

Issue 436

PS

March
1989

THE PREVENTIVE MAINTENANCE MONTHLY

AWFUL
QUIET OUT
THERE!

GOOD!
LET'S
CHECK OUT
THAT
PS ARTICLE
ONE MORE
TIME!

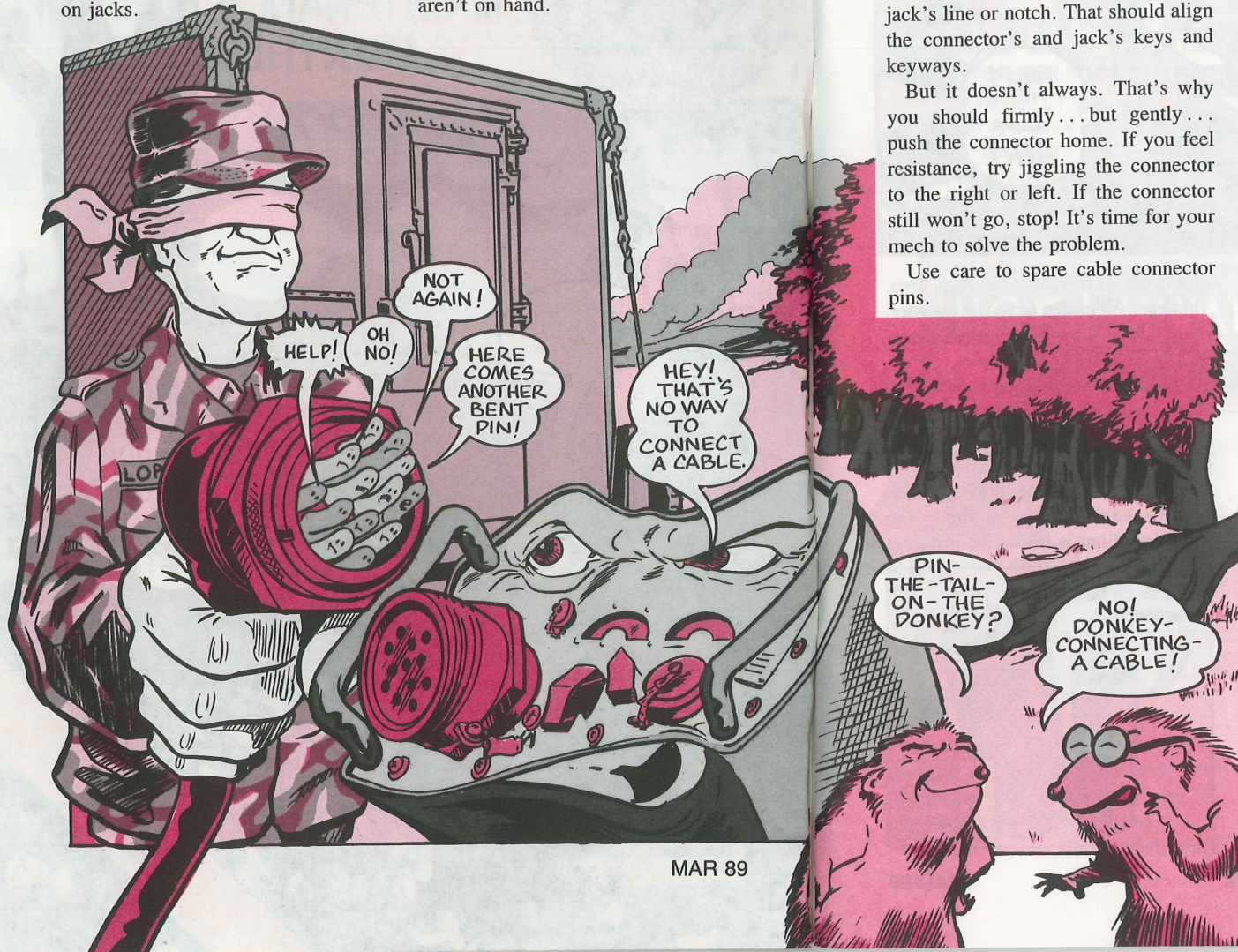
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See M249 SAW
Pages 27-34

HASTE WASTES

Missile systems . . . radios . . . radar . . . tank power supplies . . . test equipment . . . and slave cables are being put out of business again and again by soldiers blindly jamming cable connectors on jacks.

Pushing without looking bends sensitive connector pins. Damaged pins mean the whole cable has to be replaced. And that can add up to a lot of downtime if replacement cables aren't on hand.



MAR 89

CABLES

Does it take much to head off jammed-up cables? No, just a little attention.

Look before you push. Line up the connector's line or notch with the jack's line or notch. That should align the connector's and jack's keys and keyways.

But it doesn't always. That's why you should firmly . . . but gently . . . push the connector home. If you feel resistance, try jiggling the connector to the right or left. If the connector still won't go, stop! It's time for your mech to solve the problem.

Use care to spare cable connector pins.

PS THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-436, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user.

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

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By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

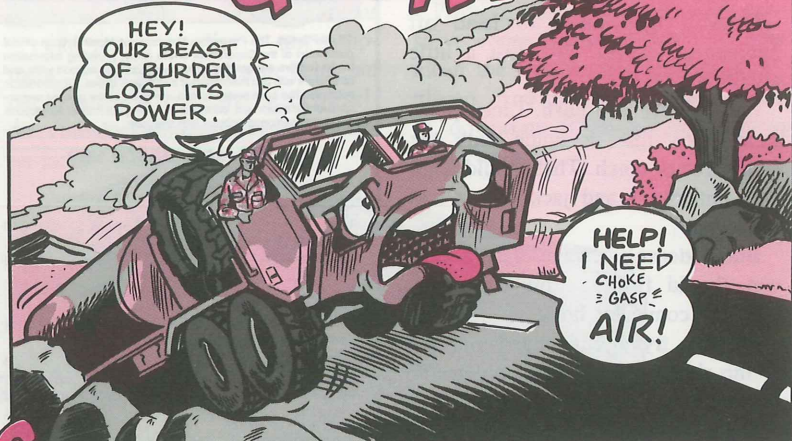
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Give Air Filters

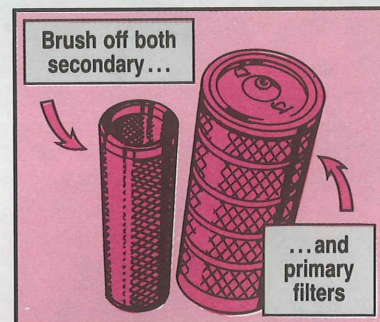


Clean air filters are important for all vehicles, but they're crucial on a HEMTT. The engine will not start if the filter is clogged. A dirty filter steals power and forces the Army's big beast of burden to struggle with any load.

Drivers, it's a good idea to squeeze the dirt out of the dust cup on the bottom of the air canister every day before you leave on a run. This is especially

true if you're in a dusty or sandy area. This gets rid of dirt from the canister, but not from the primary or secondary air filters.

Give the filters a good brush-off if you're on the road and the engine chokes down, or you notice a loss of power and black smoke. Just pull over and shut off the engine. Pop the canister's lid and pull out the air filters. The secondary filter is inside the primary.



the Brush-off

Tap each filter real good with the heel of your hand to loosen the dirt. Then shake it good and tap some more. This will knock enough junk out of the filters to get you home where your mechanic can clean or replace the filters.

Never bang 'em on a rock or hard surface. You might dent them so they won't fit again.

Keep an eye on the air cleaner indicator on the dash. If the indicator moves from green to yellow or red, stop and clean out the filters.

You might want to bone up on how the canister and air filters fit together before you hit the road. Get your favorite mechanic to let you look at his TM 9-2320-279-20-1. All the info you need is on Pages 4-3 thru 4-7.



Hot, humid, tropical areas are murder on a HEMTT's ether start cartridge. Moisture causes it to rust and leak.

Since the cartridge is there to help the truck start in cold temps, it's not needed in places where it's summer all year.

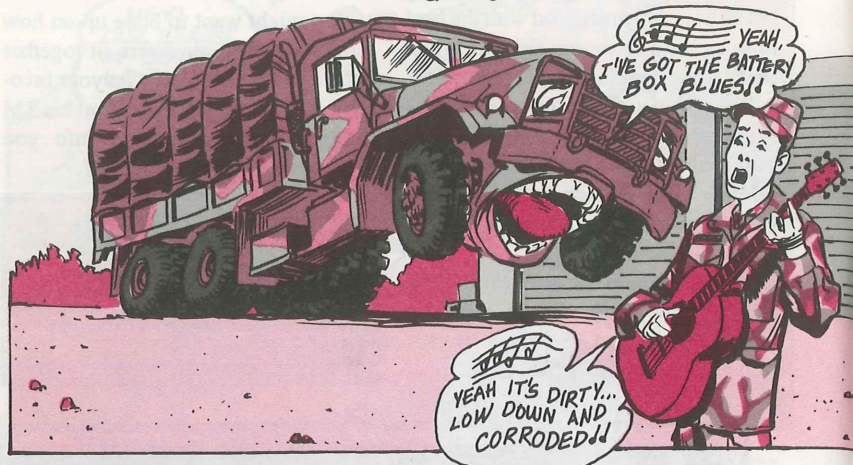
If you're in one of the sunny areas, unscrew the cartridge from the solenoid valve and plug the hole with the cap that is chained to the solenoid.

Be sure to store the ether cartridge

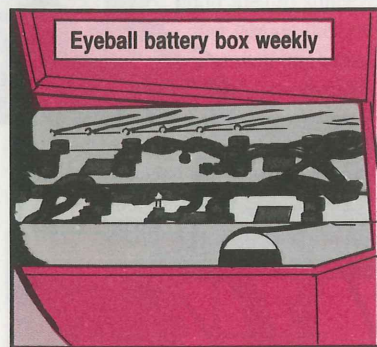
in a cool, dry place so it can be put back on if the truck is sent to a cooler area.



How to Avoid



Drivers, the battery box is one place where a stitch in time will head off major repairs. Eyeball the battery box once a week, like it says in the PMCS in TM 9-2320-272-10.



Look close at the rubber boots, NSN 2530-01-089-4992, on the battery posts. If they're worn, cut or missing, get another set. They keep the metal lid

away from the posts and prevent sparks that can ignite explosive battery fumes.

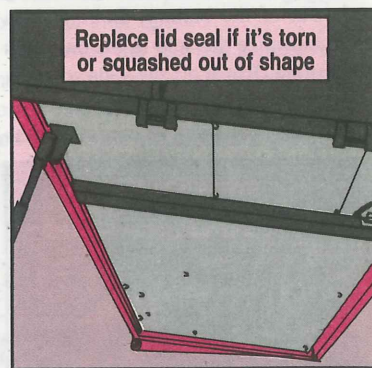


The same battery fumes come up into the cab and attacks the seats if something is wrong. The culprit is usually a clogged vent drain hole or a bad lid seal. Crawl under the truck and look at the vent drain holes. Clean 'em if they're covered with mud, but don't just clean the outside. Get a stick, nail, or welding rod and punch the dirt out of the vent holes.

the Battery Box Blues



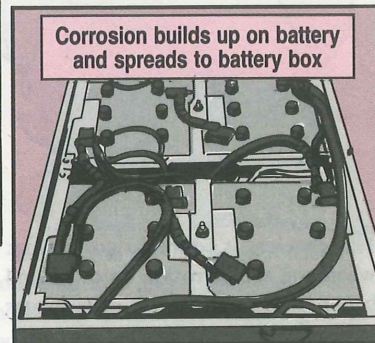
The lid seal needs to be replaced if it's torn or squashed out of shape so that it doesn't form a good, tight fit.



Keep an eye out for corrosion. Corrosion builds up on batteries and spreads to the battery box. Most times it starts when a battery is overfilled or a filler cap is missing. Electrolyte is

flushed or sloshed out and it turns to a gray/white corrosion when it dries.

Electrolyte eats up cables, brackets and gnaws holes in the battery box when it's left alone. The holes let sul-



flushed or sloshed out and it turns to a gray/white powder when it dries.

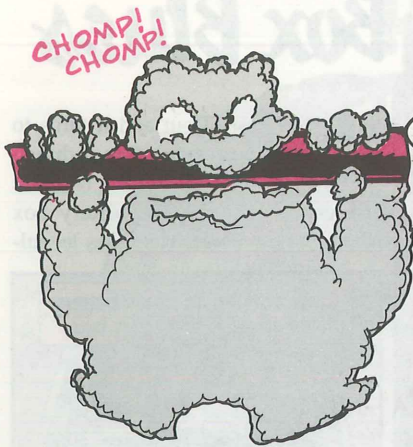
Call your mechanic if you see corrosion. Your mechanic can get rid of it with a solution of baking soda and water. Also, have the mech put felt washers, NSN 5970-01-101-4147, on all battery posts. They cut down on corrosion build up.

It's a good idea for your mechanic to pull the batteries during semiannual service. That's the only way to find some rusty spots and pinholes.

Rusty spots need to be sanded and painted. Holes are to be patched and painted before the batteries are put back in. Check the vent holes after the box has been recoated or painted and make sure they're open.

CLEAN 'EM-

THE SOONER THE BETTER



Mechanics, it's time to go to work when you see corrosion on or around batteries in a battery box. The longer you wait the worse it gets.

Corrosion is that gray-white powder that shows up on battery posts, cables, clamps and anything near the battery. It eats through paint and into metal parts.

At the first sign of corrosion, scrub the battery connections with 1/2 pound

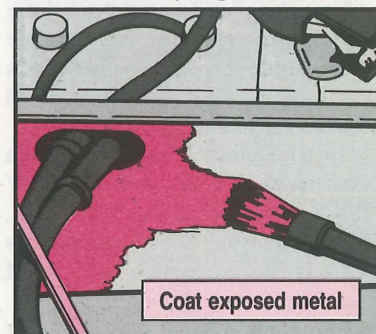
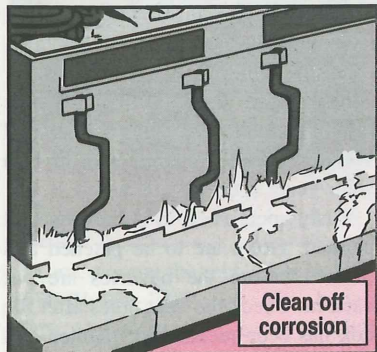
of baking soda, NSN 6810-00-264-6618, mixed in a gallon of water. Use a bristle brush, not a wire one. Keep the battery filler caps screwed in tight while you scrub. This keeps baking soda out of the battery. Baking soda will neutralize the acid in the battery's electrolyte. Rinse off the soda solution with plenty of clean water.

Pull the batteries if corrosion has

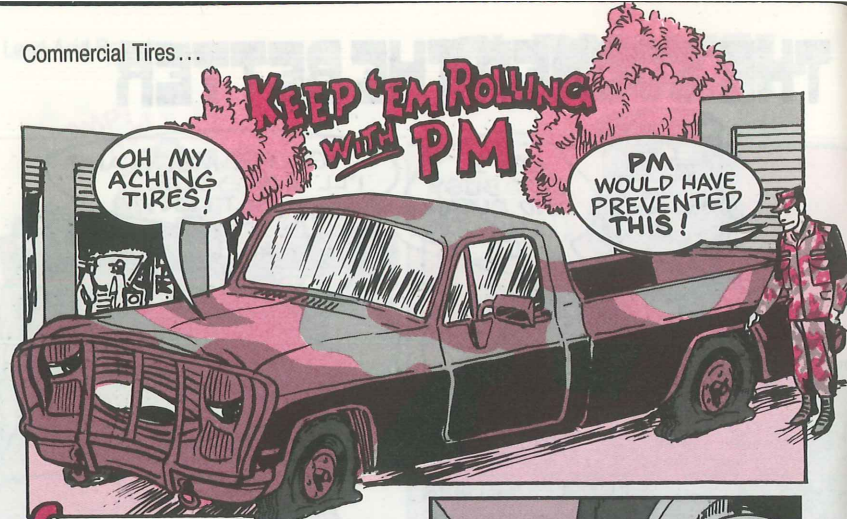
spread to any metal parts, or is on the base of the batteries. Soak metal parts in the baking soda mixture and then scrub them with a wire brush to get off rust and loose paint. Wear goggles to protect your eyes.

Get inside the box and scrub everything, especially the corners where corrosion hides. Rinse with lots of water and then dry everything completely.

Before you put the batteries back in, touch up bare spots. Bare metal parts need to be treated with a coating compound, either epoxy, NSN 8010-00-959-4661, or bituminous, NSN 8030-00-290-5141. Use the same coating that's on the metal. If you switch coatings, you have to sand or burn off the old stuff before you put on the new.



For more on corrosion, read up on battery PM in TM 9-6140-200-14.



Commercial-design tires show up on a number of vehicles, including the CUCV. You have to take care of them to get the most life out of them.

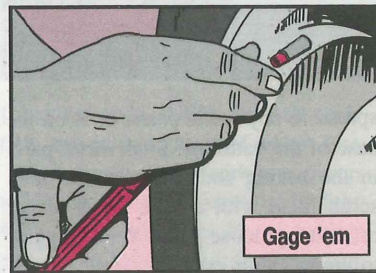
Look at your tires during your daily before-operations PMCS. Check for cuts, cracks or gouges that extend to the cord body. Look for bulges or any damage. Remove any nails or anything else that penetrates the tires.

Tire Pressure

An underinflated or overloaded tire is headed for an early graveyard. Either way, the tire flexes more and makes heat. Heat is a tire's worst enemy, and leads to early failure.

Use a tire pressure gage to check the pressure as part of your WEEKLY PMCS. If you see a tire that looks low, check the pressure. Your mechanic has a gage you can use, and your -10 TM lists the pressure for the tires.

Check tire pressure before you start out, while the tire is still cold. While you drive, the tire heats up, and the



Gage 'em

pressure goes up, so don't check the pressure right after a trip.

Defects to Look For

Bullfrog throat—A single worn spot on the tread. Check it close... it could be a bubble under the tread! Tread separations like this can blow out on the road. Have the tire replaced immediately.



Bulges? Replace the tire!

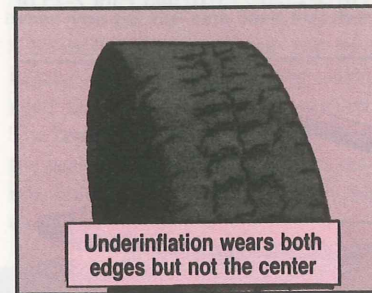
Bubbles—Under the tread or in sidewall. These are a separation or air pocket between layers of the tire. Replace the tire ASAP! The tire could blow at any time. But don't be fooled by ripples in the sidewall of radial tires. These are caused by the way the tire is made.

Uneven tread wear—Tread in the center worn down more than the outside is a sign of running the tire overinflated.



Overinflation causes rapid wear at center tread

—Tread worn down more on both edges more than the center means the tire ran underinflated.



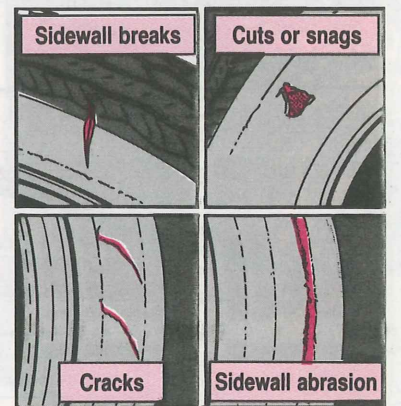
Underinflation wears both edges but not the center

—Tread worn down more on one side or the other is a tip-off that the front end alignment is off.

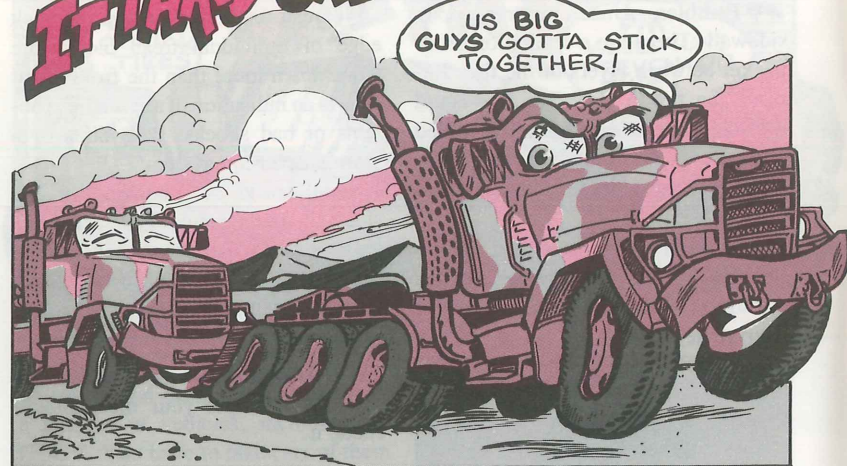
—Tread feathering, where the back edge of individual tread blocks are worn down more than the front edge. This is an indication of alignment problems or bad shocks, ball joints or a worn suspension system.

Small cracks or "checking" in the sidewall are the result of tire aging. As long as the cracks do not penetrate to the cords, you don't need to replace the tire. Keep an eye on the tire to see if the cracks get deeper.

If you have any questions on whether a tire is bad, get your mechanic to check it.



IT TAKES ONE TO TOW ONE

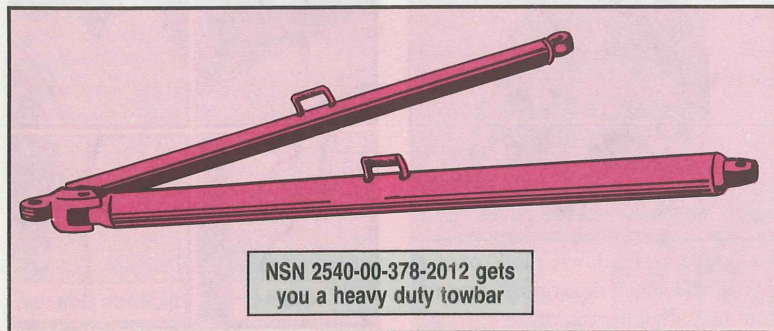


Towing a disabled M915-series truck is tricky because the trucks are so heavy. It takes an M915-series truck of the same model or one that is heavier to do the job safely.

Even a 5-ton wrecker is not big enough to handle an M915. The 5-tonner is too light and its towbar, NSN 4910-00-433-7094, will bend or break under the load.

When you tow an M915-series truck with another M915-series truck, use a towbar with some muscle. It's NSN 2540-00-378-2012 and is listed in the Additional Authorization List (AAL) in TM 9-2320-273-10 and TM 9-2320-283-10.

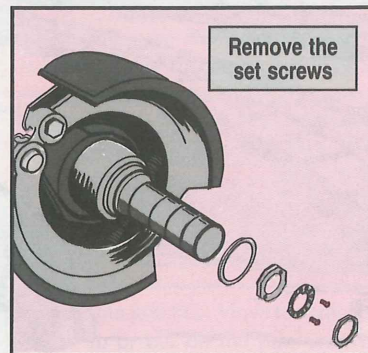
For more towing info, see Para 2-27 of TM 9-2320-273-10 and Para 2-25 of TM 9-2320-283-10.



NSN 2540-00-378-2012 gets you a heavy duty towbar

Axle Set Screw Setbacks

The outer bearing nut is locked in place by two set screws. The screws are easy to overlook because the nut is usually covered with grease. The TM's don't say to remove them, so you might just put a wrench on the nut and turn. It doesn't take much pressure to ruin the nut, lock washer and set screws.



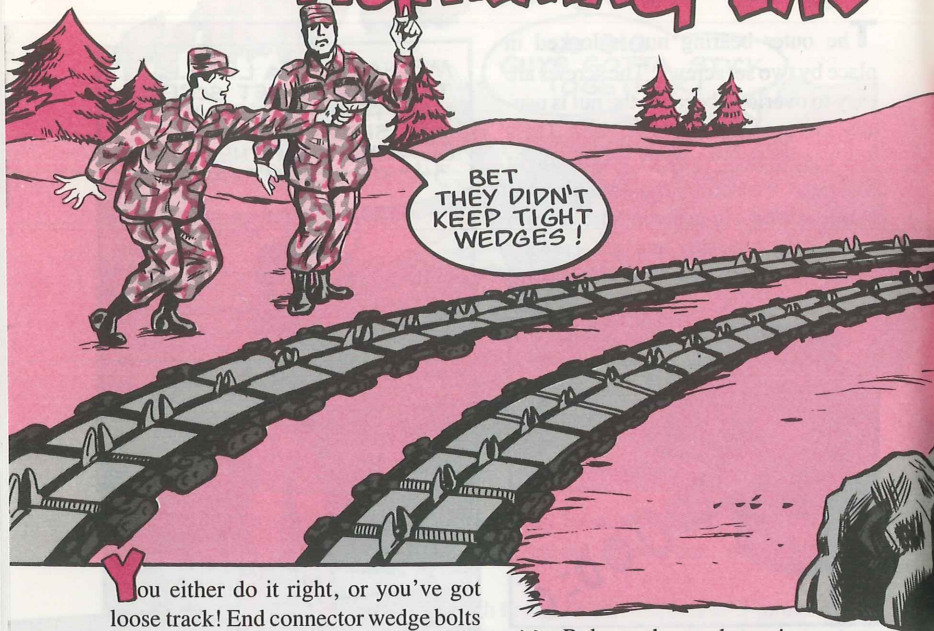
Always start by wiping off the excess grease. Remove all screws from the washer and then take off the outer nut. Make sure the screws are back in place when you put the axle back together.

Eyeball the parts anytime you have to take 'em off. Forget reusing a damaged set screw, nut or lock washer. The bearing nut has to be snug to keep the bearings tight. Damaged parts may not hold. Loose bearings mean big damage.

MECHANICS, A LITTLE THING LIKE A SET SCREW CAN TRIP YOU UP WHEN YOU SERVICE THE WHEEL BEARINGS ON THE 34-TON SEMITRAILERS.



TIGHTENING END



You either do it right, or you've got loose track! End connector wedge bolts must be tightened by the book or you've set up your track to fail.

The track shoe must be in the right place at the right time when you tighten the bolt or the wedge won't fit into the notch cut in the pin.

Plus, on M60-series tanks you've got to loosen the center guide nut before tightening the end connector. Otherwise, the track pin notch won't line up with the wedge. The wedge won't seat, the bolt will loosen and sooner or later the track will fail.

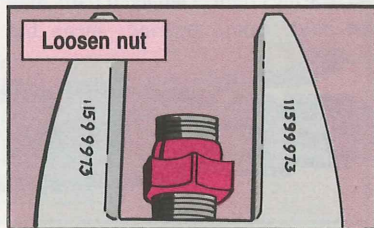
Here's how it goes for M60-series tanks:

➤ Move the tank so the end connector to be tightened is between the No. 1 roadwheel and the compensating idler.

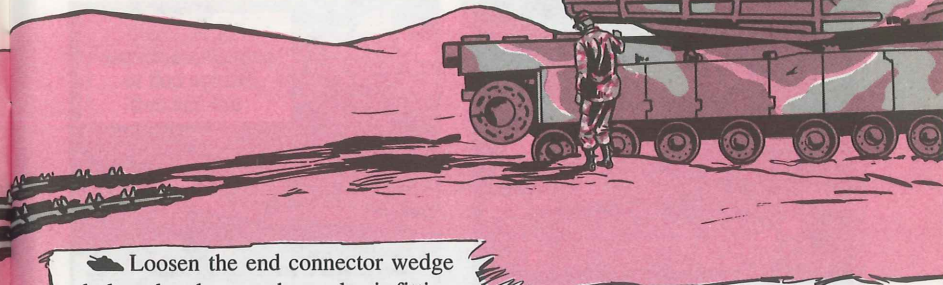
➤ Release the track tension.



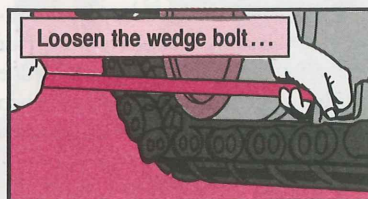
➤ Loosen the center guide nut.



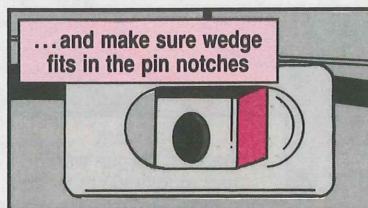
CONNECTOR WEDGES



➤ Loosen the end connector wedge bolt and make sure the wedge is fitting



into the pin notches. Move the end connector in or out on the pins until the wedge fits.

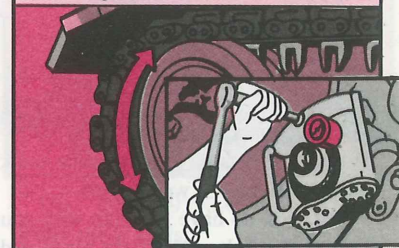


➤ Snug up the wedge bolt and mark the end connector.



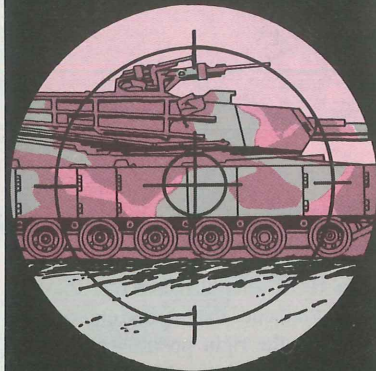
➤ Have your driver move the tank backward until the marked end connector is in the right position around the compensating idler. This is where the shoes are at 16-degree angles (between 8 and 11 o'clock positions). The wedge will seat right only at this place. Torque the bolts to 180–200 lb-ft.

...and tighten in this area on the idler



➤ Move the tank forward until the loosened center guide is between the No. 1 roadwheel and the idler. Remove the guide nut and install a new one. Torque the new nut to 350–380 lb-ft.

➤ When all track faults have been corrected, readjust the track tension to TM standards ($\frac{3}{8}$ - to $\frac{1}{16}$ -inch).



Broken track leaves you a sitting duck

M1 Differences

For M1 tanks, things are a bit different.

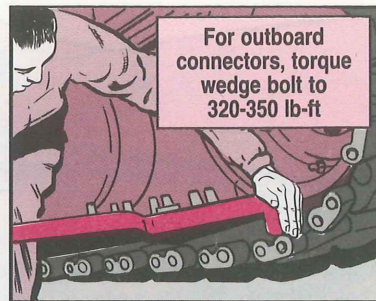
For openers, you don't have to release track tension or loosen the track guide to tighten a wedge bolt.

But, you do have to make sure you tighten the bolt at the right place and time.

◆ Once the wedge is in place and snugged down, mark the end connector.

◆ For outside connectors, have the driver move the tank backward until the forward edge of the shoe behind the marked connector just touches the idler wheel.

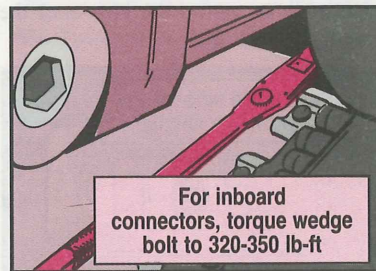
◆ Torque the wedge bolt to 320–350 lb-ft.



For outboard connectors, torque wedge bolt to 320-350 lb-ft

◆ For inside connectors to be tightened at the same time, have the driver move forward after the outside wedge has been tightened. Stop the tank when the inside wedge is midway between the idler and the No. 1 roadwheel.

◆ Torque the wedge to 320–350 lb-ft.



For inboard connectors, torque wedge bolt to 320-350 lb-ft

◆ After the bolts are tightened, have the driver move the tank forward 6 feet and backward 6 feet. Stop the tank at the right point to torque the outside connectors again to 320–350 lb-ft. Do the same with all inside connectors to be tightened at their right location.

◆ After 20 miles, torque the bolt again to 320–350 lb-ft.



Here are the new NSN's you'll need to make engine deck seals for your M88's. This info's not in your TM 9-2350-256-20P yet, so make a note.

In Figs 171 and 171.1 of the -20P, use NSN 9390-00-893-1908 to make these seals:

10862511	10862531	10862462
10862512	10862452	10862463
10862515	10862453	10862464
10862515-1	10862454	10862465
10862515-2	10862455	10862466
10862516	10862456	10862466-1
10862517	10862459	10894433
10862530	10862460	

Use NSN 9390-00-893-1907 to make these seals:

10862518	10862525	10862527
10862519	10862526	

Use NSN 9390-00-893-1906 to make these seals:

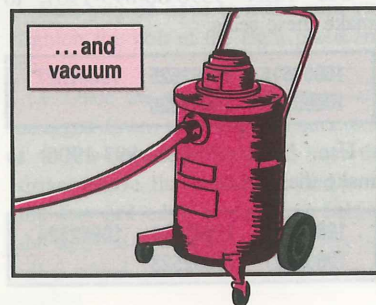
10862520	10862522	10862524
10862521	10862523	

TURRET CLEANING



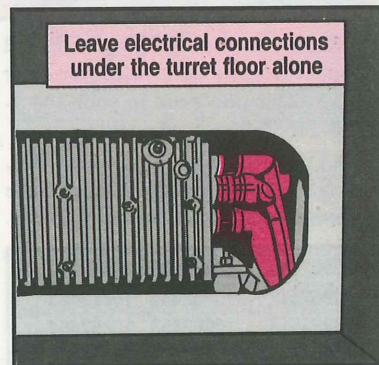
Some cleaning methods work, and some don't. Here are the right ways to keep turrets clean and dry.

Because you cannot use water, steam or compressed air in the turret, you remove dirt by loosening it with a brush and vacuuming with industrial-type vacuum, NSN 7910-01-068-5662.



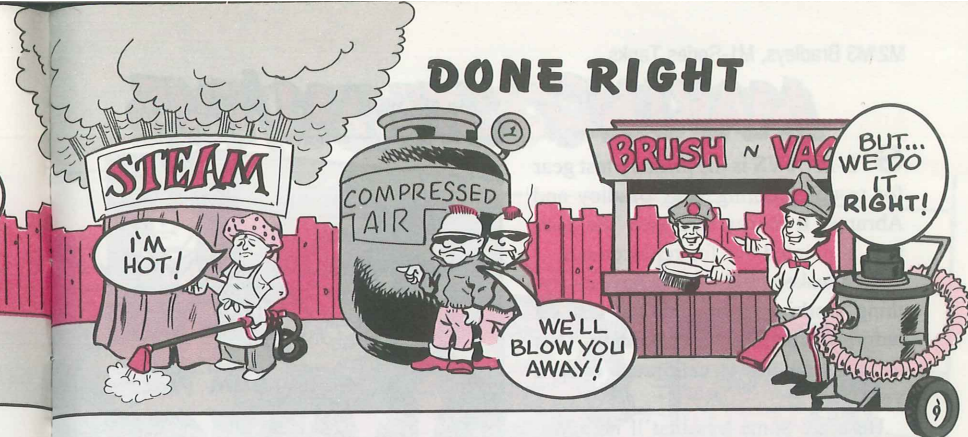
If you know there is water and more dirt under the turret floor plates, leave it there and notify your unit mechanics. They will remove turret floor plates to get at the mess.

There's a good reason your mechanic does this. There are lots of electrical cables and connections in the turret floor. If you are not careful or are not familiar with these connections, you can fry yourself or damage equipment.



Use dry cleaning solvent on metal surfaces that are above floor level. Make sure you have plenty of ventilation and keep a fire extinguisher nearby.

DONE RIGHT



Use scrubbing soap and warm water to remove oil and grease from canvas, rubber or plastic equipment. Rinse with clean rags dipped in water and dry.

Use isopropyl alcohol or lens cleaning solution and lens paper to clean optical lenses.



Whatever you do, stay away from these unsafe cleaning actions:

Never remove the floor plates and try to remove dirt and water from the turret bottom with metal cans.

These cleaning materials are out —WD-40, all-purpose cleaner like is used in your home or dayroom, window cleaner, degreasers, scouring pads, sponges, cups, metal cans, pipe cleaners, and so forth.

Just do what you're supposed to do, the way you're supposed to do it. Your turret will thank you for it.

MAKING STE-M1/FVS

STE-M1/FVS is the primary test gear for troubleshooting your Bradley and Abrams. It makes sure only the bum part is pointed out for replacement.

So it makes good sense to have everything working right with the test set before you begin troubleshooting. That includes having it calibrated once a year, too.

Here are some tips that'll help you and the STE-M1/FVS troubleshoot your vehicles:

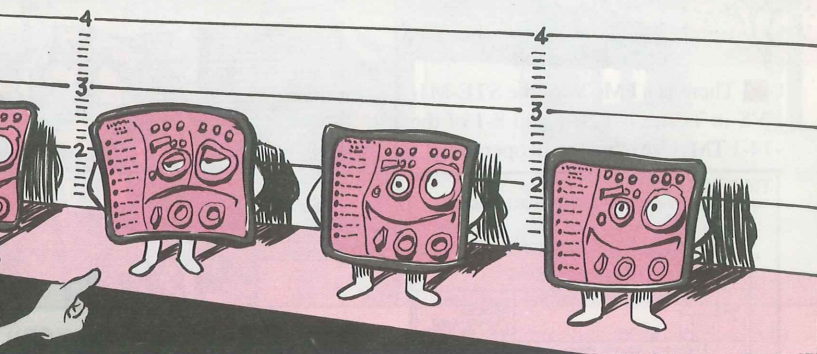
❑ Never assume that the STE-M1/FVS test set is in good working order. Always—every time—do the self-test



on Pages 4-14 through 4-50 in TM 9-4910-751-14-1 before you use it. Follow the instructions to the letter from beginning to end. That's the only way you can be sure your test set is working right.



PAY FOR YOU



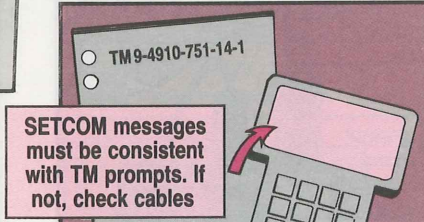
❑ Check all adapters and cables for bent, broken or missing pins and bad connectors before you use them. Make sure the cables are connected right and tight. Never bend or kink cables trying to make them fit into the carrying cases or other tight spaces. You'll break the wires inside.

❑ Test all cables at least once a year or whenever you think you may have a cable problem.

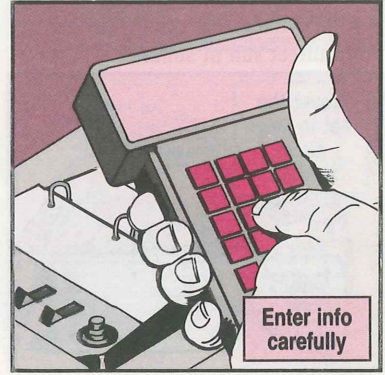
❑ Run STE-M1/FVS tests twice before you replace a component. Follow the test program in the vehicle -20 TM's to the letter. No shortcuts, no "doing it from memory."

If you get SETCOM messages that are not consistent, double-check the cables for problems by running the checks found in TM 9-4910-751-14-1.

❑ Enter all information into the SETCOM very carefully. Any errors you build in will show up as wrong diagnostic answers in the end.



Even though the vehicle TM's don't mention the -14-1, -14-2 and -14P, you must use them, too. Tests found in the test set TM's verify the test set and its components.



There is a PMCS for the STE-M1/FVS in Tables 4-1, 6-1 and 8-1 of the -14-1 TM. Use it before all operations.

TM 9-4910-751-14-1
Table 4-1. Operator Preventive Maintenance Checks and Services

B - Before D - During A - After

Item No.	Interval			ITEM TO BE CHECKED	FOR READINESS REPORTING EQUIPMENT IS NOT READY, AVAILABLE IF:
	B	D	A		
1				PROCEDURE	

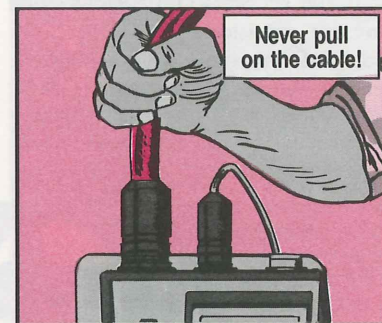
Table 6-1. Operator Preventive Maintenance Checks and Services

B - Before D - During A - After

Item No.	Interval			ITEM TO BE CHECKED	FOR READINESS REPORTING EQUIPMENT READY, AVA
	B	D	A		
1				PROCEDURE	
2				STABILIZATION/TURRET ACCESSORIES Transit Case (1). Check for major damage to case, cover, handles, latches, relief valve. Identification plate (2). Controls	

Once you've made a repair or replaced a component because of information from the test set, run the test again to verify that you've solved the problem.

Try to avoid extreme temperature swings with the test set and its cables. Let them "warm up" during the self-test in winter and shield the test set from direct sun in summer.



CIB, is sturdy, but the J1 connector on the VTM is not. Break the solder in the electrical connection of the J1 and you increase the chances of poor or no signal transmission.



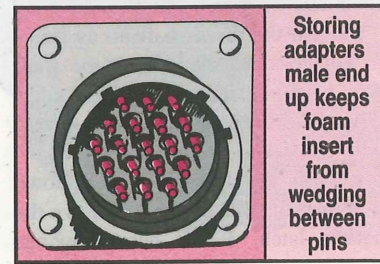
The controllable interface box (CIB) determines when it's too hot or too cold for the test set to work right. You'll get a message on the SETCOM: "WARNING—Too hot/too cold." If you don't get the message, heat or the lack of it is not a problem.

Never pull the vehicle test meter (VTM) around with the W1 cable. The cable, which connects the VTM to the

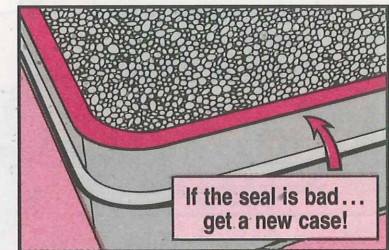
Store cable assembly adapters female end down. Otherwise, dust and moisture can get into the female end.



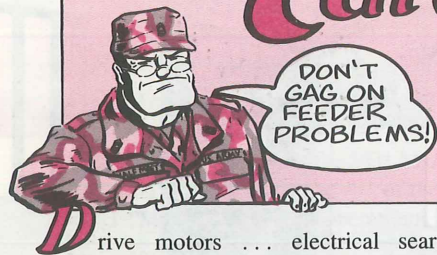
This also prevents small pieces of the foam insert from wedging between the male end pins. Next time you connect the adapter, you could get bent or broken pins or a poor connection if the adapters aren't stored right.



Take care that no moisture gets to the VTM and CIB whether they're in storage or in use. If the seals on your transit cases are bad, replace the cases. Remember, too, that the SETCOM is not waterproof. Don't set it down where it'll get soaked.

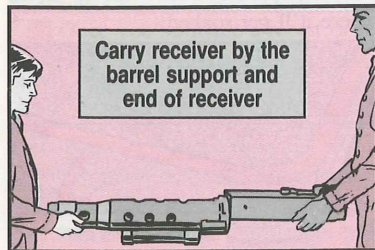


Care Cures



rive motors ... electrical sear solenoids ... drive shafts are being knocked off and out when Bradley crews put in and take out the M242. But you can save your M242 a trip to the shop by paying attention to just a few points.

Carrying the M242's 95-pound receiver is always a two-man job. If you try to carry it by yourself and drop it, you'll shear off the drive motor.

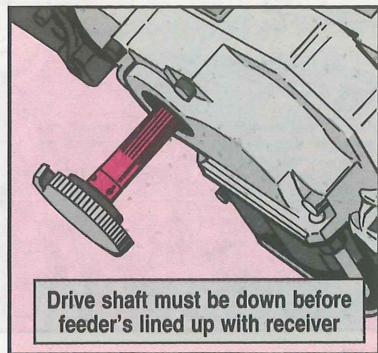


To carry the receiver, have a buddy lock his hands under the barrel support while you lock yours under the receiver five inches from the end.

Lining it Up

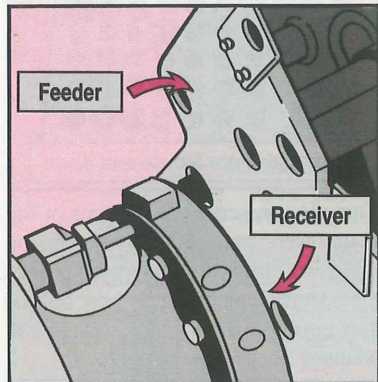
Carefully line up the feeder to the receiver. Otherwise, you'll mash the drive shaft or the sear's solenoid. Do it like this:

- Make sure the receiver's drive shaft is all the way down.



- Lift the feeder locking handle out of the way.

- Put the feeder fully forward on the receiver.



- Push the drive shaft up as far as it will go and lock it in. If the shaft won't move, reposition the feeder. Give the drive shaft a firm tap upward with the palm of your hand.

- Push the locking handle down with two fingers as you hold down the handle latch. If the handle swings

Problems

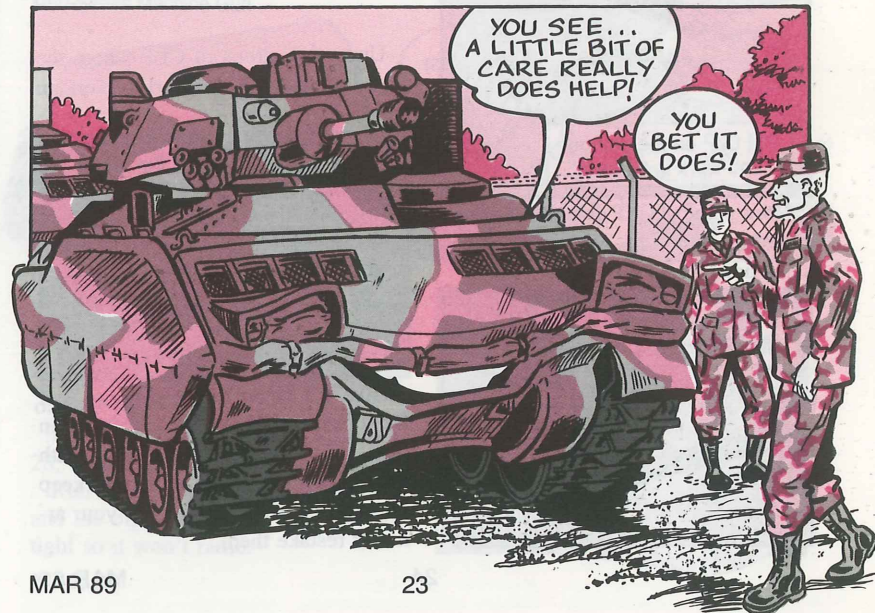
down all the way, lock it in. You're in business.



If the handle won't go, don't force it. Reposition the feeder against the receiver and try again. When the feeder's on right, the handle swings in place easily. Tell your armorer if the handle won't go after 3 tries.

Storing It

Lock the drive shaft up in the receiver for storage. That keeps it from being bent when the receiver's slid along a workbench or shelf.



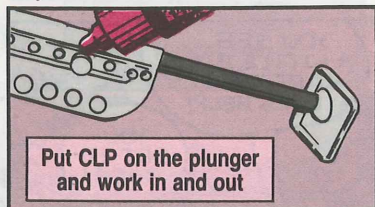
A STEP AHEAD



Without a little leg PM, your M60 won't have a good leg to stand on.

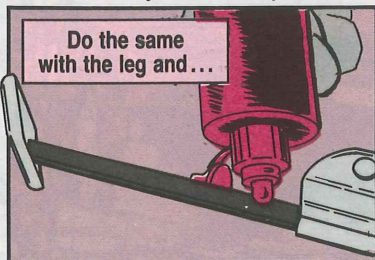
Give the bipod and legs a good workout during cleaning. Move the leg locks in and out... the leg extensions up and down... the bipod back and forth. If all parts of the bipod don't move smoothly, do this:

Put a few drops of CLP on the leg locks and work them in and out until they move smooth.



Put CLP on the plunger and work in and out

Draw a line of CLP down the seam in each leg extension. Work the extensions until they move easily.

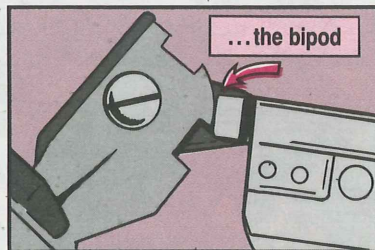


Do the same with the leg and...

I'VE LOST THE LEGS FOR THE LONG HAUL!



Use a few drops of CLP where the bipod slides back and forth. Work in the CLP.



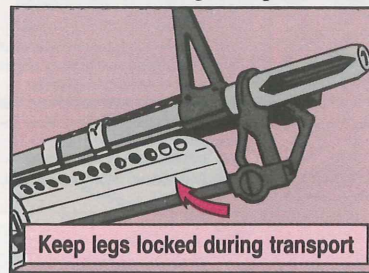
...the bipod

Give the bipod legs a shake to feel for looseness. If you feel any play in the legs, tighten the bipod screws with your combination tool. If screws keep loosening during firing, have your armorer restake them.

OF LEG PROBLEMS

Test the leg extensions in each latch position. If a latch won't hold, don't try to keep it in place by bending the latch. You'll only weaken the latch. Your armorer needs to send your M60 to DS for a latch fix.

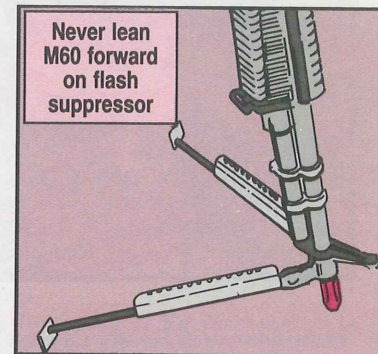
Protect the bipod by keeping the legs locked back during transport. Other-



Keep legs locked during transport

wise, bumping bends the legs. Lay your M60 on its side for travel.

Never lean the gun forward on its flash suppressor, either. One good jolt ruins the flash suppressor and bipod.



Never lean M60 forward on flash suppressor

M60-Series Machine Gun...



THE RIGHT TAG WILL PREVENT PROBLEMS LATER.



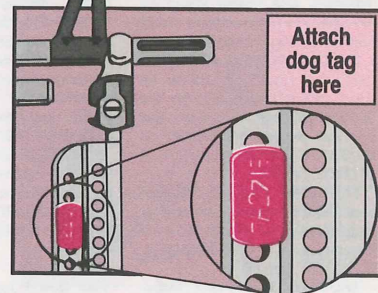
Use metal tags, NSN 8465-00-242-4804, to ID M60's.

Punch a hole in each end of the tag.

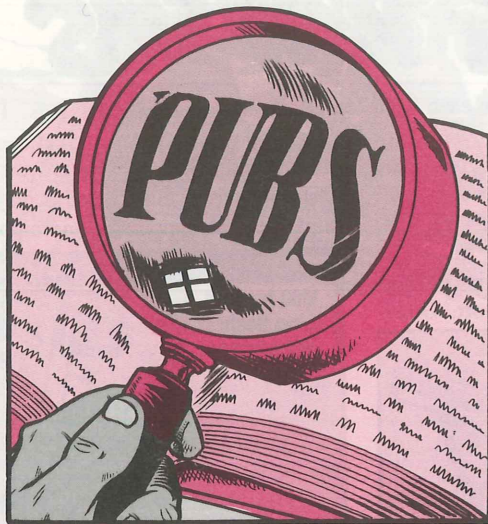
Stamp the receiver's serial number on the tag.

Paint the tags black. NSN 8010-00-285-4916 brings a pint of black paint.

Run lacing wire through the tag holes and the bipod leg holes. Lace the tag tight so it won't rattle.



Attach dog tag here



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

- TM 9-4935-396-24P Nov 88 Pershing missile
- TM 11-5855-262-10-2 Aug 88 AN/PVS-7B night vision goggles
- TM 11-5985-372-10-HR Oct 88 OE-361 (V)1/G antenna group
- TB 55-1520-214-20-58 Nov 88 Inspection of P/N AN 320-5 nuts (NSN 5210-00-176-8109) for H-6 series aircraft
- TB 55-1520-237-20-101 Nov 88 Inspection of troop/gunner seat and 3-man medevac seat upper support installation assemblies, UH-60
- TB 55-1520-238-20-40 Nov 88 Tail rotor swashplate bearing/slider inspection, AH-64A
- TB 55-1520-238-20-41 Nov 88 Inspection of main rotor housing nuts, AH-64A

Maintenance & Safety-Of-Use Messages

CECOM SOU-MSG-88-10-04—Advisory, Operational, Deadlines lithium-sulfur dioxide (LI-SO2) BA-5590/U and BA-5598/U batteries made by PCI, contract numbers DAAB07-84-C-H330 and DAAB07-85-C-H330, AMSEL-SF-REE 281800Z Oct 88.

CECOM SOU-MSG—Advisory, Operational, Adds Sincgars man-pack radio to list of equipment on SOU-MSG-88-10-04, AMSEL-SF-REE 161300Z Nov 88.

CECOM SOU-MSG-88-11-03—Advisory, Reduces previous maximum safe towing speed for AB-1309(V)4/TRC antenna mast, AMSEL-SF-SEP 232200Z Nov 88.

TACOM SOU-MSG-88-54—Advisory, Technical/Maintenance, Inspect cables routed through the opening between the battery box and the engine compartment on M1/IPM1/M1A1 tanks, AMSTA-M 141400Z Dec 88.

TACOM SOU-MSG-88-55—Operational, Changes fire emergency procedures in TM 9-2350-255-10-2 (Nov 81) with C7 (Mar 88), AMSTA-M 230900Z Dec 88.

TROSCOM Maintenance Advisory MSG-88-47—Installation procedures for low fuel level sender

switch, NSN 2910-01-125-0788, on bridge erection boat, NSN 1940-01-218-9165, LIN B25476, AMSTR-MES 072100Z Dec 88.

TROSCOM Maintenance Advisory MSG-88-46—Failure of filter head, NSN 2940-01-216-3452, on M812 ribbon bridge transporter, NSN 5420-00-071-5321, LIN X23277, AMSTR-MES 121230Z Dec 88.

TROSCOM Maintenance Advisory MSG-88-49—Gage failure on the 600 GPH reverse osmosis water purification unit (ROWPU), NSN's 4610-01-234-2196 and 4610-01-093-2380, AMSTR-MES 201600Z Dec 88.

TROSCOM SOU-MSG-24-88—Advisory, Air purity testing for diving breathable air compressors, air banks and related equipment, AMSTR-MES 021600Z Dec 88.

TROSCOM SOU-MSG-25-88—One-time inspection of all Army procured interim ram air parachute systems (IRAPS), MT1-XX, NSN 1670-01-212-3335 and MT1-S, No NSN.

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

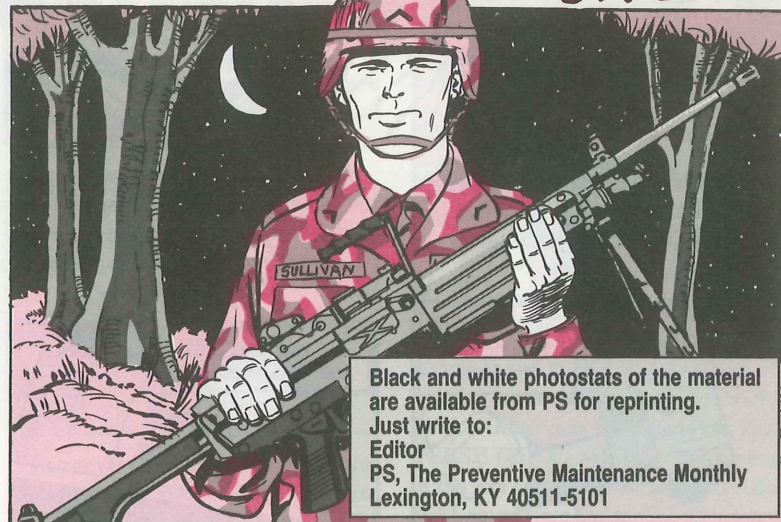
AUDIO-VISUAL STUFF
Available at battalion or Post Learning Center

Films, TV Tapes

- TVT 3-30 M-40 protective mask: components and use
- TVT 3-31 M-40 protective mask: preventive maintenance checks and service (PMCS)
- TVT 3-32 M-40 special purpose mask
- TVT 3-33 M-42 protective mask: components and use
- TVT 3-34 M-42 protective mask: preventive maintenance checks and services
- TVT 3-35 M81 simulator
- TVT 6-129 Operation of the AN/TPQ-36 radar in the hostile mode
- TVT 6-130 Operation of the AN/TPQ-36 in friendly fire mode
- TVT 6-133 Emplacement on the AN/TPS-25 radar
- TVT 6-134 AN/TPS-25 march order
- TVT 6-138 Introduction to the battery computer system
- TVT 6-139 BCS initialization and data base construction (Pt 1)
- TVT 9-79 M901 ITV chain maintenance and deceleration linkage adjustment
- TVT 9-137 M1A1 hydraulic system
- TVT 9-152 Battle damage assessment and repair
- TVT 20-825 Different bolts for different jobs

M249 Squad Automatic Weapon...

A LITTLE HELP FROM A FRIEND



Black and white photostats of the material are available from PS for reprinting. Just write to:
Editor
PS, The Preventive Maintenance Monthly
Lexington, KY 40511-5101

The M249 is a light machine gun that's expected to do a heavy-duty job. To be all it can be, the gun's going to need your help to meet those heavy-duty demands. Read and heed these tips, plus the info in TM 9-1005-201-10 to keep your M249 burping.

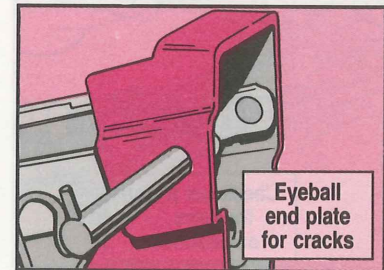
Extra PMCS

Add these checks for extra firing insurance:

★ Make sure the cover, feed pawl, and safety springs are all in place and in

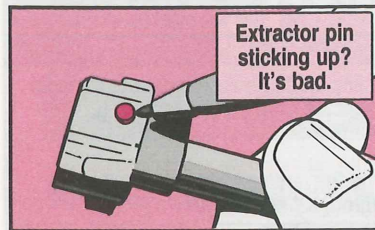
good condition. If springs are missing or broken, you'll have problems ranging from a cover that won't stay up to a jammed gun to a safety that won't catch.

★ Eyeball the plate at the end of the receiver for cracks. The plate takes a beating when you hit the dirt carrying your M249. Cracks in this area dead-line the receiver.





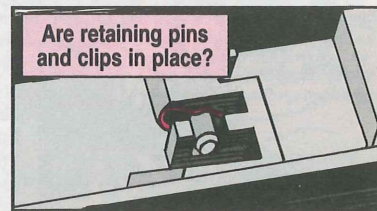
★ Eyeball the bolt's extractor pin. If it's sticking up at all, it's bad and will cause the bolt to lock up in the locking lugs.



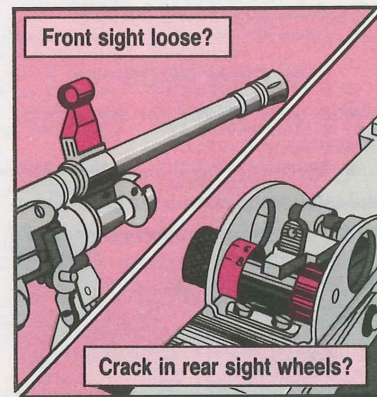
★ Feel the piston for burrs. If the piston's burred, it's hard to charge. Also, pull back and forth on the piston assembly's housing. It shouldn't move. It's OK if the piston rotates slightly side to side.



★ Make sure the retaining clips on the takedown, pivot, handguard and feedtray cover pins are all in place. If a clip's missing, its pin comes out during firing.

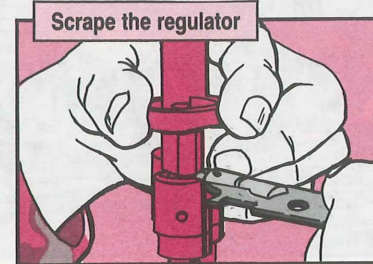


★ Feel the front sight for looseness. Look at the rear sight for hairline cracks in the sight's two wheels. If the front sight moves or the rear sight can't be adjusted, you have no accuracy. Report any problems to your armorer.



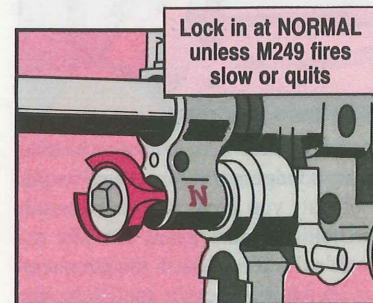
Keeping Regulator Regular

Scrape out the regulator after every firing. If the regulator gets clogged, your gun can't fire. The longer you put off the cleaning, the harder it is to clean. If all the carbon won't come out, tell your armorer. He can use cleaning solvent on stubborn carbon.



But never use CLP on the regulator. CLP coats the inside of the regulator and makes it impossible to clean. The regulator must always be completely dry for firing.

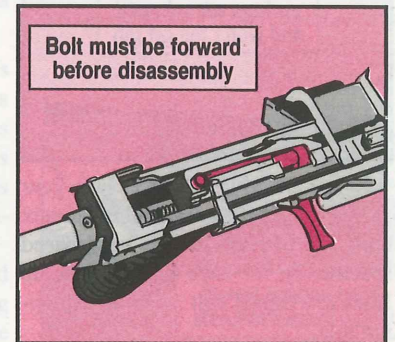
Remember, unless the regulator is set exactly on NORMAL, it's set on ADVERSE (MAX) . . . even if it's barely off the NORMAL mark. Make sure the regulator's locked in at NORMAL before you fire. Firing on ADVERSE (MAX) wears out the M249 fast.



If your M249 fires slow, switch the regulator to ADVERSE (MAX) for 50 rounds, then switch back to NORMAL. Often just 50 rounds on ADVERSE (MAX) will blow out carbon in the gas system. Returning to NORMAL saves wear and tear on your gun.

Disassembly and Cleaning

Always make sure the bolt is forward before you disassemble your M249. If you forget, the operating rod will explode out of the receiver when you take off the buttstock. That can cost you teeth or an eye.





If you have the old firing pin springs that are not crimped, remember they can fall off the firing pin when you take apart the bolt. Take off the spring and put it in your pants pocket so it won't get lost.

Your armorer can solve that problem by ordering crimped springs, NSN 5360-01-128-5634.



If you and your buddies clean your M249's together, be careful not to mix bolts and barrels. They're headspaced specifically for each gun. A mix up leads to a ruined bolt... or an exploding gun.

Put a few drops of CLP on the cocking handle lock pin during cleaning. That keeps the cocking handle from hanging up.



Easy does it when you put on or take off the handguard. If you pound its pin in or out, you break the receiver tab that holds the handguard on. The receiver's deadline. Push the pin out or in with the spring guide rod. If the pin

won't go in, check the alignment of the holes. Clean and lube the pin to help it slide better.



In the Field

CLP's fine for your barrel when it's going back to the arms room. But it's terrible for firing. As the barrel heats up, the lube smokes. CLP also takes the finish off a hot barrel, which leads to corrosion. The barrel should be completely dry for firing.

Even if you've thoroughly cleaned your M249, it may need more cleaning in the field. Carbon builds up in the

chamber and causes double feeding and cookoffs. When you change magazines after 200 rounds, eyeball the chamber for carbon. If you spot any, remove the barrel and run the chamber brush through it.



Before you put on a new magazine, feel in the magazine well for links or brass. Pull out any you find. They will cause jamming.



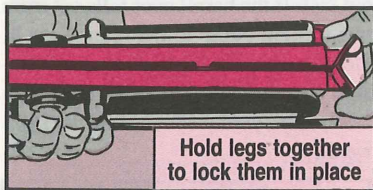
The barrel release latch spring wears out fast. If the barrel ever falls off from just a slight bump to the release latch, the spring's shot. Test release latch tension during PMCS. It shouldn't move easily. Tell your armorer if the spring's weak.





The bipod leg latches wear out, too. If a leg ever slides out while you're carrying your M249, the leg or latch needs to be replaced.

To lock the legs on the receiver, you must hold the legs together as you push them into the locking position on the receiver. If the legs are not held together, they won't fully lock in place. The first time your gun's bumped the legs spring open.



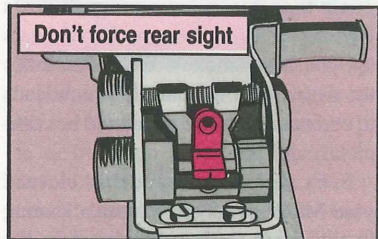
Sight on Sights

Before you zero your rear sight, first eyeball the front sight post. The post often works loose and you can't zero the sight. No more than two threads on the post should show. If the post

sticks up higher, you can't zero the sight. Your armorer can screw the post back in the receiver.



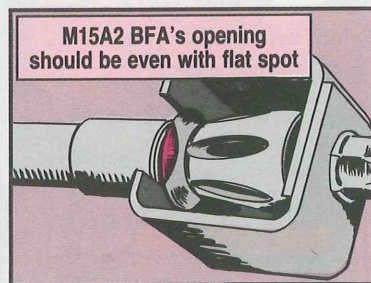
Never force the rear sight. You'll break the rear drum. Once the elevation knob starts binding, stop. Something's out of alignment. Your armorer needs to check it out.



Adapting to Blanks

Always use the M15A2 blank firing adapter (BFA), NSN 1005-00-118-6192, instead of the M15. The M15A2, which has a ring handle, stays on much better.

Put the M15A2 on so its sides are on the rounded part of the flash suppressor.



The BFA's opening should be even with the suppressor's flat spot.

Screw the BFA on hand-tight only. If you force it tighter, it spreads the M15A2. Then it won't stay tight.

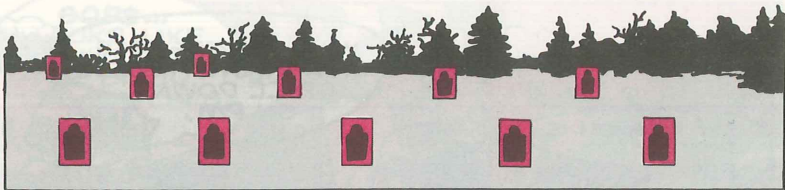
Fire 50 rounds to warm up the barrel. The barrel changes shape as it heats up. Retighten the BFA. During every break, reach up and feel if the BFA's tight. Retighten if necessary.

Armorer's Only

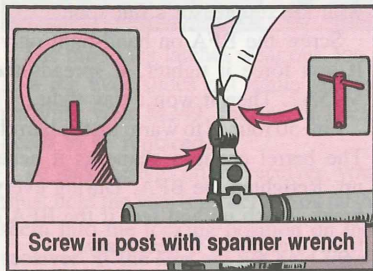
Armorer's, if your unit has 30-round magazines, give them a good eyeballing. The magazines cause feeding problems. Look for weak springs, bent lips, and burring. Turn in bad magazines.

There are 200-round magazines in the field with bad locking levers. You can ID them by their lever ramps. Instead of being flat, the ramps slope up and down. To fix the magazines, just shave the slopes flat with a knife. If that doesn't work, turn 'em in.





You can now tighten loose front sight posts. Use spanner wrench, NSN 5120-01-141-3839, to screw the post down until its top thread is even with the bottom of the sight. One-half turn of the sight post will move the shot group 1 mil on the target, about 12 inches at 300 meters or 20 inches at 500 meters.

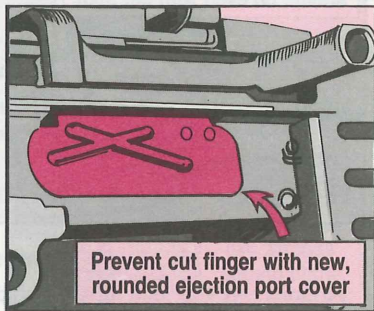


Screw in post with spanner wrench

All front sights should have keys that are either blank or marked A. If any sights are marked B or C, they're bad. Have DS replace them.

If rear sights don't click as you turn the knobs, they've lost the tension needed to keep them set. Send 'em to DS to replace the pin and spring with a ball bearing and spring that lasts longer.

Some ejection port covers have sharp edges that will cut hands. Order the new cover, NSN 1005-01-236-0238, which has rounded corners.

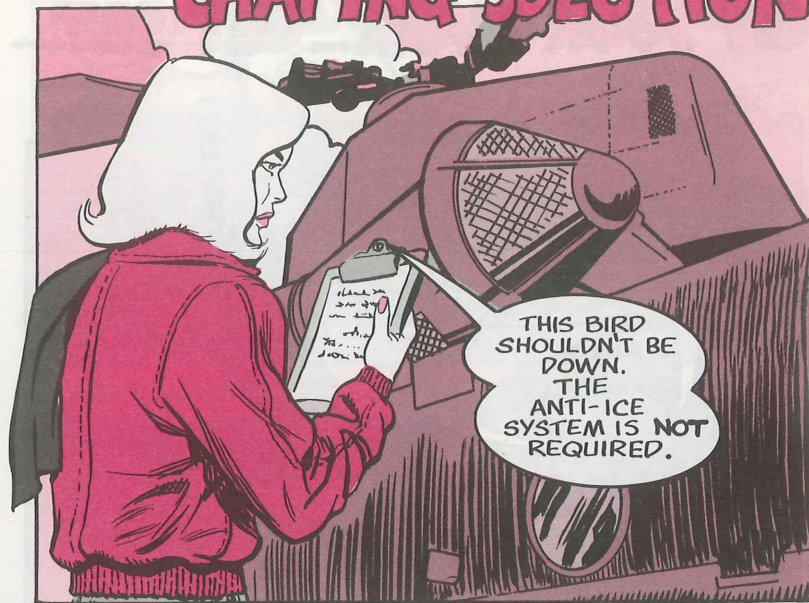


Prevent cut finger with new, rounded ejection port cover

FEEDING PROBLEMS?
WHAT ARE FRIENDS FOR... I'VE
BROUGHT YOU SOME
NEW MAGAZINES.



CHAFING SOLUTION



If the engine anti-ice system on your C or D-model Chinook fails, you can get along without it.

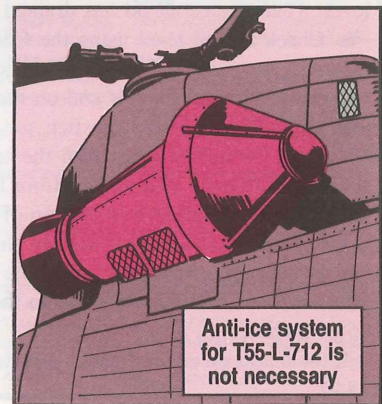
The headshed says if your bird has a T55-L-712 engine with bypass FOD screens, the system does not have to work. It's going to be trashed, anyhow, when the C-models are converted to D's by MWO 55-1520-240-50-22.

Remember, on the C-model the flight boost is pressurized off the anti-ice valve. It does not have to be operational, but it does have to be installed.

So if the system fails, just make the appropriate entries in your historical records.

Here's another time and labor saver for C and D-models equipped with L-712 engines. If the anti-ice system

ducting is chafing the engine transmission housing, simply remove the ducting. Make a note in the historical records.



Anti-ice system for T55-L-712 is not necessary

ON YOUR MARK... GET SET...



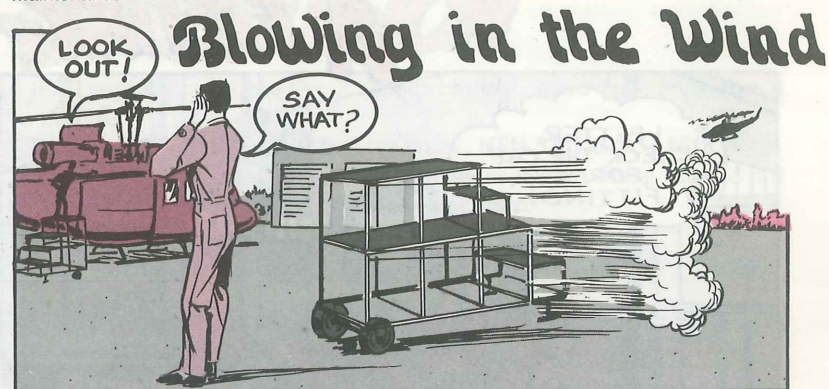
If you add too much oil to your bird's main transmission, the excess oil will churn in the input module and cause the main gearbox to overheat.

So here's what to do:

- Wait at least 2 hours after your bird has been shut down to check the oil level. That insures all oil has drained back into the oil sump.
- Check the oil level using the COLD level marking on the dipstick. Some dipsticks are calibrated for checking cold levels only, while others are calibrated on one side for cold levels and on the other side for hot levels.
- Eyeball your bird's dipstick for a part number. PN 70351-08164-103 is 17 $\frac{3}{8}$ to 17 $\frac{1}{2}$ inches long from the top of the cap to the end of the stick. It should be 15 $\frac{1}{2}$ to 15 $\frac{3}{4}$ inches from the top of the cap to the ADD mark and 15 $\frac{1}{2}$ to 15 $\frac{5}{16}$ inches from the top of the cap to the FULL COLD mark.

PN 70351-08164-104 is slightly shorter—16 $\frac{1}{16}$ to 16 $\frac{1}{16}$ inches from one end to the other. From the top of the cap to the ADD mark should be 15 $\frac{7}{8}$ to 16 $\frac{1}{32}$ inches. And from the cap to the FULL COLD mark should be 15 $\frac{1}{16}$ to 15 $\frac{1}{16}$ inches.

If the marks on either dipstick are incorrect, replace it with NSN 6680-01-161-2840.



Low-level platforms weigh only about 115 pounds. Moderately high winds or rotor wash from a nearby aircraft can and will push 'em around. Anything that gets in the way is bound to suffer.

Like the UH-1 that got in the way of a maintenance platform blown 30 feet by the rotor wash of a UH-60. Scratch one chin bubble!

Don't let it happen to you. Move 'em inside the hangar or chain 'em outside.

Aviation Messages

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

UH-60-88-12, SOF, Maint Mandatory, Revision to UH-60-88-10 message, inspection of troop/gunner seat and three man medevac upper support assemblies, 011800Z Nov 88.

OH-58-88-05, SOF, Maint Mandatory, Inspection and manual change concerning control cable to fuel shutoff valve, 012200Z Nov 88.

CH-47-88-16, SOF, Operational, Identification of additional emergency descent procedures, 031800Z Nov 88.

OH-58-88-06, SOF, Maint Mandatory, Inspection of P/N AN320-6, NSN 5310-00-176-8110 nuts until replacement, 091900Z Nov 88.

CH-47-88-17, SOF, Operational, Correction to identification of additional emergency descent procedures, 092300Z Nov 88.

OV-1-88-05, SOF, Maint Mandatory, Life extension of the MK-J5D ejection seat rocket motor NSN 1377-00-244-1578, 142300Z Nov 88.

AH-1-88-11, SOF, Maint Mandatory, Inspection of P/N AN320-5, NSN 5310-00-176-8109 and P/NH AN320-6, NSN 5310-00-176-8110 nuts until replacement, 162300Z Nov 88.

UH-60-88-13, SOF, Technical, Inspection retention pin P/N 70103-08107-101 for missing segments, 171800Z Nov 88.

CH-47-88-18, SOF, Technical, Engine cross shaft inspection, 180022Z Nov 88.

U-21-88-03, SOF, Operational, Restrictions in airdrop procedures in jump formations, 211300Z Nov 88.

AH-64-88-15, SOF, Maint Mandatory, Inspection of fuel hose assemblies for premature aging, 212200Z Nov 88.

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

AH-64-88-MIM-15, Advance notice to extend the wheel bearing maintenance period, 092000Z Nov 88.

UH-60-MIM-88-10, Removal of main module oil pumps, 222300Z Nov 88.

AH-64-88-16, SOF, Maint Mandatory, Revision to AH-64-88-15, Inspection of fuel hose assemblies for premature aging, 212330Z Nov 88.

C-12-88-03, SOF, 10,000 hour fatigue life on wing spars, 212330Z Nov 88.

OH-6-88-08, SOF, Technical, Inspection for location of night vision goggles terminal block, 212300Z Nov 88.

UH-1-88-MIM-07, Engine torque transmitter/indicator incompatibility, 091900Z Nov 88.

AH-1-88-MIM-05, Engine torque transmitter/indicator incompatibility, 091900Z Nov 88.

A FITTING

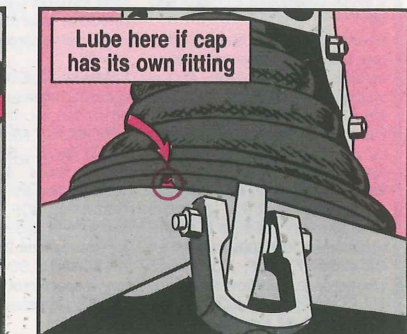


Before you lube your bird's swashplate and support assembly, eyeball the swashplate cap. PN 206-010-444-1 has its own grease fitting. PN 206-010-456-1 has four small vent holes instead of a grease fitting.

If your bird's swashplate cap has vent holes, lube the swashplate through the fitting in the swashplate outer ring. Keep pumping until lube is purged from one or more holes in the cap.

Then rotate the outer ring 360 degrees in 90-degree increments, lubing at each increment.

If the swashplate cap has its own lube fitting instead of four holes, slap the lube to it until grease is purged from the lower seal. Rotate the outer ring 360 degrees while lubing at 90-degree increments.



CONCLUSION

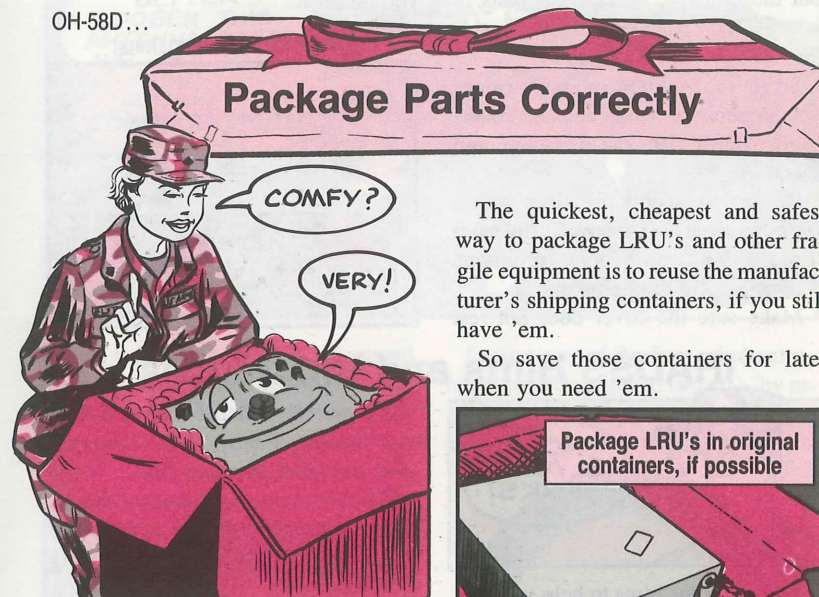
If the cap has its own lube fitting, the other fitting—in the outer ring—should be plugged.

If it's not plugged, plug it with drive screw, NSN 5305-00-253-5618.

Don't be tempted to pump lube through the unplugged fitting because it'll purge past the seal and the bearings won't get lubed.

The caution's spelled out in Fig 1-5 of TM 55-1520-228-23.

OH-58D...



The quickest, cheapest and safest way to package LRU's and other fragile equipment is to reuse the manufacturer's shipping containers, if you still have 'em.

So save those containers for later when you need 'em.



A lot of components are arriving at rebuild with more damage than they started with.

Mast mounted sight system LRU's—black boxes, sensors and circuit card assemblies—are extremely fragile. They are easily damaged when they're not packaged properly. Repair costs double, even triple, and the lifespan of the component is greatly reduced.

If you can't lay your hands on the original shipping container, latch onto a copy of TM 9-1240-778-20. Task 3-45 tells how to package most of the OH-58D's mast mounted sight system LRU's.



It's hard to keep from banging up your Apache's radio console when you take out those heavy, bulky crew seats or when you do other maintenance inside the cockpit.

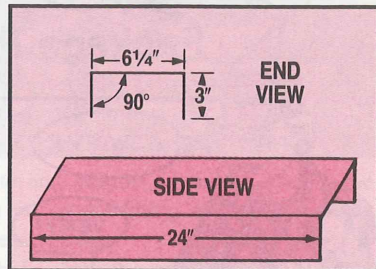
So get your sheet metal shop to make you a couple of handy console covers from Alclad T3 .040-in aluminum sheet.

Be sure to smooth all edges with a file before you use the cover. And paint it red so you won't forget to remove it when you're through working.

Make sure the cover does not rest

on any knob, dials or switches when you install it.

Here are the dimensions:



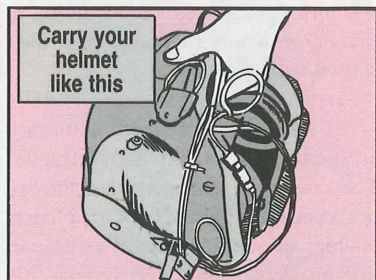
IHADSS Hints and Hindrances



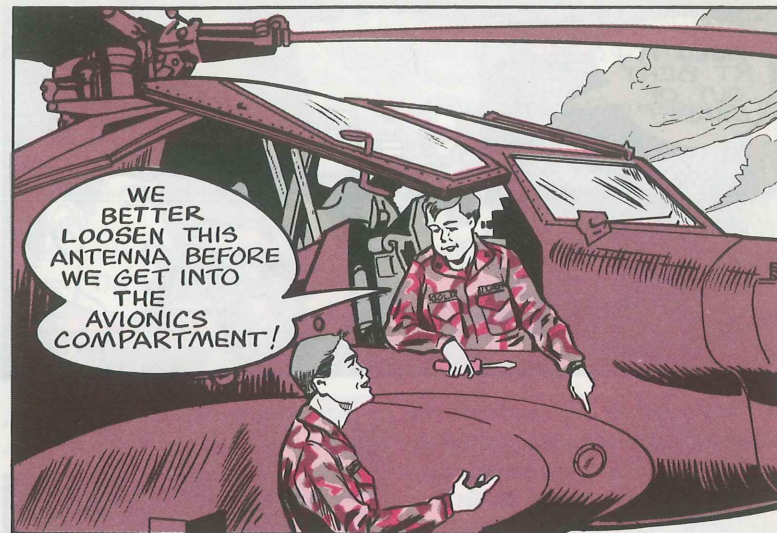
Here are some hints to help you take care of your Integrated Helmet and Display Sight System (IHADSS).

❑ Don't slam dunk your helmet into its storage bag when you're done flying. Too many cables and sensitive components can get snagged or broken. Give the cables and microphone extra protection against bumps by putting your helmet upside down in the bag instead of right side up.

- ❑ Never use your helmet bag to store knee boards, maps, vests, canteens, pubs and other personal gear.
- ❑ Never carry your helmet by its straps. That pulls the ear cups loose. Then you have to be refitted—a big time-waster.

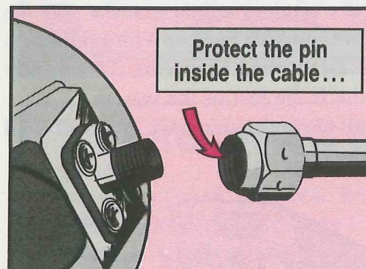


THE SPIRAL CONNECTION

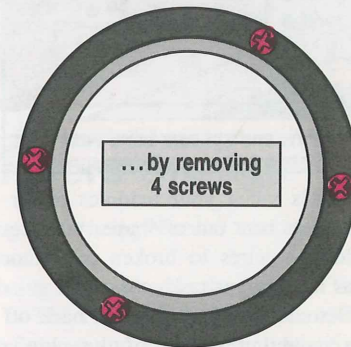


Next time you have to work around the coaxial cable that connects to any of your Apache's radar warning spiral antennas, be sure to first loosen the antenna.

Loosen any of the four spiral antennas—two forward and two aft—by removing the four screws that hold each antenna in place on the fuselage.

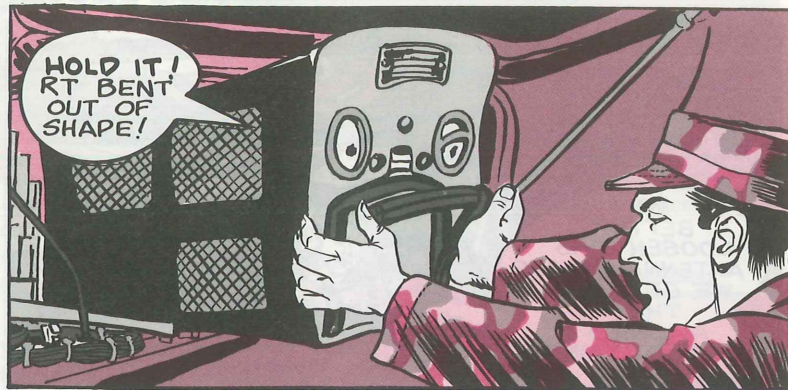


If you don't, you could easily jolt the cable and break the pin inside the cable. The pin's extremely brittle. If it breaks, you'll have to replace the cable.



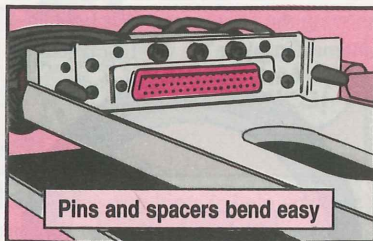
Loosening the antenna allows the cable to give if you accidentally bump it while you're working.

The RT Connection



Patience and an easy touch are two things you must have when you replace one of your bird's receiver-transmitters.

If you're heavy handed or get in a big hurry, you'll break or bend the pins, spacers and plates that connect the radios to your aircraft.



That's when your avionics repairman gets bent out of shape, too. Resoldering wires to broken connector pins is a tedious task, at best.

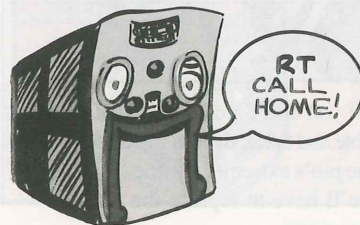
Before you install the RT, back off the mounting screws of the plug a couple of threads so that it "floats." A floating plug is easier to mate with the RT as it is installed.

After you set the RT onto its mount, ease it back until you feel resistance.



Then jiggle it a little to make sure the guide pins are lined up with guide holes in the floating connector. Then gently ease it the rest of the way in.

If it won't go in easy, back off, and start over again.



... OVER AND OUT ...

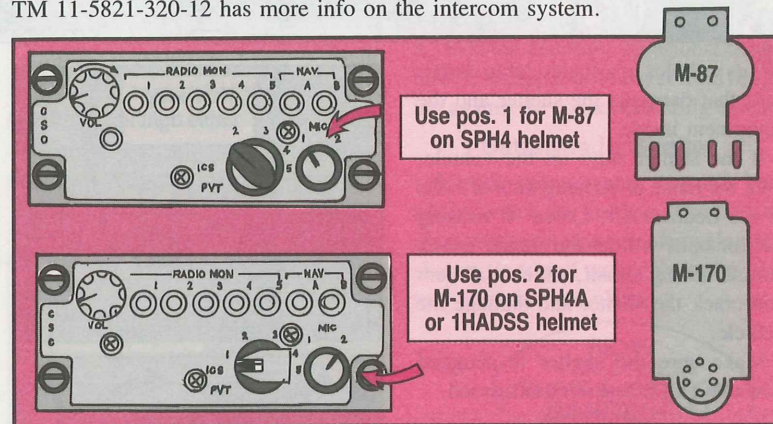
If you pilots and crew chiefs who fly the AH-64A, EH-60A, OH-58D or OV-1D have trouble communicating over your intercom system, you may be setting your intercom control unit on the wrong impedance.

If you have an SPH-4 helmet, it should have an M-87 microphone. The impedance on your bird's control set should be set at 1.

But if you have an SPH-4A or IHADSS helmet, it should have an M-170 microphone. In that case, the impedance on your bird's control set should be set at 2.

If you're not sure which microphone your helmet has, you can tell by its shape. The M-170 is straight and narrow, while the M-87 has a bulge in the middle.

For more info on the headset and microphone kit, see TM 11-5965-279-13&P. TM 11-5821-320-12 has more info on the intercom system.



Aircraft TM Numbers Change

You aircraft types have been bragging about being Number 1 so long that the Army has decided to make it official.

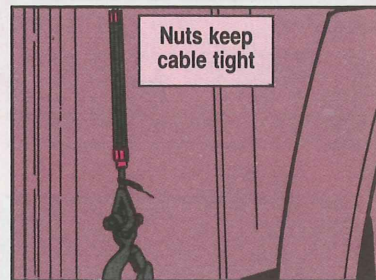
Aviation TM's in the 55-series are being renumbered in the 1-series. The first aviation TM to be renumbered is TM 1-1500-328-25, Aeronautical Equipment Maintenance Management Policies and Procedures. It was formerly numbered TM 55-1500-328-25. It's scheduled to hit the field early in 1989.



Cuts or holes in a shelter let in dampness that damages the shelter and the equipment inside.

If the shelter stays on the vehicle, look for loose or missing nuts or bolts in the tiedown kit. Loose or missing nuts or bolts will let the shelter knock around during transit, which will dent and crack the shelter and damage the vehicle.

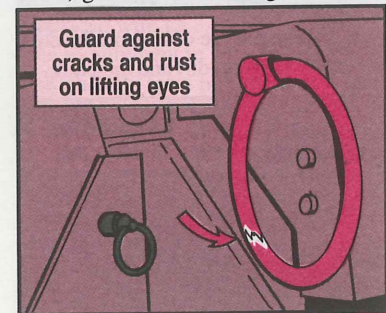
Make sure the shelter is snugged down by a kit before it is transported.



Concertina wire will poke holes in the roof, and stacking cargo or walking on the roof will break the shelter seams.

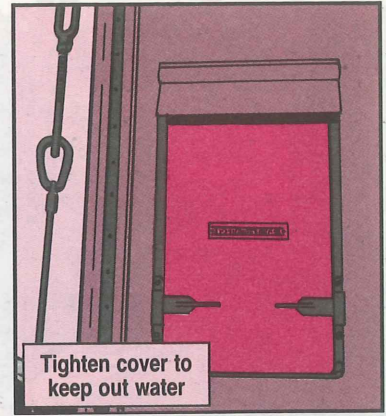


Before a shelter is lifted, eyeball those lifting eyes. After you've looked for cracks and loose eyebolts and found none, have the shelter lifted a few inches above the vehicle or ground. This will make sure the eyes are holding. Then, go ahead with the gentle lift.



Shelter Connectors

When a connector is behind a distribution panel, keep the panel cover fastened to keep out water. If moisture gets into the panel, the connectors will get corroded.



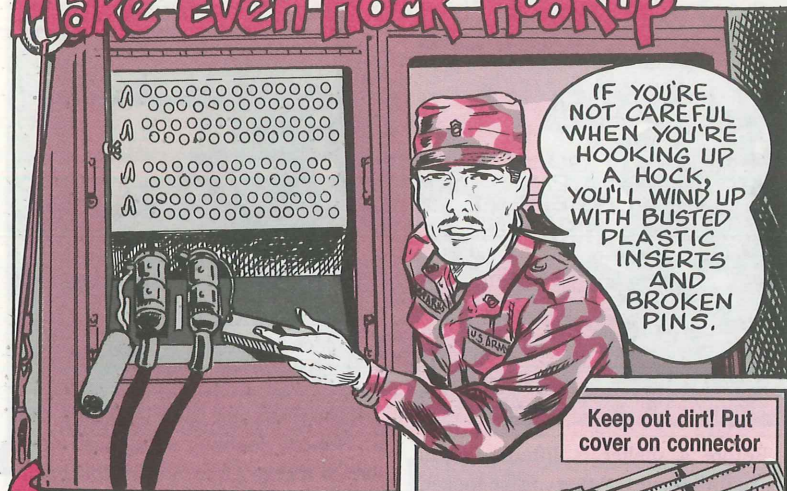
If the connector has a cover too, use it. Besides doubling up against moisture, it'll keep a loose cover from banging against the connector during transit.

Batteries in Shelter

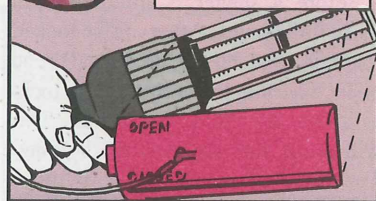
If your comms gear requires batteries, watch for leakage. The battery electrolyte will corrode, damaging the shelter floor and walls. Keep the battery compartment clean.



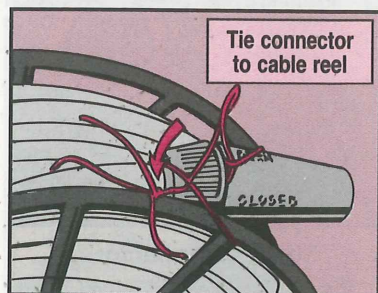
Make Even Hock Hookup



Keep out dirt! Put cover on connector



Be sure to put the covers on the connectors to keep out dirt and moisture.

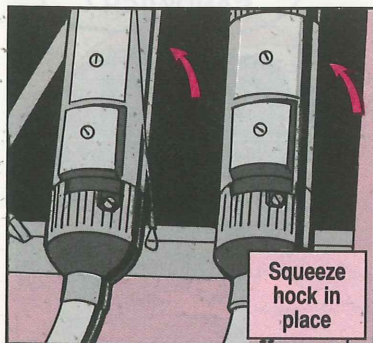


Tie connector to cable reel

After you've rolled up the cable on a reel, tie the hock to the reel's rim with field wire. This keeps the hock from getting knocked around.

Save the connectors by lining up the hock with the receptacle and gently squeezing the hock in place. Put even pressure on both ends of the hock. Then, tighten the two connector locks at the same time.

Take them apart the same way. Release the locks together. Then, pull up on each end of the hock at the same time.



Pack 'em for Repair

A simple repair task will wind up a major one if you fail to pack that sensitive piece of commo or electronic gear for the trip to the maintenance shop.

Protect the item for the truck ride by wrapping it in bubble packing material, NSN 8135-00-926-8991, or even wrap it in clothing.

If there's more than one piece making the trip, stack them in a box or similar container. Then, put packing around them so they can't move. This'll keep them from banging into each other to cause added damage.



MX-148/G Is Replaced

The one-piece, 6-ft MX-148/G ground rod, NSN 5975-00-224-5260, is being replaced with an 8-ft rod, NSN 5975-00-296-5324. The longer ground rod meets the requirement in Article 250-83, Para C, of the National Electrical Code 1987, which calls for a minimum of 8 feet. But keep using the 6-ft rod until you need to replace it.

Card Extractor NSN

Get the card extractor for your T-961/GRC-143 radio set with NSN 5999-00-140-7406. It's shown in Fig 1-4 of TM 11-5820-595-12, but the NSN's not in the TM.

YOU DON'T HAVE TO HAVE PULL TO OBTAIN A CARD EXTRACTOR.



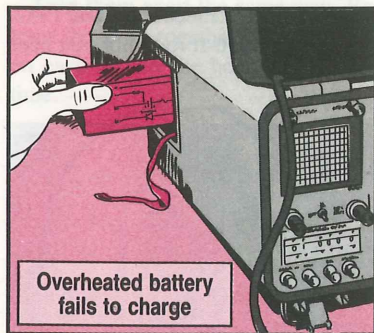


The head commo honcho did you radio repairmen a favor when he sent you the Grimm-114. You have a built-in automatic battery charger when you're connected to AC power.

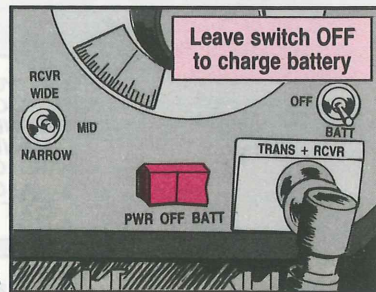
But there's a catch! If the temperature inside the battery compartment

It's easy for the temp inside the box to go over 105 degrees. For example, if all the operating controls are ON and the outside temperature is over 60°F, the temperature inside the set is going to be over 105. And the battery is not going to continue to charge.

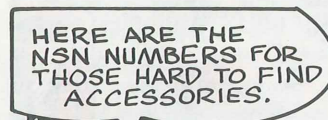
So just remember this about charging: Do it when the set is not being used or take the batteries out. Just push the POWER-OFF-BATT-SWITCH to OFF and leave the Grimm-114 plugged in. It takes 14-16 hours to fully charge the battery.



gets over 105°F, a thermal switch trips and stops all charging. Charging does not resume until the compartment cools down.



AN/PRC-70 Radio Set NSN's



NSN's for the accessory carrying bag and the ground rod are not listed in the Components of End Item List in TM 11-5820-553-10.



NSN 5820-01-120-5290 is for the bag, Item C of Fig 1-1 on Page B-3.

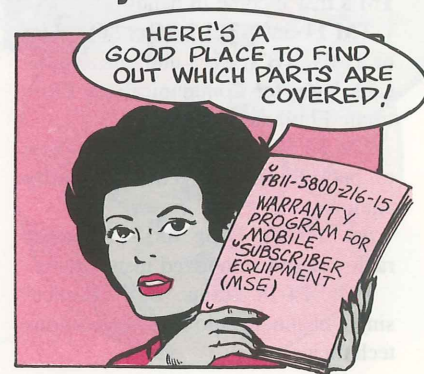
NSN 5975-01-202-0987 is for the ground rod, Item 5 of Fig 1-2 on Page B-4.

MSE Warranty

Don't toss out a replacement part from your mobile subscriber equipment (MSE).

Could be the part's covered under warranty. Generally, the MSE is covered one year from the date your outfit gets it. That's spelled out in TB 11-5800-216-15.

If there's any doubt about a part, contact your local CECOM warranty officer WARCO, or your local CECOM LAR.



Fingertip C-E



Whether you're upgrading your communications and electronics pubs collection or starting from scratch, here are a few references besides your gear's TM's that'll come in handy.

TM 11-5800-213-L (Oct 86)—List of TM's, TB's, SB's and other applicable pubs for Communications Electronic Equipment.

TM 32-5800-001-L (Nov 87)—List of pubs for B-46 electronic security equipment.

SB 11-131 (Apr 88)—Vehicular radio set and authorized installations.

FM 24-18 (Sep 87)—Tactical single-channel radio communications techniques.

TC 24-20 (Oct 88)—Tactical wire and cable techniques.

FM 24-21 (Dec 85)—Tactical multi-channel radio communications techniques.

FM 24-26 (Apr 77)—Tactical automatic switching.

TM 11-5800-215-BD (Dec 86)—Battlefield damage assessment and repair for Communications Electronics Equipment.

Reference



TM 11-2300 Series—Installation kit instruction for installing radio and intercommunication sets and electronic equipment in vehicles.

TB 11-2300 Series—Installation kit and dunnage instructions for installing electronic equipped shelters in the Gama Goat, and radio set installation in HMMWV trucks.

TB 43-0129 (Jun 86)—Safety measures for installing and using whip antennas, field type masts, towers, antennas and metal poles used with communication, radar and direction finder equipment.

TB 43-0118 (Jun 86)—Painting and preserving Communications Electronics equipment, including camouflage pattern painting.

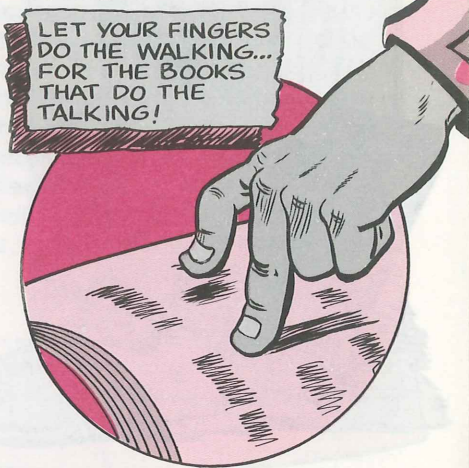
TB Sig 222 (Mar 85)—Solder and Soldering.

SB 11-6 (Dec 87)—Tells which dry-cell batteries go in what equipment and identifies each battery by nomenclature and NSN.

SB 11-30 (May 82)—Gives info for requisitioning, transporting, storing, marking and testing dry-cell batteries.

TC 11-4 (Apr 77)—Handbook for AN/VRC-12 series radio sets plus the AN/VIC-1 intercommunication set.

TC 11-6 (Sep 76)—Illustrates ways to ground communications equipment and shelters.



Get the LIME OFF!

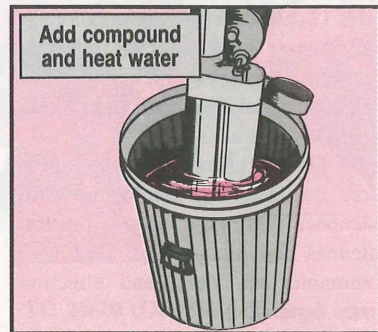


When you use immersion heaters to heat hard water, you end up with mineral deposits—scale—on the heater. If too much scale builds up, the heater won't heat the water.

Remove the scale with scale-removing compound, NSN 6850-00-637-6142. You'll get a 100-lb drum.

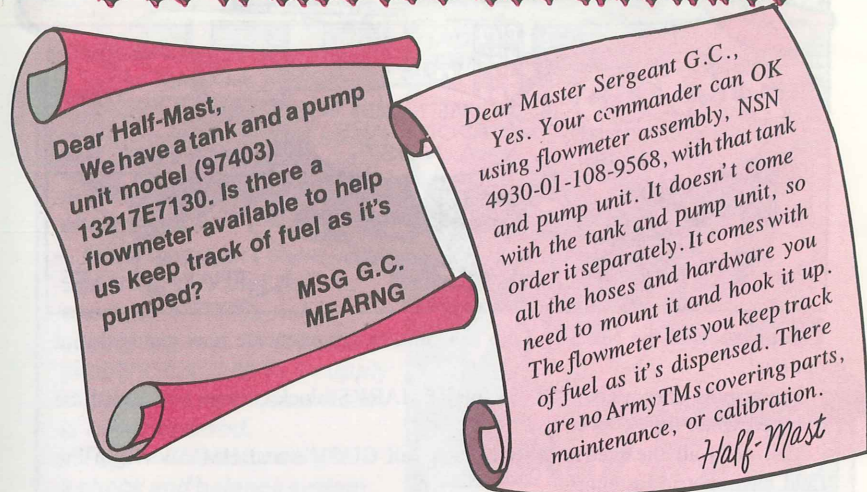
Set up the heater in a 32-gal can and fill the can with water. Add 5 cups of compound and stir until dissolved.

Fire up the heater and heat the solution for 30 minutes. Check the color of the solution and look for scale. If the solution is yellow and there's still scale on the heater, add 5 more cups of compound and heat for another 30 minutes.



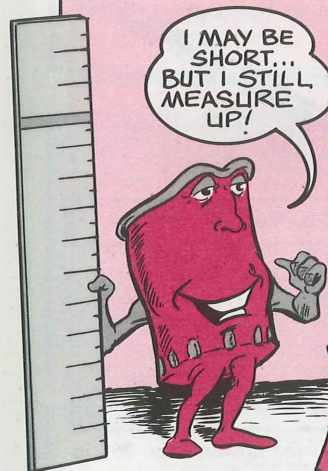
When the solution remains red or pink and the scale is gone, turn off the heat and pour out the solution. Rinse the can and heater thoroughly with fresh water.

Flowmeter Available



6-HP Mil Std Engines...

Oil Filter Switch



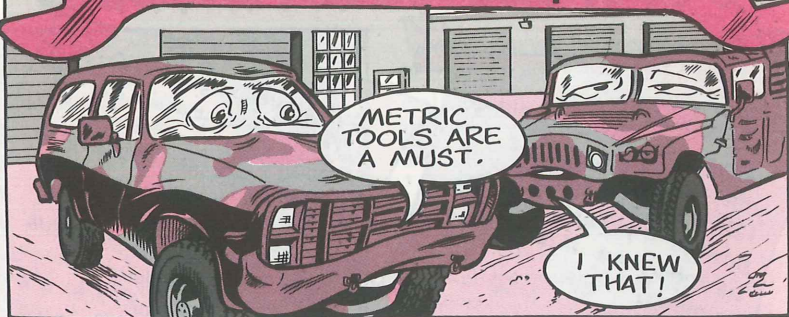
Dear Editor,

I switched to the spin-on oil filter on the 6-HP Mil Standard engine on my 15-CFM compressor by using oil filter kit, NSN 2805-01-189-9698. But the filter element in the kit, NSN 2940-00-832-6054, was too long and rested on the muffler. I found that filter element, NSN 2940-00-586-4792, will fit and is about 1¼ inches shorter, enough to clear the muffler.

**CW3 David A. Rivaldo
Las Vegas, NV**

(Editor's Note: Thanks for the tip! You can also use the shorter filter any time the longer filter won't fit, such as the 4.2-KW generator.)

Metric Tools Now Required



Metric tools in the No. 1 and No. 2 Common shop sets are now required, not optional.

These tools have a code '81' in the REMARKS block column in SC. It'll be dropped when the SC is revised.

You need all the metric tools because all CUCV's and HMMWV's in the field have metric fasteners.

Until the revised SC's hit the field, your commander can OK getting your metric tools on order.

Screwdriver Set...

NSN's for Parts

IF YOU NEED REPLACEMENT SCREWDRIVERS FOR YOUR JEWELER'S SCREWDRIVERS SET, NSN 5120-00 288-8739, USE THESE STOCK NUMBERS.



NSN 5120-00-180-	Inch Size
0705	.025
0706	.040
0727	.055
0728	.070
0729	.080
0730	.100

You'll find the tips on Page 263 in the GSA catalog.

Check and Balance System

Dear Editor,
When there's a tool shortage on a unit's tool set hand receipt, everyone seems to know that a hand receipt annex is used to record the shortage.

What they don't seem to understand is that the shortage annex is not a supply request. Unless the supply clerk puts in a supply request, the replacement tool is never ordered.

To give our motor sergeant a check and balance system, I've added a column to the hand receipt annex for the supply folks to place the document number for replacement tools.

SSG Kenneth W. Krotzer
Ft Bragg, NC



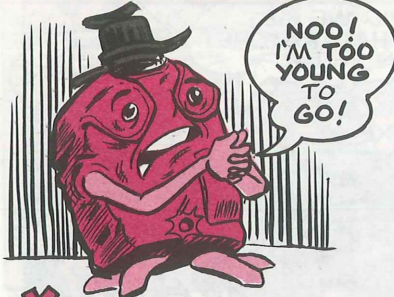
(Editor's note: Sounds like you've found a way to control tool replacements. When dealing with several tool sets, you might want to attach a sheet of paper to the hand receipt annex for recording multiple document numbers.)

HAND RECEIPT ANNEX NUMBER		FROM	TO	HAND RECEIPT NUMBER									
For use of this form, see DA PAM 710-2-1. The proponent agency is ODCSLOG.		Commander 21st MP	Motor Pool	2									
FOR ANNEXOR ONLY	END ITEM STOCK NUMBER	END ITEM DESCRIPTION	PUBLICATION NUMBER	PUBLICATION DATE	QUANTITY								
	5120-00-117-7033	Tool Kit Gen. Mech.	SC 5180-90-N26	30 OCT 86	6								
STOCK NUMBER	ITEM DESCRIPTION	Document Number	* SEC	UI AUTH	QTY	QUANTITY							
a	b		c	d	e	f	g	A	B	C	D	E	F
5120-00-011-8543	Hammer, hand	8378 0001	D	EA	3	2							
5120-00-230-6385	Ratchet type	8379 0001	D	EA	2	1							
5120-00-293-0032	Pliers	8349 2002	D	EA	4	4							

Place the document number for replacement tools here

* WHEN USED AS A
HAND RECEIPT, enter Hand Receipt Annex Number
HAND RECEIPT FOR QUARTERS FURNITURE, enter Condition Codes
HAND RECEIPT ANNEX/COMPONENTS RECEIPT, enter Accounting Requirements Code (ARC)

CANTEEN PARTS



You won't find parts for the 1-qt plastic canteen listed in any TM, but a missing part or two is no reason to toss it.

Get a canteen with the M1 chemical protective cap with NSN 8465-01-115-0026.

Parts for the canteen are:

Cap
NSN 8465-00-930-2077

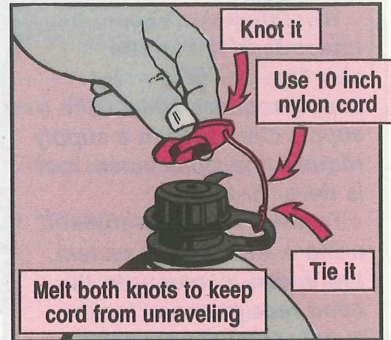
Cap strap
NSN 8465-01-082-6449

Cup
NSN 8465-00-165-6838

Cover
NSN 8465-00-860-0256

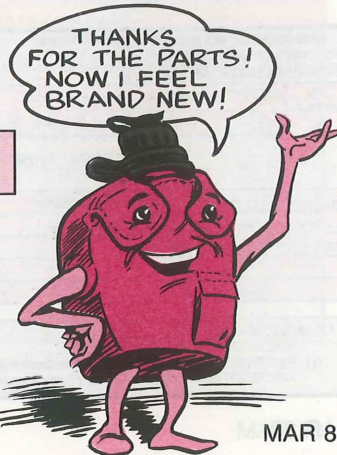
If the chemical protective cap's drinking cap breaks off, you can make a quick fix using 10 inches of nylon cord, NSN 4020-00-262-2019.

Begin by cutting off the broken strap. Drill a 1/8-in hole about a quarter-inch in from the edge.



Run the cord through the hole and knot it. Tie the other end around the cap strap.

Melt both knots with a match or lighter so the cord doesn't unravel.



Report Substitute Items

HERE'S HOW TO REPORT SUBSTITUTE ITEMS:



Dear Half-Mast,
Our unit is authorized two reportable 5-ton trucks, LIN X40831. We were issued two other 5-ton trucks, LIN's X40794 and X40968. How do we show on the DA Form 2406 what we're authorized and what was substituted?
SFC A.C.B.

Dear Sergeant A.C.B.,

Paragraph 3-5c of AR 700-138 (Sep 87) says that equipment issued in place of an authorized item is reported only if the substitute's LIN is in Appendix B.

Since both your substitute truck LIN's are listed in Appendix B, you'll report them under their own LIN's. In this case, you'll have three different entries on the DA Form 2406.

When you prepare the commander's impact statement for the remarks block on the back of the 2406, make a note that LIN's X40794 and X40968 are substitutes for LIN X40831.

Half-Mast

MATERIEL CONDITION STATUS REPORT							Requirement Control Symbol	
For use of this form, see TM 38-750; the proponent agency is DCSLOG.							CSGLD-1042 (R3)	
1. PERIOD OF REPORT		2. DATE PREPARED		3. UTILIZATION CODE		4a. PAGE NO.	4b. NO. OF PAGES	
FROM: 8153 TO: 8182		8/83		Ø		1	2	
5. TO: (Include ZIP Code)				6. FROM: (Include ZIP Code)		7. UNIT IDENT CODE	8. TOE NO.	
Commander 24th INF DIV Ft Stewart, GA 31314				Commander 2d Bde, 24th Inf. Ft Stewart, GA				
9. AVAILABILITY ST.								
SEQ NO.	NOMENCLATURE			ECC LIN	DENSITY	AUTH QTY	ON HAND QTY	f.
	a.	b.	c.					
1	Truck	Cargo, 5-ton	M54A2C	X40831	0	1		
2	Truck	Cargo, 5-ton	M54A1	X40968	2	0	0	
3	Truck	Cargo, 5-ton	M813	X40794	0	2		

When you're assigned a reportable item, but you don't have any on hand, go ahead and list it. Put the number you're authorized in column e and 0 in column f.

When you're assigned a reportable substitute, list it as a separate item in the correct letter and number order. Put 0 in the authorized column and the number you have on hand in column f.

Get Help From MRSA



EXTENDED DISPATCH



Dear Half-Mast,

DA Pam 738-750 doesn't show an entry on the DD Form 1970 of an extended dispatch for vehicles not technically on a training exercise.

For example, a vehicle is dispatched at 0800 Monday, returns at 2400 hours and leaves again at 0500 Tuesday.

How do we avoid trouble with the MP's and IG's when a vehicle is dispatched in situations like this?

CW2 A.M.

MOTOR EQUIPMENT UTILIZATION RECORD									
DATE (MM/DD)	TYPE OF EQUIPMENT	REGISTRATION NO./SERIAL NO.	ADMINISTRATION NO.						
88 06 06	TRK, 14-T, M1009	1C4777	HQ10						
OPERATOR(S) NAME	FA	ACTION	TIME	MILES	HOURS	FUEL	OK		
1. HRS, V022		IN	1005	7348	2			REPORT TO (Last Name, First MI)	
OPERATOR(S) SIGNATURE		OUT	0800	7348				DISPATCHER'S SIGNATURE	
2. GUNER, P. HAZARD		TOTAL	2:05	15				REPORT TO (Last Name, First MI)	
OPERATOR(S) SIGNATURE		IN	1230	7348				DISPATCHER'S SIGNATURE	
3. OPERATOR(S) (Last Name, First MI)		OUT						REPORT TO (Last Name, First MI)	
OPERATOR(S) SIGNATURE		TOTAL						DISPATCHER'S SIGNATURE	
4. OPERATOR(S) (Last Name, First MI)		IN						REPORT TO (Last Name, First MI)	
OPERATOR(S) SIGNATURE		OUT						DISPATCHER'S SIGNATURE	
OPERATOR(S) SIGNATURE		TOTAL							
DESTINATION		TIME	RELEASE		REMARKS				
FROM	ARRIVE	DEPART	SIGNATURE						
1. Motor Pool		0800			Extended Dispatch				
2. Killceen	0820	0750	R. dahn		Fuel: 15 gals				
3. Motor Pool	1005	1230							
4. Dallas	1700	1930	R. dahn						
5. Ft Hood	2400	0500							
6. Dallas	0700	0600	D. W.						
7. Motor Pool	1400								
8.									
9.									
10.									
11.									
12.									
13.									
14.									
15.									
16.									
17.									
18.									
19.									
20.									

Dear Mr. A.M.,

You're right. DA Pam 738-750 only shows an extended dispatch for a training exercise.

In your situation, make a notation in the remarks block of the DD Form 1970.

Be sure that the dispatcher's DA Form 2401 shows the vehicle on extended dispatch, too.

Half-Mast

Make notation here

DD FORM 1970 APR 81 EDITION OF FEB 75 MAY BE USED.

Preparing your consolidated PLL MPL is a time-consuming job, especially if your unit has a large number of different end items.

What you need is help—and the US Army Materiel Readiness Support Activity (MRSA) can help.

MRSA can provide a listing that gives MPL support parts for all your end items in NIIN sequence, showing support item nomenclature, AMDF Materiel Category Structure Code (MATCAT), AMDF unit price, stockage quantity and applicable end item NSN's.

Just write to:
Commander
USAMC Materiel Readiness Support Activity
ATTN: AMXMD-SE
Lexington, KY 40511-5101

Send them a list of:
 ✓ End item NSN's from your property book;
 ✓ Quantity of each on-hand end item;

✓ Unit category (combat, combat support or combat service support). You should also indicate if any of the end items are aircraft or aircraft armament subsystems.

If your unit has personal computers, a floppy disc may be submitted. Display each end item on the floppy by a 17 position record containing the following information.

✓ End item NSN—positions 1–13;
 ✓ Unit category code—position 14 (combat unit = 1, combat support unit = 2, combat service support unit = 3, aircraft = 4).
 ✓ End item quantity—positions 15–17, right justified within field.

Example:

NSN	CAT	DENS
6665009356955	2	010
1010001796447	2	004
1005003229715	2	002



Pistol Rack NSN

Need a rack for your .45 pistols, armorers? NSN 1095-00-650-7453 brings the M1920 rack. Your ordering authority is Appendix A in CTA 50-970.

Right Light—Wrong AR

Oops! Part of the convoy warning light story on Page 20 of PS 434 got garbled. Eyeball Para 2-16g of AR 385-55 instead of Para 216g of AR 55-162 to get the word about the light.

Old Shoes Made New

You're wasting money if you trash can the worn out brake shoes on your M39- or M809-series 5-ton trucks. The SMR code shows the shoes as non-repairable, but that's not so! DS can replace the linings and make 'em good to go for a lot less than the cost of new brake shoes.

HMMWV Door NSN's

Here are the NSN's for the door assemblies shown in Fig 158 of TM 9-2320-280-20P:

Item	Door	NSN
9	LH Rear	2540-01-189-3460
9	RH Rear	2540-01-189-3459
21	LH Front	2510-01-189-9724
21	RH Front	2510-01-189-9725

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

H150C/F Forklift Wheel NSN Change

TM 10-3930-222-20P has two separate NSN's listed for the wheel for the Hyster forklift. NSN 2530-00-480-7459 gets the wheel you need. Make a note until your -20P TM is updated.

MW-24C Loader Head NSN Change

When your loader goes to support for a new cylinder head, be sure they order the correct head. NSN 2815-01-131-5800, PN A67352, gets the right head. The part number shown for the head, Item 6 in Fig 3 of TM 5-3805-262-24P, is wrong.

CUCV Sliding Window NSN

You can now get a sliding rear window for the M1008A1 commo CUCV. Get your commander's OK and have your DS shop put in sliding window, NSN 2510-01-285-7310. It will be added to the Additional Authorization List (AAL) in TM 9-2320-289-10.

Hub Gasket NSN

The NSN for the wheel hubcap gasket on the M967A1, M969A1, or M970A1 semi-trailer is not listed in TM 9-2330-356-12&P. Order it with NSN 5330-01-280-5827.

TACCS Disk NSN

Use only high quality double sided, quad density, 5¼-in floppy disks, NSN 7045-01-173-4574, in your AN/TYQ-33 Tactical Army Combat Computer System (TACCS). Order these disks on DD Form 1348-6 and put "NSN Not on AMDF" in the Remarks block. If you order another disk, it may or may not work in the TACCS.

M1A1 Collimator Protection

Add a whole lot more protection to the M1A1 collimator by wrapping foam rubber around the light source end of the telescope and secure with tape before installing the cover. Use NSN 9320-00-598-2559 to get enough ½-inch foam rubber to make at least twelve 6-inch wide protectors. This will prevent much of the adjustment damage your collimators get in transport.

Apache Wheel Bearings

Good news, AH-64 mechanics. The wheel bearing maintenance period on your bird has been extended. You now repack the wheel bearings and check for smooth operation every 500 hours instead of every 250 hours. That goes for all three wheels. AH-64-88-MIM-15 has the word.

KNOW-HOW Books Available

KNOW-HOW I (for M109-series howitzers) and KNOW-HOW II (for M198 howitzers), pamphlets produced by the Weapons System Managers at AMCCOM, are available for the asking. To get either pam, write to Commander, HQ AMCCOM, ATTN: AMSMC-ASN-M (Mr Lipton), Rock Island, IL 61299-6000.

Filter Changes on Generators

When you order oil filter elements for 15-, 30- or 60-KW generators, order the gasket, too. The gasket is supposed to come with the element, but current stocks of the elements are missing the gaskets. Here's what gasket is used where:

Generator	15-, 30-KW	60-KW
Filter element		
NSN 2940-00-	580-6304	580-6283
Gasket needed		
NSN 5330-00-	171-7032	740-6097

M44-Series Truck U-Bolt

The NSN listed in TM 9-2320-209-20P for the rear spring U-bolt used on the 2½-ton truck has been changed. You can get the correct U-bolt by ordering NSN 5306-01-234-9388.

Would You Stake Your Life *right now* on

the Condition of Your Equipment?

DRIVERS



Fast curves



Jack rabbit starts

WRONG



TIRE PRESSURE

Mechanical problems

Panic stops



SCREECH!

KILL TIRES