



Issue 536



July
1997

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-536

WHAT'S THE
PROBLEM?

FRANCK'S
ROOM AND BOARD

HENDERSON'S
VIDEO SHACK

THEY WEREN'T
PREPARED.

CRUNK
TOWING
21 MORRIS AVE.

MAADSEN
WAX
MUSEUM

LULU ADAMS
MISS FOURTH
OF JULY

MA'AM,
IS THIS PART OF
THE PARADE?

NO,
JUST POOR
PM.

Approved for Public Release;
Distribution Is Unlimited

PM Is No Game
... See Page 27

An Opportunity to Excel

Soldiers learn real early in the morning that a day in the Army presents them with many opportunities.

There's the opportunity to get up close and personal with a drill sergeant.

There's the opportunity to excel at PT.

There's the opportunity to try to replace the run-flat spacer in a HMMWV tire in less than half a day.

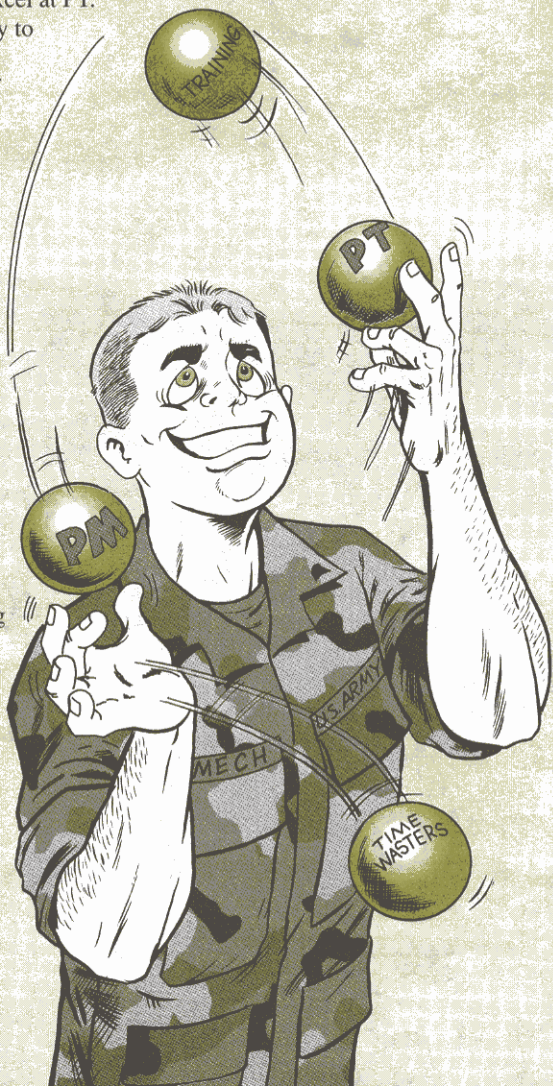
And on and on...

What you learn later (and often the hard way) is how to juggle what needs to be accomplished against all the other opportunities that life presents.

So what can you do when you don't have an octopus's eight arms, and the irons in the fire or stuff on the front burner are more than you can handle?

You do the best you can the first time. You learn to make every minute count. You learn where corner-cutting means danger and you stay away from it. You do every job right. You lay off the time-wasters. You give it everything you've got every minute of the day.

Over time, you'll learn to weed out those opportunities that don't really matter. And your work will stand out as a mark of excellence. That's the best opportunity you have.





THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-536, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user.

ISSUE 536 JULY 1997



WHEELED VEHICLES

2

FMTV Transmission Capacities, Bearing Micrometer	2
FMTV Davit Status	3
Oil Drain Pan	3
Dump Truck Bed	4
HMMWV Brush Guard Pins, Cargo Cover	5
M149 Water Trailer Drain Plug	6-7
HEMTT Towing Preparation	8



COMBAT VEHICLES

9

FISTV Ventilation Grille Support	9
FISTV North Seeking Gyro	10-11
M1 Tank Parking Brakes	12-13
M1 Tank Ammo Blowoff Panels	13
M2/M3 Bradley M242 Gun Feeder	14
M2/M3 Bradley Water Barrier	15
M113 FOV Road Tests	15
M88A1 Recovery Vehicle Torsion Bars	16
Brush for Cleaning	16
M109A6 Paladin PCU Handle	17
M109 Howitzers, M992 Carrier Cleaning	18
M109A2-A5 Howitzer Oil Pressure	18



MISSILES

19

MLRS Boom Lubrication	19
Avenger MP3 Gun Care	20-22
M139 Volcano Mine Dispenser Control Unit	22



SMALL ARMS

23

M249 MG Night Sight Mount, Ammo Use	23
M60 MG Gas System	24-26



COMMUNICATIONS

35

SINGARS Cable for HMMWV	35
OE-253 Antenna Feedcone Hazards	36-37
Lithium Battery Use, Disposal	38-39
Vehicular Antenna Spring, Cable, Tip	40-41



AVIATION

42

AH-64A Armament Pylon Pins, Connectors	42,43
Vibration Pickup Abuse	44-45
Aviator Night Vision Goggle Storage	46
Water Detector Kit Pads	47



NBC

48

M40/M42 Mask Facepieces Replaceable	48-49
M157 Smole Generator Ignitor, Filter, Head	50-51



SOLDIER SUPPORT

52

833C High Security Padlock Care	52-55
200-, 400-lb Ice Chest Manuals	56



LOGISTICS MANAGEMENT

57

PLL Stockage Changes	57
HAZMAT Drum Care	58-59
Project SMART Address Change	59

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

MSG Half-Mast
The Preventive Maintenance Monthly
LOGSA, Bldg. 5307
Redstone Arsenal, AL 35898-7466

Or E-mail to:

psmag@logsa.army.mil

Internet Address:

<http://www.logsa.army.mil/psmag/pshome.html>

By Order of the Secretary of the Army:

DENNIS J. REIMER

General, United States Army Chief of Staff

Official:

Joel B. Hudson

JOEL B. HUDSON

Administrative Assistant to the Secretary of the Army
03540

PS, The Preventive Maintenance Monthly (ISSN 0475-2953) is published monthly by the Department of the Army, Redstone Arsenal, AL 35898-7466. Periodical Postage is paid at the Huntsville, AL post office and at additional mailing offices.

Postmaster: Send address changes to PS, The Preventive Maintenance Monthly, LOGSA, Redstone Arsenal, AL 35898-7466.

TRANSMISSION CAPACITIES



The lubrication charts in Appendix F (Page F-3) of both TM 9-2320-365-10 (2 1/2-ton) and TM 9-2320-366-10 (5-ton) need some additions so you'll do transmission oil changes right.

Otherwise, you may put too much oil in the system and blow seals.

✓ For all 2 1/2-ton FMTVs, you add **31.8 quarts** when you change the transmission oil.

✓ For M1088 5-ton tractors and M1089 5-ton wreckers, you add **31.8 quarts** when you change the transmission oil.

✓ For all other 5-ton models, you add **36.8 quarts** when you change the transmission oil.

Remember, when you add oil always operate the vehicle to bring fluids up to operating temperatures, then check oil levels and add more if necessary.

If your fluid levels are too high, drain off the excess to prevent system damage.

FMTV Micrometer

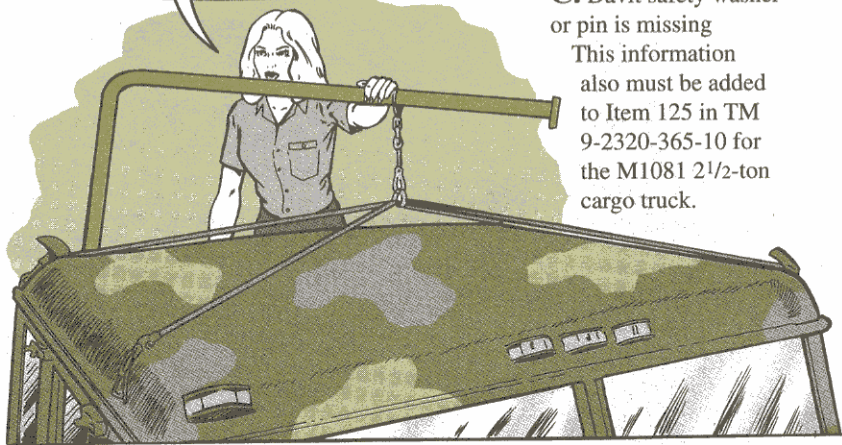
Use NSN 5210-00-619-4045 to get the depth micrometer gauge for FMTV wheel bearing replacement. The NSN shown for Item 22 in Appendix C of both TM 9-2320-365-20-3 and TM -366-20-3 is wrong.

Missing Davit Info

ADD THIS TO THE "NOT FULLY MISSION CAPABLE IF" COLUMN OF ITEMS 125 AND 132 IN TM 9-2320-366-10 FOR THE M1093 CARGO TRUCK AND M1094 DUMP TRUCK.

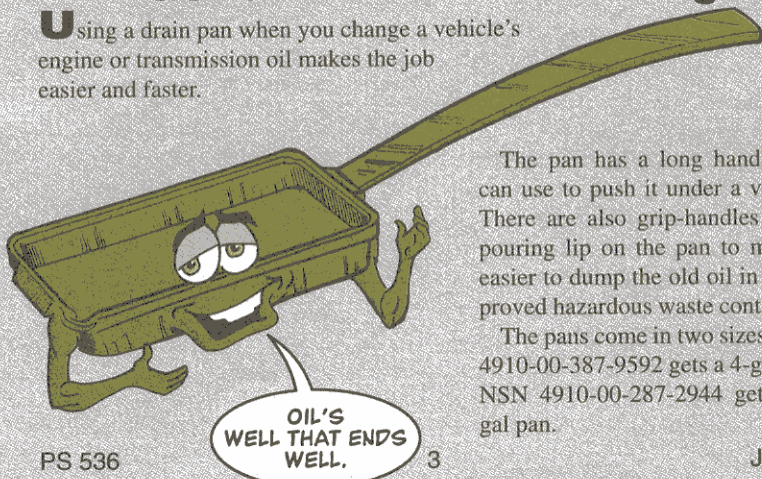
- A.** Davit boom is damaged or missing
- B.** Any clamp is damaged or missing
- C.** Davit safety washer or pin is missing

This information also must be added to Item 125 in TM 9-2320-365-10 for the M1081 2 1/2-ton cargo truck.



Get a Handle on Draining

Using a drain pan when you change a vehicle's engine or transmission oil makes the job easier and faster.



The pan has a long handle you can use to push it under a vehicle. There are also grip-handles and a pouring lip on the pan to make it easier to dump the old oil in an approved hazardous waste container.

The pans come in two sizes. NSN 4910-00-387-9592 gets a 4-gal pan. NSN 4910-00-287-2944 gets a 6-gal pan.

Unplug That Dump Bed

KEEP MY
BED ELEVATED
TO GET RID OF
STANDING
WATER.

Operators, standing water in the bed of your M929 dump truck is **telling** you something: The drain holes are stopped up.

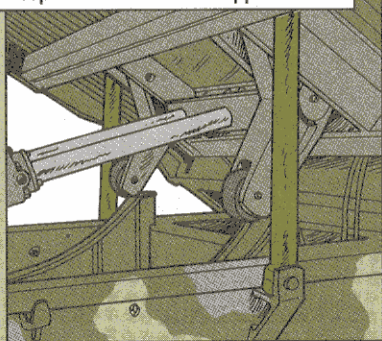
If the water stays there long enough, it'll also **show** you something—a rusted-out dump bed.

Eyeball the drain holes in the front corners of the bed for dirt and leaves. Watch for holes that have been painted over, too. Then, remove any debris or paint residue by running the tip of a ballpoint pen or small screwdriver through the holes to open 'em up.

Another way to keep water and snow out of the dump bed—especially when your 5-ton sits for long periods of time—is to keep the bed elevated. Use the dump body support braces (bedlocks) to hold the bed up and keep pressure off the dump body's main hydraulic cylinder.

Page 2-19 of TM 9-2320-272-10 tells how to use the dump body's bedlocks.

Keep bed elevated with support braces



HMMWV ...

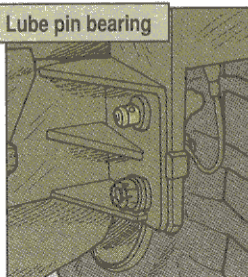
BRUSH GUARD PIN BINGE



The ball bearing on the HMMWV brush guard's quick release pin is constantly exposed to water, dirt and mud. Without PM, it will eventually rust in place.

Then you're stuck with a pin that won't release and a brush guard that can't be moved up and down.

Free up the pin's ball bearing with a shot of lubricating spray, NSN 9150-00-458-0075, at each scheduled service. Spray the pin's ball bearing, then slide the pin in and out of the brush guard a few times to lube it.



Fitting Vinyl Covers

The four-man cargo area soft top enclosure on the HMMWV takes a real beating from weather conditions. The cover eventually shrinks so much that the clips and hook-and-pile strips won't hold.

So what can you do other than buy a new soft top? You can cut down the support bows and re-drill the 1/4-in bolt holes so the shrunken cover fits and holds again.

For the entire story, plus info on how to modify the bows to use them with a new soft top, check out TB 43-0001-39-3 (Dec 96).

Pages 4-8 and 4-9 have complete instructions. If you can't get your hands on the EIR Digest in your unit or through your local TACOM logistics assistance representative, ol' Half-Mast will provide. Just drop him a line by mail or e-mail.



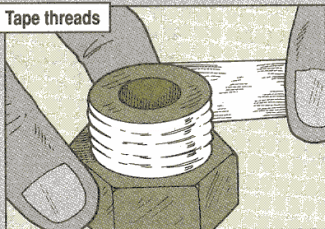
Drain Plug Removal Made Easy

Removing the drain plug on an M149-series water trailer can be a real job, for more reasons than one.

The plastic plug can be overtightened, which strips threads and makes it hard to remove.

To prevent that, wrap the plug threads with antiseize tape. NSN 8030-00-889-3535, and only lightly snug the plug in place. Repeat the taping each time you drain the tank.

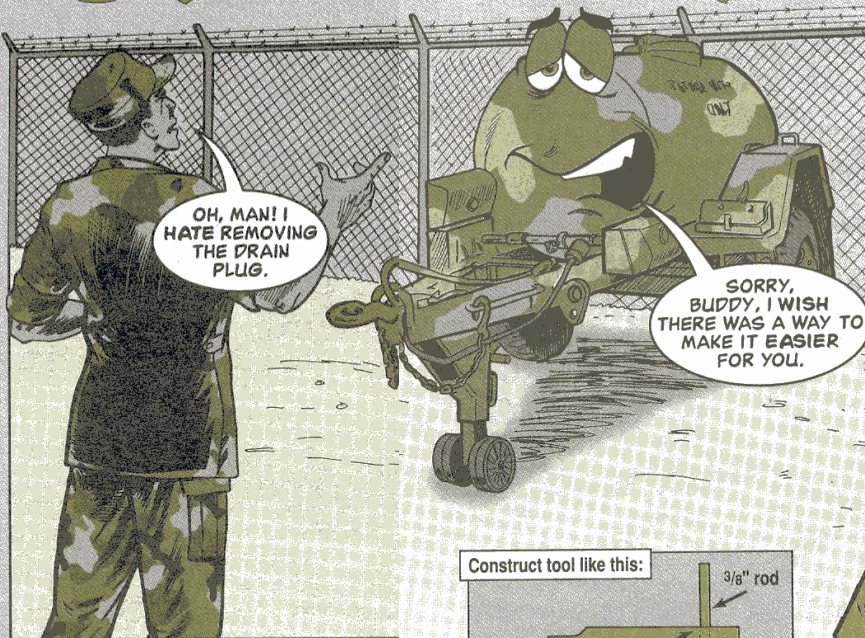
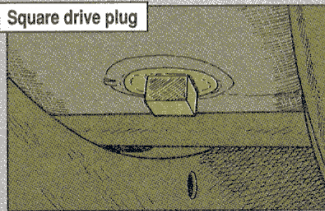
Tape threads



You don't find just any old wrench or other tool that fits the plug, plus can get into the confined area between the trailer crossmembers.

If your trailer has a 1 1/4-in square drive plug (and many do), SFC Warren Corp of the Missouri National Guard has provided one answer.

Square drive plug

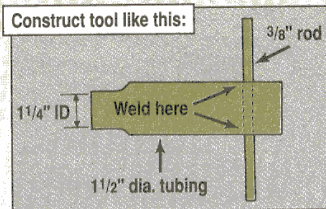


He used a 7 1/2-in piece of 1 1/2-in diameter steel tubing and a 7-inch piece of 3/8-in diameter steel rod to make a removal tool.

He put the tubing on an anvil and hammered one end until it was square enough to fit the plug. Then he drilled a hole in the other end about an inch from the edge, inserted the rod and spot welded it in place.

The tool stays with the trailer and makes draining the tank a piece of cake.

Construct tool like this:

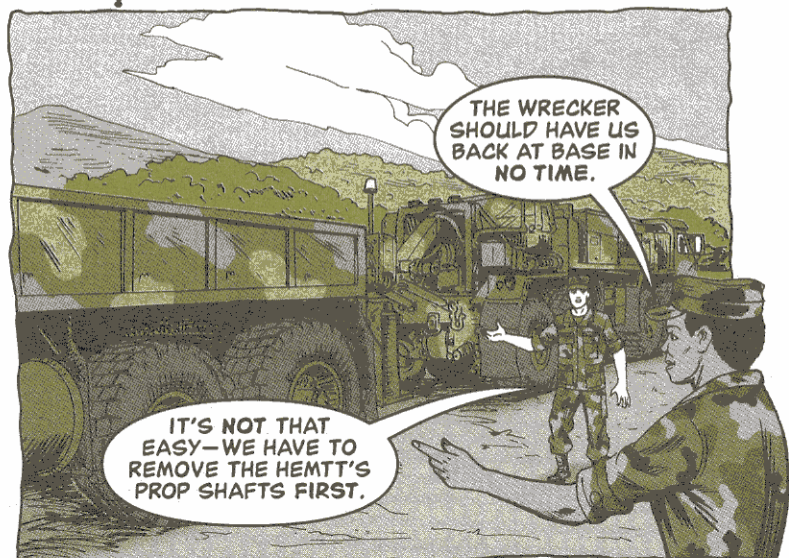


If your water trailer has either a 1 1/4-in or 2-in hex plug, and you'd like a socket to fit, here's what you need:

Socket	NSN 5120-00-
1 1/4-in	235-5871
2-in	199-7770

IF DRAIN PLUG REMOVAL IS GETTING YOU DOWN, HERE'S A TOOL TO EASE THE PAIN.

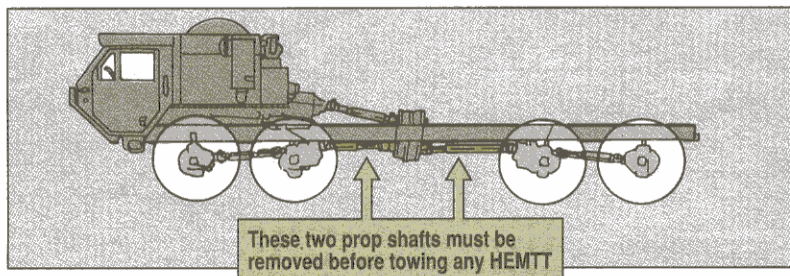
Prop Shaft Off Before Tow



You need more information on towing HEMTT vehicles than you're given in TM 9-2320-279-10-1 if you're going to prevent powertrain damage.

You must disconnect both transfer output shafts: the one from the transfer to the front axles and the one from the transfer to the rear axles.

This must be done regardless of how you tow the HEMTT.



The basic caution in the -10-1 does not specify which propeller shaft must be removed, so make a note on Page 2-428 of the -10-1 until the new information is added.

FISTV Needs Your Support

Dear Editor,

The first time mechanics raise the FISTV's ventilation grille, most of them forget to remove the protective metal ring that goes around the gunner's hatch.

They won't forget twice.

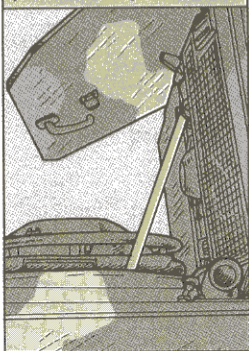
The ventilation grille support arm, NSN 5340-01-052-8931, is too short to keep the grille from crushing the ring. What starts out as routine maintenance results in damage to the vehicle itself.

Using the old support as a guide, our metal shop made a new support that's 26 1/2 inches long measured from the mounting holes.

The extra length keeps the ventilation grille from hitting the hatch ring.

CW3 Gene Wolske
MATES, TXARNG
North Ft Hood, TX

Homemade support stops protective ring damage

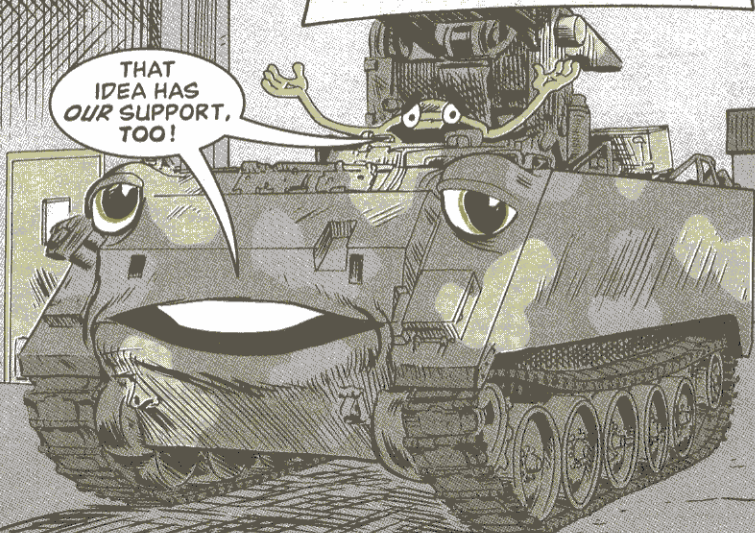


FROM THE DESK OF THE Editor



Your new support gets our support!
Good job!

THAT
IDEA HAS
OUR SUPPORT,
TOO!

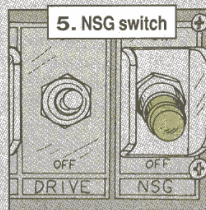
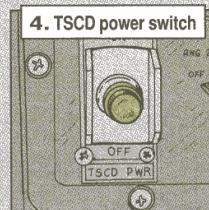
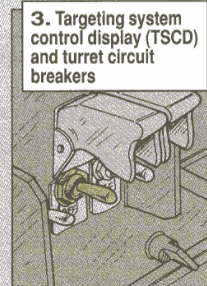
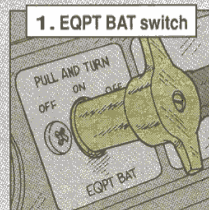


Keep Your FISTV Fit

Cutting corners can do big-time damage to your FISTV's north seeking gyro (NSG) or G/VLLD.

Turn on NSG

If you drive off in the FISTV without first turning on the NSG, the NSG gyros have no cushion against bumps in the road. Soon the gyros get knocked out of alignment and the NSG can't tell north from south. Fixing it costs about the same as a luxury car. Before you move, turn on these switches in this order:



6. Then wait at least one minute before driving.

Exercise It, Too

Without exercise, the gyro settles and may freeze in place. At least weekly, exercise it like this:

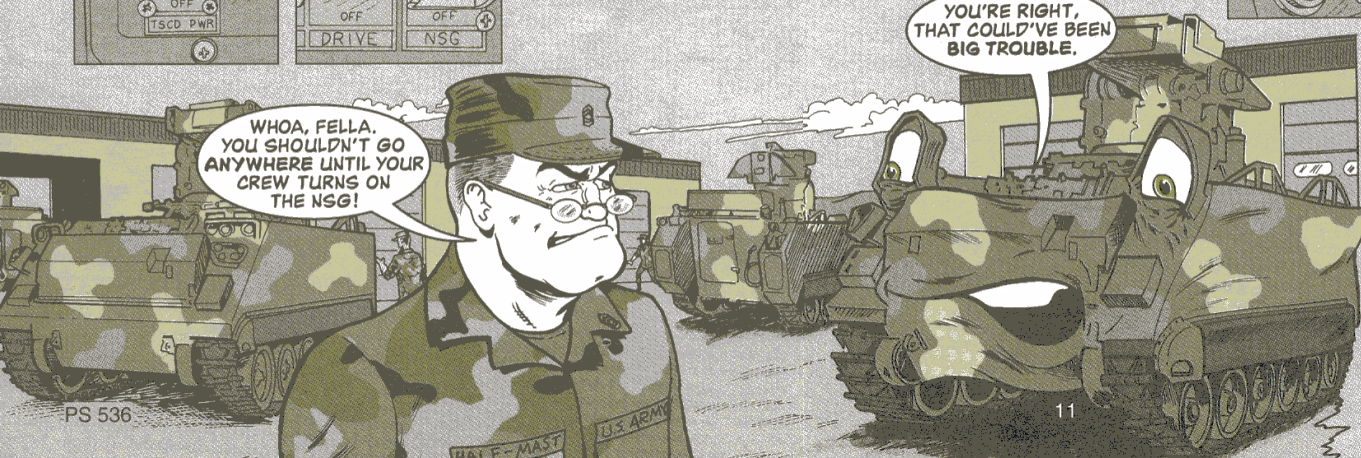
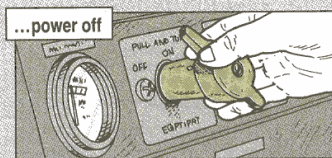
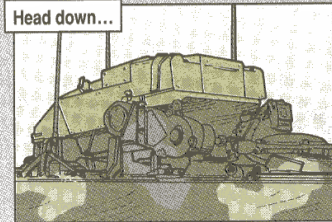
1. Turn on vehicle power.
2. Flip the TSCD PWR switch ON.
3. Set the NSG switch to ON.
4. Enter the FISTV's coordinates and altitude into the targeting system control display.
5. Enter the G/VLLD code. The NSG ALIGN light should come on.

After about 10 minutes, the NSG READY light should come on. When that happens, you're ready to shut down. The NSG is good to go for another week.



Installing G/VLLD

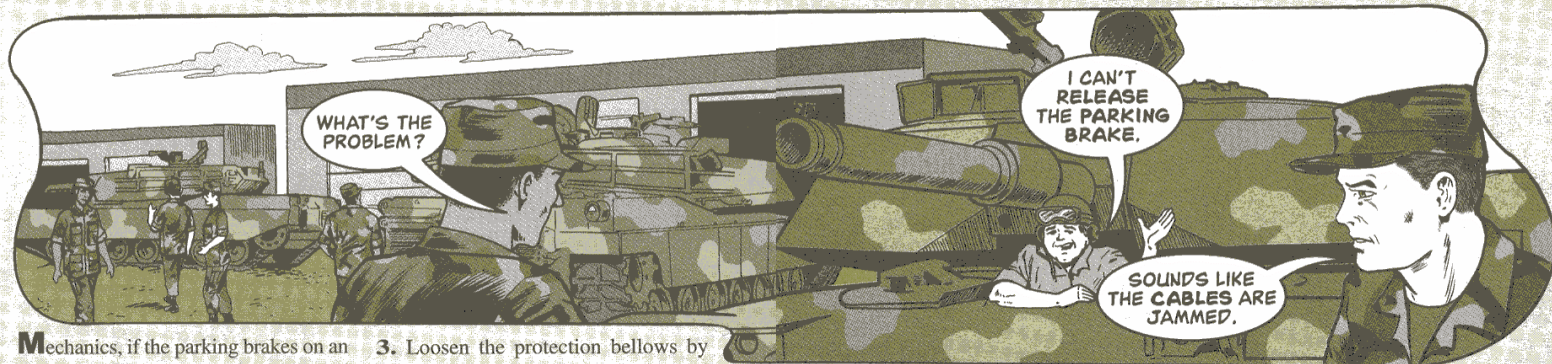
When installing the G/VLLD, remember it's **head down, power off**. If turret power's on when you connect the inhibit plug and G/VLLD cables, the 1J1 connector and circuit cards short out.



Sure, it's easier to install the G/VLLD with the head up. But for the head to be up, the power has to be on. And there goes the G/VLLD as soon as you plug in the plug and cables.

Stow the head and turn off the BAT and EQPT BAT switches. Then put in the G/VLLD.

Put the Brakes on Jammed Cables

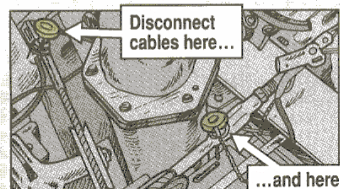


Mechanics, if the parking brakes on an M1-series tank won't release, jammed cables are a likely cause.

In sandy or dusty conditions, grit slowly works its way under the cables' protection bellows. When enough grit accumulates, the cables jam. Then, the **PARKING SERVICE BRAKES** light comes on and stays on, no matter how hard the driver tries to release the brakes.

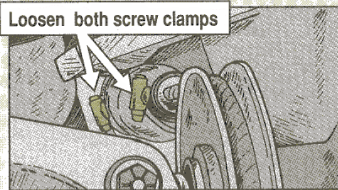
Here's how to unjam the cables:

1. Park the vehicle on level ground, set the parking brake, and chock both tracks.
2. Open the top left grille door and both precleaner doors. Disconnect the parking brake cables by removing the quick-disconnect pins from each clevis.

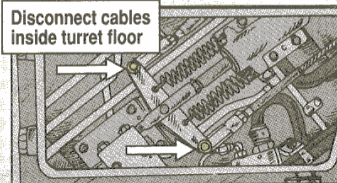


3. Loosen the protection bellows by loosening the two screw clamps and sliding the bellows, clamps, and spacer up the cable.

Loosen both screw clamps



4. Loosen both sleeve nuts and slip the cable free of the bracket slot.
5. Open the access door inside the turret and disconnect the parking brake cables by removing the pin, washer and cotter pin from each clevis.



6. Work the parking brake cables back and forth with one mechanic holding each end until the sand works itself out and the cables slide freely.
7. Put a light coat of CLP on as much cable as you can expose at both ends. Then, slide the cables back and forth again to work the CLP in.

8. Slip the cables back into place on the bracket slot and tighten the sleeve nuts.
9. Slide both bellows back in place, making sure that each is firmly attached to the spacer and sleeve nut with screw clamps. That helps keep out dirt and sand. Replace any worn or damaged hardware.
10. Reattach the cables at both ends.

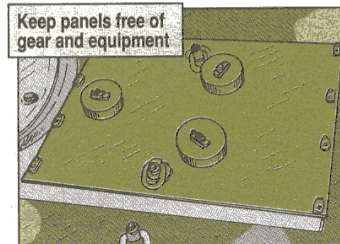
Got It Covered?

In the field, tankers store their gear anywhere they can. Unfortunately, that sometimes includes the top of the blow-off panels.

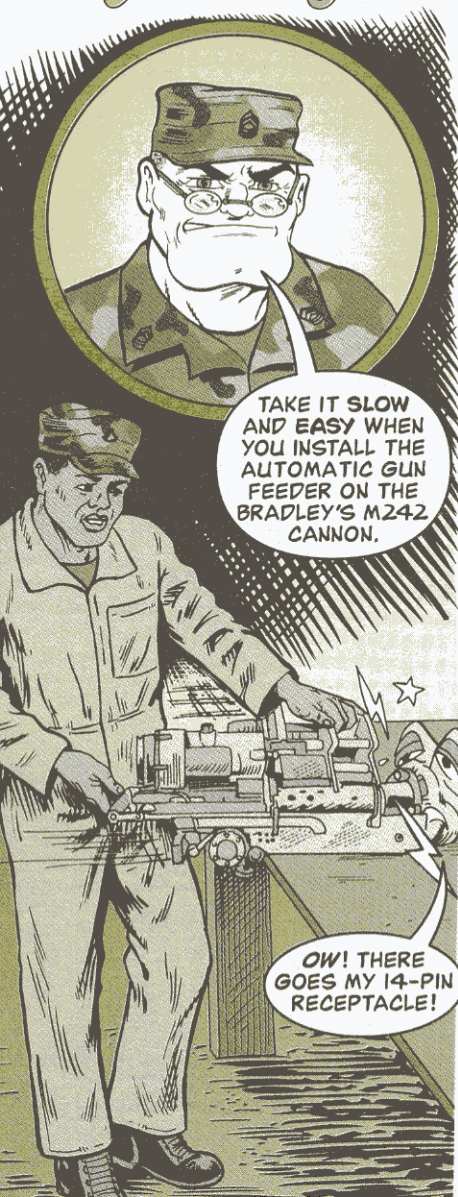
If the ammo in the turret bustle explodes, the panels are designed to blow outward. That lets the explosion vent outside the tank which could save lives.

But if you've covered the panels with equipment, that may not happen. If the panels won't blow, the force of the blast stays inside the turret.

So do your entire crew a favor. Keep **everything** off the blow-off panels.



Go Easy on Gun Feeder

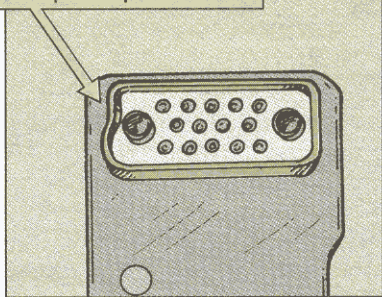


TAKE IT SLOW
AND EASY WHEN
YOU INSTALL THE
AUTOMATIC GUN
FEEDER ON THE
BRADLEY'S M242
CANNON.

OW! THERE
GOES MY 14-PIN
RECEPTACLE!

Slamming the feeder into the receiver and pulling down the locking handle too fast will bend the outer rim of the 14-pin receptacle. The 14-pin connector won't fit inside a bent receptacle, so you end up with broken pins and no connection.

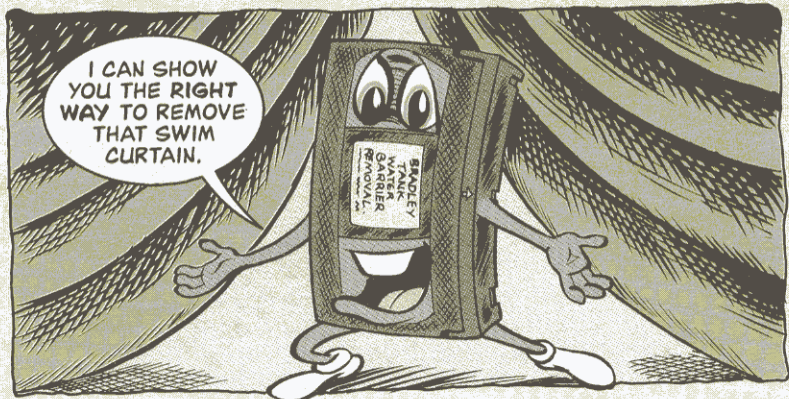
Use care to prevent bending
of 14-pin receptacle



Here's the proper way to install the feeder:

1. Put the receiver on a clean, flat surface or gun stand.
2. Place the feeder on the gun receiver guide rails.
3. **Slowly** slide the feeder forward until it rests firmly against the end of the receiver. If you meet any resistance, pull the feeder out and try again.
4. Press the release button and insert the drive shaft into the bottom of the receiver. Give the drive shaft a tug to make sure it's locked in place.
5. Press down on the locking handle latch and **slowly** pull down on the locking handle.

It's Curtains for Water Barrier



The water barrier system (swim curtain) used for fording your Bradley is a thing of the past, so you need to remove it.

But that's easier said than done. After all, some of the hardware items from the barrier system **must** be reinstalled to ensure hull integrity.

That's why the Bradley PM office developed a videotape that shows

you—step-by-step—the right way to remove the barrier system.

For a copy of the tape, call DSN 786-5239 or (810) 574-5239.

Or write to:

Program Executive Office
Ground Combat and Support Systems
ATTN: SFAE-GCSS-W-BV-L
Warren, MI 48397-5000

M113A3 FOV . . .

Take No Shortcuts

Some mechanics are confused about the semiannual road test required for M113A3 carriers on Page 2-21 in TM 9-2350-277-20-1.

The note under Item 1 says "When conditions prevent a road test, perform engine idle test (page 2-24), governed no load test, and stall check (page 2-25)."

Some mechanics take this to mean they can **choose** between the road test and the other three tests, so they choose the engine idle test, governed no load test and the stall check.

Unfortunately, the stall check damages the vehicle's transmission through clutch wear and overheated fluid. That's why you should **always** check the carrier with a road test unless conditions **absolutely** prevent it.

Know Your Left From Your Right?



Dear Half-Mast,

The left and right torsion bars for the M88A1 recovery vehicle are Items 28 and 29 in Figs 190-192 of TM 9-2350-256-24P-1.

Unfortunately, the TM doesn't say which is left and which is right. That's a problem when we need only one torsion bar. Can you help us out?

SGT I.D.K.

Dear Sergeant I.D.K.,

You bet! Item 28, NSN 2510-00-703-5900, is the left torsion bar. Item 29, NSN 2510-00-703-5899, is the right. Since there's no way to tell which one's which from the drawing, make a note in your TM.

Half-Mast

Left torsion bar: Item 28



Right torsion bar: Item 29

Dust Brush

Using compressed air inside your combat vehicle forces dirt and sand under control panels where it can damage connectors. Use brush, NSN 7920-00-062-5468, to wipe panels clean. Appendix A of CTA 50-970 is your authority for ordering one.

Get a Grip on the PCU

Dear Editor,

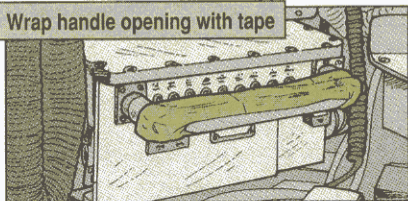
The M109A6 Paladin delivers a bumpy ride in the field. As gunners get jostled around, they'll grab anything for support—like the handle on the power conditioner unit (PCU).

As a hand closes on the handle, it's easy to accidentally flip some of the PCU switches. That makes faults show up on the automatic fire control system that could keep the system from operating properly in a fire mission.

We prevent this problem by wrapping duct tape around the handle opening. It won't let wayward fingers accidentally flip the PCU switches.

SFC Sampson G. Chriscoe
4/42d FA, 4th ID
Ft Hood, TX

Wrap handle opening with tape



FROM THE DESK OF THE Editor

I'm sure a lot of units will be switching to your solution!

HANG ON!
ROUGH ROAD
AHEAD!

HEY, MAN!
WATCH OUT FOR
MY SWITCHES!

Keep the Wet Out

I WASHED OUT
THAT HOWITZER
BUT GOOD!

YEAH, BUT
DID YOU PROTECT
THE BLOWER MOTOR
HOSE?

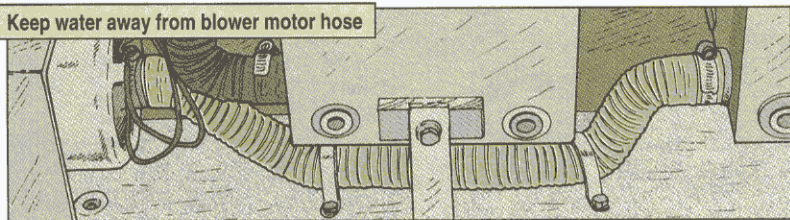
Crewmen, it's a good bet that if you've kept a clean floor in your M109-series howitzer and M992-series ammo carrier, the blower motor hose is in sad shape.

The hose, NSN 4720-00-808-7903, runs along the floor under the air filter housing. It gets drenched every time you clean the floor with high pressure water.

Constant soakings lead to dry rot.

You can prevent dry rot by wrapping the hose in plastic before cleaning inside the vehicle. Better yet, keep high pressure water away from the hose entirely.

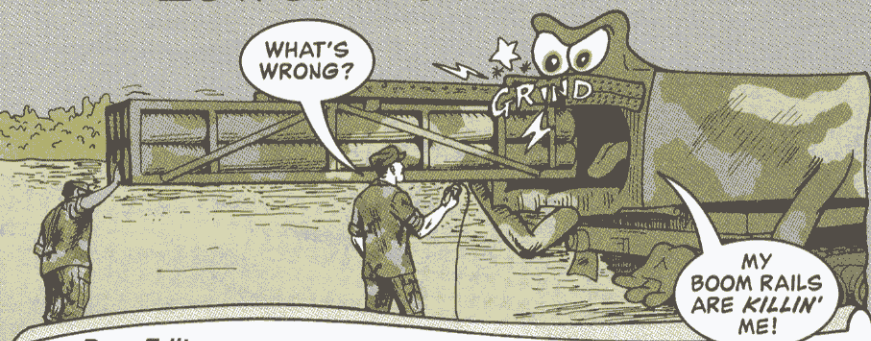
Keep water away from blower motor hose



M109A2-A5 Oil Pressure

Table 9-1 on Page 9-6 of TM 9-2350-311-20-1 gives outdated transmission oil pressure info for your M109A2-A5 SP howitzer. Until the TM can be updated, follow the chart on Page 196 of TM 9-2520-234-35. If you don't have this TM, see your LAR or write to Half-Mast for a copy of the chart.

Lower Boom with PM



Dear Editor,

We work in an MLRS shop and we've noticed crews aren't paying attention to the boom rails and the hoist positioning assembly on the launcher loader module (LLM).

They seem to think that once you put a few globs of grease on the rails and the hoist you can pretty much forget about them. That's a big mistake.

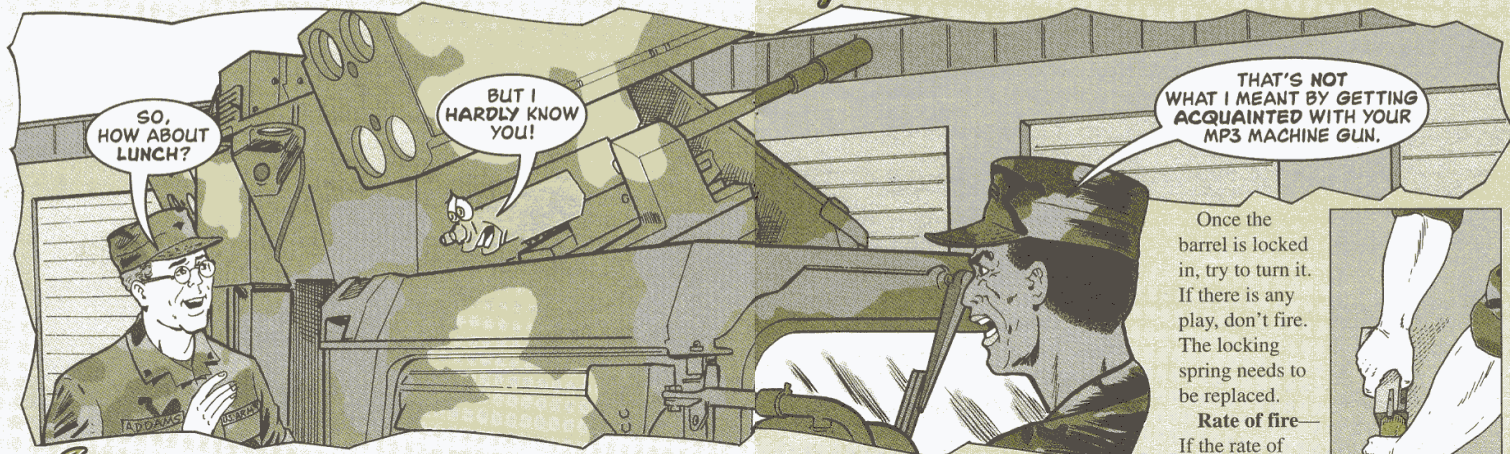
The MLRS throws up a lot of dirt during travel. The dirt mixes with the grease. Soon the grease starts scouring parts instead of greasing them and parts wear out fast, especially the handcrank and jack screw. Replacing MLRS parts costs big bucks.

Units will save those bucks if after every mission they clean the boom rails like it says in Para 3-9f of TM 9-1425-646-10-1 and clean the hoist positioning assembly like it says in Para 3-9h. In addition, put a thin coat of GAA on each of the nylon buttons on the rails to cut down friction.

Chris Kehl
Ricky Houchens
Ft Knox, KY

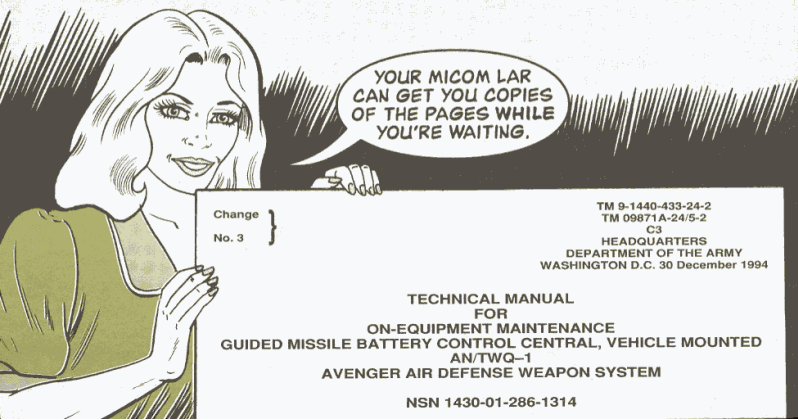


The Fine Points of Gun PM



Avenger gunners and repairmen are getting acquainted with the MP3 machine gun. These PM fine points will help strengthen that acquaintance fast:

TM—Make sure you have Change 3 (Dec 94) to TM 9-1440-433-24-2. It changed things like assembly/disassembly of the bolt and servicing the cradle assembly.



Change
No. 3

TM 9-1440-433-24-2
TM 09871A-24/5-2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON D.C. 30 December 1994

TECHNICAL MANUAL
FOR
ON-EQUIPMENT MAINTENANCE
GUIDED MISSILE BATTERY CONTROL CENTRAL, VEHICLE MOUNTED
AN/TWQ-1
AVENGER AIR DEFENSE WEAPON SYSTEM

NSN 1430-01-286-1314

Once the barrel is locked in, try to turn it. If there is any play, don't fire. The locking spring needs to be replaced.

Rate of fire

If the rate of fire is set wrong the machine gun will have feeding problems. Check the rate

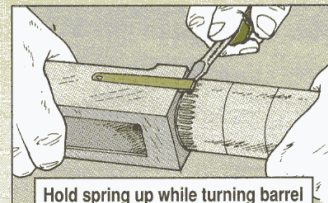
of fire on the control display terminal. It should be 950 to 1,100 rounds per minute. If it's off, reset it like it says on Page 3-43 in TM 91425-433-10.

Test by turning barrel

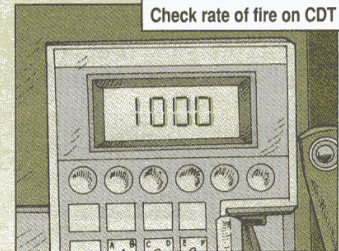
Check rate of fire on CDT

Headspace—If the machine gun loses headspace during firing, the bolt and barrel will be damaged or the gun will jam. It loses headspace if the barrel locking spring is weak.

What weakens the spring is letting it ride on the barrel as you screw the barrel in or out. Save the spring by using a screwdriver or something similar to hold the spring up slightly as you turn the barrel.



Hold spring up while turning barrel



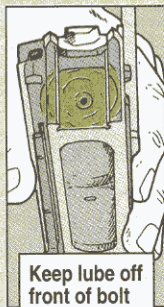
Cleaning—Like any weapon, the MP3 needs to be cleaned thoroughly and regularly. But do **not** use CLP on the MP3. Use rifle bore cleaner (RBC) to clean inside and outside the barrel.

Use TW-25B to lube and preserve the outside of the barrel.

But keep TW-25B away from the inside of the barrel. It damages the barrel liner.

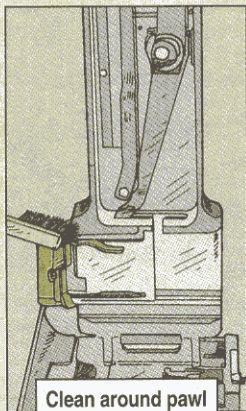


Clean the front of the bolt face with a wire brush, but keep TW-25B off the face. Order TW-25B on a DD Form 1348-6 using part number TW-25B1SP11 and CAGE 0BAN7.



One trouble spot is the pawl on the feed cover. Dirt, carbon, and brass shavings build up behind the pawl and cause it to bind. Then the MP3 has trouble feeding.

Gunners, clean as best you can around the pawl with the small brush in your tool kit. If the pawl binds, your repairmen need to disassemble the feed cover and clean it.



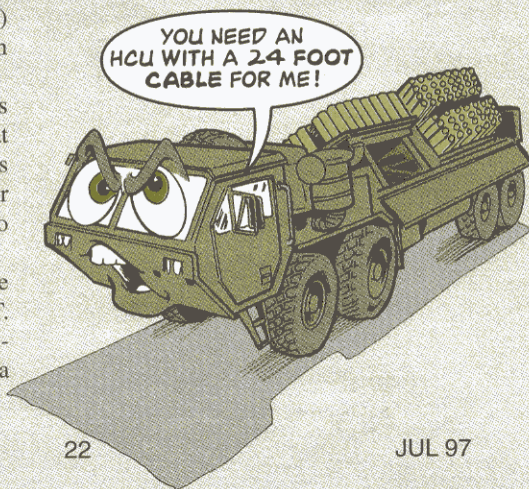
M139 Mine Dispenser (Volcano) . . .

Vehicle Determines HCU

The hand control unit (HCU) used with Volcanoes mounted on trucks comes in two versions.

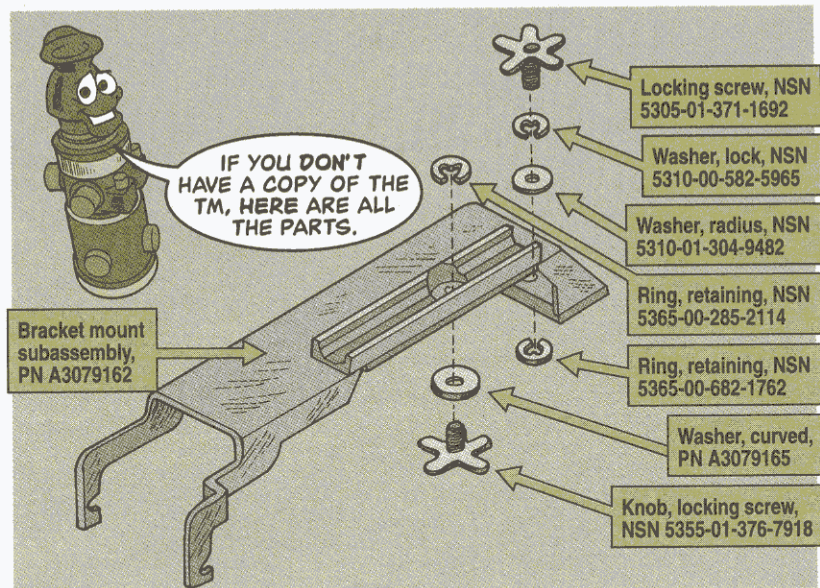
NSN 1095-01-271-8055 brings an HCU with a 14-ft cable. That HCU works fine if the Volcano's mounted on a 5-ton cargo or dump truck, or M548A1 cargo carrier.

But the cable's too short if the Volcano's riding on a HEMTT. Then you need HCU, NSN 1095-01-388-4846, that comes with a 24-ft cable.



Parts on the Mount

If you need parts for the AN/PVS-4 night sight mount on the M249 machine gun, there's no need to look in the M249 TM. They're not there. Look in the AN/PVS-4's TM 11-5855-213-23P.



Order the bracket mount subassembly and curved washer by CAGE code 80063 and part number on a DD Form 1348-6.

No Magazines Please

It's true the M249 machine gun can handle ammo in a magazine, but it's also true that firing with a magazine causes jamming.

The M249 was designed to fire linked ammo and that's what works best. The magazine feature was added for emergencies—like the enemy is bearing down and you're out of ammo belts. Then it's OK to insert an M16 rifle magazine in your M249 and try to keep firing.

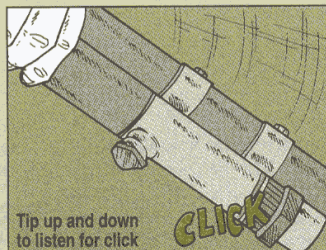
But at all other times, use ammo belts. You'll save yourself lots of headaches.

Curing Nasty Gas Problems

A plugged gas system in your M60 machine gun causes short recoil, which leads to a runaway gun or a gun that can't fire.

The worst part is that when you think you're fixing gas problems, you may be making them worse. Here's a cure that can't go wrong:

✓ See if the gas system needs cleaning by tipping the barrel up and down.

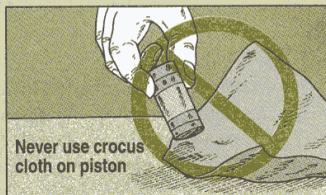


Tip up and down to listen for click

CLICK

Listen for a click. If the system's clean, the piston will slide like it's on ice. A piston that slides slow or not at all means it's cleaning time.

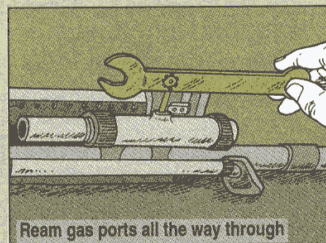
✓ Clean carbon off the piston with CLP. If CLP's not strong enough, use RBC.
✓ Keep sandpaper and crocus cloth away from the cylinder and piston. They



Never use crocus cloth on piston



may shine up the cylinder and piston, but they also rub off the finish and cause more carbon buildup.

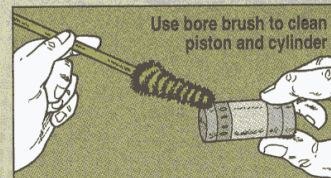


Ream gas ports all the way through

✓ Ream the gas port with the combination tool. Be sure to push the prong all the way into the cylinder or it will

still plug up. Ream the cylinder and piston holes, too.

✓ To make sure you've got all the carbon, run the bore brush through the cylinder and over the cylinder and piston holes.

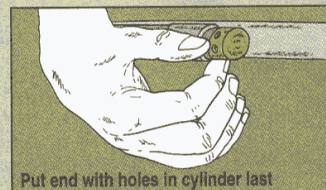


Use bore brush to clean piston and cylinder

✓ Clean out the extension vent hole with lacing wire.

✓ Wipe the piston and cylinder dry. If they're not dry, they gum up quick. Clean the barrel with the cylinder up. That keeps CLP from dripping into the cylinder.

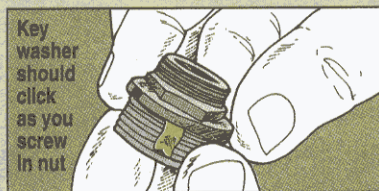
✓ Put the piston's shiny end in the cylinder last so the piston holes line up with the cylinder holes. Get the piston backwards and the M60 fires once and stops.



Put end with holes in cylinder last

✓ Make sure the key washer's long prong points toward the opposite end of the cylinder. If the washer's backwards, the cylinder nut's tough to unscrew.

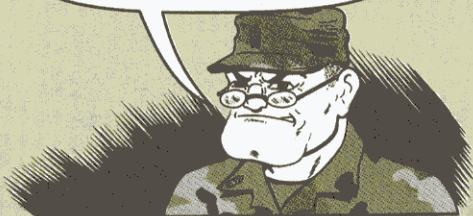
✓ As you screw on the nut, listen for the key washer clicking. No clicks means the washer's weak and can't hold the nut tight. Your armorer can replace the washer.



✓ Look at the bottom of the cylinder plug. If there's a tiny hole in it, your armorer needs to safety wire the plug so

it will stay tight. Newer plugs have lock washers and don't need safety wire.

ARMORERS, MAKE COPIES OF THIS ARTICLE AND GIVE IT TO ALL YOUR M60 GUNNERS. THE BETTER THEY CLEAN THEIR MACHINE GUNS THE LESS WORK FOR YOU. THINK ABOUT IT.



PS END

Readers Quiz

HERE ARE SOME QUESTIONS ABOUT THE EQUIPMENT FEATURED IN THIS ISSUE OF PS. SEE IF YOU KNOW THE ANSWERS.

WHEELED VEHICLES—Do you know how much oil you need for an FMTV transmission oil change? (Page 2)

COMBAT VEHICLES—What's the best way to fix jammed parking brake cables on your M1-series tank? (Pages 9-10)

MISSILES—Which lubricant is best for the Avenger's machine gun? (Pages 20-22)

SMALL ARMS—How do you fix a plugged gas system in your M60 machine gun? (Pages 24-26)

COMMO—What can you do to extend the life of OE-254 antenna feedcones? (Pages 36-37)

AVIATION—How can you prevent the abuse of aircraft vibration pickups? (Pages 44-46)

NBC—What's the difference between M42A1 and M42A2 masks? (Pages 48-49)

SOLDIER SUPPORT—Why should you never use petroleum-based lube on your high security padlock? (Pages 52-55)

LOGISTICS MANAGEMENT—When must "excess" items on a unit's PLL be turned in to the SSA? (Page 57)

THIS IS NOT A GAME

IN THE SECLUDED MOUNTAIN HEADQUARTERS OF SHIRK (SOCIETY OF HIGHLY IMPERTINENT REPAIR KREEPS) ANOTHER PLAN OF PM DESTRUCTION IS UNVEILED.

THIS PLAN IS FOOLPROOF! I'VE CREATED THE PERFECT CLONES AND THEY HAVE INFILTRATED UNITS ARMYWIDE. THEY WILL CONTINUE IGNORING PM UNTIL EVERY VEHICLE IS NMC.

BUT WHAT ABOUT SERGEANT HERO?

THESE CLONES ARE PERFECT! EVEN SERGEANT HERO WON'T DETECT THEIR LACK OF PM.

MEANWHILE...AT
FORT LACKADAISICAL.

WELL, SERGEANT
HERO, YOU'RE HERE FOR
A...CLONE HUNT??

YES, SIR. SHIRKER
CLONES CREATED BY A
DIABOLICAL ORGANIZATION
INTENT ON DESTROYING
THE WORLD'S BEST
EQUIPMENT.

HOW
EXACTLY DO
THEY DO
THAT?

SIR, THEY
INFILTRATE UNITS,
THEN WEAKEN THEM
BY A SHOCKING
LACK OF PM!

SHIRKERS? IN MY UNIT?
PREPOSTEROUS, ABSOLUTELY
PREPOSTEROUS!


YOUR
READINESS RATE
SAYS DIFFERENTLY,
SIR.

HOW DO
YOU PLAN TO
STOP THEM?

WITH
THIS.

A
FLASHLIGHT?

NO, SIR. A PM
ILLUMINATOR.



YOU SEE, SIR,
WHEN A SHIRKER IS
BATHED IN THE LIGHT OF PM,
THEY DISINTEGRATE.

IF YOU'LL EXCUSE
ME, I THINK I'LL START
IN THE MOTORPOOL.



HEY, SERGEANT.
WHAT BRINGS YOU
OUT HERE?

JUST
LOOKING FOR
SHIRKERS,
SOLDIER,
SEEN ANY?



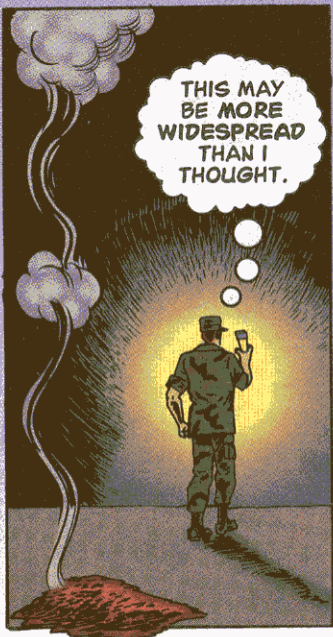
NO SHIRKERS
AROUND HERE.

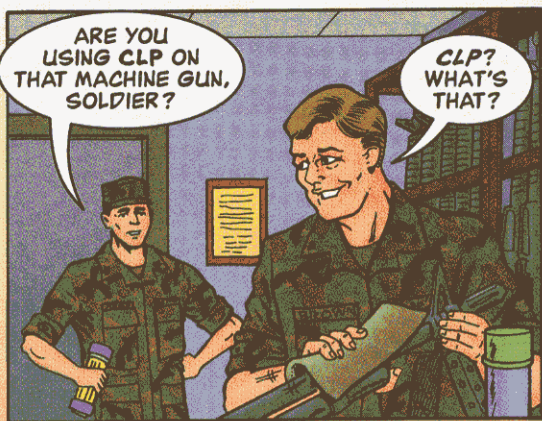
THEN WHY
WEREN'T YOU
USING A TM?

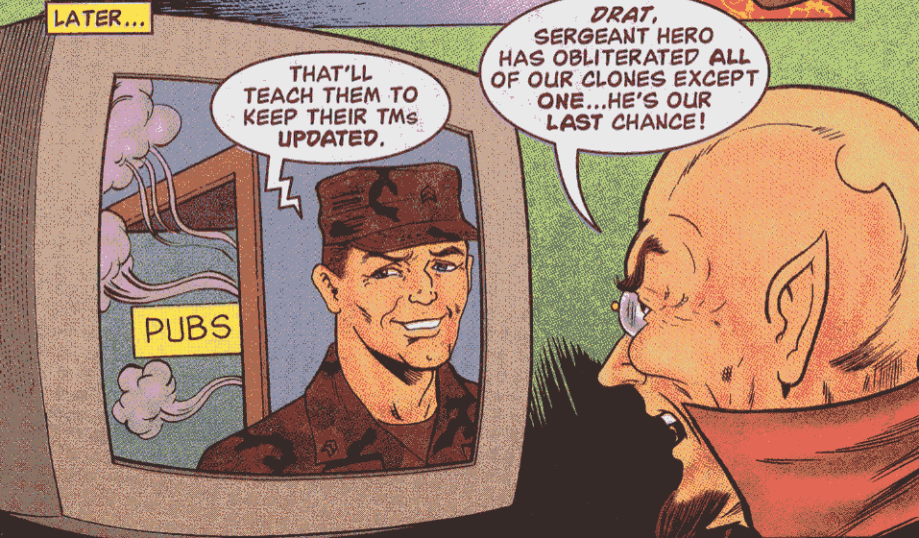
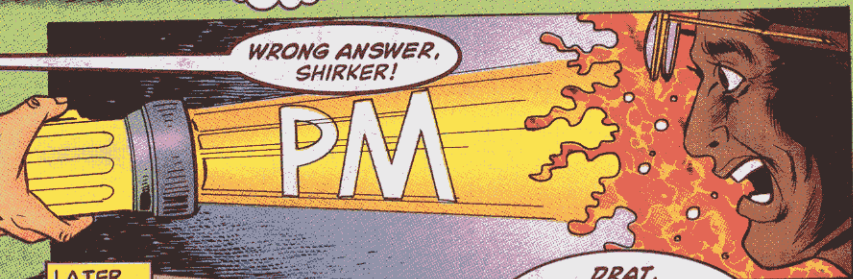
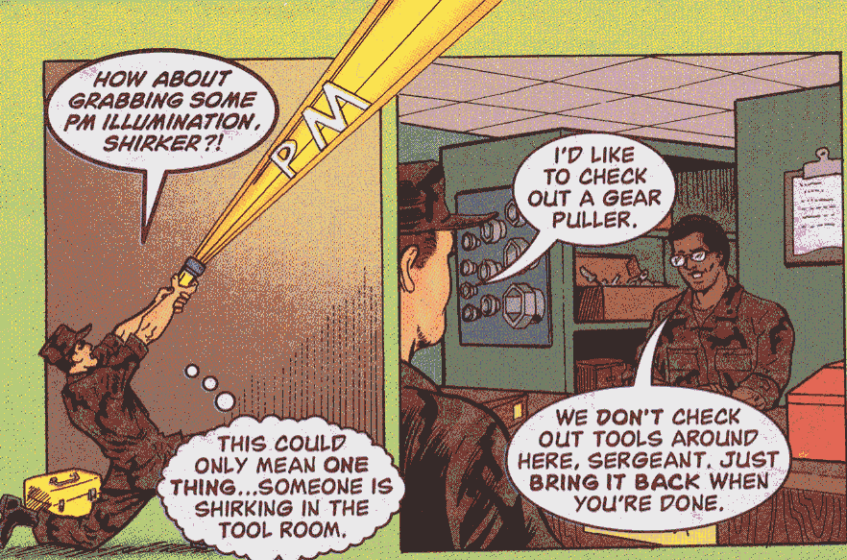


TAKE THAT,
SHIRKER!!

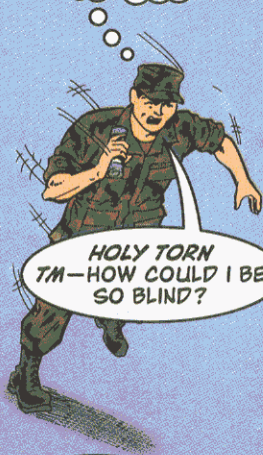
WHAT
HAPPENED
TO HIM?







HMMM... SHIRKERS
SEEM TO BE EVERYWHERE.
HOW COULD THEY...



HOLY TORN
TM—HOW COULD I BE
SO BLIND?

SERGEANT
HERO, WHAT'S
UP?



IT TOOK ME
A WHILE TO CATCH
ON, BUT A LACK OF PM
THIS SHOCKING CAN
ONLY START AT THE
TOP! THAT MEANS
YOU, CAPTAIN.

I THINK IT'S
TIME FOR YOU TO
SEE THE LIGHT,
SHIRKER!



YOU
FORGET,
SERGEANT...
I'M AN
OFFICER!

SHIRKING
KNOWS NO
RANK!



YOU CAN
STOP ME, BUT WHAT
ABOUT OTHER UNITS?
WE SHIRKERS ARE
EVERYWHERE!

ONE BY ONE
I'LL GET YOU ALL!
BUT FOR NOW, YOUR
TOUR OF DUTY
HAS ENDED!

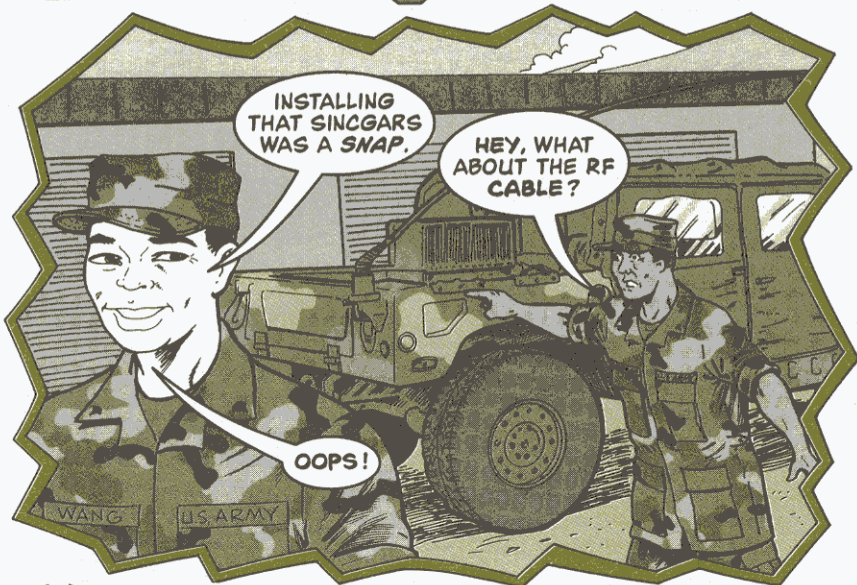


MISSION COMPLETED

SO, WHAT DO YOU THINK OF VIRTUAL REALITY, MASTER SERGEANT HALF-MAST?

IT'S AN INTERESTING GAME, PROFESSOR, BUT PREVENTIVE MAINTENANCE IS NO GAME! IT'S *SERIOUS BUSINESS*—AND WE ALL MUST RECOGNIZE THAT. OTHERWISE, *WE ALL LOSE!*

Use the Right RF Cable



When it's time to replace the AN/VRC-12-series radio in your HMMWV with a SINGGARS radio, remember to replace the radio frequency (RF) cable, too.

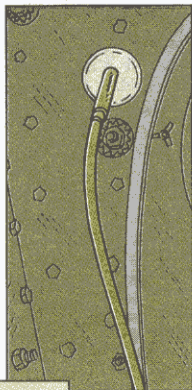
You need to replace the AN/VRC-12-series' CG-1773 RF cable with the SINGGARS CG-3855 RF cable.

The CG-3855 is double-shielded to protect your digital and voice transmission from electromagnetic interference (EMI). The CG-1773 is not double-shielded.

EMI can create noise during voice transmission and cause loss of data during digital transmission.

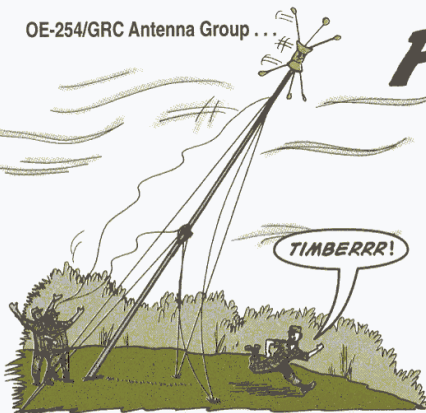
Depending on your SINGGARS configuration, you might need one 21-ft CG-3855 cable, NSN 5995-01-225-1660, or two 18-ft CG-3855 cables, NSN 5995-01-219-7035. To get the whole story, see TB 11-5820-890-20-90, Installation Instructions for Installation Kit, Electronic Equipment, MK-2328/VRC.

The CG-3855 cables are included in the installation kit, or you can order them separately.



Use only CG-3855 RF
cable with SINGGARS

Facing the Feedcone Facts



It's a tough life for OE-254 antenna feedcones. Here are five common hazards and what you can do about them:

Hazard 1. Operators drop the antennas while lowering or raising them. That cracks the plastic section of the feedcone and the feedcone comes apart.

Stop dropped antennas. Para 2-9 of TM 11-5985-357-13 tells you how to safely raise and lower the mast.

One of the most important—and often neglected—points the TM makes is using a support to keep radial elements off the ground when lowering the antenna and to give a lowered antenna a resting place.

Hazard 2. High winds pry the glued-on cones away from the housing.

Reinforce the feedcones with nylon cord, NSN 4020-00-262-2019. Here's how:

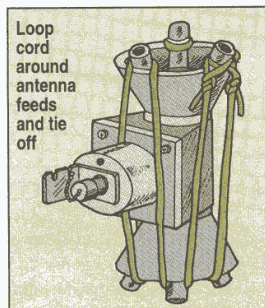
Cut about three feet of cord. Tie one end to an upper cone antenna feed using two half-hitches. Cinch the knot tight.

Loop the cord around an antenna feed on the lower cone. Then loop it around a feed on the upper cone.

Weave the cord up, down and around until you get back to where you started.

Pull it tight and tie it with two more half-hitches.

Trim any extra cord and melt the ends to prevent fraying.



Hazard 3. Items are thrown onto the bag where the feedcone is stored.

The feedcone may look tough, but it's too fragile to be tossed about or have things tossed on it.

Make the feedcones one of the last things you store.

Stencil the storage bag to warn folks not to toss things on top of it.

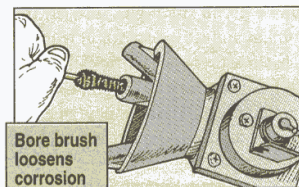


Hazard 4. Corrosion and rust build up in the feedcone sockets.

Keep the feedcone sockets clean and corrosion-free with a small arms bore brush, NSN 1005-00-903-1296. Use handle, NSN 1005-01-113-0321, for a better grip and more twisting force.

Just twist the bore brush down into the socket and turn it several times.

The stiff fibers loosen corrosion and clean out the grooves.



Then wipe out the socket with isopropyl alcohol, NSN 6810-00-753-4993, and foam swabs, NSN 7045-01-154-1317.

There is some good news. The SMR code on the transformer, Item 1 on Page 4-1 in TM 11-5985-357-23, will be changed from PAFZZ to PAOZZ. Being able to change

out the transformers at unit level will save a lot of time and money.

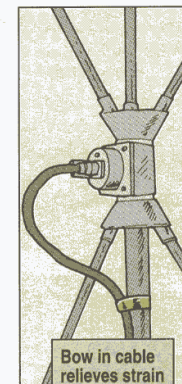
Hazard 5. The sheer weight of the CG-1889 RF cable puts a strain on both the feedcone connector and the RF cable.

Eventually, the feedcone connector pin bends or breaks. Or the cable wiring breaks at the cable connector. Either one can lead to high reflected RF power that can damage your radio.

Follow these tips to take the strain off of the connection:

- Attach a PF-211 strain relief clamp, NSN 5975-00-563-0229, to the RF cable and the upper guy plate of the mast. Para 2-4 of TM 11-5895-357-13 shows you how.

- Put a small bow in the cable just below the feedcone. Tape the cable to the uppermost section of the mast. You'll find electrical tape, NSN 5970-00-419-4291, in Appendix E of the TM.



- For more strain relief, continue to tape the cable to the mast every five feet or so.

HANDLE 'EM RIGHT

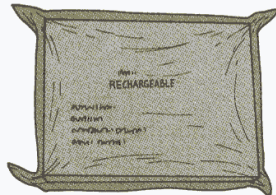


Lithium sulfur dioxide batteries contain pressurized poisonous sulfur dioxide gas. Handled right, they'll do their job so you can do yours. Handled wrong, they can explode.

Here's how to handle them:

Keep batteries in their original packaging until you're ready to use them.

Keep battery in original packing



If the battery compartment is hot to the touch, hisses, makes a burping sound, or if you smell gas, turn off the equipment and let it cool for at least an hour. Keep everyone away from the area.

After the equipment is cool, remove all the batteries and put in new ones.

Never short-circuit, crush, puncture or cut batteries.

Never use a damaged battery.

Never use batteries that are swollen, or that won't fit easily into the battery compartment.

Never use batteries if there is liquid in the plastic storage wrap, or if they've bulged or burst. Turn them in.

Never test them for charge or try to recharge them. That's a job for the trained maintainer in your unit. If you

suspect bad batteries, try substituting good ones.

If there is more than one prime power lithium battery in the equipment, replace all of them.

Always use batteries from the same manufacturer and date code.

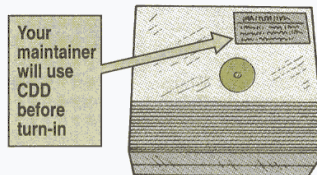
If, after battery substitution, your equipment still doesn't work, the problem is not the batteries. Call your unit repairer.

When you aren't planning to use your equipment for 30 days or longer, take the batteries out.

Never use a halon fire extinguisher on a lithium battery fire. Always use water.

Never store these batteries near heat, flame or other hazardous materials.

If your battery has a complete discharge device (CDD), get your battery maintainer to discharge the battery before you turn it in.



A label over the manual switch or an information card that comes with the battery tells the maintainer where the CDD is located.

When he's discharging more than one battery, he'll make sure the batteries are at least two inches apart.

After the CDD is activated, the maintainer will store the batteries for at least five days in a cool, dry, well-ventilated

area away from personnel before disposal.

When a discharged battery is ready for disposal, or if your battery has no CDD, then check with your local environmental office for any federal, state and local requirements on battery disposal.

For more safety tips, get a ready reference card from CECOM. Write:

US Army CECOM
ATTN: AMSEL-SF-SEP
Ft Monmouth, NJ 07703-5024

Or call:

DSN 987-3112, Ext 6437
(908) 427-3112, Ext 6437

Battery NSNs

Here are NSNs for some of the lithium sulfur dioxide batteries used by the Army:

Battery	NSN
BA-5093	6135-01-216-9771
BA-5112	6135-01-235-4168
BA-5372	6135-01-214-6441
BA-5557	6135-01-088-2707
BA-5567	6135-01-090-5365
BA-5588	6135-01-088-2708
BA-5590	6135-01-036-3495
BA-5590	6135-01-435-3097
BA-5598	6135-01-034-2239
BA-5599	6135-01-069-8575
BA-5600	6135-01-168-2944
BA-5800	6665-99-760-9742
BA-5847 (plain)	6135-01-090-5364
BA-5847 (A)	6135-01-391-4944
BA-5847 (B)	6135-01-430-3119

TUNE IN TO

ANTENNA PM



Whip antennas are taken for granted until something goes wrong. Then they get lots of attention. And you will, too, if you can't communicate. Here are some things you can do to keep your whip antenna on top of things:

Most folks know to tie down their vehicular whip antennas when they're on the move.

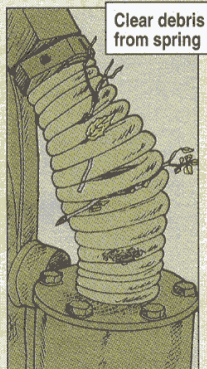
But when your vehicle's parked for any length of time, even overnight, take the antenna out of the tied-down clip.

That relieves tension on the base spring. Over time, tension will weaken the spring.

On an upright antenna, the base spring's coils are close together, which

helps keep out moisture and debris. Those coils spread on a tied-down antenna, making it easy for dirt and moisture to get inside and damage the base and the RF cable.

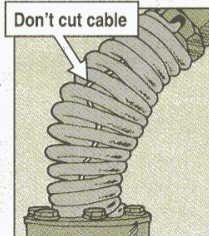
When you're in the field—but not moving—turn off the radio every so often, and look at the base spring.



Gently pull down the antenna element to open up the spring. Dig out any debris with a pencil or small stick.

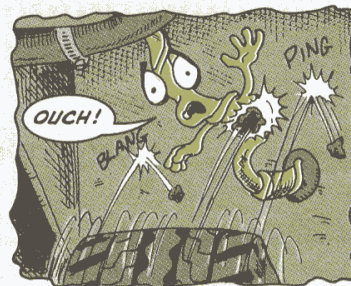
If the buildup is bad enough, use an air hose to blow it out.

Never use a screwdriver or knife to clean the spring—you could cut the RF cable.



Coaxial Cable

Check the coaxial cable in the HMMWV wheelwell often. The rear tire picks up rocks and hurls them full speed at the cable, cutting insulation and exposing the wires to dirt and moisture.

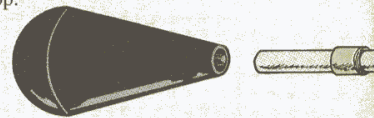


Protect the cable by wrapping it several times with insulation tape, NSN 5970-00-240-0620. Or cover it with plastic spiral wrap tubing, NSN 9330-00-980-1419.

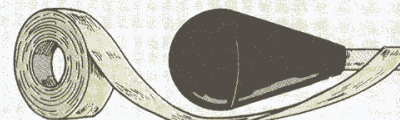
Tip Cap

Protect the tip of your whip antenna by making sure the tip cap, NSN 5820-00-437-2353, is on tight. Here's how:

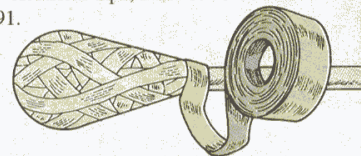
Wrap 1/2-in pressure sensitive tape, NSN 7510-00-582-4771, six times around the whip, two inches from the top.



Push the tip cap down over the tape. Then, starting just below the bottom of the cap, wrap the top antenna element and the cap. Cover it completely.



Finish up by covering the cap with 3/4" electrical tape, NSN 5970-00-419-4291.



The pressure-sensitive tape holds the two shells of the cap together, cushions the cap, and firmly holds the cap on the top element. The electrical tape protects against sunlight and moisture.

Replace the tape when it becomes badly scuffed or worn.

Pylon Pin Corrosion

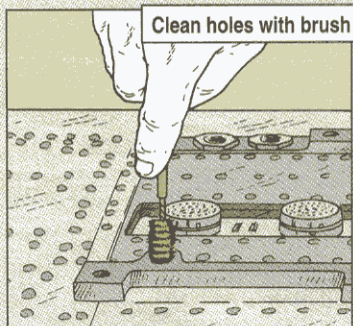
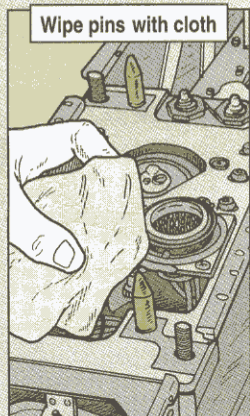
When one type of metal rests on another type, dissimilar metal corrosion forms.

The Apache's armament pylon has an area where two steel pylon lineup pins fit into aluminum holes. The result of this mating is corrosion.

So you need to check and clean the pins and holes every time you remove the pylon.

Clean the holes with a small brush, NSN 1005-00-550-4037. Don't wear out the

holes or the brush. A couple of strokes will do the job.

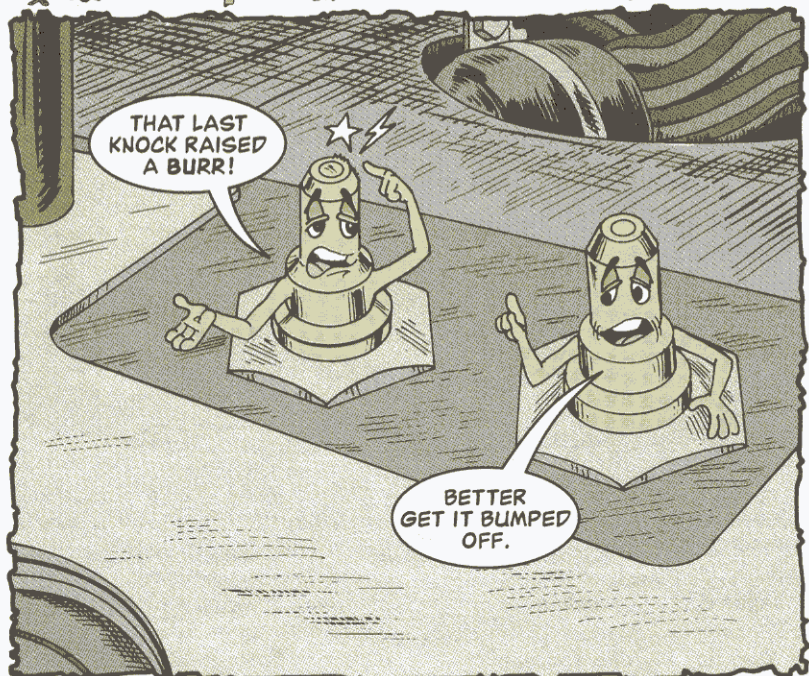


Wipe the pins and give them a light coat of antiseize compound, NSN 8030-00-105-0270.

Nothing can completely stop dissimilar metal corrosion, but cleaning combined with antiseize compound will slow it down.



Bump Off the Burrs



The pressure return hydraulic fittings on the Apache's armament pylons take some knocks while the pylon is being mounted to the wing.

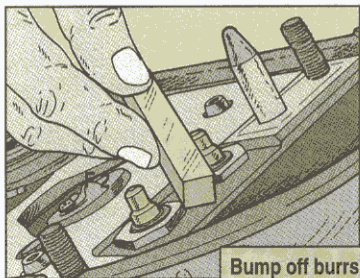
These knocks raise burrs on the fittings.

Burrs cause hydraulic leaks.

Bump off the burrs with a sharpening stone, NSN 5345-00-584-4607, from your small arms repairman tool kit. It's the extra fine stone, not the hard grit stone. This job doesn't need it and you might damage the fitting.

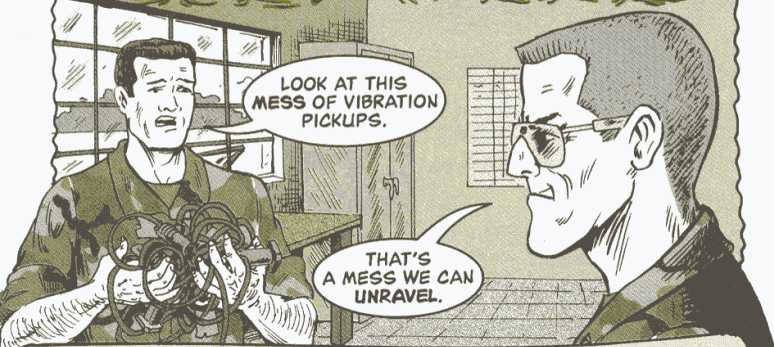
First, gently feel for the burrs. When you find one, just as gently bump it off with the fine grit stone.

Eliminate the burrs and you should eliminate the hydraulic fluid that is leaking down your actuator mounting bracket.



Bump off burrs

Bad Vibes



LOOK AT THIS MESS OF VIBRATION PICKUPS.

THAT'S A MESS WE CAN UNRAVEL.

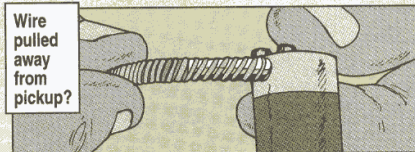
Dear Windy,

I do the annual calibration on vibration pickups. Eighty percent of those that land on my workbench have been abused and mishandled and need repair or replacement.

Vibration pickups are expensive and somewhat fragile, but they're being treated like cheap, indestructible items.

Here are the most common problems and the abuse that causes them:

1) The wire is pulled away from the pickup under the spring reinforcement.

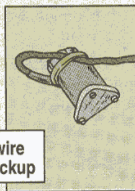


Wire pulled away from pickup?

This happens when a pickup is carried by its wire, when the wire is jerked while the pickup is in place, or when an engine cowl is slammed down on a pickup.

End this abuse by carrying the pickup by both ends, making sure there is no unnecessary stress on the wire. And, when a cowl must be closed, close it with care.

To stop some of the stress on the wire, tie the wire to the pickup with a wire tie. Make the tie point about an inch down from the spring.



Tie wire to pickup

2) The shielding is worn away from the wire.

This happens when a pickup is tossed on a shelf or improperly stored. All too often pickups are stored in a knotted bundle and thrown together with other equipment.

Shielding worn away?



... Tape it

Wind the wire of the pickup in a hand-size circle and carefully tuck it into a zip-type plastic bag to keep it in place. Give your pickups their own storage area where other equipment can't knock them around or rub on the wiring.



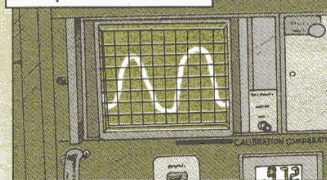
Store in plastic bag

3) The pickup is badly out of calibration.

This happens when a pickup has been dropped.

Anytime a pickup is dropped it needs to be sent for calibration. Don't assume that you did not damage the pickup.

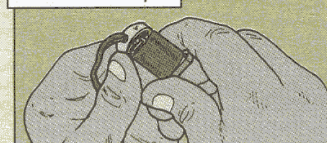
Pickup out of calibration?



4) Oil and water seep into the pickup.

The mating between the cap and the pickup is metal to metal. This won't seal out moisture.

Oil and water seep in



So, keep the pickup clean and away from water and oil.

Jim McClure
TMDE
Redstone Arsenal, AL

Thanks, Jim. You spelled out the problems and the solutions. Mechanics, it's up to you to end this abuse.

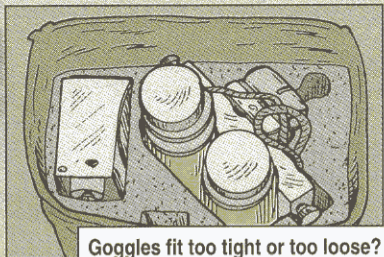
Windy

BEFORE YOU CLOSE THE CASE



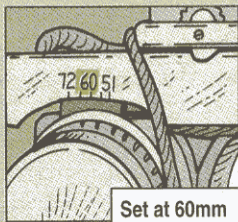
ALL THESE GOGGLES NEED IS A LITTLE FRIENDLY PERSUASION.

A too-snug fit tears the case and won't allow the goggles to settle. A loose fit means the goggles aren't secure.



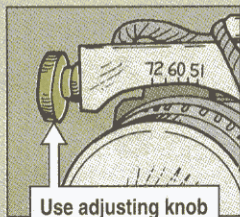
Before you put your night vision goggles in their case you must adjust the eye-span distance to 60mm. The span runs from 51mm to 72mm, but only at 60mm do the goggles fit in the case. Above or below that and the fit is too snug or not snug enough.

Some of you aren't making the adjustment, and your goggles and their carrying case are suffering because of it.



Use only the adjustment knob to adjust the eye-span distance. Trying to pull the monoculars away from each other, or pushing them together, damages the adjusting mechanism.

Before you close the case, wipe the goggles to remove moisture and dirt. Then, add the lens caps.



Water Detector Kit Pads

Dear Windy,

I have a question about the Aqua-Glow Series III water detector kit, NSN 6640-00-244-9478, used to measure water in JP-8 jet fuel.

The kit comes with two test pads—a calibrating standard pad and a fluorescing standard pad. The fluorescing standard pad is fixed in the kit under a panel. The calibrating standard pad is in an envelope loose in the kit.

The calibrating standard pad is always getting lost. NSN 6630-01-232-9545 brings a replacement pad. But there's a problem.

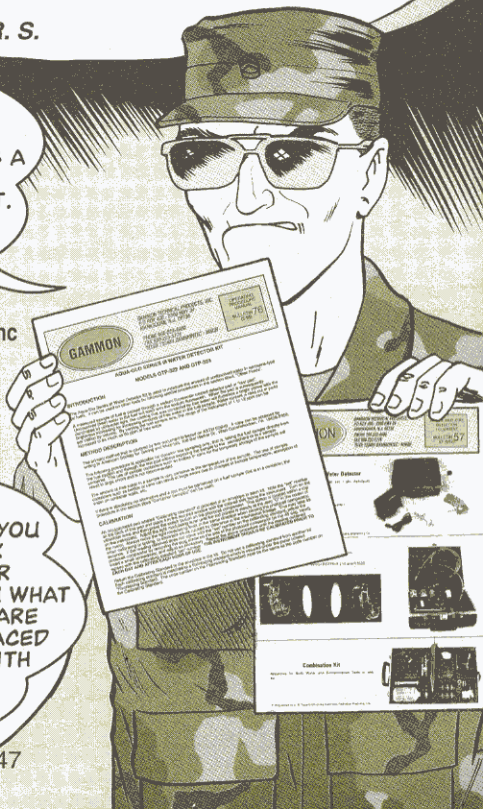
The calibrating standard pad and the fluorescing standard pad are a matched set. They're calibrated together. If you replace one, you must replace the other. And there is no NSN for the fluorescing standard pad!

SFC R. S.

NSN 6630-01-245-5989
BRINGS A SET OF PADS, BOTH
THE STANDARD AND THE
FLUORESCING. IT ALSO CONTAINS A
NEW CALIBRATION TAPE AND
INSTRUCTIONS FOR MOUNTING IT.
THE SET IS A LOCAL
PURCHASE ITEM THAT YOU
CAN GET FROM...

Gammon Technical Products, Inc
PO Box 400
2300 Hwy 34
Manasquan, NJ 08736

OR CALL THEM AT
(908) 223-4600. OR FAX
THEM AT (908) 223-5778. WHILE YOU
HAVE THEM ON THE PHONE, ASK
FOR AQUA GLO SERIES III WATER
DETECTOR BULLETIN 57. IT TELLS YOU WHAT
OTHER ACCESSORIES AND PARTS ARE
AVAILABLE. ALSO, IF YOU'VE MISPLACED
THE INSTRUCTIONS THAT CAME WITH
THE AQUA GLO KIT, ASK
FOR OPERATING PROCEDURE
MANUAL BULLETIN 76.



Facepieces Can Now Be Replaced

A damaged facepiece on the M40- or M42-series mask no longer means the entire mask and all accessories must be replaced. The facepiece itself is now a repair part.

When the facepiece for either mask cannot be repaired with the procedures in Chap 2 of TM 3-4240-300-20&P, NBC NCOs should order a new universal facepiece with these NSNs:

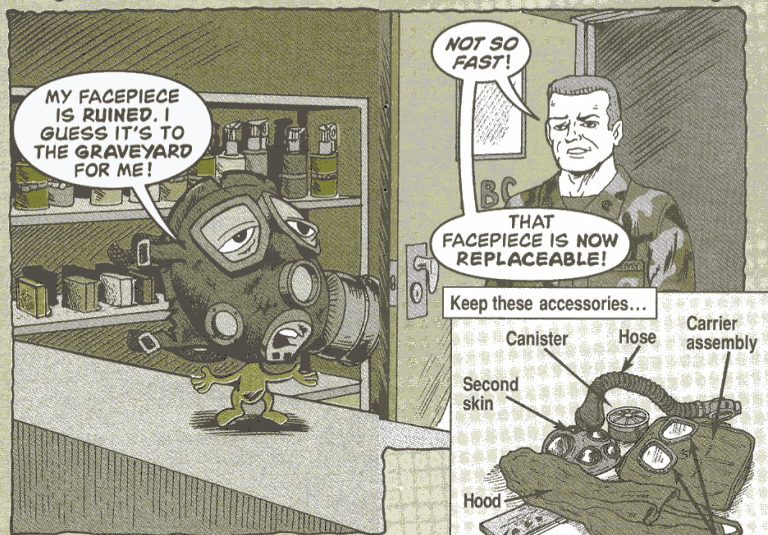
Size	NSN 4240-01-
Small	415-4517
Medium	415-4518
Large	416-0430

These facepieces replace those for both the M40- and M42-series masks.

When ordering a facepiece for an M42/M42A1, also order the new detachable external microphone assembly, NSN 5965-01-414-2257. For M42s only, also order the detachable hose assembly, NSN 4240-01-378-6479.

The new microphone and hose make the mask an M42A2, which means you need a copy of TM 3-4240-343-10 for each mask and TM 3-4240-343-20&P (Jul 96) for yourself. TM 3-4240-300-10-2 covers only the M42, TM 3-4240-340-10 covers the M42A1 and TM 3-4240-343-10 covers the M42A2.

All M40 and M42 mask accessories—hood, second skin, optical inserts, outsert sets, mask and canister carriers, canister, waterproof bag, -10 TM and hose—should be kept and used with the new facepiece.



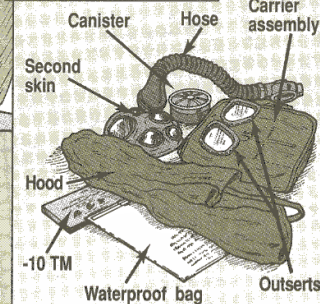
Turn In

You can't just chuck the old facepiece. It can still be repaired, so you must turn it in.

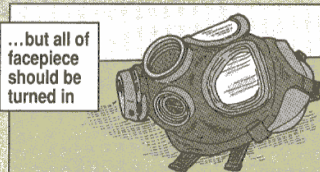
Report the facepiece as excess unserviceable. See Chap 7 in AR 725-750 for instructions. The ACALA reply to your excess report will tell where to send the facepieces.

Don't remove the valves, side voicemitter, headharness, outlet valve cover, internal and external drink tubes, airflow deflector, outlet valve cover, M42/M42A1 microphone and cable from the facepiece. They should all be turned in.

Keep these accessories...



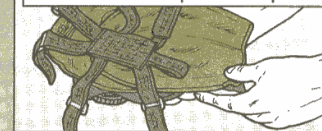
...but all of facepiece should be turned in



To pack the facepiece assembly for shipment, loosen the headharness straps and put the faceform in the facepiece. Secure the M42/M42A1 microphone cable in the faceform cavity with a

piece of tape. Coil the M42 hose in the faceform. Tighten the straps evenly around the faceform.

Put faceform in facepiece for shipment



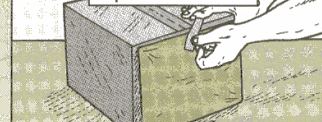
Wrap cushioning material (Item 20, Appendix D, TM 3-4240-300-20&P) one complete turn around the facepiece so that it overlaps. Tape the material together. Place the facepiece in a shipping container (Item 18). Put no more than 10 facepieces in one container. Don't lay them on top of each other. Fill any spaces with cushioning material.

Wrap facepiece with cushioning material



Put a shipping document envelope on the side of the shipping container with a completed DD Form 1348 for each NSN being shipped.

Tape DD form to box



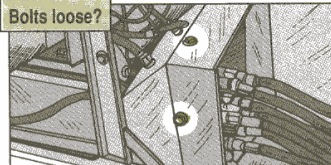
WHERE THERE'S PM THERE'S SMOKE

Good smoking begins with PM. Draw on this PM to generate the best smoke possible.

Before you go to the field, look for shiny spots around cover assembly bolts. That means the cover's loose. Tighten loose bolts.

A loose cover vibrates so much during operations that it cracks and breaks fuel lines. What's worse, there is no replacement cover. Once the cover is broken, you'll have to order a whole new smoke generator.

Bolts loose?



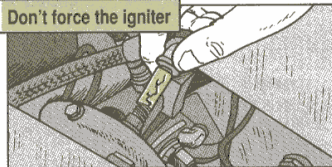
Make sure the equipment container panel is in place. It's often removed and forgotten during services. Without the panel, rain gets at wiring and shorts it out. Notify your repairman if the panel's missing.

Panel in place?



When you screw an igniter back in, don't force it. If it's misaligned, it cracks. The whole assembly must be replaced.

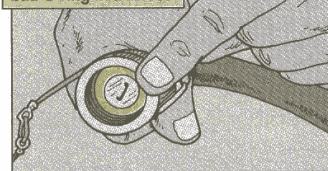
Don't force the igniter



Eyeball the O-rings in the quick disconnects for the air compressor hoses. A dry-rotted O-ring gives a bad seal and the air compressor has trouble building up pressure. Your repairman can order new O-rings with NSN 5330-00-702-7217.



Replace or remove bad O-ring in air hose



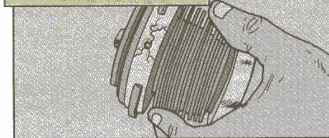
Also give the air compressor filter the once-over. A dirty, crumpled or ripped filter makes the compressor's job difficult. Clean a dirty filter with an air hose. Get a ripped or crumpled filter replaced.

Filter dirty, torn or crumpled?



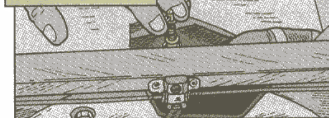
Take the engine heads out and look them over for cracks and dents. A bad head makes for bad combustion. Get it replaced.

Head dented or cracked?



Work the hot gas lift check valve up and down. If it sticks, flames will shoot out the valve. Lube a sticking valve with general purpose lubricating oil, NSN 9150-00-273-2389.

Exercise and lube check valve



Locking Up Padlock PM

SHERIFF! EVIL JACK SLADE AND HIS BAND OF SIDEWINDERS ARE A COMIN' INTO TOWN GUNNIN' FOR YOU!

TARNATION, GRUBBY! THIS HERE HIGH SECURITY PADLOCK IS JAMMED!

DAD GUMMIT SHERIFF, AIN'T YOU NEVER HEARD TELL OF PM?

There's a new high security padlock (HSP) hanging around...probably on your arms room door. Sargent and Greenleaf (S&G) Model 833C, NSN 5340-01-217-5068, has replaced Hi-Shear Model LK-1200 and S&G Model 831B.

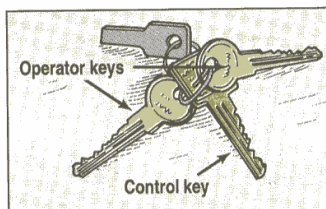
Of course, you don't have to replace those older models until they become unserviceable.

Remember to pull PM on your new padlock, though, or you could find yourself locked out of your work area.

Since the padlock doesn't have a TM, here are some tips to keep it in shape.

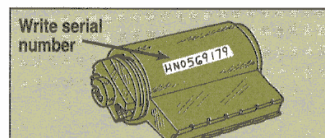
Each padlock has its own matched set of serial-numbered keys—a control

key (with square bow) and two regular operator keys (with round bow). The matching cylinder is not numbered.



A good way to remember which keys match which cylinder is to mark the serial number of the keys on their matching cylinder. Use a fine-point permanent marker. **NEVER** etch the num-

ber on the cylinder. The cylinder has a teflon coating that will be damaged!



The deep cuts and sharp angles of the key make it easier to crack when forced or twisted before being fully inserted into the cylinder. If the key doesn't go in or turn easily, you need to clean and lube the lock.

Key Maintenance

Use the control key only to service or replace a cylinder.

Check the keys every time you use them. When you see cracks, start using your extra key and order a new key. The Navy may be able to help. Call DSN 482-1354 or commercial (812) 854-1354 for funding and ordering procedures.

Keep it Clean

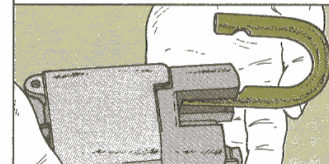
Clean the lock every six months. Before you start, make sure you have these items on hand:

Item	NSN
Wire brush	7920-00-449-6859
Cleaning solvent, aerosol	6850-01-061-5493
Molybdenum disulfide powder	6810-00-264-6715
Corrosion preventive compound	8030-00-938-1947
Molybdenum disulfide grease	9150-00-943-6880

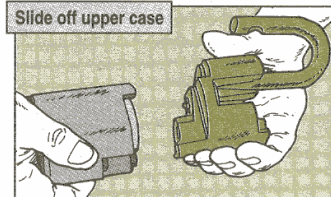
To clean the lock, you need to take it apart. Here's how:

1. Hold the HSP in your hand. Insert the control key fully in the keyway.
2. Rotate the key 1/4 turn counter clockwise.

3. Lift the shackle and rotate it 1/2 turn.



4. Slide the upper and lower case apart. Set the upper case aside.

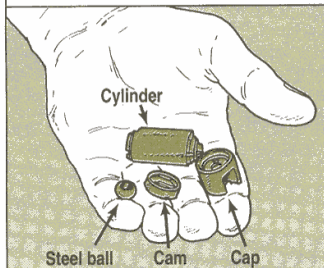


DON'T SADDLE UP YET, PARDNER. THERE'S MORE ON THE NEXT PAGE.

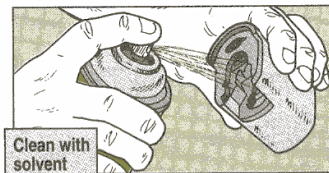


5. Rotate the key back to the locked position and take it out.

6. Cover the top of the lower case and turn the case upside down. Remove the cylinder, key cap, cam, and steel ball.



All parts and both cases can now be inspected and cleaned with the cleaning solvent. Remove corrosion with the wire brush.



Clean and sparingly lubricate the cylinder by spraying it with corrosive preventive compound, NSN 8030-00-938-1947.

Lube the shackle, steel ball and cam with a small amount of molybdenum disulfide grease. Don't over do it!

Use the molybdenum disulfide powder to lubricate the keyway and cylinder. Lube it this way:

✓ Dip the key in the can of lubricant. Remove excess lubricant by lightly

PS 536

tapping the key against the interior rim of the can.

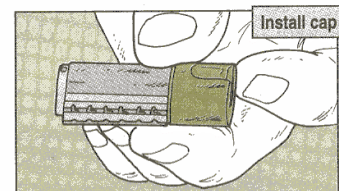
✓ Insert the key into the keyway, move the key in and out several times. Make sure you turn the key from LOCK to UNLOCK each time.

Never use petroleum-based products on the lock. They collect dust, sand, and other elements that get into the lock cylinder.

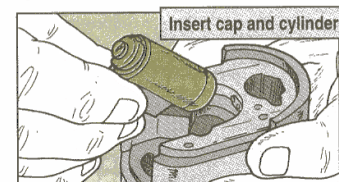
Reassemble the Lock

Here's how to put the lock back together:

1. Place the key cap over the end of the cylinder. Align the flat of the cap to the flat of the cylinder.



2. Insert the cap and the cylinder into the lower case and press down on the cylinder.



54



JUL 97

3. Insert the control key and rotate it 1/4 turn counterclockwise. Keep the key in the lock.

4. Place the cam on top of the cylinder.

5. Slide the upper case assembly back onto the lower case.

6. Rotate the shackle back and insert it into the shackle hole.

7. Turn the key 1/4 turn clockwise.

8. Remove the key.

Make sure the lock is working right by using the operator key to lock and unlock the HSP several times.

If the lock doesn't operate properly after you've disassembled, cleaned and reassembled it, get a piece of paper and jot down the problem along with your name, address and phone number.

Get your support folks to call the Navy lock repair office at DSN 482-1354, (812) 854-1354, to get instructions on arranging funding repairs. Then they send the lock in with instructions to repair it. Your name, address and phone number need to be included in case there are questions.

Send the lock and information by registered or certified mail to:

Commander
Defense Locking Systems
NAVSURFWARCENDIV
300 Hwy 361
Crane, IN 47522-5001

They'll repair the lock and send it back to you. In the meantime, get a replacement lock from your security folks.



PS 536

55

PS END

Food Service ...

ICE CHEST MANUALS

You can now get the manufacturer's manual for the 200-lb and 400-lb ice chests from the Defense Industrial Supply Center.

OH, MAN,
I MUST BE
HOTTER THAN
I THOUGHT.

HERE ARE
THE MANUALS
AVAILABLE.

Manufacturer	Size Chest	TM-DISC-4110-
Brenner Metal Products Corp.	200/400-lb	554
Morton Manufacturing Co.	200/400-lb	681
Auto Skate Co., Inc.	200/400-lb	425
Taltech International, Inc.	200/400-lb	711
MGR Equipment Corp.	400-lb	508
R.S.P. Industries, Inc.	400-lb	522

TO GET
THESE MANUALS,
WRITE...

Defense Industrial Supply Center
ATTN: DISC-WFA
700 Robbins Ave
Philadelphia, PA 19111

Supply . . .

PLL STOCKAGE CHANGE

HQDA Messages DALO-SMZ-C 191222Z and 081700Z Jul 96 make significant changes on stocking a unit's Prescribed Load List (PLL).

Here are some of the changes:

- * You need nine demands in a 180-day control period to add an item to your PLL, then you need six demands within each 180-day period thereafter to keep it there.

- * Units are not authorized more than 150 lines on their PLL. This is effective immediately for units at or under 150 lines. For units currently over 150 lines, this change becomes effective when it's changed in Unit Level Logistics System-Ground (ULLS-G).

- * The requirement to stock Initial Mandatory Parts List (IMPL) repair parts has been deleted.

- * When an end item is added to the supply system, you no longer need to keep an initial stock of repair parts on the PLL. The repair parts for new end items will be stocked with a Support List Allowance Card (SLAC) deck at no lower than ASL level.

- * Stockage of non-demand supported repair parts must be approved by the first general officer in the chain of command. These items can not

exceed 10 percent of the total lines stocked in the PLL.

All these changes should be made to the ULLS-G in early 1997.

With your local commander's approval, units can keep any items that become "excess" as a result of the above changes through 29 Aug 97. However, on 1 Sep 97, items that do not qualify for stockage in PLL or shop stock are to be turned in to the SSA using standard Army turn-in procedures.

Repair parts stockage criteria at the aviation unit maintenance level will remain at three demands to add and one demand to retain. Additionally, a total of 300 lines may be stocked. All other changes listed above for non-aviation units will be made to AVUM units, too.

**MAKE A NOTE
OF THESE CHANGES IN
STOCKING YOUR PLL.**



Beat the Drum Slayers

DRMO WILL NEVER TAKE THESE DRUMS.

WELL, WHAT AM I GONNA DO WITH 'EM, THEN?!

NOBODY WOULD TAKE US IN OUR CONDITION!

YEAH, I'M BEAT UP AND BUNGLESS!

I-I'M MIXED UP!

I'M READY TO POP!

Soldiers usually ignore PM on drums used for motor pool hazardous waste. But, if PM is neglected, DRMO could refuse to accept the drums for turn-in.

Here are some tips on drum maintenance:

💧 Wipe off water, oil or grease from the top and sides with a clean cloth and dispose of the dirty cloth properly. Some things, such as antifreeze and used oil, are recyclable as long as they haven't been mixed with a hazardous waste and are not managed locally as a hazardous waste.

💧 Check the lids, bands and bungs. If any are missing, switch to another

drum. Do the same if you find loose lids or bands.

Need a bung wrench? Get one with NSN 5120-00-507-4886. Use CTA 50-900 as authorization to order it.



Bungs loose? Tighten them

💧 Never fill a drum all the way to the top. Allow about four inches for expansion.

💧 Never use a bent or leaking drum.



Lids and bands must be tight

When a drum's been used before, make sure it's in good condition and empty. Your local hazardous waste SOP gives details on cleaning drums. If not, check with your environmental folks.

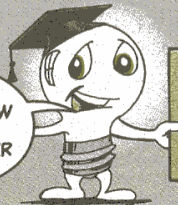
All previous hazardous material markings and numbers on the outside of the drum must be painted over (ex-

cluding UN markings). Put a hazardous waste label listing container contents on the outside of the drum. That way, everyone knows what's inside.

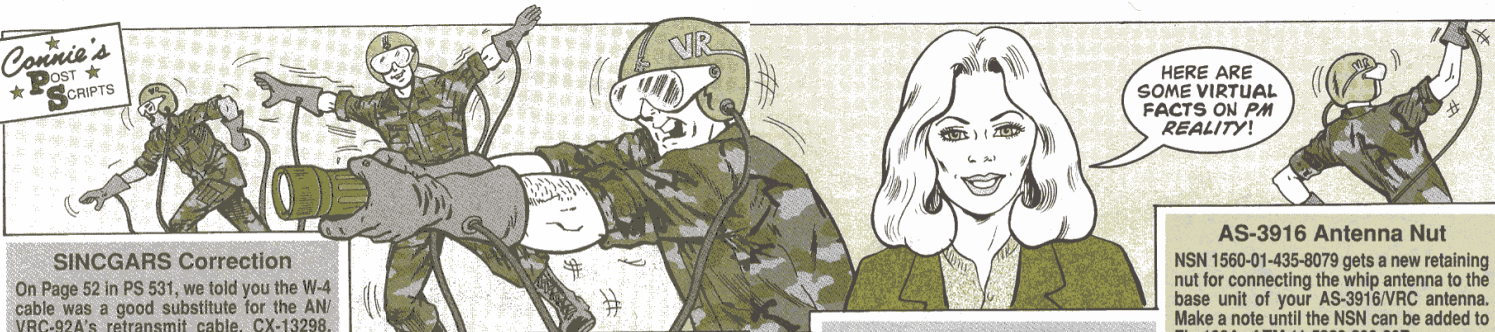
If you're uncertain of a drum's contents, contact the folks at your installation environmental office to help you identify what's inside the drum.

SMART's New Address

THE SUPPLY AND MAINTENANCE ASSESSMENT AND REVIEW TEAM - SMART- HAS A NEW ADDRESS. SEND YOUR SUGGESTIONS TO...



Project SMART
Director of Combat Development for
Combat Service Support
3901 A Ave, Suite 220
Ft Lee, VA 23801-1809



SINGGARS Correction

On Page 52 in PS 531, we told you the W-4 cable was a good substitute for the AN/VRC-92A's retransmit cable, CX-13298. Forget that. The W-4 won't work. The CX-13298 is the only authorized retransmit cable for the AN/VRC-92A.

ACALA SKO Team Address

The address for the ACALA Sets, Kits and Outfits Team home page given in PS 529 has changed. Their address on the World Wide Web is now:

<http://www.acala1.ria.army.mil/acalachem/ctf/ctts/cttspsc1.htm>

Re-refined 15W40 Available

NSNs have been assigned for re-refined 15W40 motor oil in three sizes:

- 1-qt bottle NSN 9150-01-421-1427
- 5-gal can NSN 9150-01-421-1424
- 55-gal drum NSN 9150-01-421-1432

The 1-qt size must be ordered by the case (12 qts) only. This oil meets MIL-L-2104.

NSNs for re-refined 10W30 motor oil were provided in PS 523 (Jun 96) on Page 57.

Replace Avenger W32 Cable

Repairmen, check your Avengers for the W32 power cable assembly (shorting plug), PN 13264876. It's Item 12 of Fig 19 in TM 91440-433-24P. The cable is defective and will damage the A2 card in the Avenger control electronics (ACE). If you find any old W32s, stop using them immediately. Order new W32s with NSN 6150-01-385-1777, PN 13264876-2. The old W32 measures less than an inch long beyond the connector. The new one measures 1 3/8 inch.

Tool Kit Suggestions Wanted

The Army is revising the General Mechanics Tool kit, which is covered by SC 5180-90-N26. They want suggestions from you repairmen about what tools to drop or add. Send suggestions to:

USACASCOM

Directorate of Combat

Developments-Ordnance

ATTN: ATCL-O (SKO)

3901 A Ave, Suite 250

Fort Lee, VA 23801-1809

Or fax them to (804) 734-1174, DSN 687-1174.

AN/PRC-126 Packing

The preformed packing, NSN 5330-00-942-5120, in the bottom of your AN/PRC-126 radio set wears out and sometimes falls out. Poor packing or no packing causes battery problems. Check to see if the packing is there, worn or compressed. If it's not there, or if it is worn or compressed so that the battery does not fit snugly, replace it. It's Item 7 in Fig C-1 of TM 11-5820-1025-24&P.

FMTV Machine Gun Mounts

Unit mechanics, do not attempt to install machine gun mounting kits on any FMTV truck. It's a job for DS/GS only. After initial installation you may replace broken or damaged parts as authorized by the -24P's SMR code.

Attention, Oil Buyers

Get a catalog with stock numbers, mil specs and prices for virgin and re-refined motor oils for both admin and tactical vehicles from the Defense Supply Center Richmond (S9G), DSN 695-4908, (804) 279-4908. The catalog also includes phone numbers for material safety data sheets, ordering assistance and general customer information.

Get Your Padlocks Here!

Need a good, low-security padlock? NSN 5340-00-158-3805 is your answer. This steel padlock comes with a 1 1/2-in shackle. The same padlock is also available with a 3-in shackle under NSN 5340-01-408-8434. Get a set of 10 with NSN 5340-01-437-0630.

Battery Helpline

TACOM's Team Battery has a helpline for lead-acid battery maintenance, NSN and reference information. In CONUS, call (800) 325-2920, Ext 22887. Otherwise, call DSN 786-5077 or (810) 574-5077. The line is manned weekdays from 7 am to 6 pm (eastern time). An answering machine takes your call at other times.

AS-3916 Antenna Nut

NSN 1560-01-435-8079 gets a new retaining nut for connecting the whip antenna to the base unit of your AS-3916/VRC antenna. Make a note until the NSN can be added to Fig 108A of TM 11-5820-890-20P.

Tire Catalog Available

TACOM's Team Tire has a catalog that lists all the tires (except solid rubber tires) used on Army equipment. To get a copy, call DSN 786-7783 or (810) 574-7783 weekdays from 7 am to 6 pm (eastern time). You can also order the catalog by e-mail at: teamtire@cc.tacom.army.mil.

CECOM Pubs Info on WWW

CECOM now has technical publications information on the Internet. Call up their web site at: <http://www.monmouth.army.mil/cecom/lrc/pubs/>. You'll find tech pubs points of contact, up-to-date TM information, and an electronic DA Form 2028 that will save you paperwork and mailing.

SINGGARS Splitter Cable

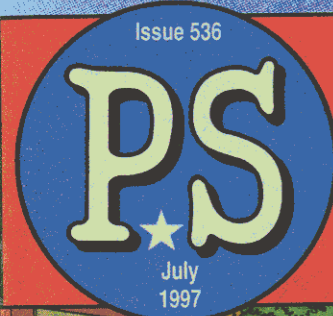
There aren't enough receptacles to hook up all the power cables needed on both LS-671 loudspeakers when your vehicular SINGGARS is in the short range/long range or long range/long range configuration. For these configurations, you need the CX-13417 splitter cable, NSN 5995-01-348-2264.

DISTRIBUTION: To be distributed in accordance with the initial distribution number (IDN) 340312, requirements for TB 43-PS-Series.

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



Issue 536



July
1997

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-536

WHAT'S THE
PROBLEM?

FRANCK'S
ROOM AND BOARD

HENDERSON'S
VIDEO SHACK

THEY WEREN'T
PREPARED.

CRUNK
TOWING
21 MORRIS AVE.

MADSEN
WAX
MUSEUM

LULU ADAMS
MISS FOURTH
OF JULY

MA'AM,
IS THIS PART OF
THE PARADE?

NO,
JUST POOR
PM.

Approved for Public Release;
Distribution Is Unlimited

PM Is No Game
... See Page 27