

Issue 519

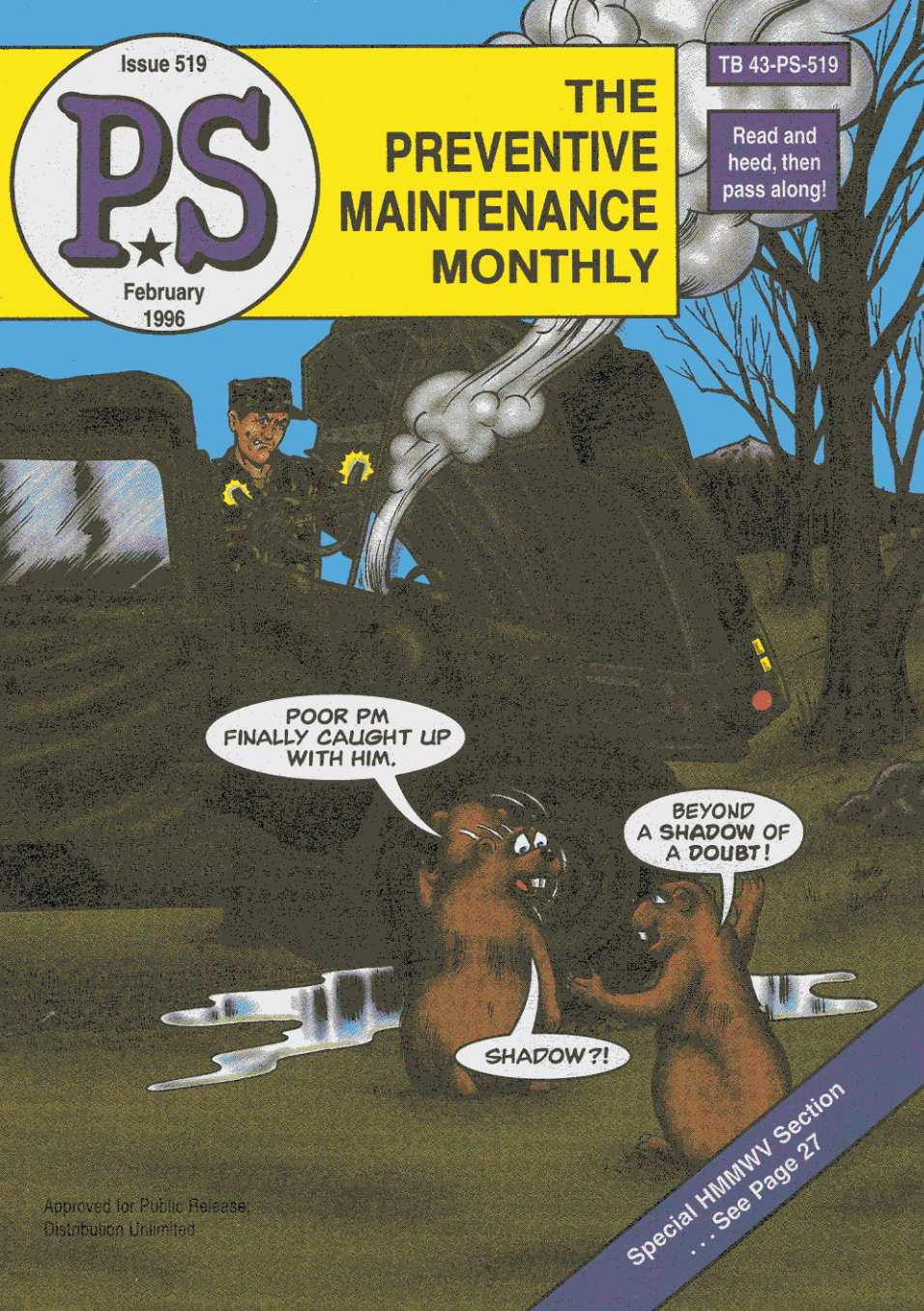
PS

February
1996

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-519

Read and
heed, then
pass along!



POOR PM
FINALLY CAUGHT UP
WITH HIM.

BEYOND
A SHADOW OF
A DOUBT!

SHADOW?!

Did You Invest Enough?



So you worked on that truck for hours, first trouble-shooting and then repairing the fuel system.

It wasn't especially hard work, but it was time-consuming and some of the hardware was hard to reach and hard to replace.

Eventually, you got everything back together. And, the truck started and idled well.

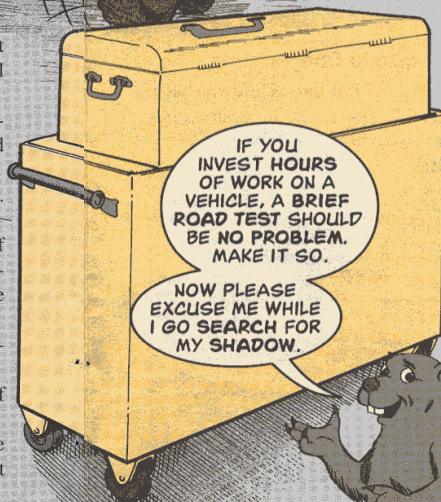
You were hot (or cold) and you were tired—of the job, and of the truck. You wanted to do something—anything—else, so you didn't finish the job.

And so, when the truck's driver took it on a mission, the fuel system failed at road speed.

You should have known—would have known—if you had road-tested the truck.

That's the bottom line on maintenance: Making sure that what you've done has solved the problem and not created any new ones.

Not enough road tests are being done. Too much equipment shows up at support with major damage directly related to maintenance that wasn't checked through a road test.



NOW PLEASE
EXCUSE ME WHILE
I GO SEARCH FOR
MY SHADOW.



THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-519, 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 519 FEBRUARY 1996

WHEELED VEHICLES

M107/M1000 HET	2-5	M915-Series Truck	8-9
M939-Series Trucks	5	HEMTT	10
5-Ton Truck	6	Tire Valve Cap Tool	11
Mechanic's Step Plans	7	HMMWV Section	27-34

COMBAT VEHICLES

M2/M3 Bradley	12-14	M113 FOV	18-19
M1-Series Tank	15	MLRS	19
M88A1 Recovery Vehicle	16-17	MICLIC	20-21

SMALL ARMS

Armor Training	22	M9 Pistol	25
Small Arms	23-24	M121 Mortar	26
		M4 Carbine	26

COMMUNICATIONS/ELECTRONICS

AS-3900 Antenna	35	AN/TYQ-30, -31 Control	
Tactical Quiet Generators	35	Element	40-41
AN/GRC-106 Radio	36-37	Commo Cables	41
KY-57 COMSEC	38	Field Wire	42
AN/PSN-11 GPS	38-39	Commo Cleaning	42
Vehicle Antennas	39		

AVIATION

AN/ALQ-144A Countermeasure Set	43	OH-58 Kiowa	47
UH-60 Black Hawk	44-45	AH-64 Apache	48
UH-1 Huey	46	Aircraft SF 364 Address	48
Aircraft Batteries	46	Aircraft TM Binders	48
		DA 2410 Instructions	49

SOLDIER SUPPORT

M2 Burner Unit	50-52	Tools	54-55
Tiedown System	53	SMART Address	55

LOGISTICS MANAGEMENT

MWOS	56-58	CARC Spot Painting	59
DLA Assistance	59	Computer Cleaning	60

You are invited to send PS your ideas for improving maintenance procedures, suggestions for articles, or comments on material published in PS. Just write to:

MSG Half-Moon

The Preventive Maintenance Monthly

Bldg. 3325

Redstone Arsenal, AL 35898-7466

Or E-mail to: psmag@logsa-emk2.army.mil

By Order of the Secretary of the Army:

DENNIS J. REIMER

General, United States Army Chief of Staff

Official:

Yvonne M. Harrison

YVONNE M. HARRISON

Administrative Assistant to the Secretary of the Army
01137

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

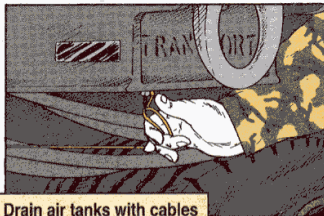
Haul Some Big PM

THE ARMY'S M1070 HEAVY EQUIPMENT TRANSPORTER AND ITS 70-TON TRAILER CAN HOLD UP THEIR END OF THE HEAVY LOADS. HERE ARE SOME TIPS TO HELP YOU OPERATORS AND MECHANICS HOLD UP YOUR END.

FIRST, FOR DRIVERS...

Cable Drains Air Tanks

Use the cables near the battery box on the driver's side or the cables by the fuel tank on the curbside to drain the HET's air tanks at the end of the day.



Drain air tanks with cables

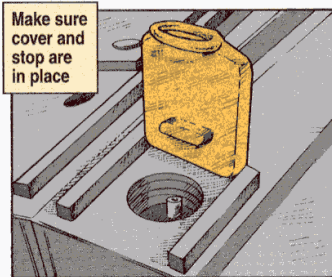
You can empty the air tanks with the brake pedal, but you'll also have to wait five to 10 minutes to build up enough air pressure to operate the next mission.

Remember, too, that you're only draining enough air from the tanks to get out any moisture that's built up in the tanks. Release air only until moisture stops dripping from the tanks.

M1000 Checkpoints

When your PM travels lead you back to the M1000 trailer, here are some things to pay particular attention to:

✓ Make sure the landing leg dust covers are on hand and in place.

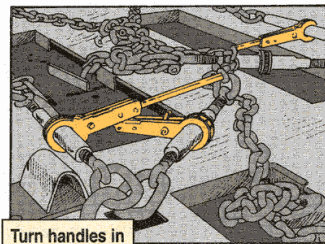


The covers have a stop that holds the landing leg in the **up** position. Without the cover stop, vibration can loosen the leg, letting it drop.

If the leg hits the ground when the trailer's moving, the leg can break or hang up enough to toss the load.

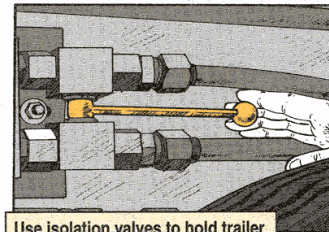
✓ Keep trailer load binder handles out of harm's way when you're through with them.

✓ Always lay handles to the inside of the trailer. If a handle is turned to the outside of the trailer, it's fair game for any tank tread that comes its way. Scratch one handle



✓ Any time your trailer is disconnected from its HET, make sure the gooseneck is down. If it isn't, it can fall on its own, or someone can hit the release valves. Anyone or anything in the way suffers.

✓ If you're working under the trailer—doing lube services or changing a tire, for instance—pull the isolation valves on all four corners.



That keeps the bed from dropping if the trailer loses hydraulic pressure.

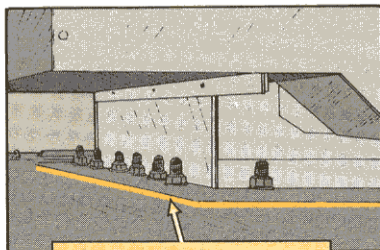


Keep Water Out

A poor seal around the ventilator on top of the HET's cab lets water into the doghouse inside the cab.

The doghouse is home to electrical components and wiring.

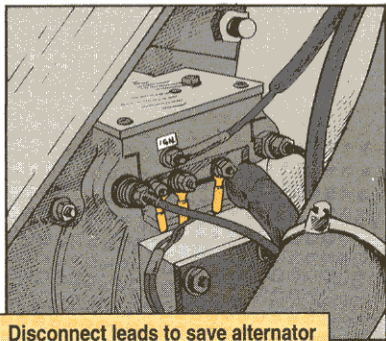
You can keep water out by running a bead of silicone, NSN 8040-00-843-0802, completely around the ventilator where it is bolted to the top of the truck.



Use silicone to seal ventilator

Alternator Overcharging?

Mechanics, if the HET's 24-volt alternator is continually overcharging, save your vehicle's batteries by removing the three wires that hook the EMI module to the alternator. If you don't, the module can short out and keep the alternator charging.



Disconnect leads to save alternator

Suspect Valve

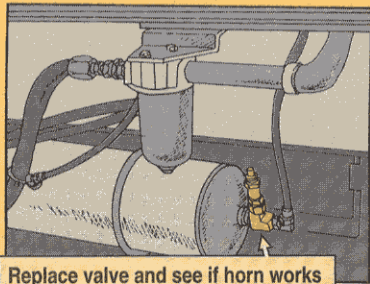
Dear Editor,

If the brakes, horn, windshield wipers, and other air-powered accessories on your M939-series truck suddenly stop working, make the safety valve on the wet reservoir (supply tank) your first check.

If that valve sticks or leaks, there's not enough air pressure to operate accessories.

Have your mechanic release the air pressure in the reservoirs and replace the valve. He can do it in two minutes.

Para 7-17 in TM 9-2320-272-20-2 shows how. After air pressure builds back up, honk the horn. If it honks, you're back in business. If not, your mechanic can go on with troubleshooting.



**SPC John Welch
Schofield Barracks, HI**

FROM THE DESK OF THE *Editor*

I think you have an idea worth blowing your horn about. Thanks.

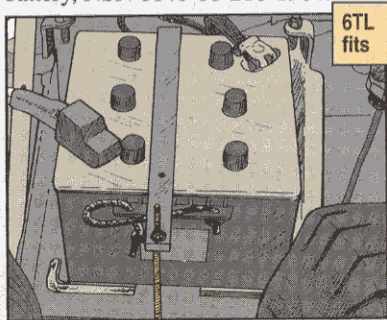
Before you do any work, though, disconnect the HET's batteries. Otherwise, you'll get shocked working on the cables.

Once you've disconnected the alternator wires, prevent shorts or accidental arcing by taping over the terminal lugs on each wire.

Then, tuck the three taped-over leads out of the way.

Swap APU's Battery

Is supply having trouble getting a maintenance-free battery for your HET's APU? No problem. The battery tray will also hold the old familiar 6TL battery, NSN 6140-01-210-1964.



To make it fit, all you have to do is flip the battery holddown and run the bolt through the last mounting holes.

PS 519

PS **END**

No Fuelin'? Switch Tanks!

HEY, PAL, HOW ABOUT **STARTING** THIS MORNING? YOUR FUEL GAUGE READS **FULL**.

YEAH, BUT YOU FORGOT TO SWITCH MY FUEL TANK SELECTOR!

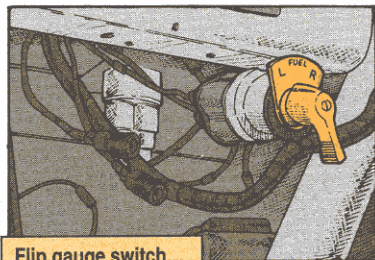
You can lean on the starter all day, drivers, but your 5-tonner with dual fuel tanks is not going to start if it's not getting fuel.

Well, duh!, you say. The fuel gauge shows what's in the tanks.

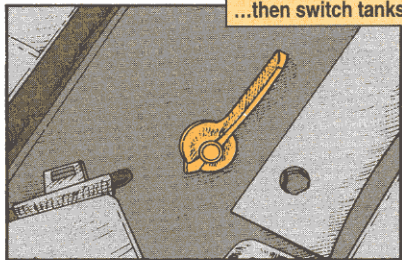
Maybe not. If you flip only the fuel level gauge when your truck is running out of fuel, your 5-ton's fuel level gauge will read **FULL** while the fuel lines are sucking air.

The gauge is reading the full tank, but the fuel lines are still feeding from the empty one. Trying to start a vehicle with no fuel runs down the battery, and can ruin the fuel injector pump.

To keep the go-juice coming, you have to flip the fuel tank selector switch as well as the fuel level gauge switches.



Flip gauge switch...



...then switch tanks

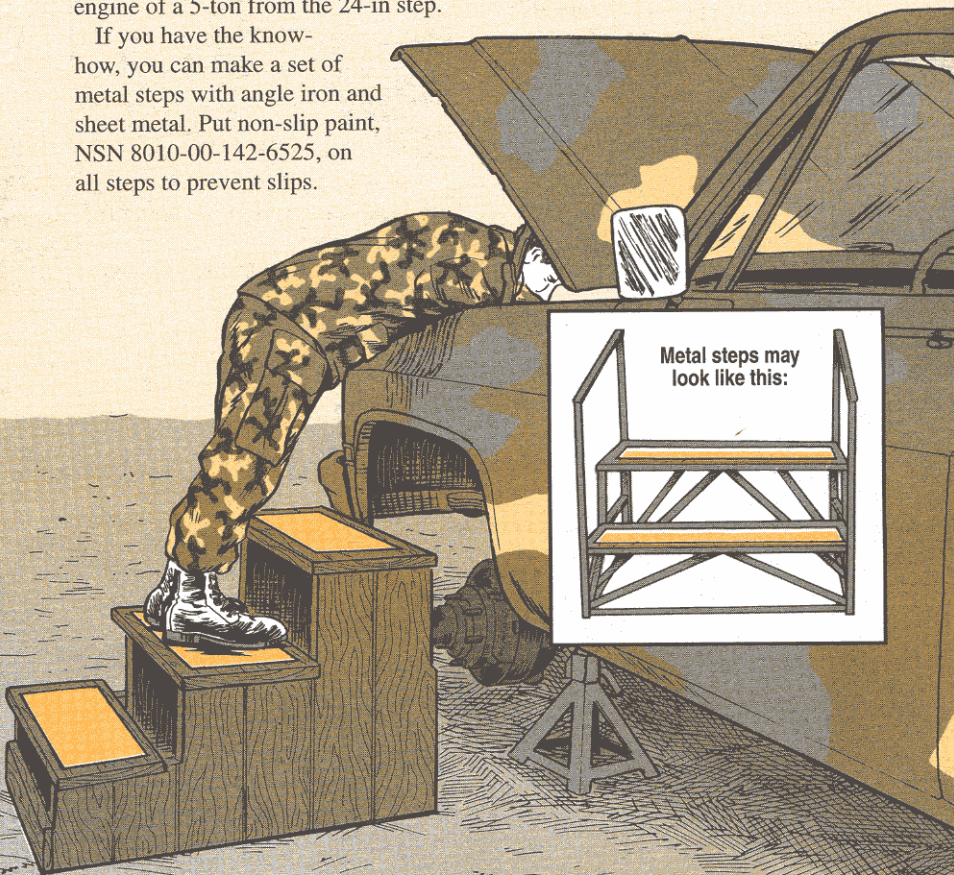
Make a Mechanic's Step

If you need steps to get up to the engine compartment of your vehicle, here are a couple of portable steps that are easy to make and won't slide out from under you.

The side supports of the wooden steps are made of 2-in by 6-in boards and the flats are 1-in boards. You can vary this for your own height. You'll probably need two or three steps. The first one should be about eight inches high, the second 16 inches, and so on.

Most folks can reach the engine of a CUCV from the 16-in step, and the engine of a 5-ton from the 24-in step.

If you have the know-how, you can make a set of metal steps with angle iron and sheet metal. Put non-slip paint, NSN 8010-00-142-6525, on all steps to prevent slips.

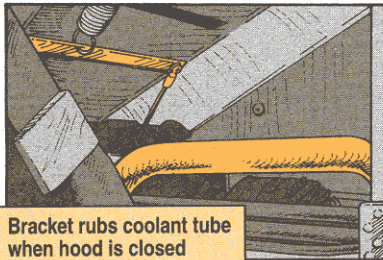


Stop the Rub, Bub!

Dear Editor,

When the hood is closed on the M915A2 and M916A1 tractor trucks, the hood support spring bracket rests against the upper radiator coolant tube.

As you drive, vibration rubs the bracket against the tube. Sooner or later a leak develops and your truck quickly runs out of coolant.



We prevent this problem by securing a piece of old radiator hose to the coolant tube with two wire ties. NSN 5975-00-899-4606 brings 100 13-in ties.

Protect tube with radiator hose



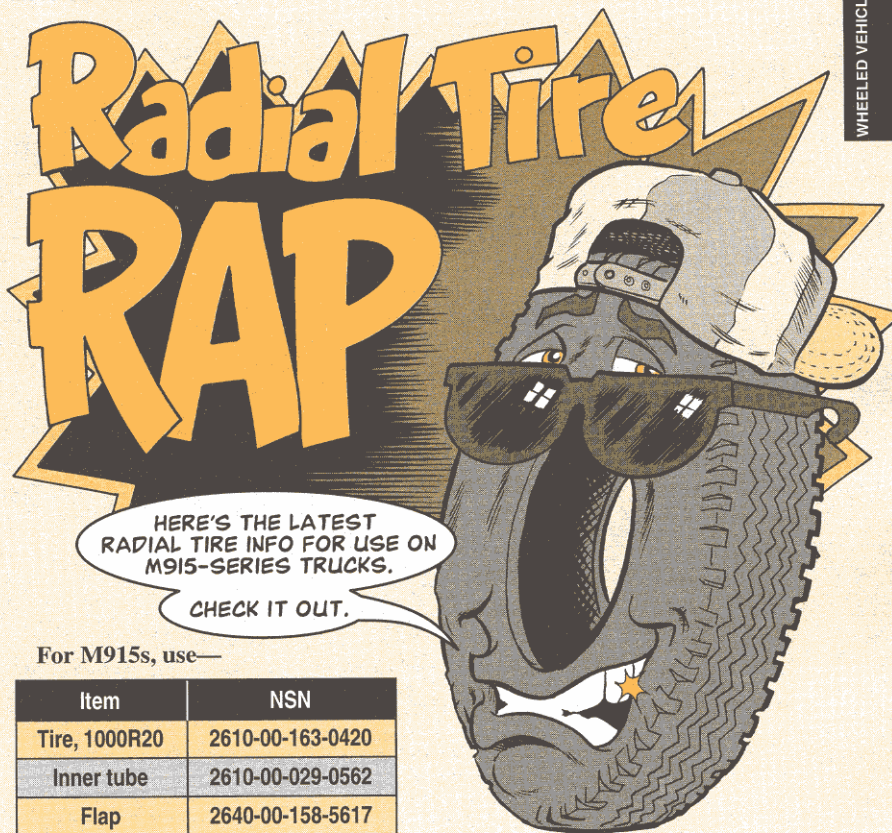
David Hinkson
ECS 33
Ft Riley, KS

That's one way to rub out a problem! Thanks!

Editor

I GUESS YOU
GOT RUBBED THE
WRONG WAY.

YOU
COULD SAY
THAT.



For M915s, use—

Item	NSN
Tire, 1000R20	2610-00-163-0420
Inner tube	2610-00-029-0562
Flap	2640-00-158-5617

For M915A1s, use tubeless tire—

Item	NSN
Tire, 1100R22.5	2610-01-045-3688

For M916-M920 trucks, use—

Item	NSN
Tire, 1100R24	2610-01-332-1564
Inner tube	2610-01-331-3520
Flap	2640-00-138-8290

Remember, never replace just one tire on a truck with a radial. Bias ply tires and radials don't mix. Replace all the tires, including the spare, when you make the change.

Yes, radials do cost more, but they last longer and give better fuel mileage.

Finally, always use a radial inner tube when a tube is called for. Bias-type tubes are not tough enough. And if you use a tube, you must use a flap.

Tow Cylinder Line Saver



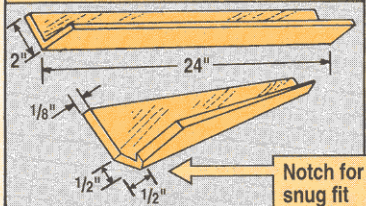
Those retract supply lines on the HEMTT wrecker's tow bar lift cylinders take a real beating during wrecker operations.

The lines are on the bottom of each cylinder. Every time a towed truck's bumper or hood bumps the line, the line gets mashed a little bit. Eventually they get crushed and leak or burst during a lift.

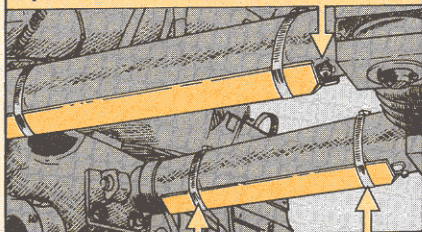
SFC Owen Ray of the 287th Cav Regt, Knoxville, TN, came up with a SMART idea to add a guard over each line.

Here's how he fixed it:

1. Cut two 24-in pieces of $\frac{1}{8}$ x 2-in angle iron. Order by the foot with NSN 9220-00-277-4911



2. Place guard over line so it doesn't cover cylinder counter balance valve



3. Hold guard in place with two loop clamps, NSN 4730-00-908-6294

Tires ...

Valve Cap Remover

It's difficult to reach and remove the valve cap on inside dual-mounted tires. Too many times, this means tire pressure doesn't get checked. To prevent improper inflation from ruining inside tires, you can make a handy tool for removing valve caps.

Use a handle of your choice and a short length of rubber hose. The inside diameter of the hose should be $\frac{5}{16}$ inch. The hose fits over the valve cap, lets you twist it off, and then holds it while you put air in the tire. When you're done, use the tool to replace the cap.

Solve valve cap problems with this rubber hose 'tool'...



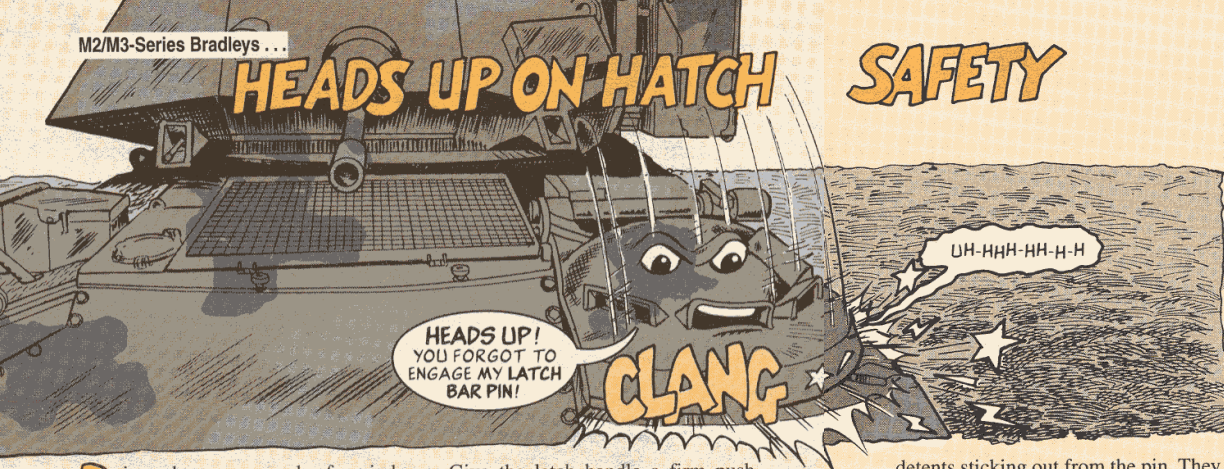
You can also use a screwdriver-style valve cap, NSN 2640-00-060-3550. You can remove it with a screwdriver. When you put it back on, finger tight is good.

...or screwdriver-style valve cap



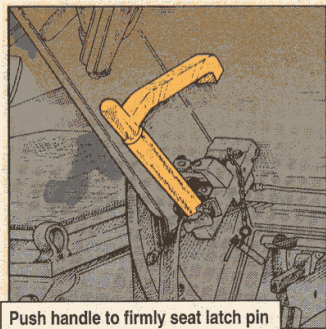
HEADS UP ON HATCH

SAFETY



Drivers, here are a couple of reminders to help keep the lumps off your head during open-hatch operation of your Bradley.

Make sure the pin that engages the hatch latch bar is fully seated and holds the cover open. The pin moves back and forth within a bushing that often comes loose. You might think the pin's fully engaged when it's not. If it lets the hatch fall, it can fall on you.



Push handle to firmly seat latch pin

Give the latch handle a firm push toward the latch bar when you lock the hatch cover in any open position. If you don't, the cover may not be locked, and could fall on you.

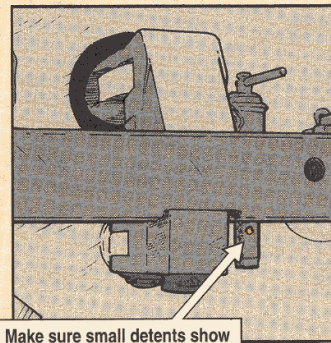
Always use the safety pin the hatch cover handle lock if you have the straight M2/M3 Bradley. The pin has no value if it's not installed, and **almost** no value if installed only half-way.

Push the pin firmly into the handle base. Make sure you can see the small

Always use safety pins with M2s and M3s



detents sticking out from the pin. They keep the pin from vibrating loose and letting the hatch fall.



Make sure small detents show

If the pin's missing, have your mechanic get you a new one with NSN 5340-01-314-2429.

The A1 and A2 versions of the Bradley use a safety latch instead of a pin. If the latch is missing or will not lock in place, let your mechanic know.

Pulling the Plug

Crewmen, make sure the hull drain plugs on your Bradley are closed tight before every operation.

If they're not, the plugs can work loose. They hang below the hull and are knocked off by rocks and brush. Then you have to replace them before you try to ford or swim.

Close the plugs right. Wipe them free of any mud or sand that might keep the bridge plates from fully seating.

Then tighten the plug valves. Squirt a little oil on the shaft threads every once in a while to keep the valves turning easily.



Loose plugs turn up missing

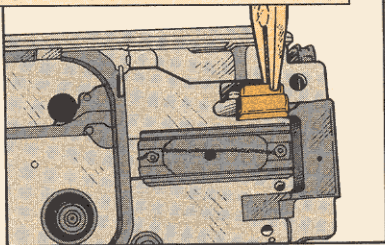
THAT'S LIFE IN THEM PINS YET

Dear Editor,

The 14-pin connectors on the M242 gun's feeder and receiver often get bent. Crews forget to push the drive shaft up before pushing the locking lever down when they install the feeder.

Repairmen think the connectors are ruined and they replace the motor or the feed select solenoid wiring harness. They may be too hasty. We've found you can often straighten the connectors with a pair of duck-bill pliers.

Try bending connector back in position



It's worth a try. At worst, you will have to replace the harness . . . which you were going to do anyway.

Gary Williams
Arthur Holt
Ft Benning, GA

FROM THE DESK OF THE Editor

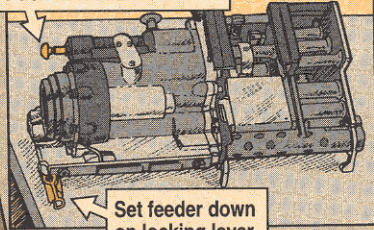


We can connect to your suggestion. It may save Bradley units some bucks.

Anytime you push down on the locking lever and feel resistance, stop pushing. Forcing things bends the connectors. Reposition the feeder and try again.

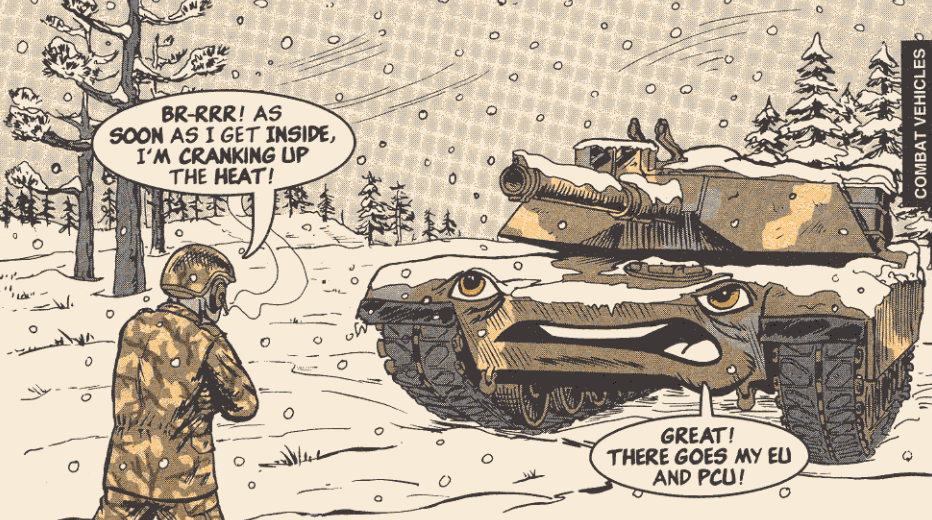
Set the feeder on the floor with the locking lever down. That protects the connector. Also, push in the feed select knob when you take off the feeder. The knob shaft is lightweight and can be snapped off if it's left sticking out. It's a big job to replace it.

Push in feed select knob



I CAN STRAIGHTEN
OUT YOUR M242 GUN'S BENT
PIN PROBLEMS.

THE HEAT IS ON!



Tankers, nothing feels better on cold nights in the field than warm air coming out of your M1 tank's personnel heater.

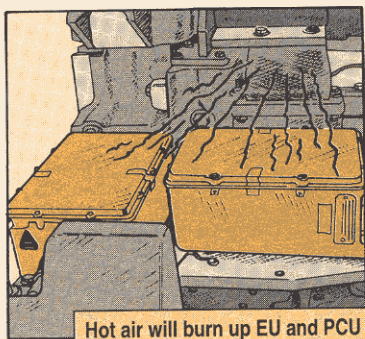
But if your tank's airflow deflector is missing, all that hot air blows directly onto the electronics unit (EU) and power control unit (PCU).

It doesn't take much of that intense heat to burn up both components.

If the deflector's missing, have your mechanic install a new one. That allows warm air through to the turret while preventing the blast of hot air that can knock out the EU and PCU.

The M1A1/A2 deflector is NSN 2805-01-203-2773. NSN 1015-01-155-2713 gets a deflector for the M1/IPM1 tank.

Until the deflector arrives, protect the EU and PCU by turning off the heater every half hour for about 15 minutes to let the units cool off.



Hot air will burn up EU and PCU

In extreme cold, when you have to run the heater longer than a half hour, turn the gun over the back deck and elevate it slightly. That keeps the air from hitting the EU and PCU.

Operators, you won't normally wipe out track with regular use around the motor pool.

But if you're not careful when you put your M88A1 on-the-road to recover another vehicle, you can ruin the track by trying to get there too fast.

The problem comes from sharp pivot steer turns. Those turns may get you where you're going a minute or two sooner, but you'll also ruin a lot of track on the way.

Sharp pivots shear off more rubber at one time than hours of normal operation in the motor pool.

Sharp pivoting 'chunks' track pads

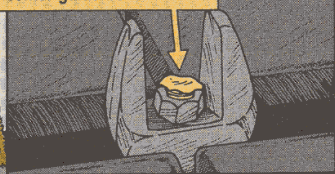


PS 519

A Cure for Track Headaches

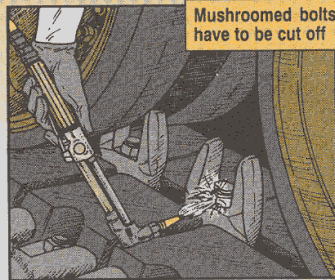
Sharps turns also throw rocks, dirt and other junk up on the track. The rocks lodge between the center guides and the road wheels. As the track moves under the road wheels, the rocks caught in the center guides mushroom the guide bolt.

Trapped rocks 'mushroom' center guide bolts



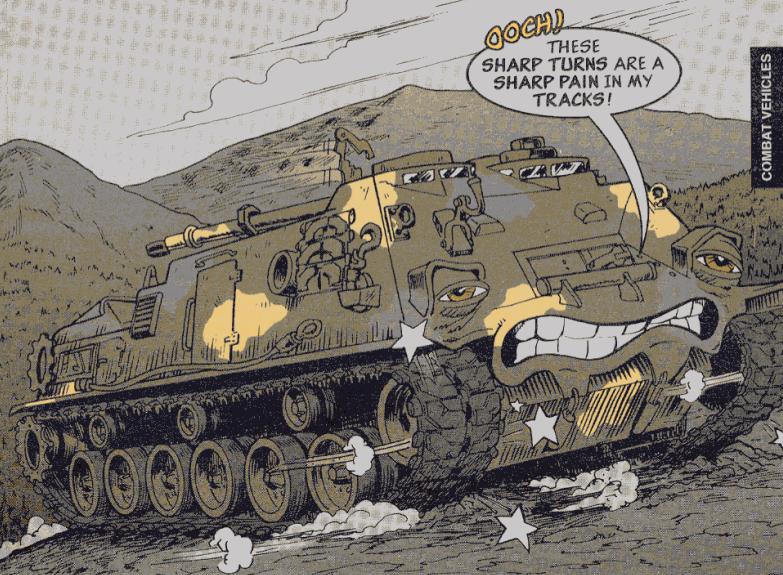
Your mechanic has to cut the nut and bolt off with a torch.

Mushroomed bolts have to be cut off



16

FEB 96



COMBAT VEHICLES

Dirt and rocks can also pile up on the final drive hubs. The accumulated crud lifts the tracks off the sprocket and you end up with a thrown track.

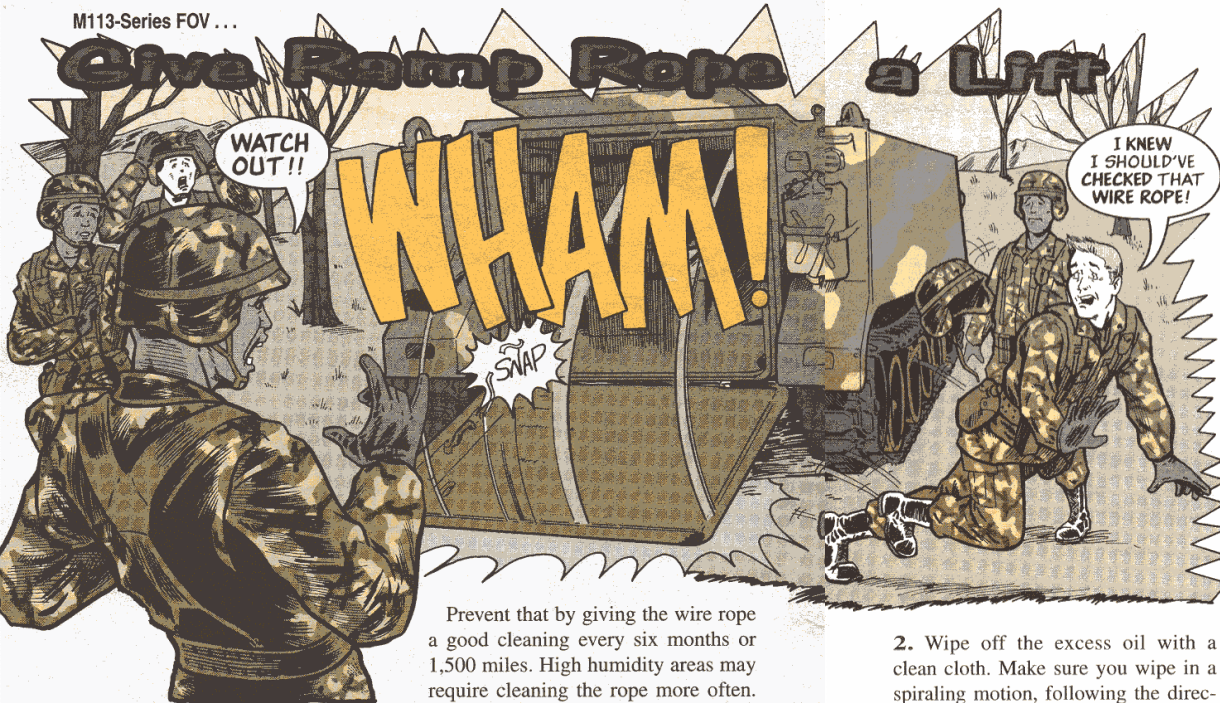
SO-O-O,
FOLLOW THESE
TIPS WHEN YOU'RE
READY TO TAKE YOUR
RECOVERY VEHICLE
ON THE ROAD!

1. Turn in long, smooth curves. That'll save on track pad wear.
2. Keep speed slow and steady. A constant, slower speed will often get you there quicker than fast driving that results in a thrown track or broken torsion bars.
3. Start and stop your vehicle smoothly. Quick starts and jerky stops wear out track pads fast.



PS 519

FEB 96



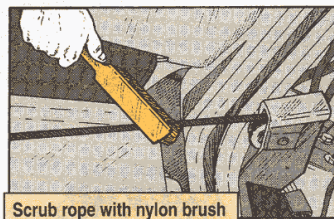
Crewmen, there's no greater letdown for the ramp on your M113-series carrier than a frayed or broken ramp rope.

After all, without the wire rope, the ramp can't be raised or lowered. And that makes your whole vehicle NMC.

When the ramp is completely raised, the wire rope retracts under the floor plates. Any dirty water that collects there will soak the rope and wash away the oil. Dirt and moisture cling to the wire strands and corrosion gets the foothold it needs.

Prevent that by giving the wire rope a good cleaning every six months or 1,500 miles. High humidity areas may require cleaning the rope more often. Here's what to do:

1. Coat the rope with OE/HDO and scrub it with a nylon brush. The brush loosens dirt particles that get embedded in the wire strands.



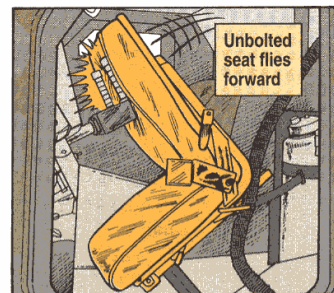
Buckle Down on Loose Seats

Hey, you're a safe driver. You always fasten your seatbelt before heading out in your MLRS. You've got nothing to worry about, right?

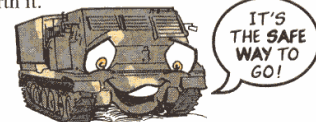
Well, maybe not.

A lot of operators have removed the rear mounting bolts on the driver's seat. That makes it easy to tilt the seat forward so you have easy access to the storage space behind the seat.

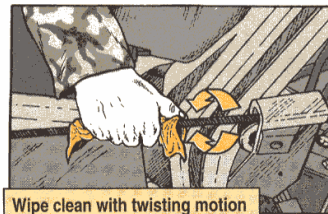
Problem is, the seatbelt is attached to the seat, not the floor. When you jam on the brakes, you'll stay firmly belted to the seat. Unfortunately, the seat—and you—are going to smash against the steering yoke.



Save yourself some broken teeth—or worse. Keep the seat bolted down. That bit of extra storage space just isn't worth it.

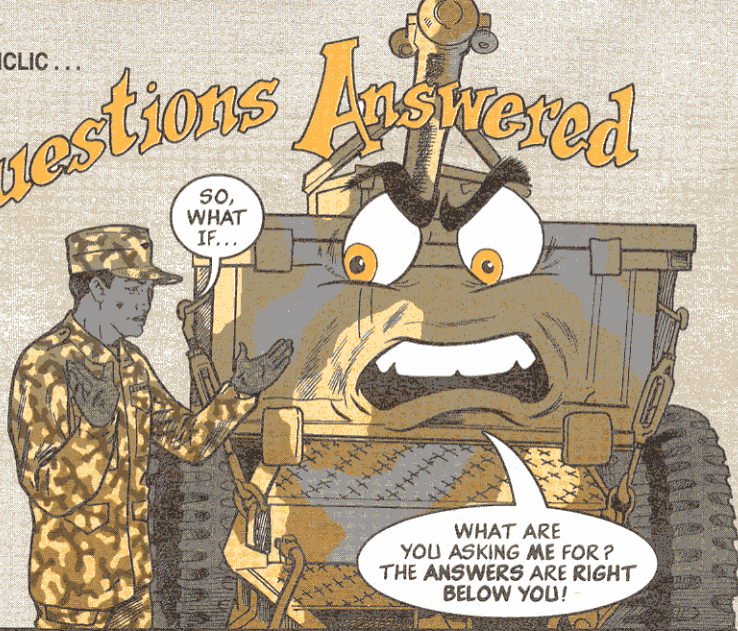


2. Wipe off the excess oil with a clean cloth. Make sure you wipe in a spiraling motion, following the direction of the strands. That wipes away all of the loose dirt.



3. Coat the rope lightly with CW-II. Of course, it's also a good idea to clean under the floor plates.

Questions Answered



Here are answers to questions posed by your fellow MK-155 mine clearing line charge (MICLIC) crews:

Q: How do you order the new control box and the new W3, W5, W6 cables? They make it easier to check the firing circuits.

A: If you have the MOD 2 or MOD 3 launcher, order the control box with NSN 1055-01-343-8527, the W3 cable with NSN 6150-01-347-8428, the W5 with NSN 6150-01-348-4036, and the W6 with NSN 6150-01-347-4724.

The new cables and control box can't be used on MODs 0 or 1.

Q: Our MICLIC's containers don't fit right on the trailer. When we try to load them, the turnbuckles bend. What should we do?

A: If you have the M200A1 trailer, it must be modified for the MOD 1 and MOD 3 launchers. TB 9-2330-323-30 (15 June 1989) has the details. The info is good even though the TB is out of date. Your ACALA LAR can get you a copy.

If the trailer's not the problem, you may be putting the container on wrong. Check out para 2-11 in TM 9-1375-215-14&P for directions.

Q: Is there a tool to turn the turnbuckle? We have been having our repairman do it with a breaker bar.

A: Yes, you're supposed to use the two 15-in crescent wrenches that are part of the MICLIC BII. Fit the wrenches over the hex-shaped ends of the turnbuckles. Turn the wrenches together so the turnbuckles aren't twisted. Using a breaker bar spreads the turnbuckle ribs and weakens the turnbuckle.

A Better Lanyard

Dear Editor,

The lanyard that runs from the MK-155 mine clearing line charge (MICLIC) to the towing vehicle gets frayed when the vehicle makes too sharp a turn. Eventually the lanyard breaks. Then if you have MODs 0 or 1, you can't raise the launcher without leaving the vehicle.

We've had better luck by substituting the 550 cord used with parachutes. It rarely breaks. Your local canvas shop or paratroop unit probably can let you have some 550 cord, or you can order 34 yards with NSN 4020-00-014-6699.

FROM THE DESK OF THE Editor 

OK, we pulled the cord on your suggestion and it floated. Good job. Your repairman should order a permanent replacement lanyard. But it's fine to use the parachute cord in the meantime.

2LT Mike Zatlukcal
SGT Willie Mitchell
SFC Thomas Brown
SSG Jack Leyrer
SSG Daniel Miller
317th Engr Bn
Ft Benning, GA

YOU MAY
SUBSTITUTE 550
CORD FOR YOUR
LANYARD.



Help for Armorers

So your CO has just informed you that you're the new company armorer. Trouble is, you don't know beans about running an arms room. You see many disasters ahead. What to do?

Help may be closer than you think.

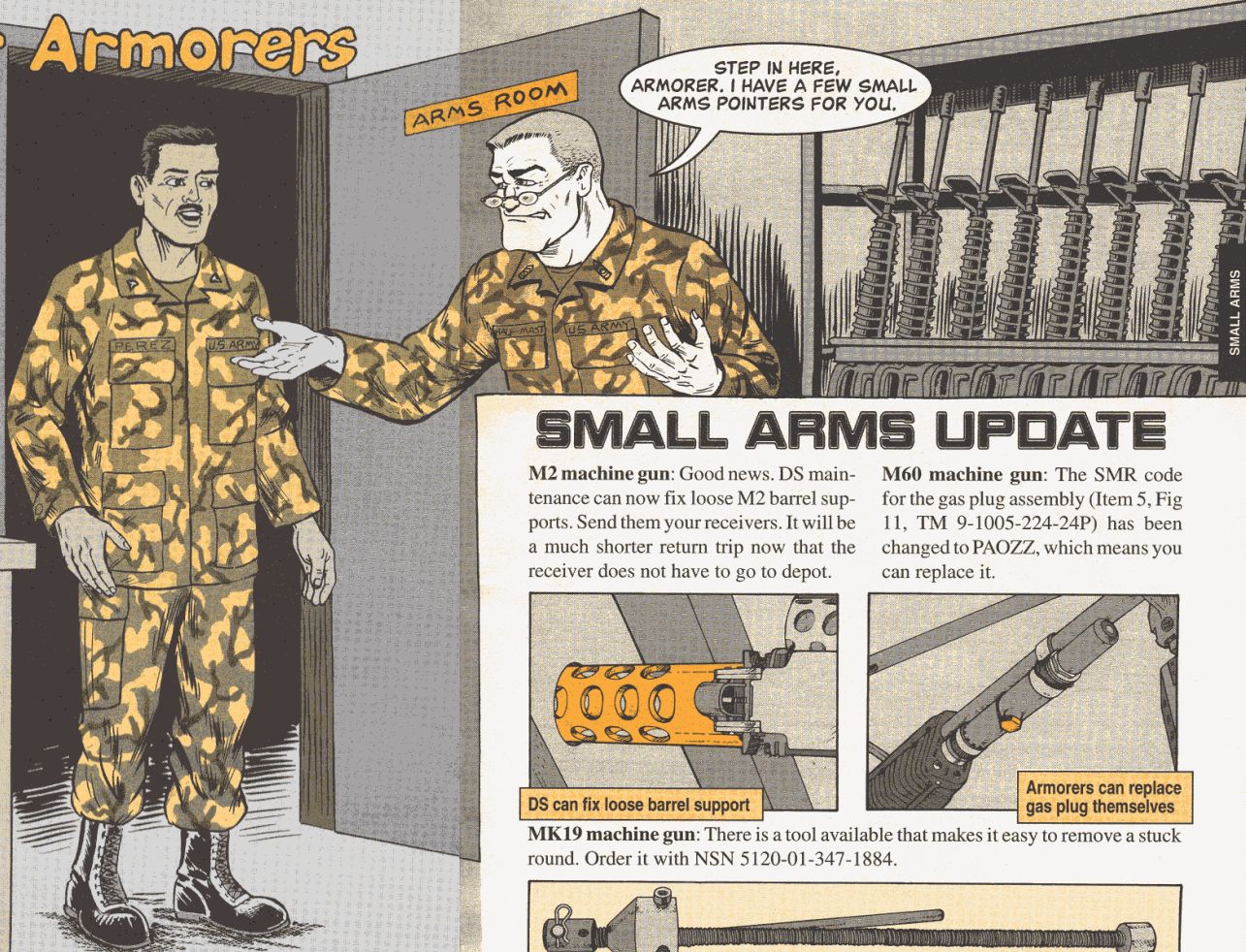
Many Army posts have an armorer training program that will give you overviews of:

- ★ M16 rifle, M203 grenade launcher, and most of the machine guns
- ★ Arms room procedures
- ★ Security requirements
- ★ Maintenance forms

Even if your post does not provide formal training, you're not out of luck. The Army offers a correspondence course on being an armorer. Many posts have Sergeant's Time when senior NCOs give MOS training, including training for armorers.

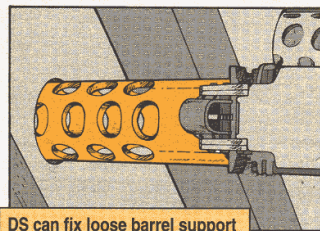
The best person to talk to is your unit training NCO. The ACALA logistics assistance representative will also know what small arms training is going on around post.

All you have to do is ask.

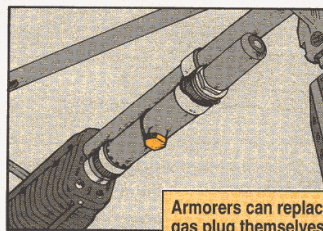


SMALL ARMS UPDATE

M2 machine gun: Good news. DS maintenance can now fix loose M2 barrel supports. Send them your receivers. It will be a much shorter return trip now that the receiver does not have to go to depot.



DS can fix loose barrel support



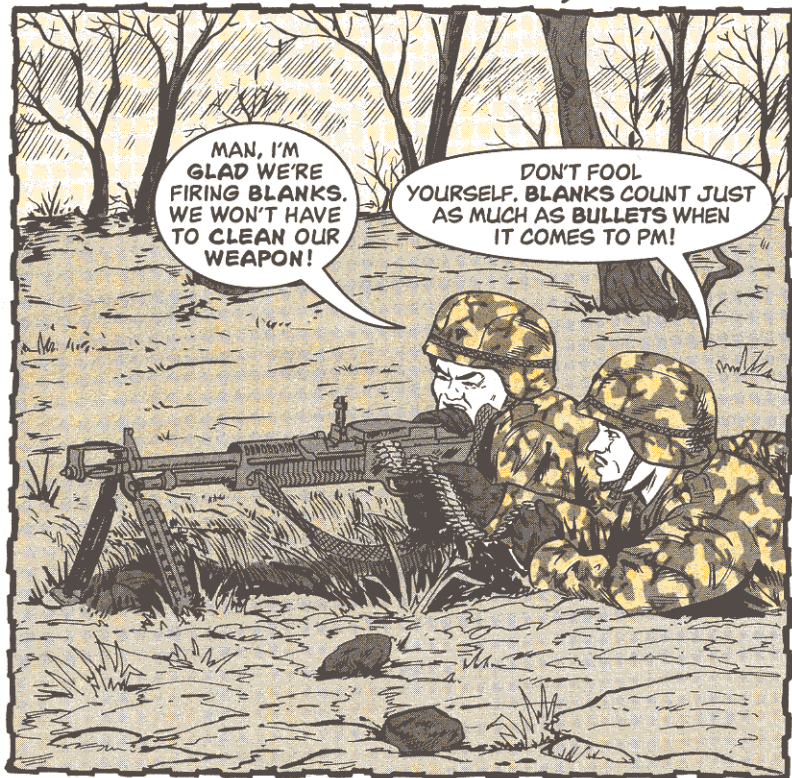
Armorers can replace gas plug themselves

MK19 machine gun: There is a tool available that makes it easy to remove a stuck round. Order it with NSN 5120-01-347-1884.



New MK 19 tool makes it easy to remove stuck rounds

Blanks Count, Too



You may not hit anything when you fire blanks with your rifle, machine gun, or pistol, but as far as your weapon is concerned you're shooting live bullets.

Blanks create the same sort of explosion in your weapon that live rounds do, but they leave even more carbon. That means at the end of a day firing blanks, your weapon is even dirtier than if you had been firing real bullets.

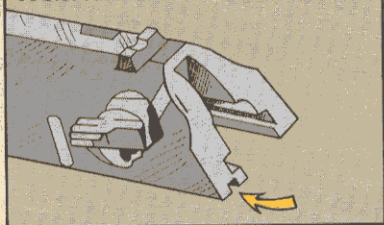
Carbon cakes parts like the barrel and bolt. That crud must be cleaned off before you turn in your weapon . . . **if** you expect it to fire next time you go to the field.

So remember: When it comes to cleaning, blanks count as much as the real thing.

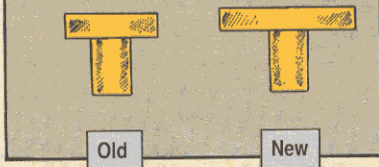
Bad Slides Need Mod

Some M9 pistols didn't get MWO 9-1005-317-30-1, which got rid of bad slides. That means you armorers may still be issuing pistols that are unsafe to fire. Modified pistols have these three changes:

1. Slot cut in underside of slide's left rail



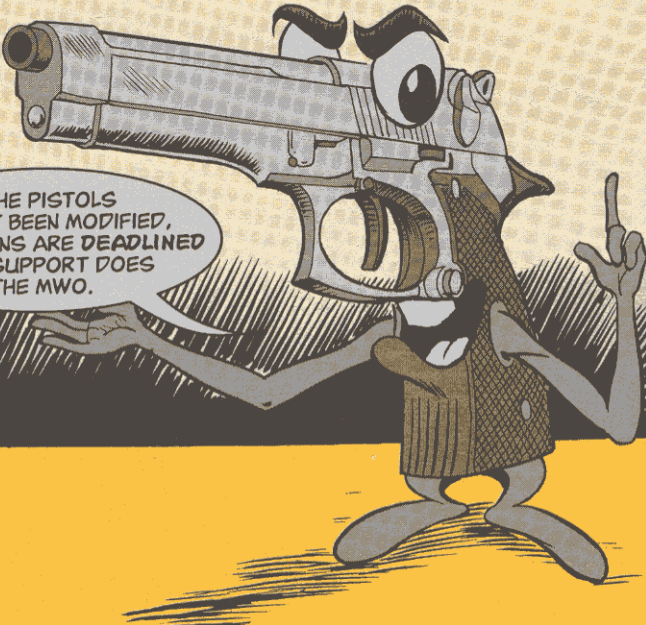
2. 1/2-in hammer pin head, instead of old 5/16-in head



3. Recessed area in left grip for hammer head pin

If you don't find all three changes, the pistol either wasn't modified or wasn't modified correctly.

It's unsafe to fire.



IF THE PISTOLS
HAVE NOT BEEN MODIFIED,
THE WEAPONS ARE DEADLINED
UNTIL SUPPORT DOES
THE MWO.

The Weak Link

Dear Editor,

The weak link in the M121 mortar's mount locking pin chain is the ring that holds the chain. The ring that comes with the mount is too weak. The chain slips off the ring and soon the locking pin disappears. The mount can't be used without locking pins.

We gave the chain a stronger ring to hang onto by substituting hand grenade rings. Your local ammo people should have plenty. Each mount will need four rings.

Lou Lindsay
Ft Benning, GA

Substitute hand grenade ring for old ring



FROM THE DESK OF THE Editor

Your suggestion has the ring of truth. Good job.

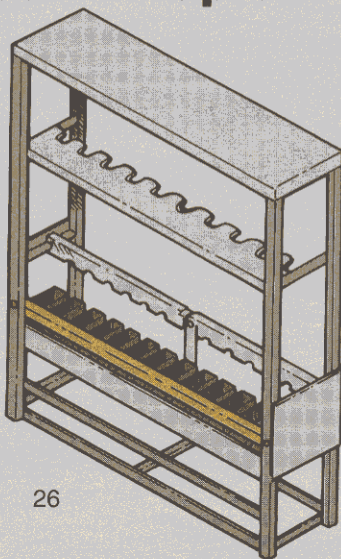
M12 Rack Needs Adapter Bar

The M4 carbine can't be secured in the M12 rack, even though the rack is locked. The rack was made for the larger M16 rifle, not the M4.

To secure M4s, have your support make an adapter bar for the rack.

Instructions for making the bar are in TB 43-0001-36-1 (Aug 95).

If you don't have the TB, contact your local ACALA LAR or write Half-Mast.



One Thing Leads to Another

Mechanics, instead of guessing when you adjust your HMMWV's alternator belt, use the tension gauge, NSN 6635-01-093-3710, from the special tools list in TM 9-2320-280-20P.

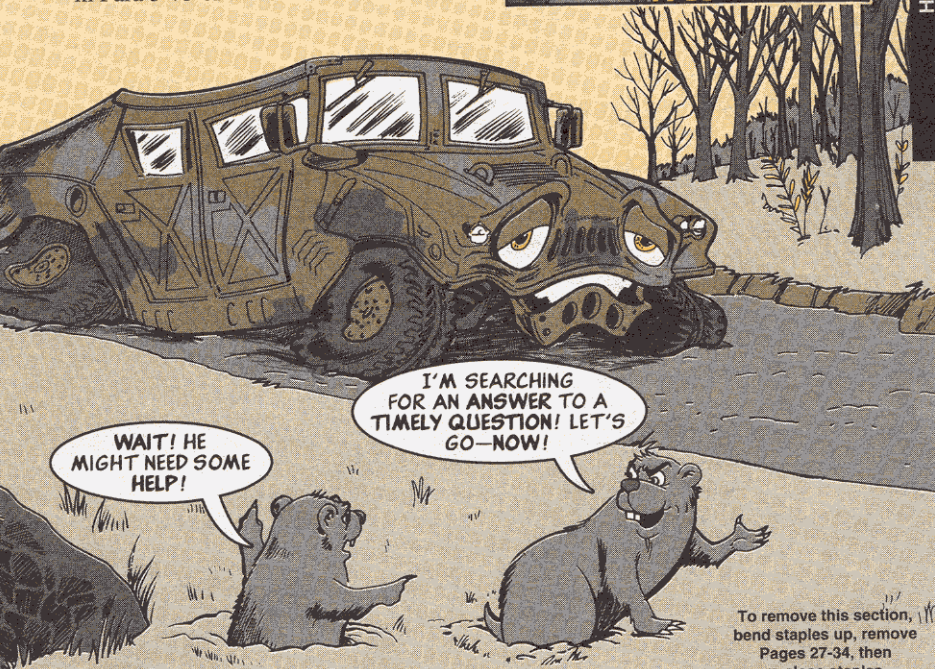
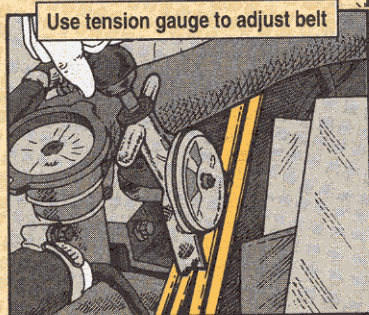
If the belts aren't adjusted right, your troubles are just starting.

A **too-loose belt** vibrates and loosens the bolts holding the alternator mounting and support brackets.

A **too-tight belt** puts pressure on bolts, and alternator and power steering shafts and breaks them off.

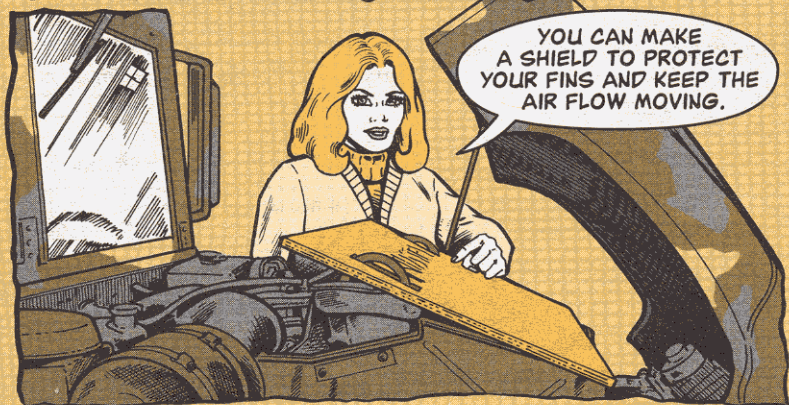
Once a bolt is loose or broken, the drive belts pull unevenly and twist other bolts and brackets. The brackets crack and bolts snap off in the engine.

New and used belts require different tensions. Always follow the belt tension chart in Para 3-75 of TM 9-2320-280-20-2.



To remove this section, bend staples up, remove Pages 27-34, then re-close staples.

Protect Oil Cooler Fins



If the fins on your HMMWV's oil cooler get bent, and airflow through the cooler and radiator stops, the engine and transmission can overheat.

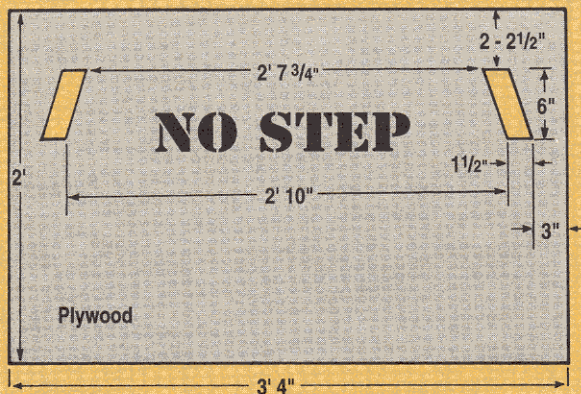
Fins get bent because mechanics lean or crawl onto the oil cooler when they pull engine PM or adjust belt tension.

You can stop fin bending by making a shield to protect the oil cooler fins.

You need a piece of 3/4-in plywood cut like so:

These dimensions are approximate—you may need to adjust them to your HMMWV.

Round off the edges and paint the board to prevent splinters. Stencil "NO STEP" on each side of the board.



To use the shield, remove the eye-hook seals and slip the shield over the two lifting rings, laying it flat on the oil cooler frame. The rings will hold the shield in place.

Never use the shield while the engine is running because it stops air flow and causes engine overheating.

After using the shield, replace the eyehook seals.

Bushing Saves Wiper Arm

Dear Editor,

When a bushing on the HMMWV's windshield wiper motor connecting arm failed, we had to replace both arms to fix it—a cost of almost \$12.

Our local TACOM Logistics Assistance Representative (LAR) helped us track down a bushing for the arm that costs only \$1.

The bushing is NSN 3120-01-388-1527. You just press it into the shaft to install it.

CW2 Danny Barlow
SGT Darrell Mealer
2/327th INF
Ft Campbell, KY

NOT AGAIN!
LAST TIME THE
BUSHING FAILED, IT COST US 12
DOLLARS TO REPLACE BOTH
WIPER ARMS.

THERE'S
GOT TO BE A
CHEAPER
WAY.

HMMWV

FROM THE DESK OF THE Editor 

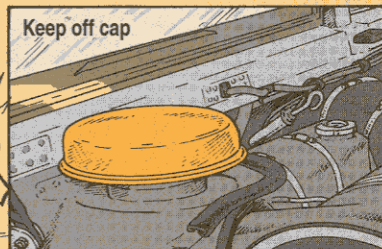
Good work. A small part, but a big savings. The bushing on the other end of the arm is PN S-3076, CAGE 82484. Order it on DD Form 1348-6.

HEY,
WAIT
UP!

C'MON,
SLOWPOKE!

Watch Your Step

While you're watching your feet, keep them off the air intake cap, too. The extra weight will bend and break it.



There it is, big as life, painted right on top of the HMMWV's air intake tube—**NO STEP**.

The tube looks sturdy, but it cracks when a boot bears down on it. Once it's open, it lets dirt, dust and crud into the engine. Your truck will soon be heading for repair.



"NO STEP" means **NO STEP!**

On the Outside

You've got to watch your feet on the outside of the HMMWV, too.

Never walk on the hood. It's made of fiberglass, and will crack. The plastic grille looks tough, but will crack easily under a soldier's weight.



Your best bet around a HMMWV is to keep your feet on the ground.

Parking Brake Cable Pinch

HAVE YOU SEEN MY HUMVEE?

ONLY IN PASSING!

Bad bracket design may be causing wear and tear on your HMMWV's parking brake cable.

The cable problem has been spotted on HMMWVs with serial number 44825 and above, and on HMMWVs that have had MWO 9-2320-280-35-1 applied. The MWO is a parking brake retrofit.

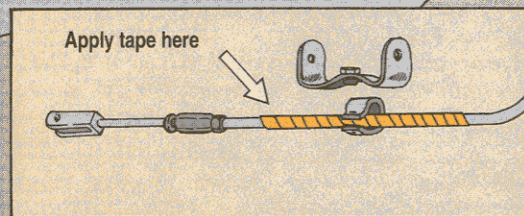
But there's a solution to the problem.

The bracket design has been changed to use the existing mounting holes and keep the cables from being crushed or chafed by the lower control arm.

Order the right bracket with NSN 5340-01-394-2408, and the left bracket with NSN 5340-01-394-8496.

Until the brackets arrive, check the parking brake cables and clamps during each PMCS for chafing near the control arm. If you see damage, use this fix until your new brackets arrive:

1. Remove the clamp and discard if it's damaged.
2. Remove any old tape on the cable.
3. Wrap a 6-in piece of rubberized tape (NSN 9320-01-299-3332) in a spiral motion around the cable near the control arm.
4. Put the clamp back on.



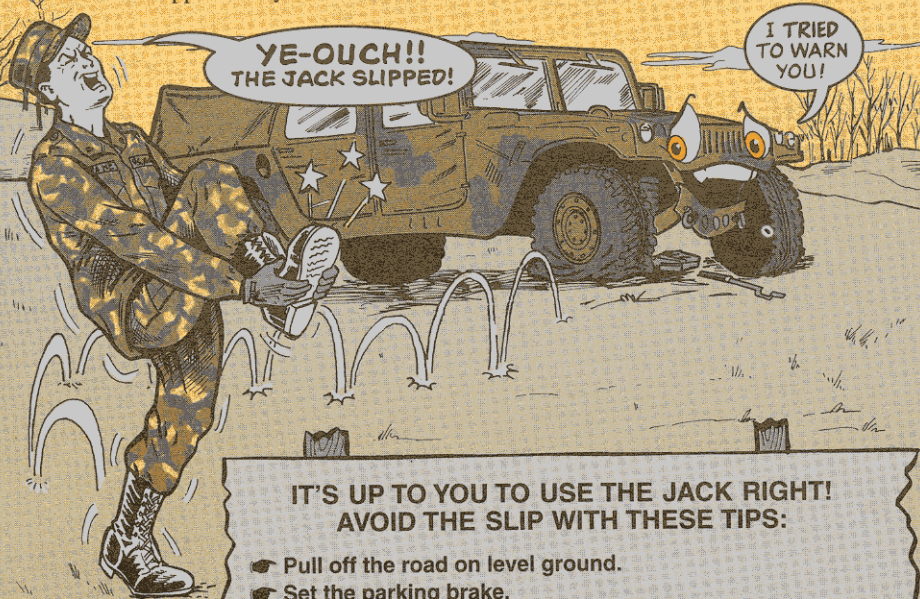
EACH TIME YOU PULL PMCS, REWRAP THE CABLE IF YOU SEE DAMAGE

Jack the Slipper?

If you misuse the 2-ton jack when changing a HMMWV's tire, you'll create Jack the Slipper—with evil results.

The jack will hold the load, but if you position it wrong, or overload it, the jack will slip sideways. The vehicle can fall off the jack—and possibly onto you!

Shelter carriers are especially at risk because of their higher center of gravity, but it can happen to any HMMWV.



IT'S UP TO YOU TO USE THE JACK RIGHT! AVOID THE SLIP WITH THESE TIPS:

- Pull off the road on level ground.
- Set the parking brake.
- Chock both sides of a wheel on the opposite side.
- Center the jack directly under the lower control arm next to the wheel being changed. Placed anywhere else, such as the frame rails, the jack won't hold the load.
- Lift the tire only as high as needed to remove it. The higher you lift, the greater the chance the jack will slip.
- Lift only one wheel at a time or you'll overload the jack.

HE MUST'VE
POSITIONED HIS JACK
WRONG.

Sealing Geared Hubs

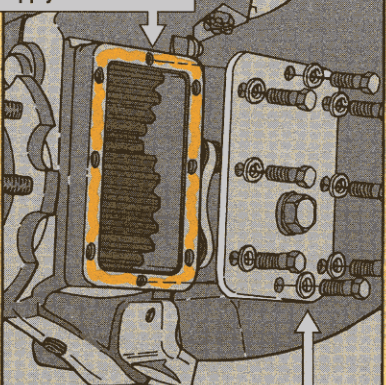
If you have trouble keeping oil in your HMMWV's geared hubs, maybe you need to change how you apply the cover seal.

The RTV method shown in TM 9-2330-280-20-2 works great for some folks. But the sealant starts to dry just as soon as you apply it. Put the cover on quickly. Then put sealing compound, NSN 8030-01-025-1692, on the capscrews and tighten them immediately to no more than 15 lb-ft torque.

If that method doesn't work for you, try this one:

Cut a piece of 1/16-in gasket paper, NSN 5330-00-270-8470, to fit the cover. You won't need any RTV under the cover, but you still need to put sealing compound on the cover capscrews and torque them to no more than 15 lb-ft.

Apply sealant here ...



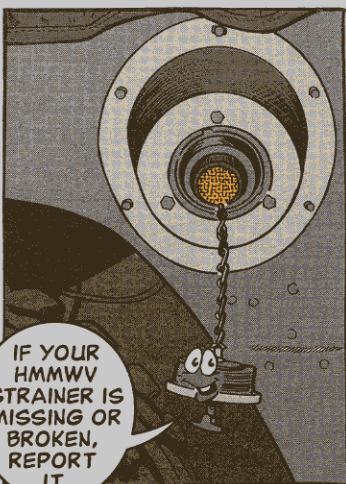
... and sealing compound on capscrews

Straining for Fuel

The strainer element in the HMMWV's filler neck is the first line of defense against dirty fuel.

If it's missing or broken, dirty fuel can get into the fuel lines, fouling the fuel filter, injection pump or the fuel injectors. Your HMMWV will run rough, or not at all.

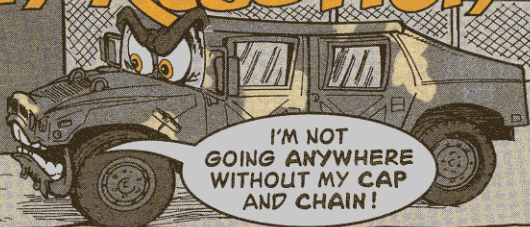
Some filler neck strainers are missing. Others have been broken by pokes with a fuel nozzle. Others have been broken to siphon fuel.



C'MON,
NO TIME FOR
SLIP-UPS NOW,
JACK!



Chain Reaction

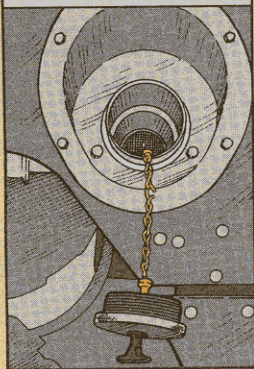


Sometimes it only takes a little effort and a little money to save a lot. So it is with the fuel filler cap on HMMWVs.

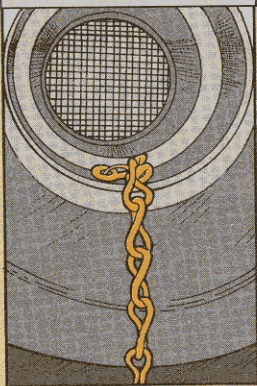
Too many caps are being replaced because the chain connecting the cap to the filler neck breaks. Once the chain breaks, the cap is easily lost.

Save caps by replacing the chain when it breaks or shows wear. NSN 4010-00-958-0633 gets a foot of chain for less than a quarter. Since mosts units have several HMMWVs, consider ordering plenty of chain. You need eight inches per truck.

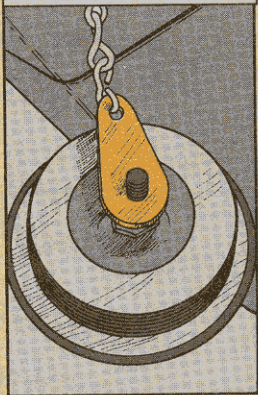
Chain worn or broken?
Replace it



Attach one end to filler
neck...



...and other end to filler
cap swivel



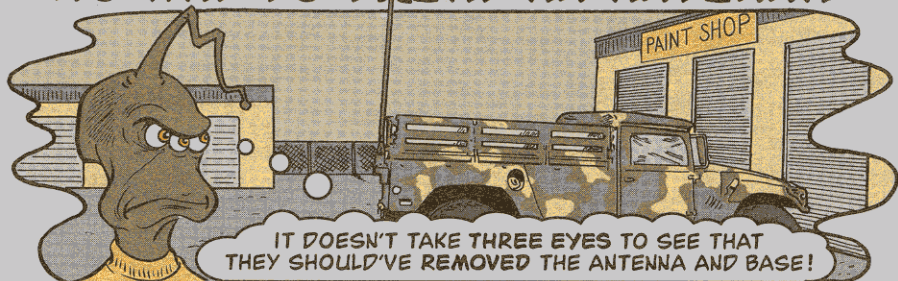
ALL THOSE HMMWVS WERE IN
TROUBLE AND YOU'VE BEEN LOOKING
FOR YOUR SHADOW?!



YEP, NOW
WE KNOW THERE'S
SIX MORE WEEKS OF
WINTER PM!



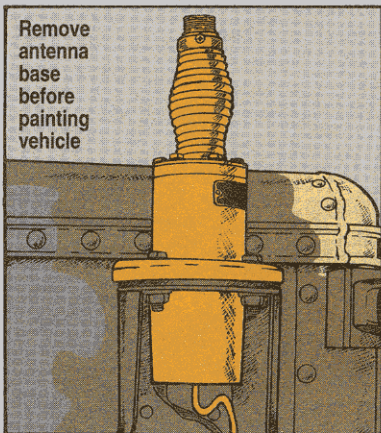
NO WAY TO TREAT AN ANTENNA



Unit maintainers, some vehicles get sent to direct support for CARC painting with the SINGARS AS-3900 antenna base still in the mount. That's no way to treat an antenna.

CARC is not meant for your AS-3900. It slowly breaks down the plastic antenna base and the rubber insulation on the RF cable.

So, before you send a vehicle out for painting, take off the antenna base. Then wind masking tape around the exposed RF cable. Make sure to tape over the cable connector so that paint doesn't coat the connections.



Tactical Quiet Generators ...

TQG Help—Loud and Clear

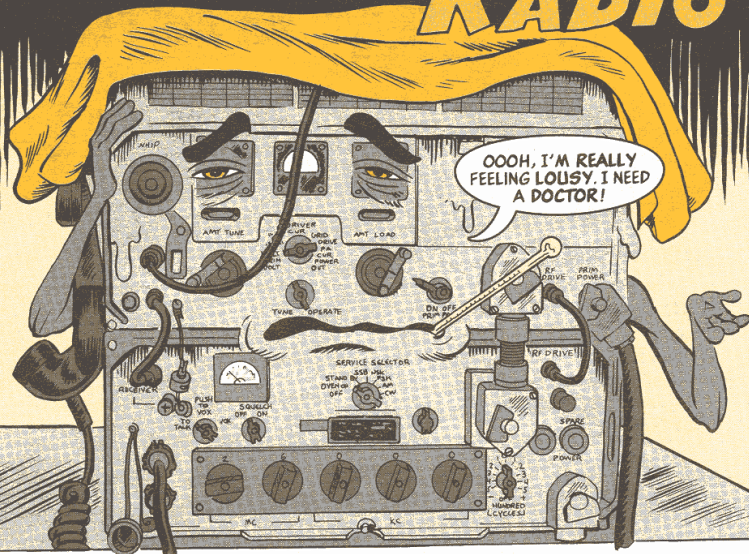
Your tactical quiet generator (TQG) is designed to be quiet. But if you can't find solutions to TQG problems, make some noise!

After you've exhausted all your local sources, such as DS/GS, DOL or LAO, and still can't find a solution, contact the DOD Project Manager—Mobile Electric Power. They manage the TQGs. Here are the address and phone numbers:

DOD Project Manager—Mobile Electric Power
7798 Cissna Rd Suite 200
Springfield, VA 22150-3199

DSN 656-7823
Commercial (703) 806-7823

RADIO REMEDIES



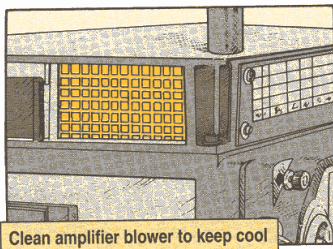
When it comes to your AN/GRC-106 radio, preventive maintenance and careful handling promote a long, useful life.

Dirt or Ice = Heat

When dirt and dust settle over your radio, they clog the AM-3349 amplifier blower and choke off airflow. Heat builds up and your radio shuts down.

The first line of defense against heat buildup is general cleaning. Regularly wipe down the surface of your radio with a soft cloth. Keep it as free of dirt and dust as possible.

The next step is cleaning the amplifier blower itself. Ask your unit maintainer to flush out the blower's grillwork with water, just like it says in Para 2-9 of TM 11-5820-520-20.

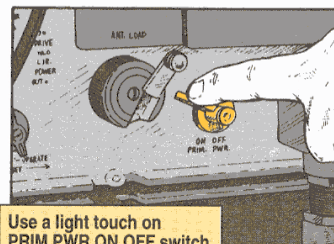


Clean amplifier blower to keep cool



Just a Touch

No muscle's needed when turning the AM-3349 amplifier's PRIM PWR ON OFF switch. Force the switch and you'll most likely break the plastic shaft. All you need is a light touch to flip the switch on or off.

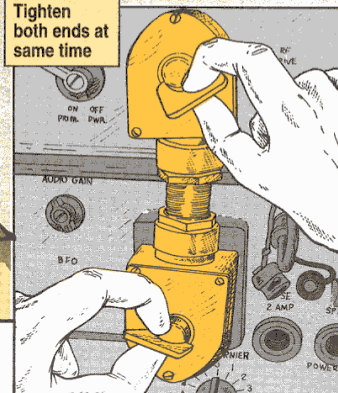


Use a light touch on PRIM PWR ON OFF switch

Cable Strain

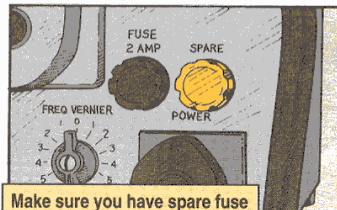
When you hook up the CX-10099/U cable, tighten both ends at the same time. Tightening them one at a time strains the flexible metal piece in the center. You could break it.

Tighten both ends at same time



Fuse News

Always keep a spare fuse in the spare fuse holder. Make sure the spare has the right value—2 amps, 250 volts. Get replacement fuses with NSN 5920-00-228-7882.



Make sure you have spare fuse

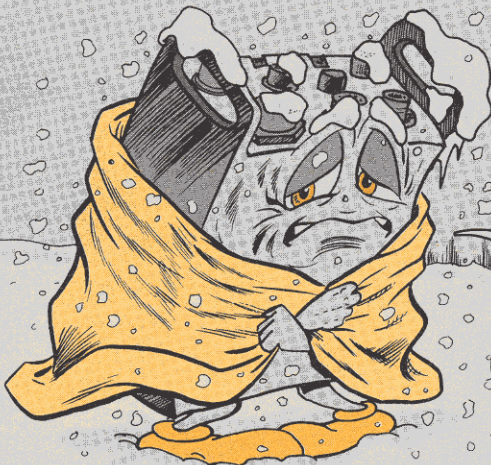
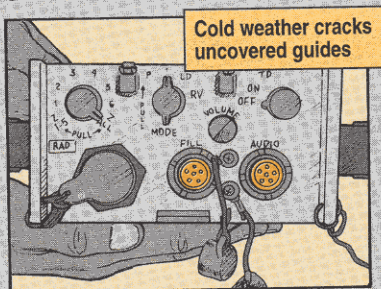
Cold Weather Crackup

When it gets really cold outside, it only makes sense to cover up properly. The same holds true for the FILL and AUDIO receptacles on your KY-57 secure device.

Temperatures below 0°F can cause the blue, plastic pin guides inside the receptacles to crack and break. Without the guides, the connector pins don't line up properly. The pins bend and break off.

On top of that, replacement pin guides aren't available. That means the entire KY-57 has to be shipped to support and each damaged receptacle has to be replaced.

You can protect those guides from the weather by keeping the rubber caps in place whenever the receptacles are not in use. If the caps are missing, replace 'em with NSN 5810-01-054-6829.



I SURE
COULD USE
THOSE CAPS
ABOUT
NOW!

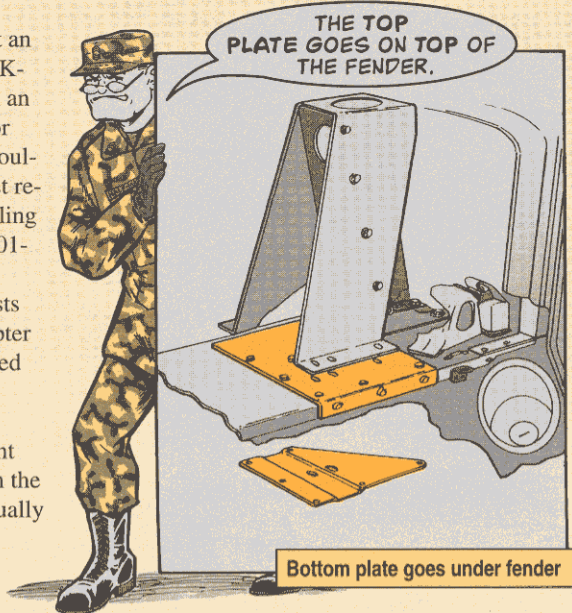
Keepers for PLGR Case

NSN 5340-00-753-5580 brings beltstrap keepers for the Precision Lightweight Global Positioning System Receiver (PLGR) carrying case. The keepers attach the AN/PSN-11's nylon case to your web belt or rucksack. They're the same keepers as used with your water canteen.

Support the Mount

Any time you put an MK-2318 or MK-2510 installation kit on an M998/M1038 four-door HMMWV with rear shoulder harnesses, you must reinforce it by also installing MK-2691, NSN 5895-01-378-5441.

The MK-2691 consists of two reinforcing adapter plates and hardware used to support the antenna mount. Without the adapter plates the mount puts too much stress on the HMMWV body, eventually causing damage.



Global Positioning System ...

A Load Off Your Mind

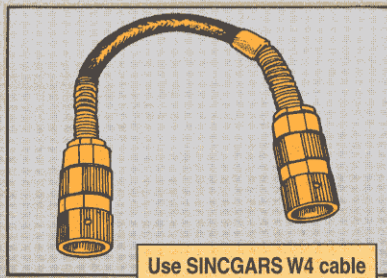
TM 11-5825-291-13 for the AN/PSN-11 precision lightweight GPS receiver (PLGR) says you can get a PLGR-to-SINGARS cable. That's not so.

Even though the parts list and the AAL authorize the cable, there are none available. And there are no plans to get any.

No problem. Your SINGARS PS 519

RT-1523A and RT-1523B already come with two separate cables that will do the job.

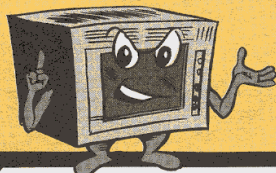
Both the W4 cable, NSN 5995-01-310-0335, and the automated net control device cable, NSN 5995-01-379-9689, can be used to load sync time from the PLGR into the SINGARS.



Back Me Up,



-PSST- HEY, BUDDY. YEAH, YOU, C'MERE. MY NAME'S AN/TYQ-30, -31 COMMUNICATIONS SYSTEM CONTROL ELEMENT. I NEED YOU TO DO ME A FAVOR.

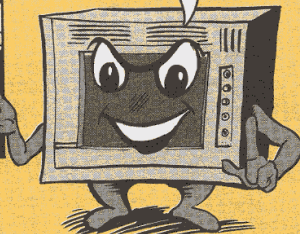


WAIT! DON'T RUN OFF. I NEED YOU TO MAKE SOME BACKUP TAPES OF MY PROGRAMMABLE DATA. WHY? EVER HEAR OF A COMPUTER CRASH? IMAGINE WHAT WOULD HAPPEN IF I LOST PRIMARY AND EMERGENCY BATTERY POWER AT THE SAME TIME! GOOD NIGHT, NURSE!

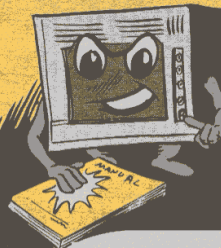
I'M TALKIN' FULL-BLOWN, STOMACH-CHURNING IRREVERSIBLE, PANIC-IN-THE-STREETS, COMPUTER CRASH. THERE GOES ALL THE PROGRAMMABLE DATA IN MY COMMUNICATIONS PROCESSOR AND DATA BASE MANAGEMENT PROCESSOR. LOST. WIPED OUT. FINISHED. DONE FOR. GONE SOUTH. GET MY DRIFT?



YOU EVER TRY TO RECONSTRUCT ALL THAT DATA WITHOUT A CURRENT BACKUP TAPE? GOOD LUCK, BROTHER. JUST DON'T MAKE ANY WEEKEND PLANS FOR THE NEXT FEW MONTHS.

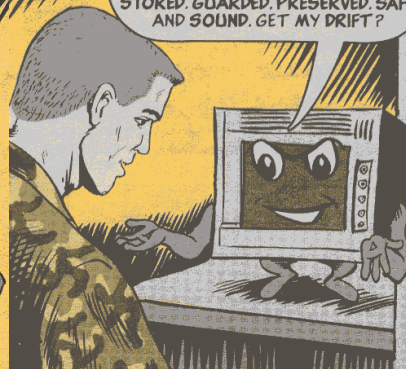


Buddy



HEY, YOU LOOK LIKE YOU'VE GOT SMARTS. SO DO THE SMART THING. PROTECT MY DATA. READ THOSE ENTERTAINING LITTLE SOFTWARE MANUALS THAT COME WITH THE SYSTEM. THEY'VE GOT PICTURES AND EVERYTHING. THEY'LL TELL YOU HOW TO MAKE BACKUP TAPES SO'S YOU CAN SAVE THE DATA IN BOTH PROCESSORS. NO KIDDING, YOU NEED TO MAKE A BACKUP TAPE ANY TIME THERE'S A MAJOR CONFIGURATION CHANGE TO THE SYSTEM.

HEY, PAL, I'M JUST TRYING TO COVER MY REAR PANELS HERE. KNOW WHAT I MEAN? THIS WAY, THE DATA'S SAVED, PROTECTED, STORED, GUARDED, PRESERVED, SAFE AND SOUND. GET MY DRIFT?



Keep Your Distance

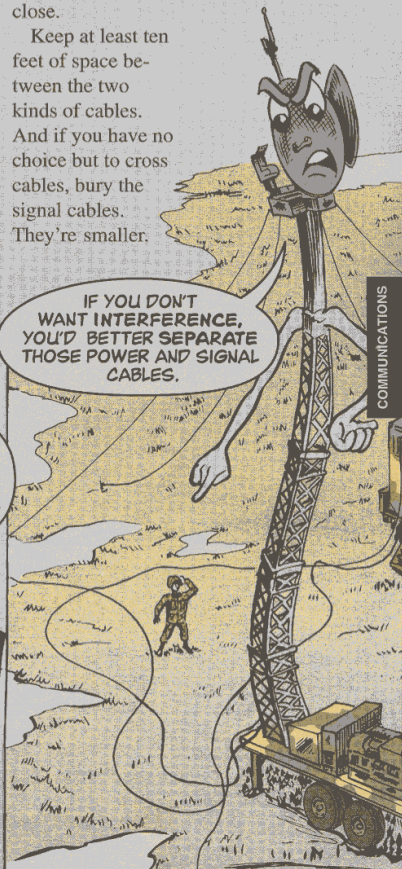
Here's a basic rule for setting up a communications site in the field:

Never lay power cables over or alongside signal cables. Power cables create signal interference if they're too close.

Keep at least ten feet of space between the two kinds of cables.

And if you have no choice but to cross cables, bury the signal cables. They're smaller.

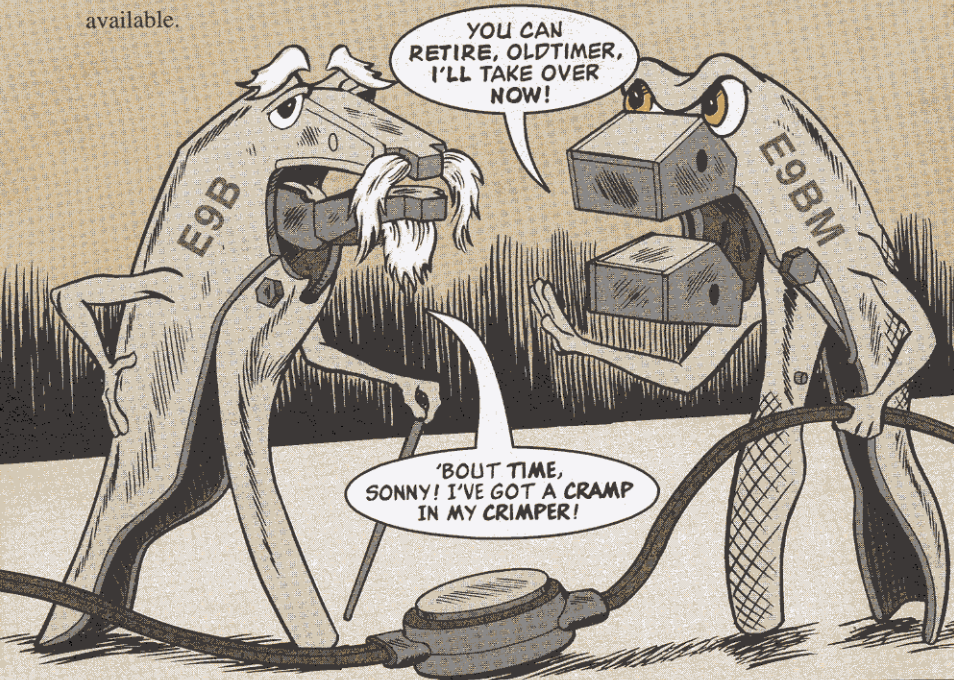
IF YOU DON'T WANT INTERFERENCE, YOU'D BETTER SEPARATE THOSE POWER AND SIGNAL CABLES.



RIGHT CRIMPER = NICE SPLICE

The UIR splice, NSN 5940-00-935-8262, makes splicing WF-16, WD-1 and WD-1A telephone cable quick and easy. Just make sure you use the right crimper with the splice, because any old crimper won't do.

You need the new E9BM crimper, NSN 5120-01-421-3979. It's made to be used with the UIR. The E9B replaces the E9B crimper, which is no longer available.



Duster Kits and Refills

Duster kits clean electronic equipment the safe way—with compressed air.

Use them to dust off printed circuit boards, computers, front panels and switches. Here are the NSNs for duster kits and 10-oz refill cans of compressed air:

Kit, NSN 6830-01-	Refill, NSN 6830-01-
406-9819	406-9820
381-2675 (12 kits)	388-6924

Never mix and match refills and kits. They're not compatible.

A MEASURE OF PROTECTION



DID YOU PROTECT THE COUNTERMEASURE SET?



Lots of aviation units are out lots of money because no one pays attention the AN/ALQ-144A countermeasure set.

Just one broken pane puts the AN/ALQ-144A down. It doesn't take much to break a glass pane: a dropped tool or a big foot does the trick. One unit had 19 sets down at one time.

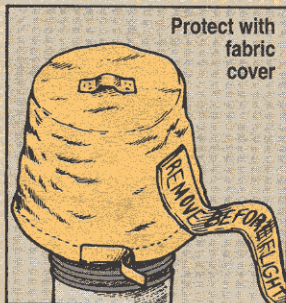
Protect the AN/ALQ-

144A with its cover, NSN 5865-01-109-1800, when you're not flying. That also shields its panes from the sun,

which dulls their refracting power.

If the aircraft will be sitting for more than 45 days, remove the set and store it in a secure area.

See TM 11-5865-200-12 for more info on taking care of the AN/ALQ-144A.



Protect with fabric cover

A Good Spin

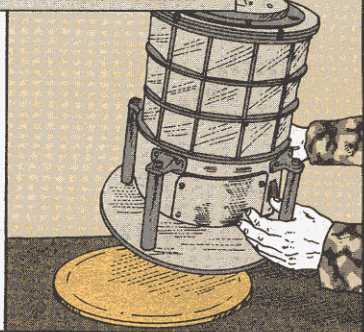
Dear Editor,

The AN/ALQ-144A countermeasure set is a bulky item to work on. Every time you work on a different part you have to pick up the whole set and reposition it.

We put a better spin on the AN/ALQ-144 with one of those microwave oven turntables. We got one for a few bucks at the PX. We set the AN/ALQ-144 on the turntable and just turn it as we work.

**SPC Richard Graham
Camp Humphries, Korea**

Turntable makes working on AN/ALQ-144 easier



FROM THE DESK OF THE *Editor*

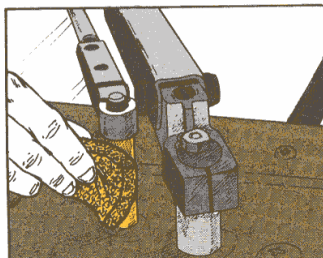
*Your suggestion does have a good spin.
Thanks.*

MAKE WIPERS COME CLEAN

It's been a tough winter and the forecast is for a wet spring. If your Black Hawks could talk, they would beg you for a little extra windshield wiper PM.

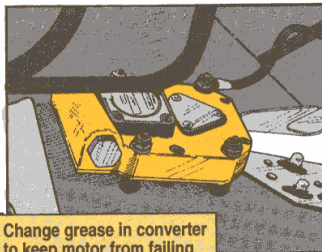
Here are three areas your Hawks would tell you about.

1. The pivot stud attracts corrosion like a blue-tick hound attracts fleas. Remove corrosion with a scouring pad, NSN 7920-00-934-3469. Then coat the stud with corrosion removal and treatment compound, NSN 6850-00-656-1292.



Remove corrosion from pivot stud

2. Grease hardens in the converter of the wiper motor. This makes wipers drag. Changing the grease is an every 500-flight-hours job, but you may have to do it more often to keep the wiper motor from failing.



Change grease in converter to keep motor from failing

If your Hawk's wipers are dragging, remove old grease from the converter and repack it with NSN 9150-00-944-8953.

BOY! I SURE COULD USE SOME EXTRA WINDSHIELD WIPER PM!

Don't forget to remove the old grease from the converter linkage, housing and front cover, too.

3. Hawk wipers with the shakes and shimmies need adjusting.

Check wiper arm pressure with a dial indicating spring scale, NSN 6670-00-240-5821. Follow the good words on Page 12-32 of TM 1-1520-237-23-5.

After you've adjusted the wipers, apply corrosion preventive compound, NSN 8030-00-231-2345, to the tension spring under the wiper arm.

Apply CPC often in wet or damp weather. That'll put the skids on rust and corrosion, the two culprits responsible for decreased arm pressure, ruined pivot studs and slowed converters.

It's a Door Thing

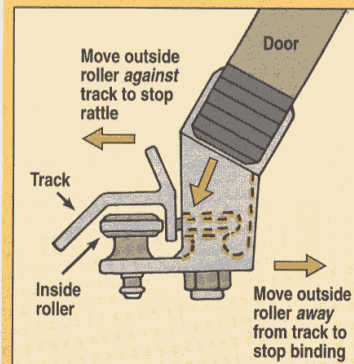
If you hear a rattle from your Black Hawk, could be your cargo doors are loose. Or, if the doors fight you when you open them, could be they're binding in the track.

Loose and binding doors are not only annoying, they can wear out the upper and lower track assemblies.

Good cargo door PM means keeping the doors on track.

To do this, head for the roller assembly at the bottom of the door. There you'll find two rollers. The inside roller is fixed, but the outside one is adjustable.

Just loosen the nut at the base of the outside roller and move the roller. Move it against the track to stop a rattle. Move it away from the track to stop binding.

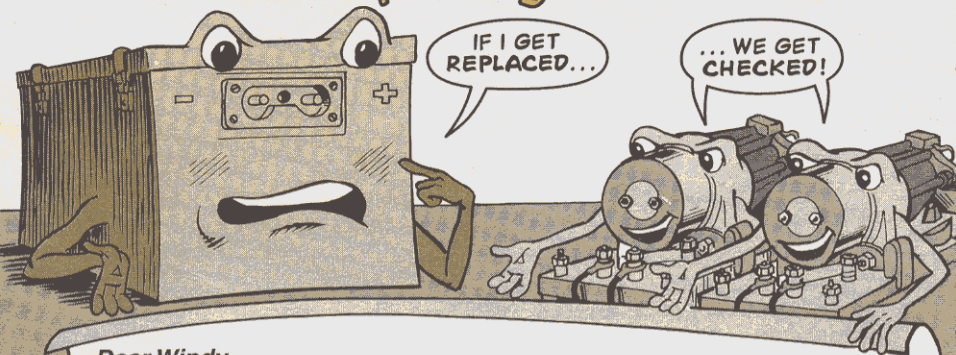


After you've adjusted the roller, torque the nut to 43-47 in-lbs.

If the nut fails to tighten or the roller is worn out, replace the roller assembly, NSN 5340-01-082-0683.

UH-1...

New Battery? Regulator Check?



Dear Windy,

Do we have to do a voltage regulator check on the Huey each time we replace a battery?

The NOTE under Para 9-38.e. of TM 55-1520-210-23-2 says the regulator check needs to be done only if the battery shows signs of overheating or overcharging. I've been told to do a voltage regulator check whenever a battery is replaced. What's right?

SGT K. C.

NOTE

If the battery exhibits signs of overheating or overcharging, such as fumes or vapor coming from the vent tube or free electrolyte present within the case, adjustment of voltage regulator should be checked.

Dear Sergeant K. C.,

A voltage regulator check has to be done on the UH-1 anytime a battery is replaced. The goal is to **prevent** overheating or overcharging instead of dealing with it after it happens.

Windy

All Aircraft...

AVA Batteries—Charge!

It's your responsibility, AVUM mechanics, to keep the aviation vibration analyzer's (AVA) Ni-Cad battery charged.

Many batteries are now dead that could have been saved with a timely charge. Follow the charging info in Para 2-2 of TM 1-6625-724-13&P.

If you have a dead battery, replace it with NSN 6140-01-347-3580.

Support Your Seat

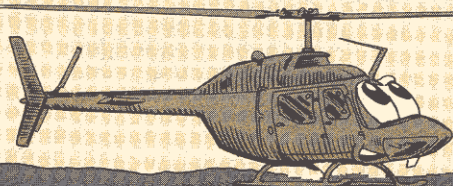
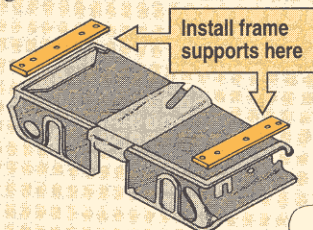
You got the word in ATCOM Msg OH-58-95-ASAM-04, 071518Z Feb 95, to check your Kiowa seat assemblies and get them in shape. Seems there's been a big problem with the seat side supports getting damaged when the seat panels are removed.

Now that your frames are looking good, take a preventive maintenance step to keep the side supports in shape. Make a brace to fit over the supports to use when you're doing maintenance with the seat panels removed.

Use two plies of $\frac{1}{2}$ inch thick phenolic sheet, NSN 9330-00-880-4870, cut to the same length as the seat frame and approximately 2 $\frac{1}{4}$ inches wide.

Drill holes in the phenolic sheets to match the holes in the seat frame. Attach the sheets with the hardware used to mount the seat panels.

You can install the braces in minutes and save the seats! Make sure to remove the braces when your maintenance is done and return the seat to its original structure.



THAT FIX
HAS ME SITTING
PRETTY!

Order Rim for Bearing

Dear Windy,

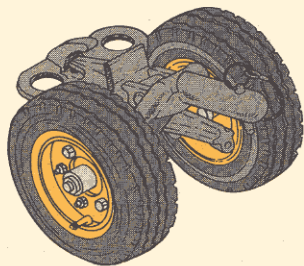
All too often, the wheel bearings fail on the OH-58's ground handling wheels. How can we order some new ones?

SFC J.H.G.

Dear Sergeant J.H.G.,

You can't get the bearing by itself. You get it with the wheel rim, NSN 2530-00-051-4695, Item 5, Fig G1 of TM 55-1520-228-23P.

Windy



Aircraft Forms . . .

Readdress the ROD

Need to report a problem with ATCOM-managed B17 or A12 items? If so, send an SF 364, Report of Discrepancy (ROD), to:

US Army Aviation and Troop Support Command
ATTN: AMSAT-I-SDC (Customer Support Branch)
4300 Goodfellow Blvd
St Louis, MO 63120-1798

Or E-mail the ROD (just type in the info from your hard copy form) to:

jrollins%mm08@st-louis-emh7.army.mil

Or fax the ROD to:

Commercial (314) 263-7135 or DSN 693-7135

Note this new address info in AR 735-11-2, Reporting of Item and Packaging Discrepancies.

Boresight Oversight

Boresighting your Apache's rocket launcher after installing the launcher is not required. Procedures for boresighting the pylons to which the launchers (M260 and/or M261 Hydra-70 lightweight) are attached can be found in TM 9-1230-476-20.

Long & 3-Post Binders

Some aircraft TMs are long and some are fat. But there are binders out there for both. Use NSN 7510-00-281-4310 for a box of 25, 11 x 17-in pressboard binders for the long, troubleshooting TMs. Use NSN 7510-00-889-3520 for a 3-post, loose-leaf binder with a locking center post. This binder will expand to 6 1/2 inches thick and handle those fat TMs.

DA Pam 738-751...

2410 NO Prob-blem

A trip through DA Pam 738-751 is a murky, gray journey where headaches lurk on each turned page, and questions—like potholes—make the ride bumpy.

Thirty pages of this vital pub are devoted to DA Form 2410/2410E, Component Removal and Repair/Overhaul Record. This form gets that much space because it must be filled out right!

If the 2410 is filled out wrong, a component could be scrapped, overhauled or rebuilt early. Or worse, it could be used beyond its life limit. Scrapped, overhauled or rebuilt early costs money. Too late could cost lives.

When a pothole puts you on the shoulder on your 2410 journey, get help by calling the DA Form 2410 Hotline at DSN 693-1879 or commercial (314) 263-1879. After normal working hours you'll get a recording. Just leave a phone number, your name, and a brief message.

For other questions on DA Pam 738-751 and how to fill out the forms, call DSN 490-2318 or commercial (314) 260-2318 during normal work hours.

For questions on TB 1-1500-341-01, Aircraft Components Requiring Maintenance Management and Historical Data Records, call DSN 693-1955 or commercial (314) 263-1955 during normal work hours.

For the fastest form processing, address DA Form 2410s to:

Department of the Army
HQ, US Army Aviation & Troop Command
ATTN: AMSAT-I-MDO (2410)
4300 Goodfellow Blvd
St Louis, MO 63120-1798



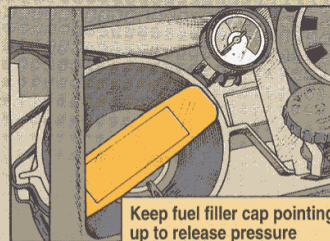
Basic Fueling



Pay close attention when you're fueling the M2 burner or your kettle of beans might not be the only thing that gets hot. Use the TM and these tips to fuel your burner safely:

- Before filling the fuel tank, make sure the burner is at least 50 feet away from fuel storage, lighting and cooking areas.
- Always turn the burner unit off and let it cool at least 30 minutes before you release pressure from the fuel tank.
- Never bleed off pressure near a lit cigarette or open flame. Even if the tank's bone dry, gas fumes linger—they can explode in your face.
- Make sure the burner unit's fuel filler cap is pointing up before you release the tank pressure. That'll keep the pressurized fuel from spraying on you.

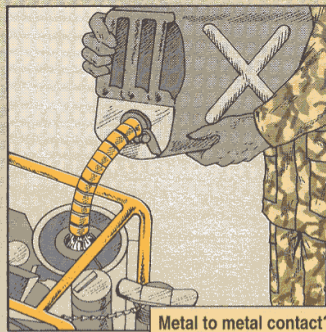
Facts



Keep fuel filler cap pointing up to release pressure

Turn the fuel cap slowly counterclockwise to release the air pressure. Then remove the fuel cap.

Be sure you have a metal-to-metal contact between the fuel tank and the container. This prevents sparks from being generated and causing an explosion.



Metal to metal contact?

Fill the tank to the bottom of the filler tube. This leaves space for the fuel to expand and helps prevent moisture from collecting in the tank, especially in cold weather. Then hand tighten the fuel cap.

Use hand pump only



Always put the burner in a horizontal position to pressurize the tank. Use only hand pump, NSN 4320-00-852-9036. Never use a compressor or an auxiliary air supply hose from a vehicle. The high pressure could cause leaks, rupture the tank or send flames shooting up when you adjust the flame valve.

In normal weather, work the pump until the gauge reads 6-8 PSI. When the weather is very hot, keep the pressure at 3-5 PSI to maintain proper fuel pressure.

Make sure the lighting area is at least 50 feet from the refueling, fuel storage and cooking areas.

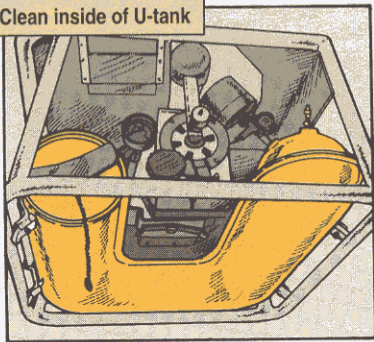
Keep the fuel tank and fuel can caps on tight. Remember never to store gas cans close to heat or open flames.

Keep Preheater Generator Unclogged

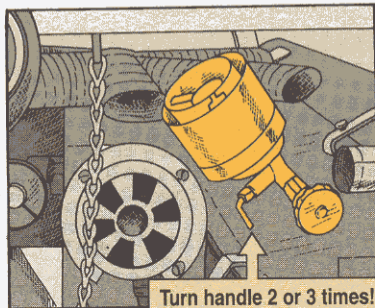
IF THE PREHEATER GENERATOR CLOGS,
USE THESE TIPS TO KEEP IT OPEN.

- ✓ Clean the inside of the U-tank with dry-cleaning solvent.

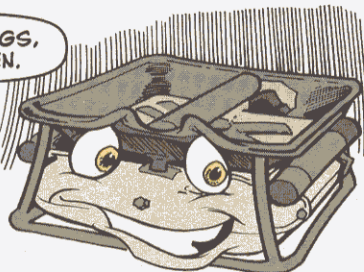
Clean inside of U-tank



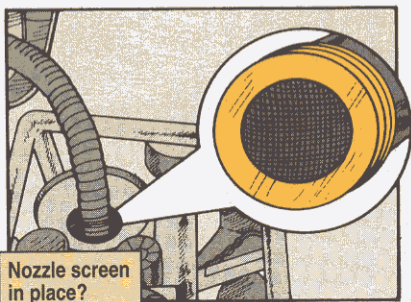
- ✓ Look at the air-fuel feed assembly. A clogged or bent feed assembly cuts the flow of fuel and air to the preheater. Replace the preheater assembly.
- ✓ Give the preheater orifice cleaning control two or three complete turns before lighting up, like it says in TM 10-7360-204-13&P. Leave the handle pointing down. The orifice will be blocked if the handle is in any other position.



Turn handle 2 or 3 times!



- ✓ Run the preheater only as long as needed to heat the full length of the burner generator. Deposits build up whenever the preheater is on.
- ✓ Keep soap and water away from the preheater when you clean the burner unit. That can clog the preheater.
- ✓ Use fresh, clean gasoline. Gasoline that's been in a can for a long time gets gummy and clogs the screen and orifice. If the burner unit is to be stored longer than overnight, drain any gas left in the tank.
- ✓ Store gasoline in a clean can.
- ✓ Make sure the gas can nozzle screen is in place when you refill the tank. The screen catches trash that could clog the preheater generator.



Nozzle screen
in place?

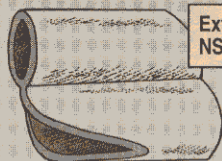
Try New Tie-Down System

There's a new tie-down strap (bungee cord) available that can be used almost anywhere because it comes in a roll you can cut to any length you need.

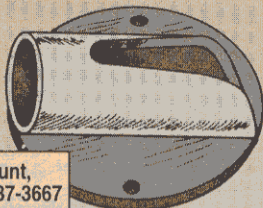
The strap is resistant to ozone and UV light. It's also non-conductive and non-corrosive.

It can be used to tie down tents, vehicle tarps, tool boxes, gas cans, or other light loads—almost anything you need.

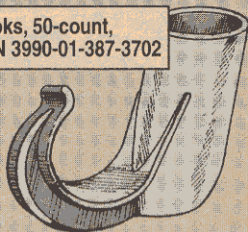
This tie-down strap "system" consists of:



Extenders, 50-count,
NSN 3990-01-387-3699



Anchors, 50-count,
NSN 3990-01-387-3667



Hooks, 50-count,
NSN 3990-01-387-3702



Tarp hooks, 50-count,
NSN 3990-01-387-3687

150-ft roll of cord,
NSN 3990-01-387-3781

300-ft roll of cord,
NSN 3990-01-387-3707

The extenders are used to make slip knots and complete circles where hooks sometimes don't fit.

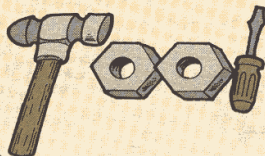
Anchors can be attached permanently where you need them every day.

After you cut the cord you need, pull it tight into the "V" of any of the four accessories.

The system should be safer to use because the cord will gradually slip through the accessory, instead of snapping and releasing the load.

IT'S EASY TO
SEE HOW THIS NEW
SYSTEM WILL KEEP YOUR
EQUIPMENT TIED UP—
INSTEAD OF YOU!





FED UP
WITH TOOLS
THAT BREAK?
OR TOOLS THAT JUST CAN'T
DO THE JOB? OR TOOLS YOU WERE
ISSUED BUT NEVER NEED?

SOUND OFF!
LET THE ARMY
KNOW HOW YOU FEEL! SEND
YOUR TOOL SUGGESTIONS AND
RECOMMENDATIONS TO TIPS, THE
TOOL IMPROVEMENT PROGRAM
SUGGESTIONS.

TO GET AN INFORMATION
SHEET AND INSTRUCTIONS
FOR PREPARING YOUR
SUGGESTIONS, CALL...

DSN 345-2513 or
commercial (703) 355-2513

OR WRITE TO...

US Army Force Integration
Support Agency - TIPS
9900 Belvoir Rd Suite 120
Fort Belvoir, VA 22060-5578

THE TIPS PEOPLE
WILL REVIEW YOUR
SUGGESTIONS AND
LET YOU GET
A REPLY.

HERE ARE SAMPLES OF THE
KINDS OF TOOL ISSUES
YOU MAY WANT TO
DISCUSS WITH
THE TIPS
FOLKS.

❖ **BAD TOOLS.** If a tool breaks, fails to hold calibration, quickly wears out, or cannot take the rugged use it was intended to take, report it. If you have a solution, let TIPS know.

❖ **Tools that should be ADDED** to the system. If you know a tool that can do the job better, don't keep it to yourself.

❖ **Tools that should be DELETED** from the system because they are never used or fail to do the job they were meant to do.

❖ **NEW commercial tools** that might be good additions to the Army inventory.

❖ **MODIFICATIONS** to make tools better. Share your mod ideas with the Army. Reporting your ideas for modifications saves duplication of effort and gives others the benefit of your wisdom.

Jeweler's Screwdriver Set

If you need replacement screwdrivers for your jeweler's screwdriver set, NSN 5120-00-288-8739, order from these NSNs:

NSN 5120-00-180-	Tip Width (inches)
0705	.025
0706	.040
0727	.055
0728	.070
0729	.080
0730	.100

ORDER THE
RIGHT TOOLS FOR
THOSE TINY
SCREWS.



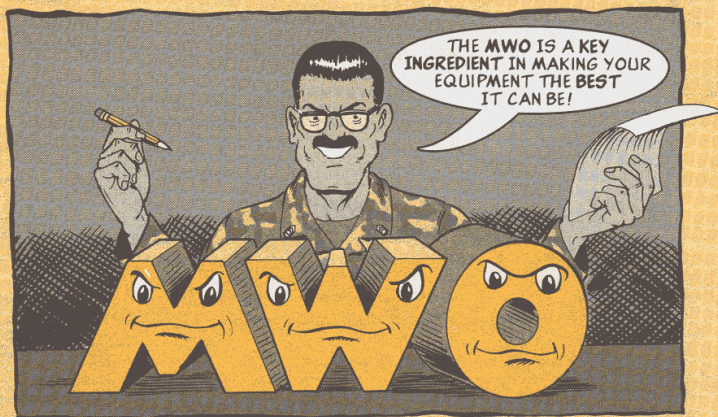
Be SMART— Change Address

Moving? If you've got a suggestion pending, let the SMART folks know your new address. That way if your suggestion is adopted, they will know where to send the money. Write:

USACASCOMFL
Attn: ATCL-CFI
3901 A Avenue, Suite 230
Ft Lee, VA 23801-1809

Or you can call DSN 687-0363/2406/1945 or commercial (804) 734-0363/2406/1945.

Get 'em Done Pronto!



When you're dealing with MWOs, the word is "Do 'em ASAP". MWOs are either **mandatory** (urgent, limited urgent or normal) or **non-mandatory** (minor alterations, special purpose or special mission modification). Normally, the MWO proponent takes care of mandatory MWOs.

There's no time to waste if the MWO is **urgent**—your equipment is NMC until the MWO is applied.

Limited urgent modifications have to be done within the time frame given in the MWO. If they're not, the equipment's NMC.

Normal modifications should be made before the completion date stated in the MWO.

MWOs Head Off Woes

MWOs are for **everybody**. They:

- assure operator safety
- improve combat effectiveness
- keep equipment up-to-date
- prevent equipment damage.

Compare your equipment with the latest models. If you find an improvement that your gear doesn't have, check to see if there's a current MWO authorizing you to make the change. For a list of the latest MWOs, check out the current copy of DA Pam 25-30.

Record It

Before you list the MWO in the Modifications Required Section of the DA Form 2408-5, Equipment Modification Record, be sure it applies to your equipment. MWOs can apply to all items of a series or to a single stock number. Others apply only to items with certain serial numbers.

Whoever does the MWO fills out the Modifications Completed section of the 2408-5 record. Then let the MWO people know it's done by sending a report on DA Form 2407. The MWO pub has the address.

If support does the MWO, send them a DA Form 2407 work request. Check out DA Pam 738-750 in the Maintenance Management UPDATE for the whole story on this procedure.

MAINTENANCE REQUEST For use of this form, see DA Pam 738-750 and 738-751; the proponent agency is DCSLOG				PAGE NO	NO OF PAGES	REQUIREMENT CONTROL SYMBOL CSGLD-1047(R1)
SECTION I - CUSTOMER DATA				SECTION II - MAINTENANCE ACTIVITY DATA		
1a. LIC CUSTOMER W338FC	1b. CUSTOMER UNIT NAME 42d Main Co	1c. PHONE NO 632-1215	2a. WORK ORDER NUMBER (WON)	2b. SHOP	2c. PHONE NO	
2a. SAMS 2 LIC/SAMS 1/7DA	2b. UTILIZATION CODE	2c. MCSR	4a. LIC SUPPORT UNIT	4b. SUPPORT UNIT NAME		
SECTION III - EQUIPMENT DATA						
5. TYPE MNT REQ CODE 2	6. ID A	7. NSN 2320011077155	15a. FAILURE DETECTED DURING WHEN DISCOVERED CODE (Enter code) See DA Pamphlets 738-750 and 738-751			
8. MODEL M999	9. NOUN TRK UTIL CAP M4T		15b. FIRST INDICATION OF TROUBLE (ROW) RECOGNIZED CODE (Enter code) See DA Pamphlets 738-750 and 738-751		16. MILES/KILOMETERS/HOURS/ROUNDS M 7315 K	
10a. OEG WON/DOC NO W338FC	10b. LIC 330176	10c. QTY 1	10d. PO 113	17. PROJECT CODE		
11. SERIAL NUMBER	12. QTY	13. PO	14. MALFUNCTION DESCRIPTION (for DSU, GSU/AVIM, DEPOT use)	18. ACCOUNT PROCESSING CODE	19. IN WARRANTY? 20. ADMIN NO (Enter Y or N) N B101	
21. REIMBURSABLE CUSTOMER (if intermittent customer enter Y or N)				22. LEVEL OF WORK F		
23. SIGNATURE Matthew Spauld				24. DESCRIBE DEFICIENCIES OR SYMPTOMS ON THE BASIS OF COMPLETE CHECKOUT AND DIAGNOSTIC PROCEDURES IN EQUIPMENT TM (G/N not required)		
25. REMARKS Apply MWO 9-2320-290-20-2						

PREPARATION INSTRUCTIONS FOR THIS PAGE

Block 6. Enter ID associated with block 7. See DA Pamphlets 738-750 and 738-751.
Block 7. Enter the NSN or stock number of the item being submitted.
Block 8. Enter model of item being submitted.
Block 9. Enter noun/nomenclature of item being submitted.
Block 10a. Enter Work Order Number (WON)/DOC NO assigned when item is submitted. Otherwise, leave blank.
Block 10b. Enter End item Code. See AMDF.
Block 11. Enter serial number of item being submitted.

Block 21. For DSU/GSU/AVIM/Depot use.
Block 22. Enter level of work performed "O" for UNIT LEVEL/AVIUM, "F" for DSU/AVIM, "H" for GSU, "D" for DEPOT, "K" for contractor or "L" for Spc Rpt Act.
Block 23. Enter the signature of the CO or the CO's designated representative when the priority designator is 01-10. For priority designators 11-15, leave blank.
Block 24. Enter a brief description of the deficiencies or symptoms that you feel require attention at this level of maint.
Block 25. Self-explanatory.

24a. SUBMITTED BY
C. G. Galt

25a. ACCEPTED BY

25b. DATE

24b. DAY

25b. STATUS

25c. TIME

DA FORM 2407, JUL 84

Block 34a. Enter first initial and last name of submitter.
Block 34b. Enter ordinal date submitted (YYDD).
Block 35a. Enter first initial and last name of person accepting maint. request.
Block 35b. Enter the initial status. See DA Pamphlets 738-750 and 738-751.
Block 35c. Enter ordinal date accepted (YYDD).
Block 35d. Enter military time.

RECEIPT COPY 1

Transferred Equipment

When you get a transferred piece of equipment and find that it needs an MWO, check the DA Form 2408-5. If there's no record that the MWO's been done, look at the equipment to see if it was modified.

If it has been, here's the way you record it on DA Form 2408-5:

- ❑ Enter all MWO identification in columns a, b, c, d and e.
- ❑ In column f put the date you discovered the MWO had been applied.
- ❑ Leave column g blank unless the amount of time required to do the MWO is known.
- ❑ In column h, enter PCW (previously complied with) plus the maintenance organization that checked it out.
- ❑ The person who checks it out signs in column i.

If you find an MWO that was completed but not recorded on DA Form 2408-5, report it on DA Form 2407 to the agency listed on the MWO. Check the MWO box and enter the information called for in DA Pam 738-750. If you don't know the info, write "UNK" in the space.

Special Modifications

Commanders can authorize special modifications on equipment, but there's a catch. You **must** be able to return the equipment to its original state within 24 hours.

You need prior approval from ATCOM to make special modifications to aircraft. COMSEC equipment modifications must be approved by the National Security Agency.

AR 750-1 has the word on special modifications.



Supply . . .

DLA Customer Assistance Reps



GOT A
QUESTION
FOR DLA?

If you have questions about the supply, distribution or transportation of equipment and parts managed by the Defense Logistics Agency (DLA), help is now available.

DLA customer assistance representatives at these locations and phone numbers are there to serve you.

The Source of Supply (SOS) code for all DLA-managed items on the AMDF begin with S9 (S9G, S9T, S9C, etc.).

Location	DSN	Commercial
Ft Bragg, NC	236-9904	(910)396-9904
Ft Campbell, KY	635-2098	(502)798-2098
Ft Carson, CO	691-5483	(719)526-5483
Ft Hood, TX	737-6248	(817)288-5207
Ft Riley, KS	856-4832	(913)239-4832
Ft Stewart, GA	870-2937	(912)767-2937

CARC . . .

Spot Painting Help



HERE
ARE THREE
ITEMS THAT
HELP WITH YOUR
CARC SPOT
PAINTING.

Get the help you need for CARC spot painting with an AR, a VCR and a TB.

🔧 AR 750-1, Army Materiel Maintenance Policies in Maintenance Management Update 14. Para 4-41 gives background info on painting with CARC.

🔧 TVT 3-40, PIN 708415DA shows how to spot paint with CARC. Get the tape from your training and audio visual support center.

🔧 TB 43-0242, CARC Spot Painting, explains why CARC is used, how to apply it, and the safety precautions to follow when spot painting. It also has NSNs for the primers and paints you'll need.

Computers ...

Give'em an Alcohol Rub

When you clean the outside of computer tape drives, CPUs, and printers, use either mild soap and water or isopropyl alcohol, NSN 6505-00-655-8366.

Never use trichlorotrifluoroethane. It's hazardous to you and to the environment.

When you use soap and water, be sure you wring out the cloth real good so you don't get moisture inside your equipment. Moisture will kill your computer.

If you use isopropyl alcohol:

- Keep it away from open flame, heat or sparks. It's flammable.
- Don't breathe the vapors. They could harm you. Use it only in a well-ventilated area.
- Wear gloves for protection. Alcohol is hard on your hands.
- Don't use it on bearings or motors because it will remove any lubricant. That causes bearings to freeze up.
- Hold keyboards upside down when you brush or wipe the keys. That keeps dirt from getting under the keys.





HET Tachometer Drive

NSN 6680-01-114-7653 gets the tachometer drive for the M1070 HET tractor truck. The NSN shown as Item 4 in Fig 92 of TM 9-2320-360-20P is wrong.

HEMTT Warning Set

NSN 9905-00-148-9546 gets the triangular warning device set shown as Item 56 on Page B-19 of TM 9-2320-279-10-1. The number in the TM is wrong.

M809-Series Fender Louver

NSN 5340-01-075-2625 gets the louver (vent plate) for the 5-ton's fender assembly. The NSN shown for Item 6 in Fig 266 of TM 9-2320-260-20P is wrong.

M870 Pipe Adapter

NSN 4730-00-069-1186 gets a straight pipe adapter for the semitrailer's air brake system. Make a note until the NSN for Item 16 in Fig 11 of C1 to TM 5-2330-360-14&P is changed.

Wheel Seal for Deucey

Use NSN 5330-00-891-7826 to get the inner wheel seal for the front hub of 2 1/2-ton trucks. Make a note in Fig 110 of TM 9-2320-361-20P until the seal's added.

M35A2 Side Rack, Troop Seat

Use NSN 2510-00-301-7756 to get the side rack assembly for your 2 1/2-ton cargo truck. It's not listed in Fig 147 of TM 9-2320-361-20P. Use NSN 2540-00-591-1108 to get the troop seat assembly (Item 32). Items 29 and 45 in Fig 147 are for the M342A2 dump truck only, despite what the UOC shows. Make a note until the TM is changed.

M871A2 Resistor Kit

If the 55-watt resistors for your trailer's marker lights (Item 2 in Fig 7 of TM 9-2330-386-14&P) aren't doing the job, replace them with 95-watt resistors, NSN 5905-01-396-7097. TACOM EIR Digest TB 43-0001-39-4 (Mar 95) okays the switch. See Page 3-102.

1 1/2-Ton Trailer Washer

NSN 5310-00-752-1650 gets a key washer for the hub and drum assembly on M103-, M105- and M107-series trailers. The NSN shown as Item 11 in Fig 22 of TM 9-2330-213-14&P is no longer available.



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?

☆ U.S. GOVERNMENT PRINTING OFFICE: 1996 — 750-072/20014

For sale by the Superintendent of Documents, U.S. Government Printing Office Washington, DC

FOOD

SAFETY WIRE

PENNY

ROPE

CLOTHING

NICKEL

SCREW

RAG

NUT

WASHER

DIME

TAPE

CAP

PLIERS

COTTER KEY

SCREWDRIVER

SHEETING

SHOELACE

MALLET

QUARTER

STRAINER

WRENCH

TUBING

REGD. PAT.

MAILBAG

WIRE CUTTERS

PAINT BRUSH

PARACHUTE

BARRETTE

RIVET

PEN

FASTENER

COMB

PENCIL

SOCKET

CLOTH

TOWEL