will just dig them in deeper and make it harder to get the truck out. Give your recovery folks a shout to have them get you out.

M107 Water Tanker Valve NSN

The NSNs for the M107 main gate valve assembly and its nipple (Items 12 and 4, Fig 31, TM 9-2330-213-14&P) are missing. Order the assembly with NSN 2590-00-611-7107 and the nipple with NSN 4730-00-196-1555.

M149A2 Water Trailer Sealant

The NSN for the white RTV sealant needed to repair the seal between the outer and inner tanks of an M149A2 water trailer is not listed in the parts TM. Get a 3-oz tube with NSN 8040-01-009-1562 or a pint can with 8040-00-927-1513.



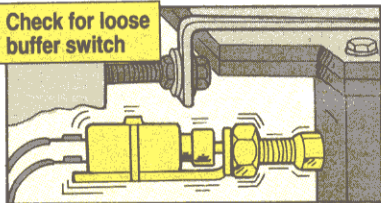
Shutdown Solution

Dear Editor,

We had a HEMTT engine shut down from what appeared to be an air lock in the fuel system, but we could find nothing wrong following the troubleshooting in TM 9-2320-279-10 or in the -20 series TMs.

We finally found that the buffer switch mounting screws were loose, allowing the switch to move and shut down the engine. After Support adjusted the switch like it says in Para 19-9 of TM 9-2815-224-34&P, everything was fine.

Check for loose
buffer switch



CW2 Richard L. Merrill
CAARNG

(Editor's note: Thanks for the
tip, Sir.)

2½-ton Trucks...

Tunnel Covers Covered

Driving around in a deuce-and-a-half with missing transmission tunnel covers can make for a hot, dusty ride. But the covers are not listed in TM 9-2320-209-20P, so it's hard to replace damaged or rusted-out covers.

Until the TM adds the info, here are the right parts:

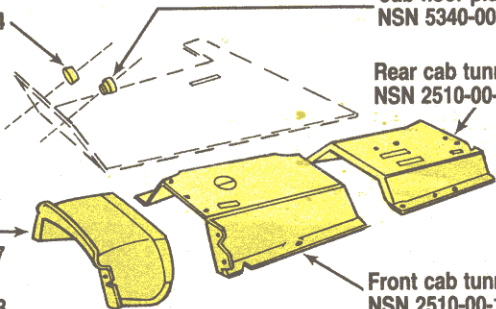
Cab floor plug,
NSN 5340-00-205-5244

Cab floor plugs,
NSN 5340-00-329-4420

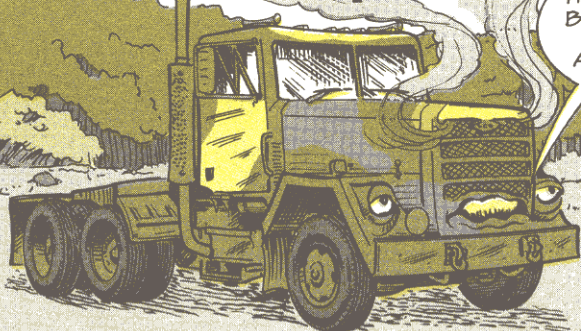
Rear cab tunnel cover,
NSN 2510-00-176-3457

Cab toe board,
NSN 2510-01-183-8327
Machine screw, (28)
NSN 5306-00-018-6493

Front cab tunnel cover,
NSN 2510-00-176-3458



Filter Keeps Corrosion Buildup Down



GASP!
THIS WOULDN'T
BE HAPPENING
IF I HAD
A COOLANT
FILTER!

You mechs can give an M915-series truck's engine and radiator a longer life by installing a coolant filter. It's the same kit used on the M915A1s.

The filter helps keep the cooling system clean and reduces internal corrosion.

Get the coolant filter kit with NSN 2930-01-184-1877. Replacement filters come with NSN 4330-00-274-4712.

Mounting instructions come with the kit.

Bias vs Radial Tires

*Dear Half-Mast,
Must radial tubes be used with new 1000x20
radial tires used on M915 tractor trucks? I've
been told that the tubes used with bias tires
are OK.*

CW2 D.C.S.

Dear Mr. D.C.S.,

You must use radial tubes with radial tires. Bias-type tubes aren't tough enough for the job.

Radial tubes (which have an "R" in the tube size) are made from a special butyl rubber that can withstand the greater flexing found in radial tires. The tube splice is stronger, too. You also need to use a flap that's designed for radial tires. It comes with the tire.

Half-Mast

Brush Guard Wearstrips

The brush guard wearstrip on these 5-ton trucks, shown as Item 23 in Fig 18-1 of TM 9-2320-260-20P, is not available.

For the tubular brush guard, make a wearstrip from scrap heater hose about 4 inches long. Slit the hose and slip it over the brush guard. Secure it with the nut and bolt from the old wearstrip.

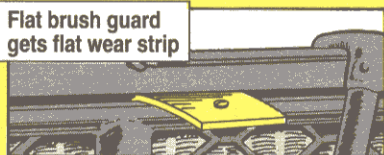


Use hose on tubular brush guard

For the flat brush guard, use a piece of tire sidewall about 1½ inches by 5 inches. Cut it from a tire that can't be



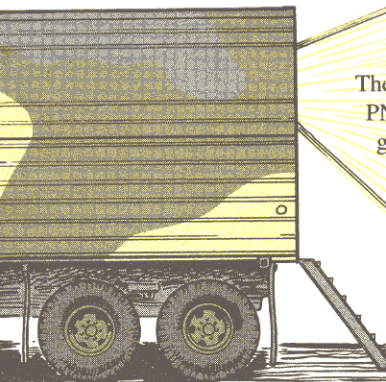
retreaded. Secure it with the hand riveter, NSN 5120-00-017-2849.



Flat brush guard gets flat wear strip

Rear Door Screen Scene

TM 9-2330-238-14&P doesn't list the rear door blackout panels on your M750 shop van. The blackout panel comes with PN P-16-08650. Use PN P-16-08648 for the blackout panel without the guide assembly. Get the guide assembly separately with PN P-16-08649. Use CAGE 70109 for all PNs. Order on a DD Form 1348-6 from S9C.



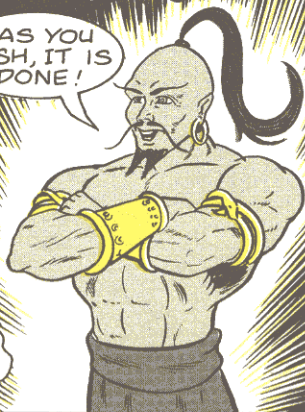
Seat Belt Fix

Plastic support holders for CUCV seat belts take a beating—and break.

A busted holder means you have to search under the seat each time you buckle up.



AS YOU WISH, IT IS DONE!

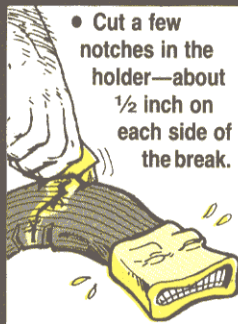


Here's a fix to put some support back in the holder:

- Remove the support holder. Scrub it clean with soapy water.



- Cut a few notches in the holder—about 1/2 inch on each side of the break.



- Cover the holder with heat shrink band, NSN 5970-01-304-6364.

This NSN is not on the AMDF. Order it on a DD Form 1348-6 from RIC S9G. Write in the REMARKS block that the NSN is not on the AMDF. You'll get a 4-ft length. Overlap the break about 1 1/2 inches on each side.

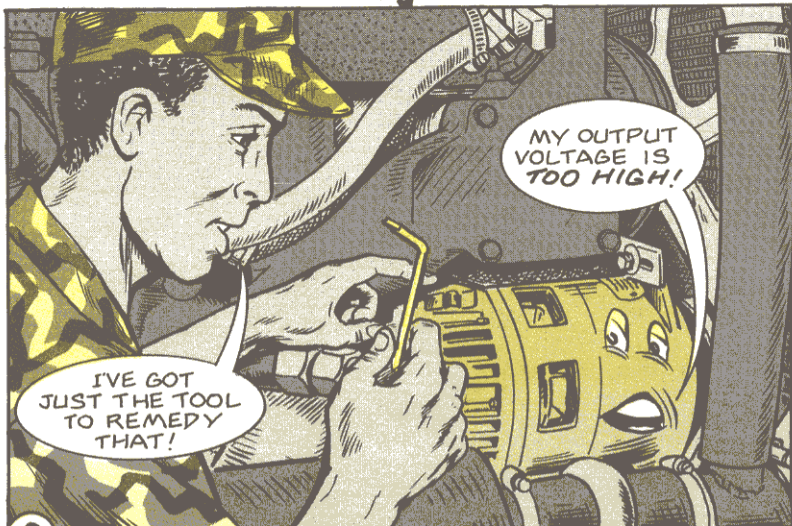
- Use a heat gun, NSN 4940-00-785-1162, to shrink the band.
- Put the support holder back in place.



NOW YOU'RE AS GOOD AS NEW!



Alternator Adjustment Tool

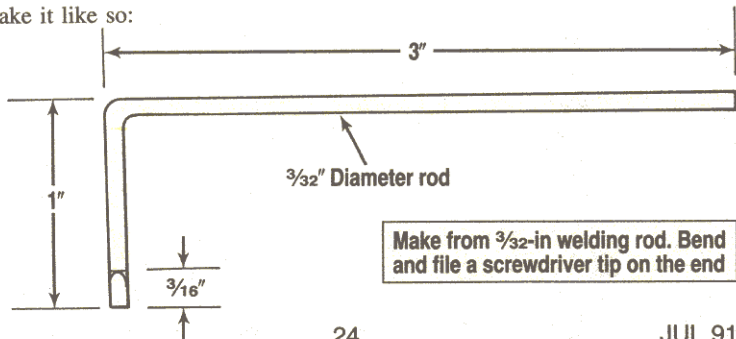


Setting alternators to the right output voltage is important—especially in high temperatures like in the desert. Over-charging causes electrolyte to boil out of the batteries.

But adjusting the Leece-Neville 60-amp alternator, NSN 2920-00-909-2483, is one tough task. This is because the adjustment screw is at the bottom of a small, deep hole. On some trucks, there are hoses and wires in your way.

Take a Tool Improvement Program Suggestion from SGT David L. Null of the 25th Inf Div. Make a tool to reach the adjusting screw. Use a 4 inch length of $\frac{3}{32}$ -in dia welding rod to reach the screw.

Make it like so:



Tire Changing...

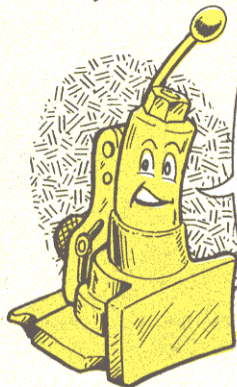
Bead Breaker Changing

If your pneumatic bead breaker, NSN 4910-01-015-7667, is unserviceable, you may not be able to get the parts needed. Repair parts weren't stocked, and some manufacturers have gone out of business.

If you can't fix your bead breaker, or if it costs too much, order the mechanical bead breaker that's replacing it. The breaker, NSN 4910-01-325-2974, is easy to use. The breaking effort comes from a screw you turn with a socket wrench. At about \$150, it's cheaper, too.



Use new breaker to break bead



I WILL BE SHOWING UP IN THE SHOP SET SUPPLY CATALOGS THAT CURRENTLY LIST THE OLD BREAKER.

2½-Ton Trucks...

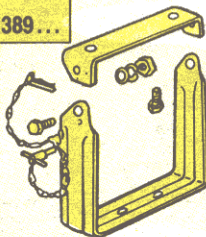
Add a Step to Your Truck

No more slipping and sliding and banging your shins climbing up on the front bumper of your M44-series 2½-ton trucks to service the engine.

Get a step up on your truck's front bumper by adding a first step. That makes climbing a lot easier and safer.

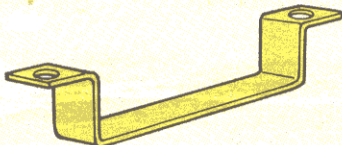
NSN 2540-01-149-1389 gets a step kit. Instructions come with the kit.

Get a step kit, NSN 2540-01-149-1389...



Or, use a truck tailgate step, NSN 2510-00-119-3903, on the front bumper. It does the same job. And it is less money.

...or use truck tailgate step, NSN 2510-00-119-3903



Whichever step you use, put skid-proof paint, NSN 5610-00-141-7838, where you'll be stepping. Then, paint the step with CARC.



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 5-3820-256-24P-1 Jan Drilling system, well, rotary, truck mounted, air transportable, 600-ft capacity, model LP-12

TM 5-3820-256-24P-2 Jan Drilling system, well, rotary, truck mounted, air transportable, 600-ft capacity, model LP-12

TM 5-3820-256-24P-3 Jan Drilling system, well, rotary, truck mounted, air transportable, 600-ft capacity, model LP-12

TM 5-3820-256-24P-4 Jan Drilling system, well, rotary, truck mounted, air transportable, 600-ft capacity, model LP-12

TM 9-1095-205-20P Apr M128 mine dispenser

TM 9-1270-221-23 Apr M142 fire control subsystem helmet

TM 9-1425-600-24P-1 Mar Mandatory parts list (Patriot air defense guided missile system)

TM 9-1430-604-20-1 Feb AN/MRC-137 guided missile system (Patriot missile system)

TM 9-1430-604-20-3 Feb AN/MRC-137 communications relay group (Patriot missile system)

TM 9-2350-261-24P Jan M113A2-series FOV

TM 9-4120-399-14 Jan Air conditioner, vertical, compact 36,000 BTU/HR cooling 28,600 BTU/HR heating 208 volt, 3 phase 400 Hertz model 3863

TM 10-3930-242-24P Dec 90 MLT-6, MLT-6CH, ARTFT-6 6,000-lb RT forklift

TM 11-5865-229-12 Nov 90 AN/ALQ-162(V)2 countermeasure set

TM 11-5895-1406-14 Oct 90 AN/MSQ-85B mobile audio/visual system

TM 11-5895-1439-12 Oct 90 AN/FSQ-162(V) communication system, control network

TM 11-6625-3208-14&P Jun 90 Test set, switch assembly TS-4262/TRC-179(V)

TM 11-6625-3223-14&P Jun 90 Test set, power supply TS-4248/G
TM 55-1520-210-BD Feb BDAR UH-1H/UH-1V

TM 55-1520-238-23P-2 Mar Avn unit/intermediate maint RPSTL AH-64A

TM 55-1520-238-23P-3 Mar Avn unit/intermediate maint RPSTL AH-64A

TM 55-1520-238-23P-5 Mar Avn unit/intermediate maint RPSTL AH-64A

TM 55-1520-244-BD Nov 90 BDAR AH-1E/AH-1F/AH-1P

TM 55-2840-238-23P Mar T700-GE-701

TB 1-1510-204-30-9 Feb One time inspect landing gear side brace and activating cylinder support fitting OV-1D(C)/OV-1D

TB 1-1520-228-20-57 Jan Erosion inspect OH-58A/C tail rotor blades involved in Operation Desert Shield
TB 1-1520-237-20-122 Mar One time inspect H-60 for four (4) unserviceable spindle assemblies

TB 1-1520-238-20-02 Feb One time inspect servocylinders for non-conforming hardware AH-64A

TB 1-1520-240-20-53 Feb Revision of special inspect intervals CH-47D combat desert operations

TB 1-2840-229-20-1 Feb Desert and combat operations T53-L-13B, T53-L-13BA and T53-L-703 engines

TB 43-0240 Mar Inspection and calibration of small arms gauges

LO 9-2805-259-12 Feb Lubrication order for 20 HP military standard engine

Maintenance & Safety-Of-Use Messages

AMCCOM SOU Msg-02-91—Advisory, Check for cracked or perforated 120MM tank ammo, AMSCM-DSM-MG 111910Z Jan 91.

AMCCOM SOU Msg-03-91—Advisory, Gives TM changes to stop accidental firing of TOW missile while pressing trigger switch, AMSCM-MAW-VF 151900Z Jan 91.

AMCCOM SOU Msg-04-91—Advisory, PM tips on Charge demolition linear HE M58A4 1375-M913, MICLIC, AMSCM-DSM-MG 292210Z Jan 91.

AMCCOM SOU Msg-08-91—Advisory, Disposal instructions for asbestos gloves, AMSCM-SFS 041940Z Mar 91.

AMCCOM SOU Msg-09-91—Advisory, Warns soldiers to wear hearing protection when firing 60MM cartridges, AMSCM-DSM-MG 272130Z Feb 91.

AMCCOM SOU Msg-10-91—Advisory, Identifies firing limitations for firing 81MM cartridges, AMSCM-DSM-MG 272120Z Feb 91.

AMCCOM SOU Msg-12-91—Advisory, Gives battery PM on Target Holding Mechanism/Tank Gunnery (THM/TG), AMSCM-MA 151407Z Apr 91.

AMCCOM SOU Msg-14-91—Operational, Safety hazard exists when removing the spare wheel of truck mounted, Model SEORTM, organizational repair shop equipment, AMSCM-MA 181500Z Apr 91.

DPSC SOU Msg—Emergency, Modifies/clarifies TROSCOM SOU Msg 051500Z Apr 91 on extendable personnel temper tents, DPSC-FOOI 261430Z Apr 91.

TACOM SOU Msg-91-08—Advisory, Operational, Binding problem with front and rear seat belts on M998, M1025 and M1037 HMM/VVVs, AMSTA-MTA 301530Z Apr 91.

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


SMART Messages

SMART MSG #89—Provides ordering information for M172A1 trailer cam shaft repair kit.

SMART MSG #90—Advance notice of changes to TM 9-2350-247-20 for the M548/M1015 FOV.

Lubrication...


High Temperature Changes



WHAT A DAY!
FIRST YOU GET US STUCK
AXLE DEEP IN THE SAND, THEN
YOU TRIP AND HIT YOUR HEAD ON
THE ONLY ROCK IN THIS
FORSAKEN PLACE!

HEY,
THIS IS
NO ROCK!
IT'S... IT'S
A
LAMP!

WELL,
DON'T JUST
LAY THERE!
RUB IT!



HUH!
SOMETHING'S
HAPPENING!



I AM THE GENIE OF THE LAMP!

WOW!

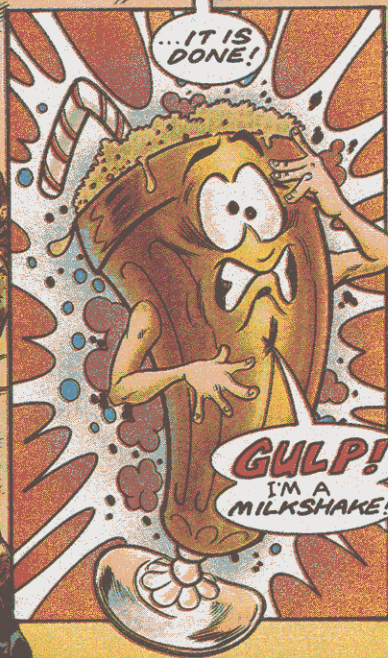
WISHES! DO WE GET WISHES?



YES, LEGEND DICTATES I MUST GRANT THREE WISHES!

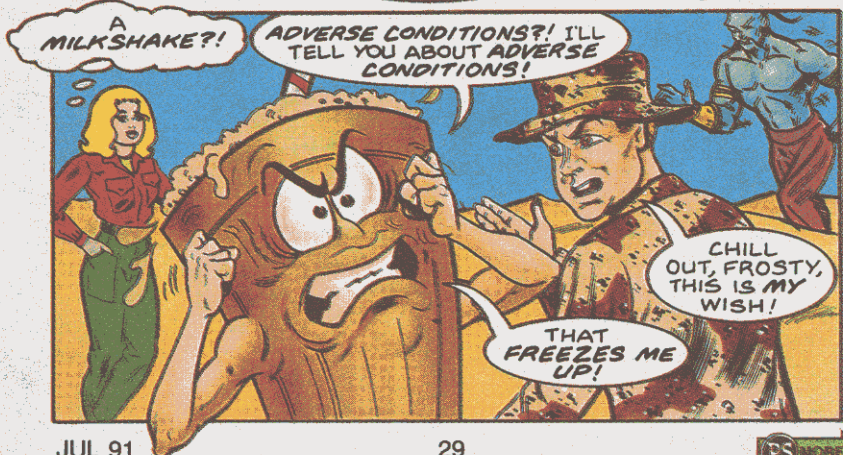
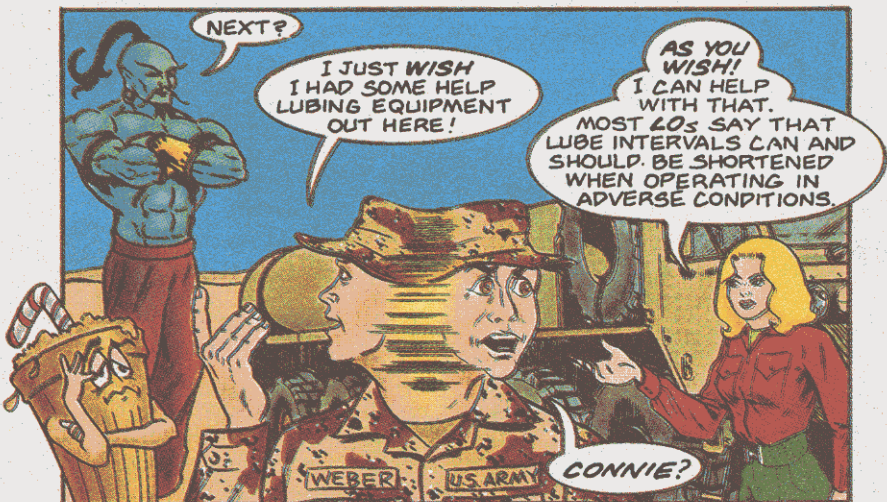
MAKE ME A DOUBLE-FUDGE, EXTRA-THICK MILKSHAKE!

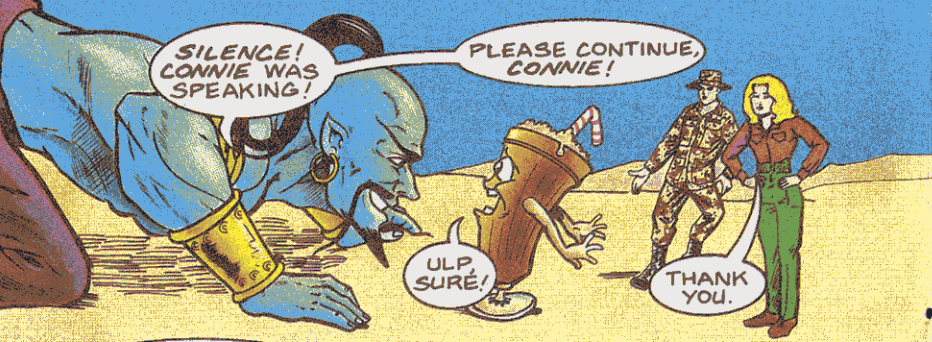
AS YOU WISH...



...IT IS DONE!

GULP!
I'M A MILKSHAKE!





IF YOUR LO DOESN'T ADDRESS HIGH TEMPERATURES OR SANDY AND DUSTY AREAS, HERE ARE A FEW GUIDELINES.

- Use OE/HDO 15W40 or OE/HDO 40 engine oil to keep your engine lubed at higher temperatures.
- Cut the oil change intervals in half. For example, if the LO requires an oil change at 12,000 miles, change it at 6,000. Or if you're supposed to change the oil every 6 months, do it every 3 months. If conditions are really bad, change the oil even more often!



LUBRICATION ORDER
16 June 1986

LO 9-2320-289-12
(Supersedes LO 9-2320-289-12, April 1983)

TRUCK, CARGO, TACTICAL, 1-1/4 TON, 4X4, M1008 (2320-01-123-6827)
TRUCK, CARGO, TACTICAL, 1-1/4 TON, 4X4, M1008A1 (2320-01-123-2671)
TRUCK, UTILITY, TACTICAL, 3/4 TON, 4X4, M1009 (2320-01-123-2665)
TRUCK, AMBULANCE, TACTICAL, 1-1/4 TON, 4X4, M1010 (2310-01-123-2664)
TRUCK, SHELTER CARRIER, TACTICAL, 1-1/4 TON, 4X4, M1028 (2320-01-127-5877)
TRUCK, SHELTER CARRIER W/PTO, TACTICAL, 1-1/4 TON, 4X4, M1028A1 (2320-01-158-0820)
TRUCK, CHASSIS, TACTICAL, 1-1/4 TON, 4X4, M1031 (2320-01-133-5368)

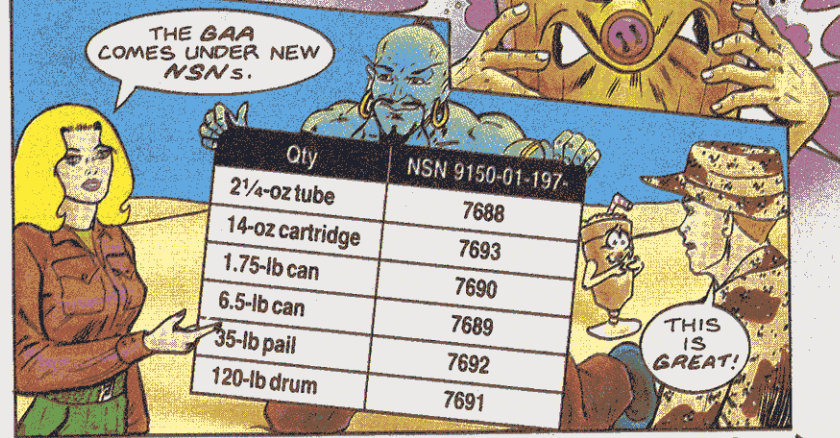
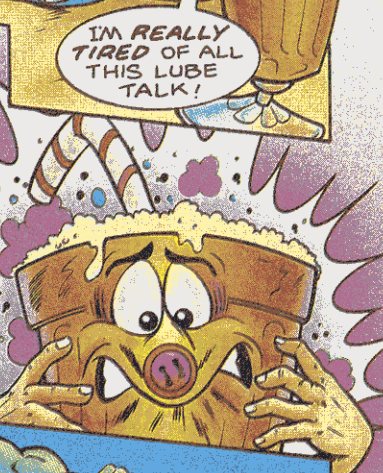
Reference: TM 9-2320-289-10 and TM 9-2320-289-20

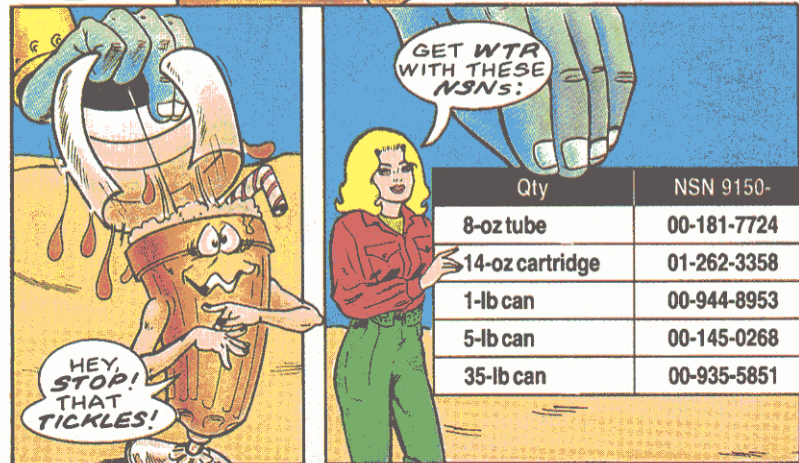
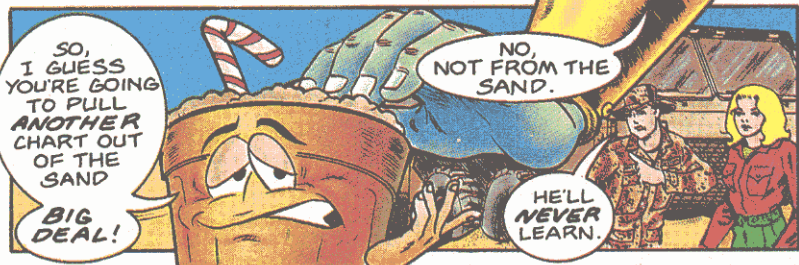
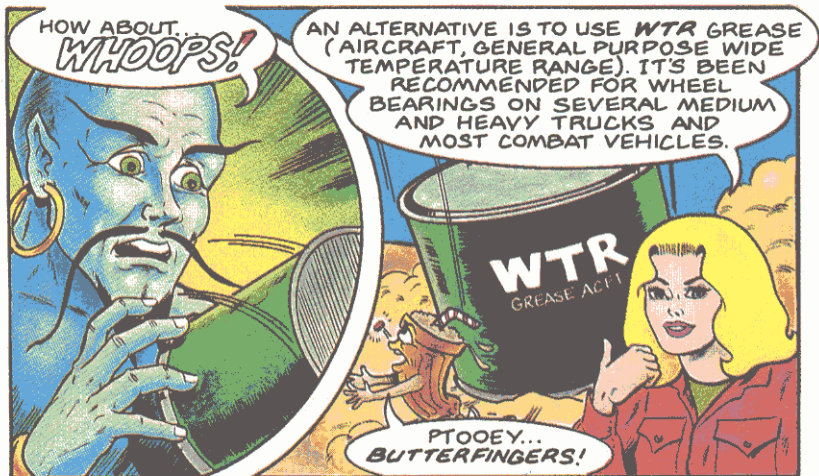
Reduce the hard time interval if your lubricants are contaminated or if you are operating the vehicle under adverse conditions, including longer-than-usual operating hours.

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS
(Army) You can improve this lubrication order. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter to DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commander, U.S. Army Tank Automotive Command, ATTN: AMSTA-MB, Warren, MI 48097-5000 (Marine Corps) direct to: Subcom NAVMAC 10772 to the Commanding General, Marine Corps Logistics Base (Code 850), Albany, GA 31704. A reply will be furnished to you.

This publication is restricted for official use or for administrative or operational purposes only. It is not to be distributed outside the Governmental Agencies. Other requests for this document may be directed to the Commanding General, Marine Corps Logistics Base (Code 850), Albany, GA 31704. A

IF YOUR LO CALLS FOR GAA (GREASE AUTOMOTIVE AND ARTILLERY) MAKE SURE YOU USE ONLY MIL-G-0010924E (ME) OR MIL-G-10924F. LOOK FOR EITHER NUMBER ON THE CAN OR TUBE. THE "E" AND "F" VERSIONS OF GAA HAVE BEEN IMPROVED SO THEY WON'T MELT AT HIGHER TEMPERATURES.

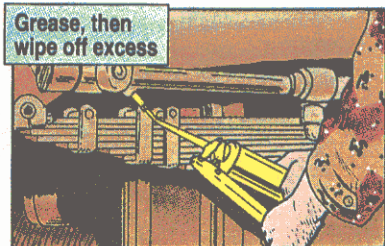
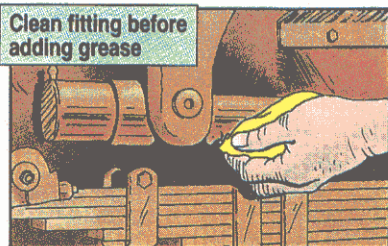






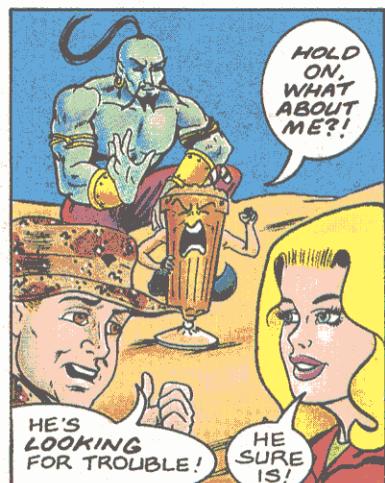
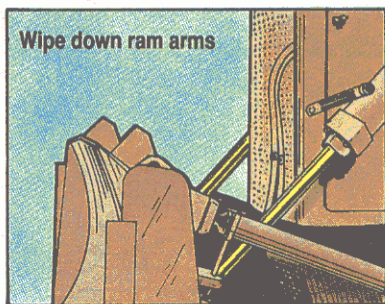
- Service or change filters when you pull the service at shortened intervals.
- DO NOT LUBE wire rope used on winch or hoist cables.
- Use extra care when servicing your equipment to prevent contamination.

Clean dirt and sand away from the dipstick and the fill port BEFORE you check or add oil. Wipe off grease fittings before—and after—you add grease.



Keep your supplies of grease and oil CLEAN! Cover cans to keep blowing sand out. Keep grease guns, oil cans and other dispensing equipment clean and protected, too.

- Wipe down hydraulic cylinder ram arms with a clean, dry cloth to remove any sand or dust before use, if possible. Grit on the ram arm cuts oil seals, causing leaks.





YOU KNOW, ALL THAT TIME I SPENT IN THE LAMP HAS MADE ME **QUITE THIRSTY!**

I WAS JUST **KIDDING**, BIG GUY...

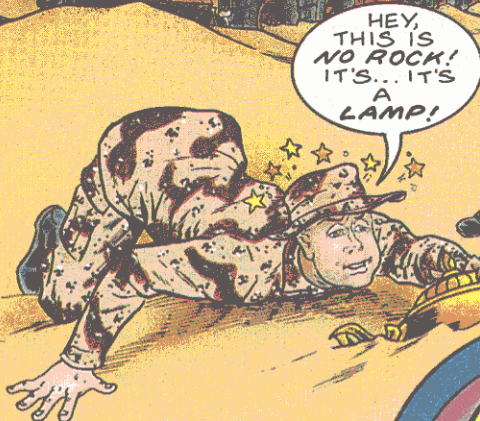
OH NO!... I WISH THIS WHOLE THING NEVER HAPPENED!

AS YOU WISH, IT IS DONE!

SO, THE THIRD AND FINAL WISH WAS GRANTED!



WHAT A DAY! FIRST YOU GET US STUCK AXLE DEEP IN THE SAND, THEN YOU TRIP AND HIT YOUR HEAD ON THE **ONLY ROCK** IN THIS FORSAKEN PLACE!



HEY, THIS IS **NO ROCK!** IT'S... IT'S A **LAMP!**

DROP IT! BURY IT! RUN FOR YOUR LIFE!

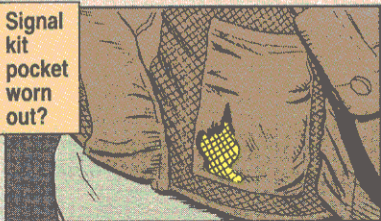


WISHES ARE NO SUBSTITUTE FOR GOOD MAINTENANCE!

Prevent Pocket Perforation

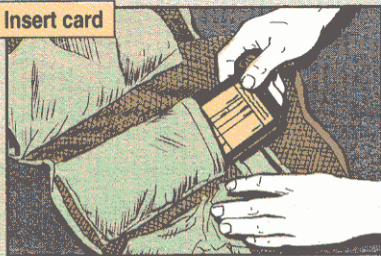
Dear Editor,
After just a couple of weeks of routine flying, the rubbing of the rocket launcher and flares wears holes in the foliage penetration signal kit pocket of a new survival vest.

Signal kit pocket worn out?



A temporary preventive measure is to put a DD Form 1574, 77 or 77-2 card into the pocket. Just void the card with an X, clip off the bottom corners at an angle to match the top corners, and slip it in the pocket.

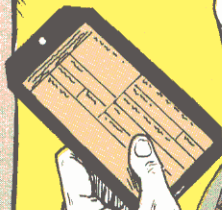
Insert card



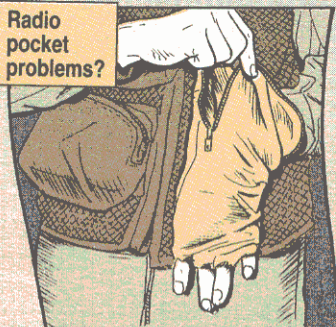
When the card wears through, replace it.

**CW2 Petrak
Ft Irwin, CA**

HM-M-M
I'VE GOT A
NEW USE
FOR THIS
CARD.

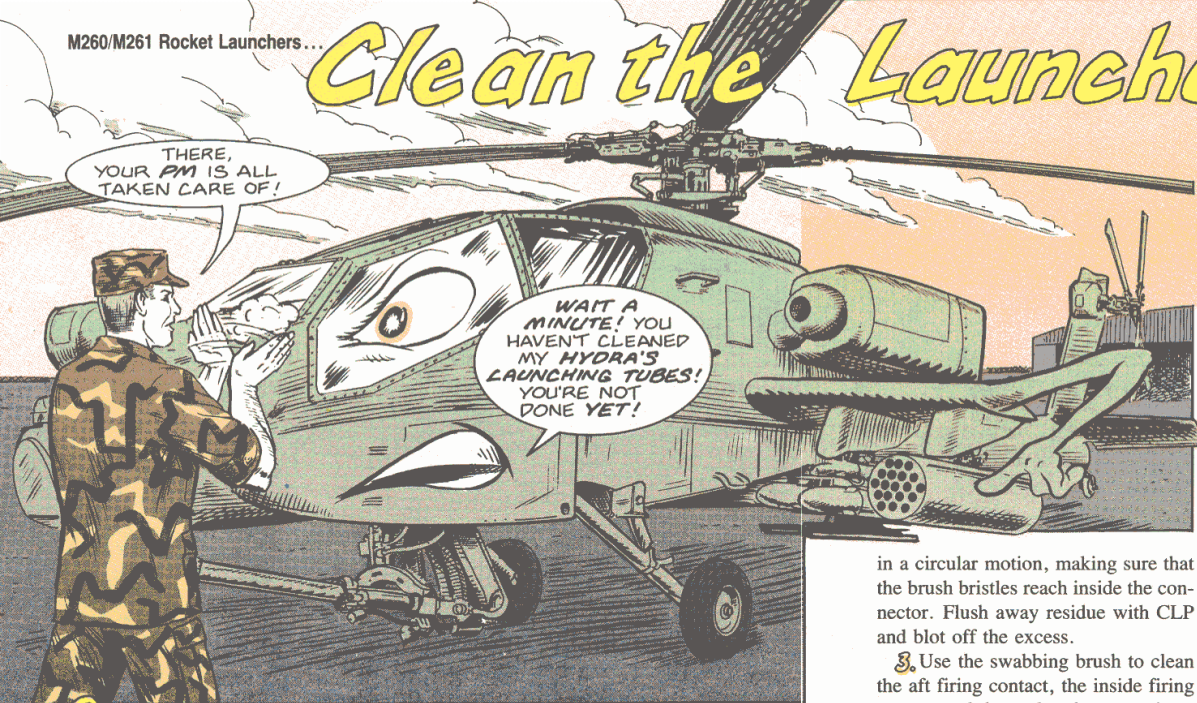


Radio pocket problems?



(Editor's note: Sounds like a good pocket protector. Another problem pocket is the one for the radio. Any ideas, ALSE techs?)

Clean the Launchers

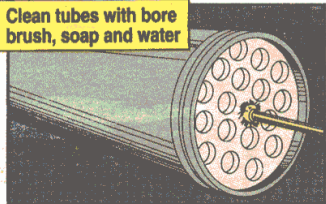


Some troops treat their M260 and M261 lightweight rocket launchers as if they were just containers—and not very important. That means the launcher doesn't get cleaned right. And failing to scrub a launcher just might scrub a mission.

Here's the right way to clean and preserve M260 and M261 rocket launchers:

1. Clean the launcher after each firing. Use soap, NSN 7930-00-282-9699, and hot water on external surfaces. Rinse with clean water and air

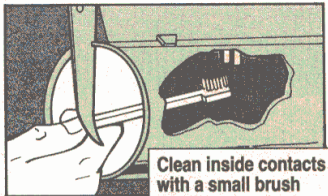
dry. Don't get soapy water on the fuze umbilical sockets.



2. To clean the umbilical connectors, apply CLP and clean using the swabbing brush. Scrub back and forth and

in a circular motion, making sure that the brush bristles reach inside the connector. Flush away residue with CLP and blot off the excess.

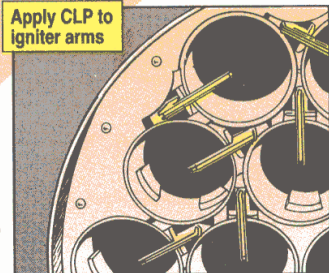
3. Use the swabbing brush to clean the aft firing contact, the inside firing contact and the rocket detent/retainer. The inside contact may need a little



more work to get off carbon residue. Apply a little CLP to the bristles of a small wire brush, NSN 7920-00-900-3577. Gently scrub the contacts on all

sides. A 20-MM bore brush will also do the job.

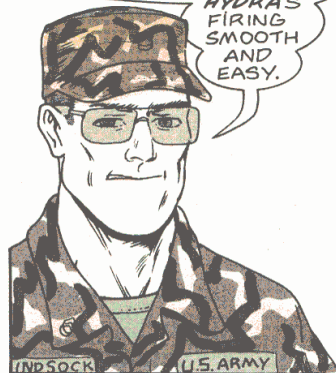
4. After cleaning, lube the launcher. Apply a light coat of CLP to the igniter



arms, inside contacts and the fuze umbilical connector to stop rocket exhaust buildup.

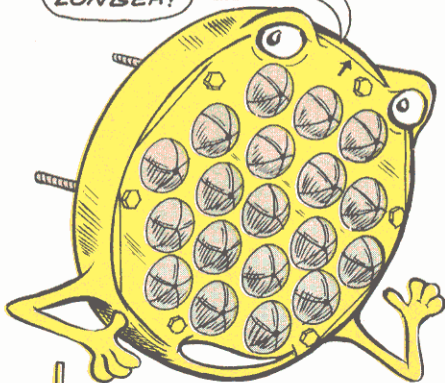
5. Wipe off all excess CLP.

CLEAN LAUNCHERS WILL KEEP YOUR BIRD'S HYDRAS FIRING SMOOTH AND EASY.



Who Shrunk the Covers?

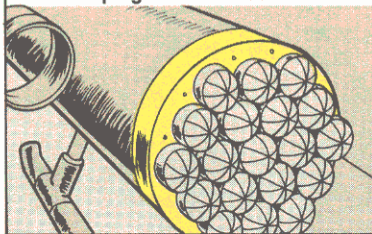
I'M NOT SHORTER!
THE ROCKETS GOT LONGER!



It may seem like someone shrunk the environmental protection device (EPD) that covers the tubes of the M260 and M261 Hydra rocket launchers. The truth is the EPD didn't shrink... Hydra rockets got longer!

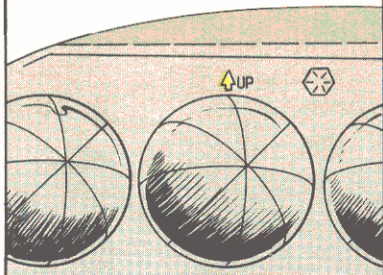
New EPDs with deeper cups are now in supply. Order the EPD for the M260 with NSN 1055-01-L70-0038. Use NSN 1055-01-L70-0039 for the M261.

The covers keep sand and dirt out of the launcher and prevent the results of ripple fire, heat and flames, from warping the bulkhead.



Once you get the new covers, put 'em on just like the old ones:

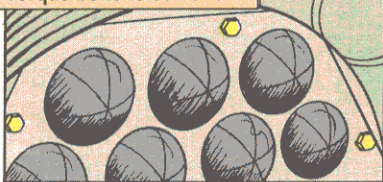
Position the EPD so that the arrow and the groove on the outer surface are straight up.



- Put the EPD on the launcher with the bolts aligned with the launcher's captive nuts.

- Torque the EPD bolts 50 to 75 lb-in. Once the new EPDs are in use, replace them if any of the cups have been fired through.

Torque bolts to 50-75 lb-in



Until the new ones arrive, try to use the old EPDs. Chances are you'll have a mix of old and new (short and long) rockets. Break out the cups for the long rockets by pushing from the inside. This won't give you maximum protection, but it will help some.

A Gage for Clearance

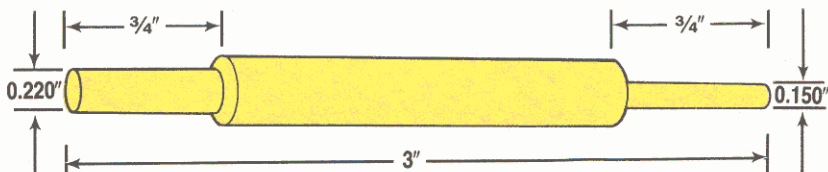
Dear Editor,

After you install the Apache's antifiail sleeve on the tailboom, you must measure clearance between the drive shaft and the sleeve. That's the word on Page 6-59 of TM 55-1520-238-23-4.

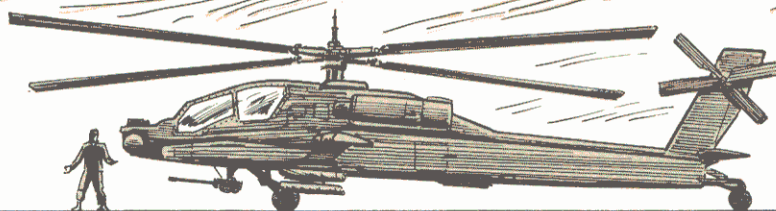
Unfortunately, the gage used to take the measurement is a square feeler gage. Because the area you measure is curved, the measurement is not true.

To get a good measurement we made a round gage by cutting off the threads and bolt head of a $\frac{7}{16}$ -in bolt. Then we machine one end to 0.220 inch and the other to 0.150 inch and harden it.

John Beckman
Ft Hood, TX

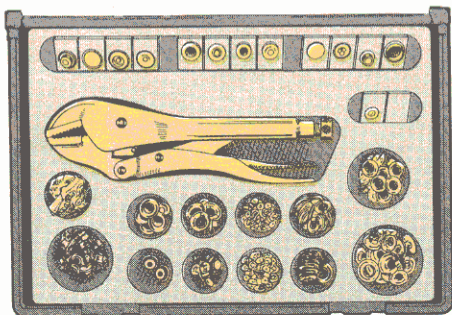


Editor's note—Good job. Your gage work will eliminate the guesswork.

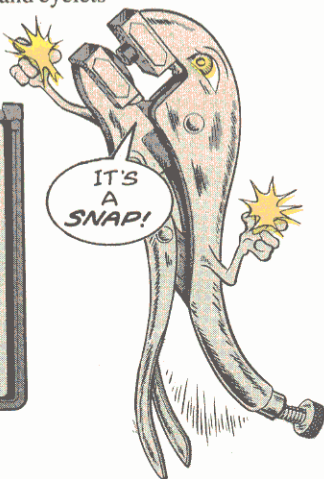


A Snappy Tool

Need a snap fastener tool to repair things like your Huey's soundproofing? There are three kits available that use locking pliers for mounting. Kit, part number T5-4-NV, comes with 14 attachments and 350 fasteners and costs \$55.95. Kit, part number T5-4, comes with the pliers and costs \$69.90. Kit, part number T3-7P, has four attachments and enough buttons and eyelets for 24 snaps. It comes with pliers for \$43.85. Order any of the kits by part number on a DA Form 1348-6. Use CAGE 64492.



T5-4 kit has pliers and attachments



Aviation Messages

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

UH-60-91-ASAM-06, Maint Mand, H-60 internal wire bundle routing, 122100Z Mar 91.

AH-64-91-ASAM-06, Maint Mand, AH-64A, Pins in spads and servo-cylinder installation, 181800Z Mar 91.

AH-1-91-ASAM-06, Info, AH-1 alert for expired time change components received from supply, 182100Z Mar 91.

UH-1-91-ASAM-04, Oper, UH-1H/M/W, Emergency governor torque available on UH-1H/M/W.

UH-60-91-ASAM-07, Info,

UH-60A/EH-60/UH-60L, Advance notification of manual changes concerning main transmission module PN 70351-08100-069, NSN 1615-01-316-2658, PN 70351-08100-070, NSN 1615-01-316-2659 and PN 70351-48100-041, NSN 1615-01-305-2375, 221900Z Mar 91.

UH-60-91-ASAM-08, Maint Mand, H-60, Inspect fire extinguishing system, 221930Z Mar 91.

UH-1-91-ASAM-05, Maint Mand, UH-1H/V/M, Assignment of retirement life to tail rotor slider, 251900Z Mar 91.

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

GEN-91-ASAM-03, Info, EH-60A, EH-1H and OH-58D, Authorization for installation and using cryptographic computer, KIT-1C, 252000Z Mar 91.

OH-58-91-04, SOF, Tech, OH-58A/C and H-6, Recall of T63 engine compressor assemblies, 150200Z Mar 91.

OH-6-91-01, Tech, OH-58A/C and H-6, Recall of T63 engine compressor assemblies, 150200Z Mar 91.

AH-64-91-03, SOF, Tech, AH-64, Inspect/replace the mixer support assemblies, 162200Z Mar 91.

Make Tracking Targets

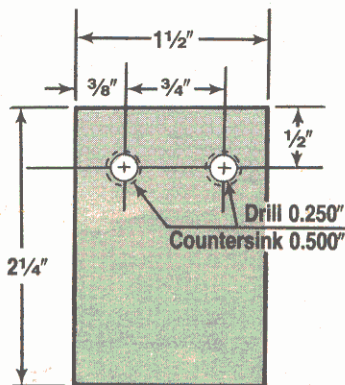
Dear Editor,

Each Apache battalion uses about four tip tracking targets (Item 3 of Fig 721 in TM 55-1520-238-23P-3) every year. At \$324 per set, that's quite a dent in the budget. So, we make our own targets.

Here's what you need:

Item	Qty	NSN
Aluminum	1 sheet	9535-00-084-4669
Decal numbers	1 set	4920-01-046-7360
Reflective tape	1 roll	9390-00-106-2465

Here's how you cut and drill the aluminum:

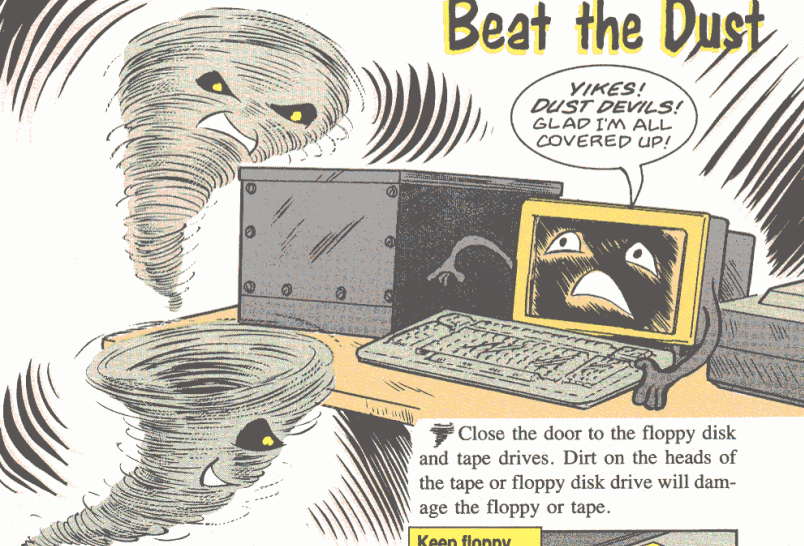


SGT Glenn Soule
229th AAHR

HERE'S
THE
FINISHED
PRODUCT!

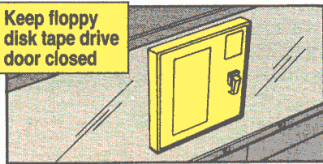
(Editor's note: You're right on track with that target!)

Beat the Dust



Close the door to the floppy disk and tape drives. Dirt on the heads of the tape or floppy disk drive will damage the floppy or tape.

Keep floppy disk tape drive door closed



Keep the drive heads clean with the floppy disk drive cleaning kit, NSN 7045-01-154-1315, and the tape drive cleaning kit, NSN 7035-00-348-1864.

Keep tape drive with cleaning kit, NSN 7035-00-348-1864



Dust and sand are the big enemies of your AN/TYQ-33(V), Tactical Army Combat Service Support Computer System (TACCS).

To wage a winning battle with these tricky foes you fight every chance you get. Clean your TACCS equipment by the book—TM 11-7010-213-12.

Here are some more pointers:

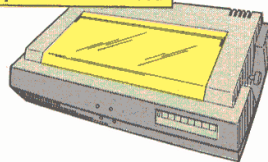
Use the dust cover of the KY-903 keyboard. It protects the keyboard from dust and dirt damage.

Never use a pencil or sharp object to press keys on the keyboard. You'll poke holes in the cover. That leaves a way for the dust devil to get in.

Devil

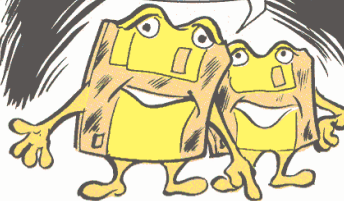
Make sure the cover is closed on the RP-336 printer. Dust and paper bits will stop the printer from doing its job.

Keep printer cover closed



Clean the print head guide shaft, platen and support shafts daily like Para 3-1.2.1.e of TM 11-7010-213-12 tells you.

TO MAKE SURE THE FLOPPY DISKETTES STAY FREE OF DIRT, PUT THEM IN STORAGE BOXES. HERE ARE THE BOXES THAT ARE AVAILABLE:



NSN	Number of diskettes box holds
7520-01-239-1504	100
7045-01-179-2980	50
7045-01-196-7227	50

The tape cartridges come with a storage box. Keep the cartridges in their boxes when not in use.

New Radio on the Block

Dear Macon,
I'm with a supply and transportation company. Is there a portable CB radio our convoy drivers can use to keep in constant touch with each other?

SFC H.B.F.



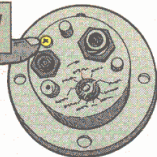


Moisture is your MX-6707 antenna matching unit's number-one enemy. Since the matching unit stays on the vehicle while other antenna parts are safe and secure indoors, it needs extra protection.

These PM tips will drain MX-6707 water woes:

Remove the drain screw at least quarterly to let the water out. Drain it more often during wet weather or in areas where humidity's high.

Remove drain screw to let water out



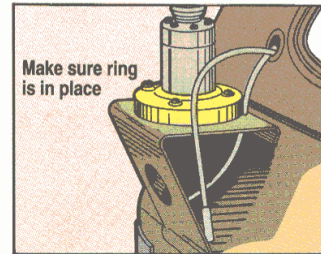
Even when the drain screw is removed, there's no guarantee that the water is completely drained because of the vacuum that can form inside the base chamber. To make sure all the water drains, stick a hollow swizzle stick or electrical insulation sleeving, NSN 5970-00-729-2969, in the drain hole to release the vacuum.

After the unit's dry, be sure to replace the screw.

Keep high pressure hoses away from your MX-6707 when you wash your vehicle. Use a damp cloth to clean the unit, like Para 3-2 of TM 11-5985-262-14 tells you.

Water Damage

Make sure the steel reinforcing ring, NSN 5985-01-012-5425, is in place. Besides blocking damaging water, the ring helps equalize the pressure on the plastic bowl around the bolts. This keeps the bowl from cracking.



Torque the mounting bolts to 100 lb-in, like it says in the antenna's pub, TM 11-5985-262-14, and the radio's pub, TM 11-5820-401-20-1.

If the bolts are tightened too much, the plastic cover cracks and water gets inside.

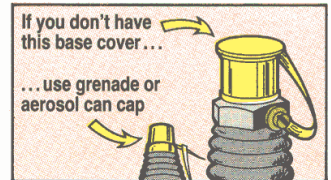
Always put a lid on the matching unit when you remove the antenna. Use antenna base cover, NSN 5985-01-135-2307.



When you install or remove the cover, gently rock the cover in line with the tang. Twisting the cap breaks the strap and you wind up losing the cover.

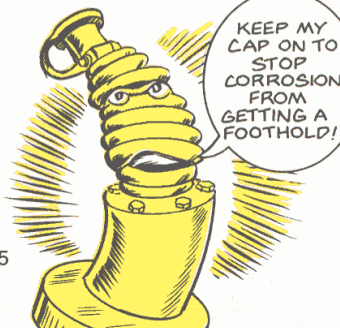
No cover? Try one of these substitutes to protect your unit until you get the cover:

—M203 grenade protective cup. Attach the cup to the matching unit with some rope, such as an extra piece of antenna tiedown rope.



—Aerosol can cap. Use a thin piece of wire to fasten the cap to the matching unit.

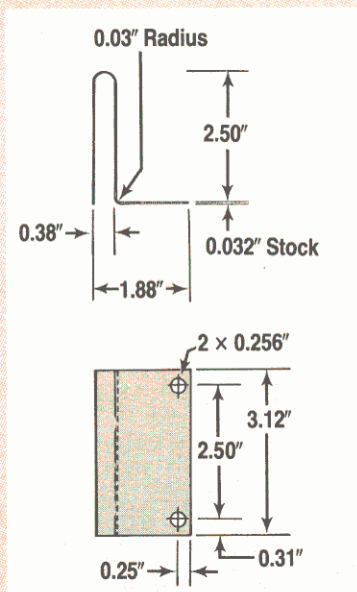
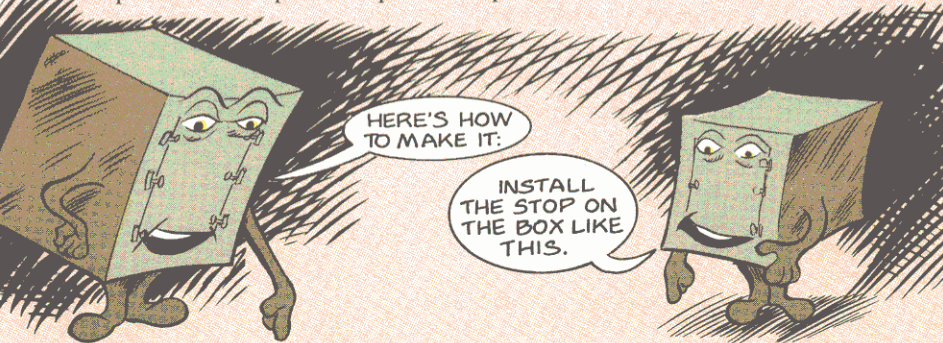
—Masking tape. Use masking tape in a pinch. Be sure to get all the glue off when you replace the antenna. Use a pencil eraser to wipe off the sticky stuff from the contacts.



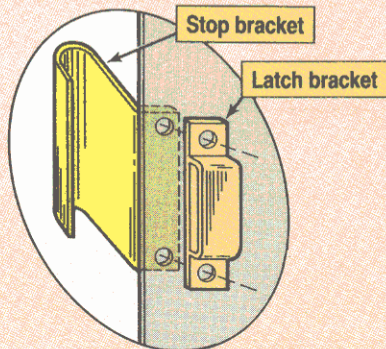
Distribution Box Fix

Hooks holding the access cover open vibrate loose and let it drop on the distribution box of the AN/MJQ-11A power plant. The falling cover bangs into the load terminals. Sparks fly. Circuit breakers trip. Equipment shuts down.

To prevent the hinged access lid from dropping, your repairman can make a stop bracket to keep the lid up. Use scrap aluminum to make the bracket.



1. REMOVE CENTER LATCH BRACKET FROM BOTH SIDES OF DOOR.
2. PLACE STOP BRACKET BEHIND THE DOOR FRAME ON THE INSIDE OF THE DOOR.
3. REPLACE THE DOOR LATCH AND SECURE BOTH IT AND THE NEW BRACKET USING THE ORIGINAL HARDWARE.



Tiedown Components



Item	NSN or P N
Sling Assembly consisting of: Cable assembly Plate & eyebolt assembly Cable assembly	3940-00-846-9858 SC-C-36424GRI* 5410-00-030-6925 SC-C-36424GRII*
Plate & Eyebolt Assembly consisting of: Sleeve, 871-1-Q Sleeve, 128-2VC Cable, 1/16-in dia Eyebolt Plate	5410-00-030-6925 4030-00-466-2575 4030-00-431-5536 SC-C-595076-1* SC-C-595075* SC-C-595074*
Wire Rope Assembly & Lifting Ring consisting of: Nut, hex lock Sleeve, 128-2VC Ring, 7/8-in x 5 1/2-in dia Cable, 1/16-in dia Thimble Turnbuckle Sleeve, 28-23-H5 Safety hook assembly Cable, 3/8-in dia	5410-00-403-9535 5310-01-147-3185 4030-00-431-5536 5365-01-177-9907 4010-01-171-1383 4030-01-172-7126 5340-01-174-8396 4030-00-445-6210 SC-C-36424-3* SC-C-36424-1*

*Order on DD Form 1348-6 using CAGE 81337 and part number.

The RIC is A12.

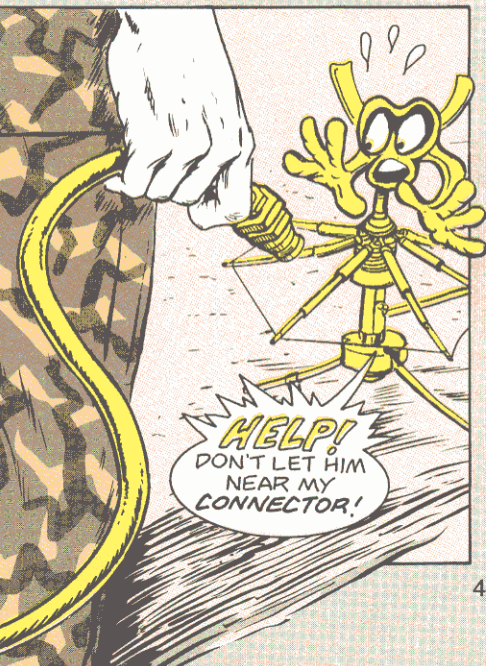
AS-3567/G Antenna...

Be Easy with Connector

If you try to force the AS-3567/G antenna connector on, you'll damage it everytime. A broken connector means that you have to replace the next higher assembly, which is the center section of the antenna.

Check the connector for pin damage before you connect it to the antenna connector. If it's OK, connect the female end of the cable to the antenna connector. The connection should only be hand tightened, so forget the heavy hand.

Never tug on the cable when you're connecting or disconnecting the connector. You'll twist the inside wires loose.



AS-1729 Antenna...

Top Tip

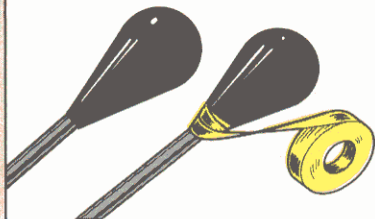


KEEPING YOUR AS/1729 ANTENNA TIP CAP ON IS AS EASY AS 1-2-3! HERE'S HOW!

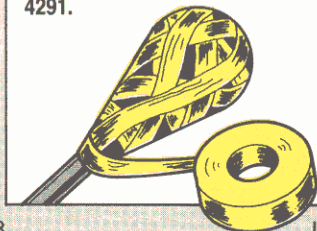
1. Put six layers of 1/2-in tape, NSN 7510-00-582-4771, around the whip about two inches from the top.



2. Force the ball over the tape. Start wrapping the ball with the 1/2-in tape just below the bottom of the tip. Be sure you cover it completely.



3. The final step is to cover the ball with a 3/4-in tape, NSN 5970-00-419-4291.



EIDS...

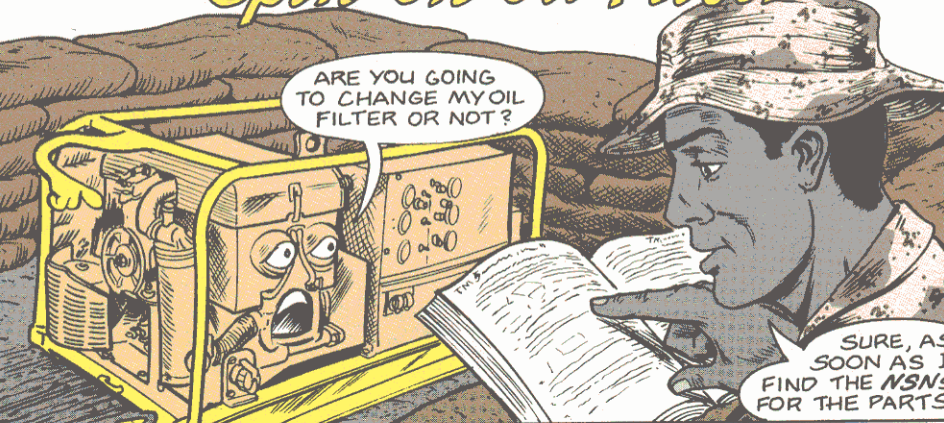
New Videos Available

IF YOU HAVE ACCESS TO THE AN/GSH-55 ELECTRONIC INFORMATION DELIVERY SYSTEM (EIDS), THESE VIDEOS ARE AVAILABLE THROUGH YOUR LOCAL AUDIO-VISUAL FOLKS:



PIN Number	IVD Number	Title
706522	11-21	Troubleshooting field cable systems CX-11230/G to locate faults
706550	11-34	Install tactical telephones
706520	11-20	Operate satellite communications terminal AN/TSC-85A or AN/TSC-93A
706551DA	11-14	Install and operate 5KW AC generator sets, PU-620/M, PU-618/M, PU-629/G and PU-631/G
706553DA	11-16	Perform PMCS and operator's troubleshooting on 5KW AC generator sets, PU-620/M, PU-618/M, PU-629/G and PU-631/G
707388DA	11-48	MD-1002 alignment and troubleshooting
706547DA	11-32	Test equipment part I: Multimeters
706554DA	11-11	Installation of AN/GRC-103 antenna using AB-952 antenna launcher
706545DA	11-12	Installation and operation of 3KW AC generator sets, PU-625/G and PU-628/G
706546DA	11-13	Installation of AB-577 antenna mast with AT-903 and AS-3047
706045DA	11-18	Multichannel system troubleshooting AN/TRC-145 loopback learning systems test
706525	11-24	Voltage, current and resistance
706527	11-26	DC fundamentals, Part 5, Resistors and Voltage Dividers
706528	11-27	DC fundamentals, Part 6, Circuit Fundamentals

Spin-On Oil Filter



The cartridge type filter element is no longer available. Now when it's time to service the oil filter assembly for your 6-, 10-, 14- and 20-HP Mil Std engines, you'll need to replace the complete oil filter assembly. Only problem is, you can't get an assembly under one NSN. You have to order the parts separately.

A woman in a yellow shirt and grey pants is sitting on a wooden crate. She has a speech bubble that says, "HERE'S WHAT YOU NEED." To her right is a list of parts with their NSNs, each accompanied by a small illustration of the part. The parts are: a gasket, a cover assembly with a pipe nipple, a pipe nipple, and a spin-on oil filter.

Gasket,
NSN 5330-00-073-3038

Cover assembly,
NSN 2940-01-264-2105,
w/pipe nipple

Pipe nipple,
NSN 4730-01-198-8624

Spin-on oil filter,
NSN 2940-00-832-6054,
OR 4⁹/₃₂-in. lg.,
NSN 2940-00-586-4792

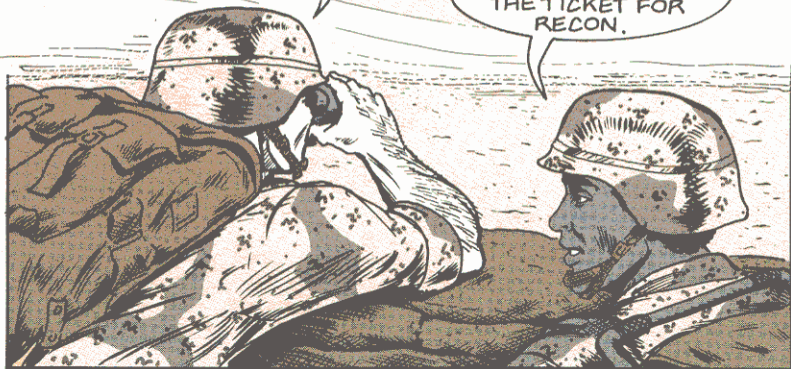
If the 5¹/₂ to 5⁷/₈ inch long filter, NSN 2940-00-832-6054, is too long or crowds the engine muffler, order a shorter one that's 4⁹/₃₂ inches long with NSN 2940-00-586-4792.

Binoculars...

Better "Binocs"

NO MOVEMENT
IN THIS DIRECTION.

THOSE M22
BINOCs ARE JUST
THE TICKET FOR
RECON.



The desert seems endless when you're looking out there with bare eyes, but the M22 binoculars, NSN 1240-01-207-5787, can help stretch your seeing power. The new M22 rubber binoculars have better range pickup than the old metal M19s they replaced.

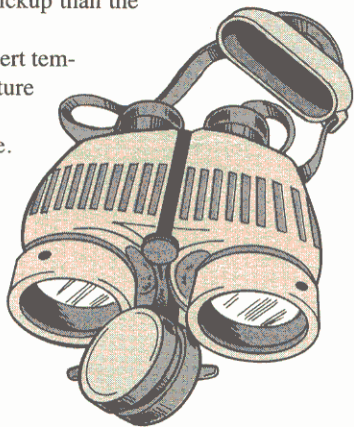
The M22 binoculars can also take the desert temperatures—hot and cold—they're temperature resistant!

The binoculars' body is not repairable. You have to replace it if it breaks.

Repair parts are listed in TM 9-1240-403-13&P.

If you wear glasses, be careful not to get them caught on the small rubber eyecup on the binoculars. If the eyecup is torn off, the binoculars might scratch your glasses' lens.

M22 binoculars are
better than M19s



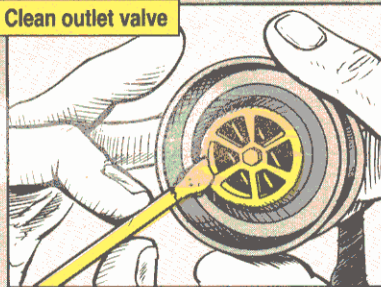
Desert Mask Seal Test



Operating in the desert requires more cleaning before you do the seal test for the M17 and M24/M25 mask outlet valves, NBC NCOs.

Use a Q-tip dipped in alcohol to clean the outlet valve and valve seal of dust, dirt, or sand.

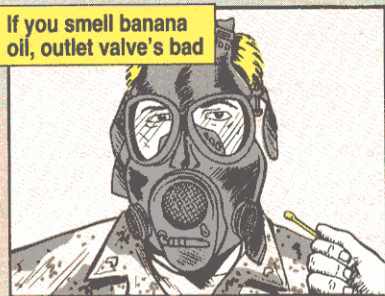
Clean outlet valve



With the mask properly fitted on the soldier, have the soldier inhale and hold it for 10 to 15 seconds. Dip a Q-tip in H-amyl acetate (banana oil) and wave it around the outlet valves.

If the soldier smells banana oil when he breathes, the outlet valve's bad. Remove it. Inspect, clean, and insert a new outlet valve. Do the banana oil test again.

If you smell banana oil, outlet valve's bad



If the soldier doesn't smell banana oil, the mask's good. If he does, turn in the mask.

For more info, see AMCCOM Maintenance Advisory Message No. 90-55. Your AMCCOM Logistics Assistance Representative can get you a copy.

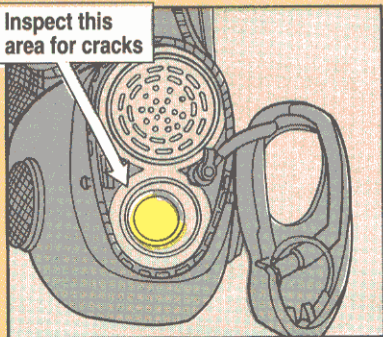
Voicemitter Checks Loud and Clear

WHEN YOU'RE CHECKING THE M17'S VOICEMITTER, PAY SPECIAL ATTENTION TO THESE TROUBLE SPOTS TO SAVE BREATHING TROUBLE LATER!

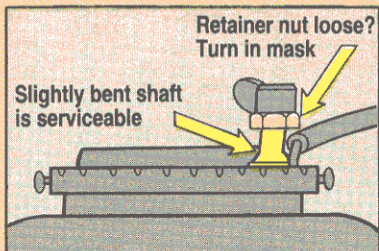


Voicemitter Housing. Look for cracks where the drink tube shaft goes through the housing (the 12 to 3 o'clock area in the outlet valve well). Cracks make the mask NMC. Scratches are OK. A crack you can feel with your fingertip, a scratch you can't.

Inspect this area for cracks



Drink Tube Control Lever Shaft. Look for bends in the shaft. The shaft should stick straight up from the voicemitter housing. If it leans more than 1/8-inch at the top of the shaft, the mask's unserviceable. If the shaft retainer nut's loose, the mask's also unserviceable. Check the nut tightness with fingers only.



NEVER TRY TO FIX BENT SHAFTS OR LOOSE NUTS. THE MASK IS NOT SAFE AND SHOULD BE TURNED IN.



ALL-Around Cooling

Ttactical air conditioners will keep vital equipment cool or warm. But neglect your PM, and all you get is a stream of unconditioned air.

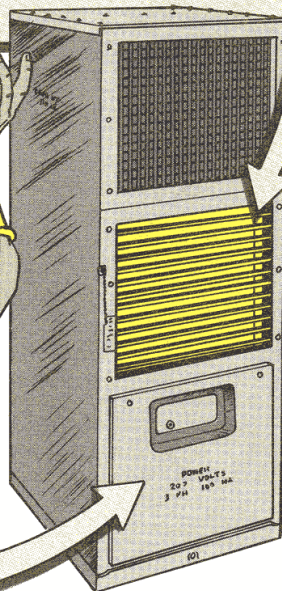
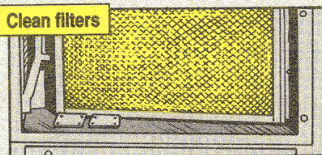
STOP WISHING! HERE ARE SOME THINGS YOU CAN DO TO KEEP THAT AIR CONDITIONER ON THE JOB.

ALSO, BE SURE TO REFER TO YOUR AIR CONDITIONER'S TMs.

• **Housing**—Be sure all the panels are in place and properly secured. A missing panel can prevent the correct airflow through the coils. Dirt and water get into the air conditioner, too. Make sure any covers are secured out of the way before operation, too.

• **Filters**—A clogged filter prevents airflow. The air conditioner may be cooling, but no conditioned air gets where it's needed. Take the filter out and wash it, or replace it.

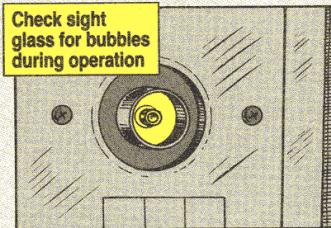
Clean filters



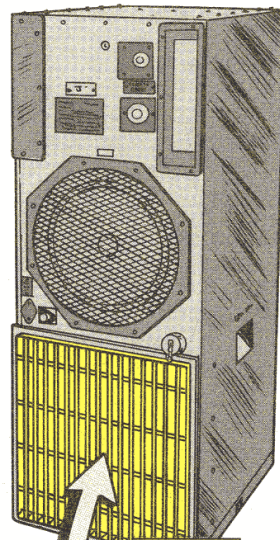
• **Fans**—If the fan motors have oil ports, lube them with a light oil, like 3-in-1 oil or OE/HDO-10.

• **Sight gage**—Run the unit at the MAX AC setting for about 15 minutes. Look at the refrigerant sight glass. An occasional bubble is OK, but many bubbles or a milky appearance means the refrigerant is low. If your unit has a moisture indicator, check that, too. Green is OK, but yellow means there's moisture in the refrigerant. Report any problems you find.

Check sight glass for bubbles during operation



Clean coils



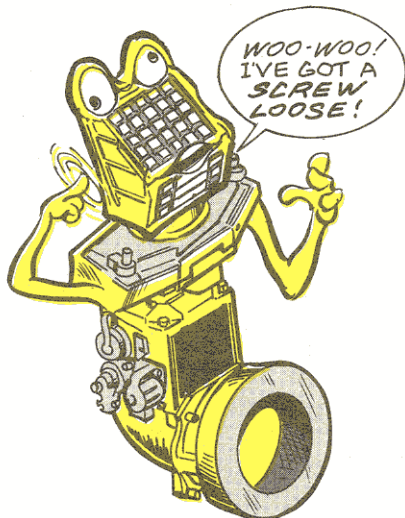
• **Coils**—Dirt or trash on the evaporator or condenser coils blocks airflow. If the condenser is blocked, pressure goes up in the system and the compressor may shut down or be damaged. A clogged evaporator coil can freeze up, further blocking the airflow.

• **Compressor**—Look at the oil level in the crankcase sight glass. If it's low, report it!

• **Dampers**—Check the operation of any dampers used on the unit to switch between inside and outside air. Fix them or report them if you find one stuck.

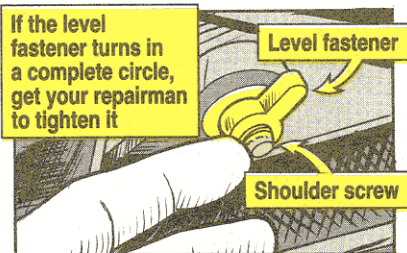
• **Control panel**—Be sure the controls work and no knobs are missing.

Tighten Up on Screw Problem



The shoulder screws on the lever fasteners on the viewer mount assembly have a habit of working loose. A loose screw leads to a loose fastener and that means a shaky viewer.

A quick check puts the screws to loose screws. If the lever fastener turns in a complete circle, the shoulder screw's loose.



Night Vision Goggles...

Don't Mix Batteries

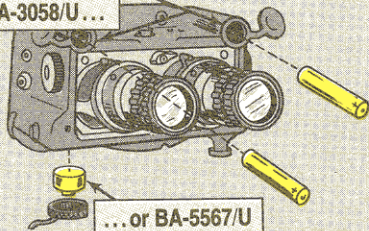
Your AN/PVS-5B and -5C night vision goggles have dual battery capability. That means that they use either the BB-5567/U lithium battery, NSN 6135-01-090-5365, or the BA-3058/U alkaline battery, NSN 6135-00-935-2587.

Be sure never to use both types of batteries at the same time since this will partially discharge the lithium battery.

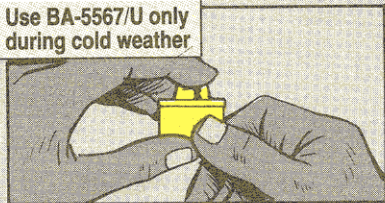
During hot and mild weather, use the BA-3058 batteries.

The BA-3058 batteries do not work well in sub-freezing temperatures, so use the BA-5567 lithium battery when cold weather sets in.

Use either the
BA-3058/U...



Use BA-5567/U only
during cold weather



5-gal Gas Can...

Repair Parts

Get repair parts for your 5-gal military gas can, NSN 7240-00-222-3088, with these NSNs:

Item	NSN
Cap & screen assembly (flat washer, screen and cap)	7240-00-132-6433
Spout assembly (Cap & screen, 1/8-in thick flat washer, rubber bushing and flexible nozzle)	7240-00-177-6154
Flat washer	5310-00-228-6638
Rubber bushing	7240-00-132-6431
Gasket—General use down to -40°F	5330-00-298-7165
Gasket—Extreme cold weather, -40°F down to -60°F	5330-01-271-7621
Closure assembly (gasket, chain, plug swivel, connecting link, and cotter pin anchor)	7240-00-025-3377

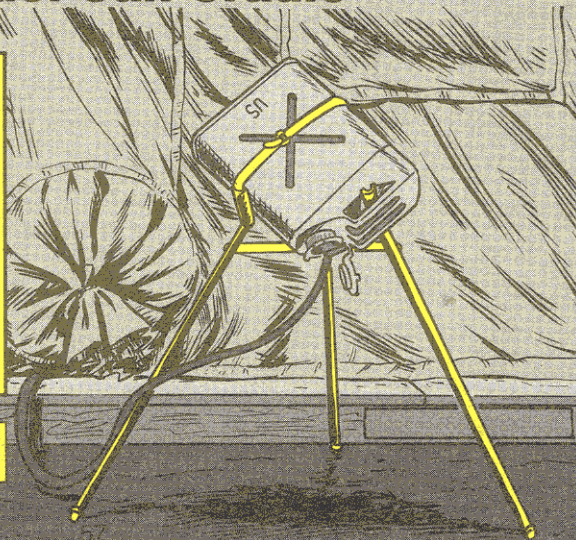
Eyeball Chapter 2 of TM 10-7200-200-13 for the PMCS.

New Fuel Can Cradle

You can now get a can cradle to hold the 5-gal fuel can. It's sturdy, lightweight, field-repairable and can be folded for easy storage.

NSN 7240-01-318-8636 brings replacement straps for the cradle.

**NSN 7240-01-318-5222
gets a fuel can cradle**



SAMS Maintenance Work Order

If your unit operates under the Standard Army Maintenance System (SAMS), you request support maintenance on DA Form 5504, Maintenance Request.

However, the order is not worth the paper it's written on if you mechanics don't give DS folks a clear description of what's wrong with the equipment. They need more than "It's broke" or "It won't run".

For example, a driver's CUCV truck won't start. He reports it on the DA Form 2404, Equipment Inspection and Maintenance Worksheet. You determine that the fuel pump's not pushing enough fuel to start the truck. Since repair of the fuel pump is a higher level of maintenance, you fill out a DA Form 5504.

Block 24 of the DA Form 5504 asks for a description of the deficiency or symptom. You would write something like "Truck won't start. Fuel pump doesn't pump enough fuel."

MAINTENANCE REQUEST			PAGE	OF	REQUIREMENTS CONTROL SYMBOL C350LD - 1047	CONTROL NUMBER
For use of this form, see DA Pam 735-750, the proponent agency is DCS/LOG						
SECTION I - CUSTOMER DATA			SECTION II - MAINTENANCE ACTIVITY DATA			
1a. WORK ORDER NO.	5. CUSTOMER UNIT NAME	C. PHONE NO.	3a. WORK ORDER NO (WON)	b. SHOP	C. PHONE NO.	
2. 8. Inherent Cust. (owner, enter data in Blocks 2a and 2b)	2a. SAMS-2 UIC	b. UTILIZATION CODE	4a. UIC SUPPORT	b. SUPPORT UNIT NAME		
SECTION III - EQUIPMENT DATA						
5. ID	6. NSN	15. FAILURE DETECTED DURING (Select one - use / or X)		16. HOURS		
7. TYPE, MNT REQ CODE	8. MOD. IT.	A. Sock. Mnth	C. Test	E. Storage	G. Flight	H. Other
		B. Handling	D. Normal Op.	F. Inspection	I. Calibration	J. Rounds
		9. MILES/KILOMETERS (Enter / or X)	10. ROTATIONS	17. PROJ. CODE (If Approp)	18. ACCT PROCESSING CODE	
		M. KM	N. ROTATIONS	19. LEVEL OF WORK (Select one - use / or X)		
				Unit Level	H. Intermediate General Spt.	I. Special Repair Activity
				Intermediate Direct Spt.	J. Depot	
24. Describe Deficiencies or Symptoms on the basis of Complete Checkout Diagnostic Procedure in Equipment TM. (Do not prescribe repairs.)						
<p>TRUCK WON'T START. FUEL PUMP DOESN'T PUMP ENOUGH FUEL.</p>						
22. REIMBURSABLE CUSTOMER? (If Inherent Customer, enter Y or N)						
SIGNATURE (Payroll Signature)						
SECTION III (Continued) -						
Block 14. Leave blank.						
Block 15. Select one. Use a - / or X. Do not report usage data in this block if reporting was detected. Do not report usage data in this block if reporting was not detected.						

Then DS goes directly to the fuel pump to see why it's not pumping fuel. This way the repair is done quicker and your unit can report fewer NMC days.

After DS does their initial inspection, they usually put a brief description of the failure in Block 14 of the DA Form 5504. The problem is Block 14 was left off the form. This information is needed to analyze equipment failures, so the DS folks should also use Block 24 to record their inspection results until new forms are available.

Maintenance Excellence Awards

HERE ARE THE WINNERS AND RUNNERS-UP OF THE FY90 ARMY AWARD FOR MAINTENANCE EXCELLENCE.

LIGHT UNIT WINNERS

Active MTOE, 188th MP Co, Taegue, Korea
TDA, 1st Sqdn, 322d Cav, Omaha, NE
Reserve MTOE, HHD, 520th Maint Bn, St Louis, MO
National Guard MTOE, HHD, 109th Medical Bn, Iowa City, IA

LIGHT UNIT RUNNERS-UP

Active MTOE, 24th Trans Co, Ft Riley, KS
TDA, USAISC Carlisle Barracks, Carlisle, PA
Reserve MTOE, HHD, 49th Medical Bn, Los Alamitos, CA
National Guard MTOE, Co D, 122d Engr Bn (CBT), Batesburg, SC



INTERMEDIATE UNIT WINNERS

Active MTOE, Co A, 39th Engr Bn, Ft Devens, MA
TDA, Defense Communications System Operations Company, Okinawa, Japan
Reserve MTOE, 801st Engr Co (PC), Oakland, CA
National Guard MTOE, 229th Chemical Co (Smoke/Decon), Roanoke, VA

INTERMEDIATE UNIT RUNNERS-UP

Active MTOE, HSC, 25th S&T Bn, Schofield Barracks, HI
TDA, TMDE Spt Center, Picatinny Arsenal, Dover, NJ
Reserve MTOE, 962d Ord Co (AMMO), Plattsburgh, NY
National Guard MTOE, 1133th Trans Co, Mason City, IA



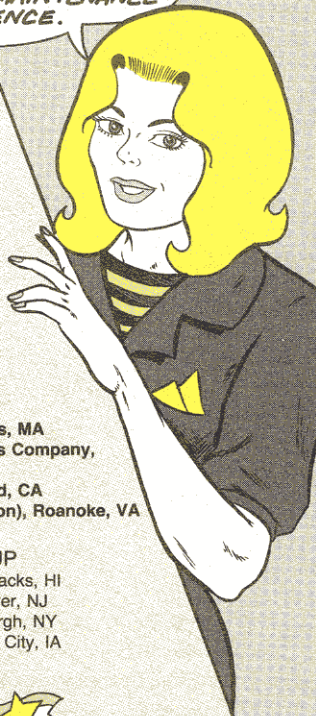
DA CIR
750-90-1
HAS THE WORD ON
THE FY91
COMPETITION.

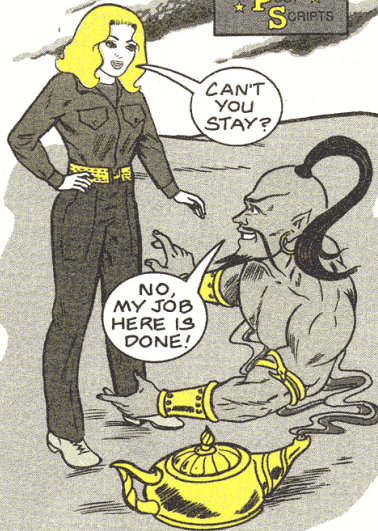
HEAVY UNIT WINNERS

Active MTOE, HSC, 3d Bn, 9th Avn Regiment, Ft Lewis, WA
TDA, 1st Bn, 29th Inf Regiment, Ft Benning, GA
Reserve MTOE, 936th Maint Co (DS), Wood River, IL
National Guard MTOE, Co B, 199th Forward Spt Bn, Winnfield, LA

HEAVY UNIT RUNNERS-UP

Active MTOE, 3d MI Bn, Camp Humphreys, Korea
TDA, Installation Maint Div, Ft Lewis, WA
Reserve MTOE, HHC, 3d Bn, 87th Inf, Ft Carson, CO
National Guard MTOE, 1st Bn, 623d FA, Glasgow, KY





2½-Ton Heater Circuit Breaker NSN

The NSN for the circuit breaker on the control panel of the personnel heater on M35-series trucks has changed. Now order the breaker with NSN 5925-00-957-9894. It's not on the AMDF, so order it on a DD Form 1348-6 using RIC S9E. It costs \$4.43.

90-Ton Snatch Block Pin NSN

Use NSN 5315-01-255-0958 to get the toggle pin for the 90-ton snatch block, Item 4, Page B-5, in TM 9-2350-256-10. The pin is shown as part of Item 4, but there is no NSN listed for the pin only.

Anniston HOTLINE Help

Anniston Army Depot has a HOTLINE to help you with info on:

- M48-, M60- and M1-series tanks
- Tank engines, transmissions and power trains
- AVLBs
- M88A1s
- M551/M551A1 Seridans
- Land combat missile systems (including LANCE launcher/loader transporter)
- Small arms
- Mortars
- Recoilless rifles

The 24-hour number is DSN 571-6582, Commercial (205) 235-6582.

DA Pam 738-750 Help

The Materiel Readiness Support Activity (MRSA) is now responsible for updating and publishing DA Pam 738-750 in the Maintenance Management Update. So, when you have a question about or suggested improvement to this publication, write:

USAMC

Materiel Readiness Support Activity
ATTN: AMXMD-MM

Lexington, KY 40511-5101

Or call DSN 745-4167/3846 or Commercial (606) 293-4167/3846.

GSA Hotline

Got a problem or complaint about an item or a service that GSA's Federal Supply Schedule (FSS) provides? Call the FSS Hotline at DSN 286-2486 or Commercial (703) 557-1368. The hotline's available 24 hours a day, 7 days a week. You'll get a recording, so be prepared to give your name, rank, address, phone number and the NSN of the item and your problem or complaint.

M102 Howitzer Tube Life

Disregard the reference in Change 6 of TM 9-1000-202-14 to 100,000 total cumulative rounds as a turn-in point for the M102 towed howitzer's M137A1 cannon tube. Para 2-8c on Page 2-29 of the cannon tube evaluation TM should reference 10,000 rounds instead. Make a note for your rounds-fired records.

M101 Trailer Leg Pin

Need a pin to lock the support leg up for travel? Get it with NSN 5315-00-045-4217. For the spring, use NSN 5360-00-663-3110. Jot down the numbers until your TM is updated.

CUCV Wrench NSN

To adjust the CUCV's side door, you need a door hinge wrench. Order one on a DD Form 1348-6 with CAGE 33287 and PN J-22585, or CAGE 9H948 and PN S9624A from RIC S9C.

SEE/HMMH Fuel Filter NSN

The NSN for a fuel filter on the SEE/HMMH is not in TM 5-2420-224-24P. Order the fuel filter with NSN 2910-01-224-7367.

4-Ton Bolster Ring NSNs

The NSNs for the retaining rings shown for Items 15 and 17 in Fig 23 of TM 9-2330-287-148P are switched. Use NSN 5365-00-721-7680 for Item 15 and NSN 5365-00-442-5845 for Item 17.

Circuit Breaker Assembly

TM 10-8340-207-14 doesn't list the NSN for the circuit breaker assembly used in the lightweight frame tent. Get the assembly shown in Figs 3-35 and D-11 with NSN 6150-01-027-9050. For just the circuit breaker, order NSN 5930-00-970-1230.

M939A2 Air Dryer Filter Kit

NSN 4330-01-284-6203 gets an air dryer assembly filter kit needed to service the air dryer filter on the M939A2-series 5-ton trucks. You get a filter element and O-ring. Make a note until TM 9-2320-358-24&P is updated.

Crane Radiator Cap

The NSN for the radiator cap on the 25-ton crane is not listed in TM 5-3810-293-20P. Get the cap with NSN 2930-01-105-7526.

Fuel Bowl NSN

Glass fuel filter bowls crack on the twin-jet bridge boats. TM 5-1940-277-20P does not give an NSN for the bowl. You can order one with NSN 2940-01-133-3360.

BUT I WISH
I COULD STAY.



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?

Need Help with Your Consolidated Prescribed Load List (PLL)/Mandatory Parts List (MPL)?

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OR
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SUPPORT ACTIVITY
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PIN: 064836-000