

Issue 455

TB 43-PS-455

PS

October
1990

THE PREVENTIVE MAINTENANCE MONTHLY

WE CAN **SHOOT,**
SCOOT AND COMMUNICATE!
WE'RE **FMC!**

EQUIPMENT
FIT TO FIGHT
IS JUST A
START!

NEW
TM-10-20 PMCS
STANDARDS
SEE PAGE 27

Approved For Public Release; Distribution is Unlimited

Warranties Are YOUR Business

The Army is losing money because some people are not using the warranties on their equipment.

No warranty is free. The manufacturer includes the cost of possible warranty claims in the price of an item. If you don't make a warranty claim when you should, you're the loser!

This is a big problem with tanks, tactical trucks, trailers/semtrailers, engines, transmissions and lots of other items covered by warranties.

For instance, paying \$30,000 for a truck engine, instead of getting it free under warranty, costs your unit maintenance dollars that could be spent on other parts.

So how do you tell what warranty, if any, is available for your equipment?

For some commercial-design vehicles, a copy of the warranty coverage comes with the operator's manual or parts manual, or the manuals may mention a warranty TB.

For military-design and some commercial-design equipment, check your -10 TM or parts manual. If warranty information is listed, look for a warranty decal or plate on your vehicle's instrument panel. Check the DA Form 2408-9 that came with your vehicle. Block 15 of that form gives the warranty period.

DA Pam 738-750, the Maintenance Management UPDATE, lists the warranty TB's for equipment under warranty in Appendix D and gives details on warranty claims.

Making a warranty claim is fairly simple. Two forms are needed—DA Forms 2407 or 5504 for filing the claims and DA Form 2402 for tagging the exhibit. It's important these forms are filled out completely.

Your Warranty Control Office (WARCO) and supporting LAO—Logistics Assistance Office—can also lend a hand.



PS

THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-455, 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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FAX: DSN 745-3855
or Comm 606-293-3855

By Order of the Secretary of the Army:

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Chief of Staff

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Brigadier General, United States Army
The Adjutant General

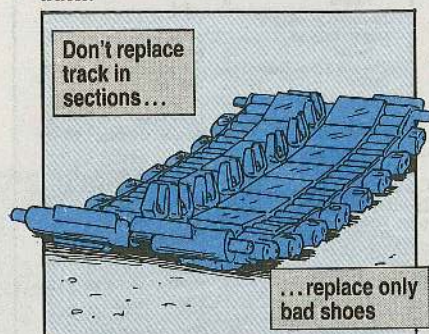
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SHOE AND PAD

Keeping your tracked vehicle rolling on serviceable track takes good management. As money gets tighter and tighter, these tips may keep you on the move.

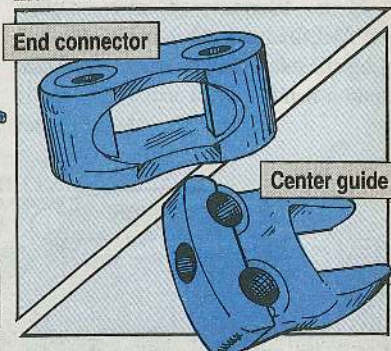
① Replace only defective shoes—those that are broken, badly cracked or that have bad bushings.

② Just because track shoes come in sections of eight shoes does not mean that's how to put them on. This wastes track.



Eyeball TM 9-2530-200-24, Standards for Inspection and Classification of Tracks, Track Components and Solid Rubber Tires, for how to judge track parts.

③ Never toss out good end connectors, pads or center guides. You can use them again. Do not use wedges, wedge bolts, center guide bolts or center guide nuts again. Carry a few extras for spares. Get them from your mechanics.



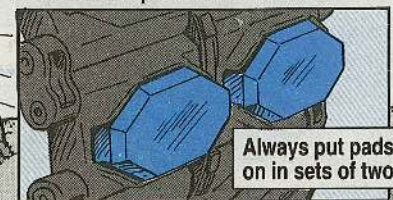
REPLACEMENT TIPS

④ When replacing shoes that have replaceable pads, make sure the pads on the two shoes on either side are about the same height. If they're not about the same height, the new pads will get chewed up right away.



⑤ When replacing pads, always put them on in sets of two—on the same shoe. Try to match the pads so you end up with about four or five shoes in a row with pads all about the same height.

You may have to juggle pads around to make it come out right. That's why you need to keep serviceable pads as well as new pads on hand.



⑥ On M113-series vehicles, do not mix T130 and T130E1 pads on the same track. The vibration set up by mixed pads can cause hull cracks and other damage.

Prevent this pad swapping problem by using pad, NSN 2530-01-130-3366, only. It replaces both T130 and T130E1 pads.



⑦ Never reuse a pad nut. That's a sure way to lose the nut and the pad. Use a new nut and tighten it as best you can. Then let your mechanic know so he can torque it to TM specs.



DID YOU FOLLOW THOSE TIPS ON SHOE AND PAD REPLACEMENT?

I...I...I...WILL, NEXT TIME!

Pliers Take on Bore Evacuator



➤ Get the diagonal pliers, NSN 5110-00-239-8253, from the Artillery and Turret Mechanic's Ordnance tool kit.

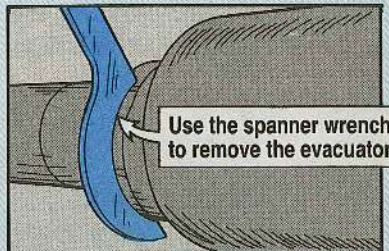
➤ Find the spiral pin on the top of the collar assembly.

➤ Pull the spiral pin with the pliers. A rocking motion will most often remove the pin.



Use diagonal pliers to pull spiral pin

➤ Unscrew the bore evacuator nut, collar assembly and rear shroud as one assembly using the spanner wrench in your BII.



Use the spanner wrench to remove the evacuator

Once the entire assembly is loose, remove the nut and collar. Be sure to clean all bore evacuator parts before reinstallation, especially the nut's locking pin.

Then prevent this problem by cleaning and lubing the bore evacuator after firing or monthly, according to the TM.

Loader's Seat Back "Covered"



The smooth backside of the loader's seat makes a slick step for a muddy or wet boot as you try to get into or out of the M1A1's turret.



To keep a fall from putting you under cover, here's a coverup for the seat back:

➊ Get a roll of deck covering, NSN 7220-00-823-7420. It's 60 feet by 24 inches, which means you can cover a bunch of seat backs.

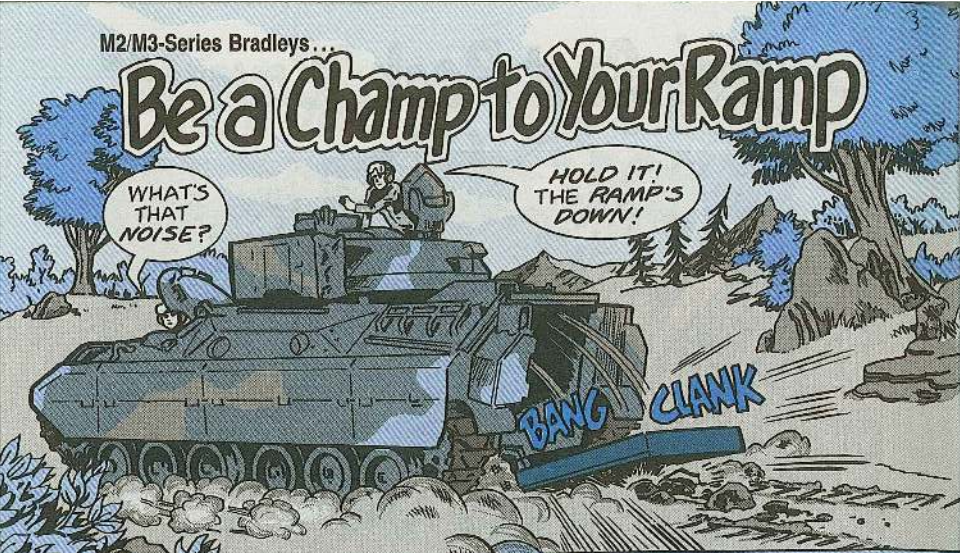
➋ Make a 12-in round template out of cardboard. Using the template, trace and cut the deck covering.

➌ Place the loader's seat in the stand and stow position and clean the seat back with drycleaning solvent and rags.

➍ Peel the backing off the deck covering and press the covering on the seat back.

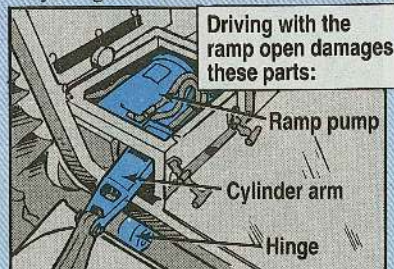


Be a Champ to Your Ramp



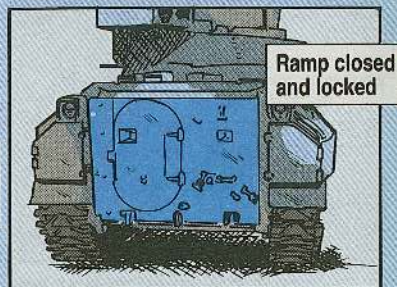
Here're some lessons learned the hard way that'll help you Bradley drivers head off equipment damage:

★ Never move your Bradley while the ramp is down or not fully locked. That "combat dismount" is like a sucker punch, just waiting for you to let your guard down.



Ramps get warped so they won't seal (makes swimming impossible), locks get broken and hinges get damaged. Moving with an open ramp also breaks cylinder arms and ramp pumps.

Make sure the ramp is fully up and locked before you move out. The same damage can happen when you just "think" the ramp is completely locked. Take no chances.



★ Never drop the ramp too hard, or on uneven ground. That puts a big strain on ramp hinges and can cause warping.

Just remember that the ramp also serves as an armored door. If it's messed up and can't do its job in a combat situation, your vehicle and its occupants make an inviting target.

Periscopes Are Different



You can't interchange rear and cargo hatch periscope parts between M2A1 and M3A1 Bradley models.

Here's how to keep them separate:

✕ Rear periscope parts for M2s, M2A1s and M3s are found in Fig 59 of TM 9-2350-252-24P-1. For M2A2s, the parts are found in Fig 54 of TM 9-2350-284-24P-1.

✕ Cargo hatch periscope parts for M3A1s are found in Fig 60 of the -252-24P-1. For M3A2s, the parts are in Fig 55 of the -284-24P-1.

Combat Vehicle Recovery...

Get AKERR for Light, Medium Work



Vehicle recovery for armored vehicles under 34 tons is much easier using the Allied Kinetic Energy Recovery Rope (AKERR).

The AKERR kit, NSN 4020-01-211-8382, contains the rope, specific shackles for AKERR use and a canvas bag for storage.

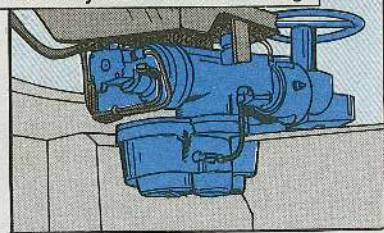
TM 9-4020-200-10 has use and care information for AKERR. Pay strict attention to the warnings and cautions in the TM. All recovery operations are dangerous, and using AKERR does not alter that fact.

No High Pressure Water or Steam to Clean Cab

For all the good water does plants and animals, it does absolutely no good for the interior of combat vehicles when applied under pressure.

A good example of the damage—traversing mechanism assembly failure on a M109-series howitzers.

The traversing mechanism assembly doesn't need watering!



The clutch and no-back components of the traversing assembly don't like water for two reasons. It shorts out electrical connections, and it corrodes bearings.

This water damage is not caused by a heavy dew or rainfall. It's caused by high pressure water or steam applied by somebody looking for a quick cab cleanup.

Keep the high-pressure hose out of howitzer cabs (and away from all combat vehicle turrets and cabs). Clean up with a mop and pail, or wet cloths.

Nothing good comes from water inside a combat vehicle. Only trouble grows.

M109-Series SP Howitzers, M992 Ammo Carriers...

Hub Nut Torque Change

Loose idler and road wheel hub nuts have always been a problem for M109s and M992s.

Vibration during operation and firing loosened the nuts, no matter how crews and mechanics tried to keep them tight.

Wet torque, instead of dry torque, may solve the problem.

Both TM 9-2350-311-20-1 (for the 109s) and TM 9-2350-267-20 (for the 992) will be changed to show wet torquing of hub nuts to 180 lb-ft.

Lubricate stud threads with OE/HDO engine oil or GAA grease before torquing.



The oil and grease are expendable items for both vehicles.

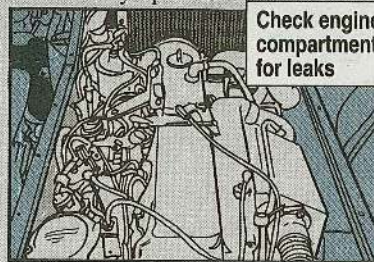
No Trial by Fire



Just a couple of operator checks and a semiannual cleaning go a long way toward making sure your Small Unit Support Vehicle (SUSV) is fireproof.

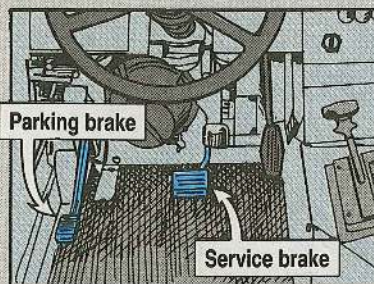
Make sure the parking brake is released before you drive off. An overheated brake system can cause fires.

Check the engine/transmission compartment for fluid leaks or debris before every operation.



If you find leaks or trash, let your mechanic know now. To keep the compartment clean, steam clean (or clean with drycleaning solvent and water) at every semiannual service.

If the cleaning job can't be done completely with the powerpack in place, your mechanic will have to pull the pack.



Also, be careful when you apply the service brake while wearing oversized footgear. The parking brake is only eight inches from the service brake.

Special Rules for Window



Incorrect cleaning is causing a lot of cab windshields to turn hazy or opaque.

Cleaning with high-pressure water or steam causes the adhesive that binds the glass layers together to lose its hold. The glass then turns hazy or opaque, which makes it real hard for crewmen to see.

Here's the right cleaning method for cab windshields:

💧 Flush the outside window surface with low-pressure water. Wipe the inside surface with a wet sponge or soft cloth.

🧽 Wipe surfaces lightly with a sponge or soft cloth well saturated with a solution of general purpose detergent and water. Make the solution with 1/4 ounce of detergent, NSN 7930-00-880-4454, per gallon of water. Keep clothing buckles, buttons and zippers away from the window surfaces.



Washing



💧 Flush the outside surface with clean water. Wipe the inner surface with a sponge or cloth and clean water until the detergent is removed.



🧽 Dry by lightly wiping with a damp sponge using straight strokes, from window top to bottom.

Keep this procedure on hand until your -10 TM picks it up. You'll see the results.

Drain Valve Check

A CLEAN VALVE KEEPS THE HULL DRY!



The hull of the M1015 electronic warfare systems carrier fills up with water when the drain valve gets clogged with leaves, dirt and sludge.

Water shorts out electronics.

Eyeball the hull of the carrier for standing water. See any? Clean the valve to drain the water.

At least once each month open the drain valve to keep the hull dry.



Keep the drain valve clean and free of debris

Pump Bracket Racket

Power steering pump belts live a short life on these 5-ton trucks because some pump brackets are made wrong. The belt won't line up right. Then the belt rubs the side of the pulley and wears quickly.

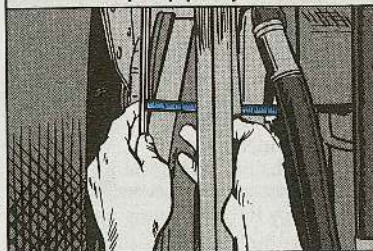
HERE'S A QUICK CHECK FOR YOUR PULLEY ALIGNMENT!

If you have a truck that's in for a power steering pump belt, check pulley alignment. Lay a straight edge across the face of the accessory drive pulley. Use the 6-in machinists rule from your tool box.



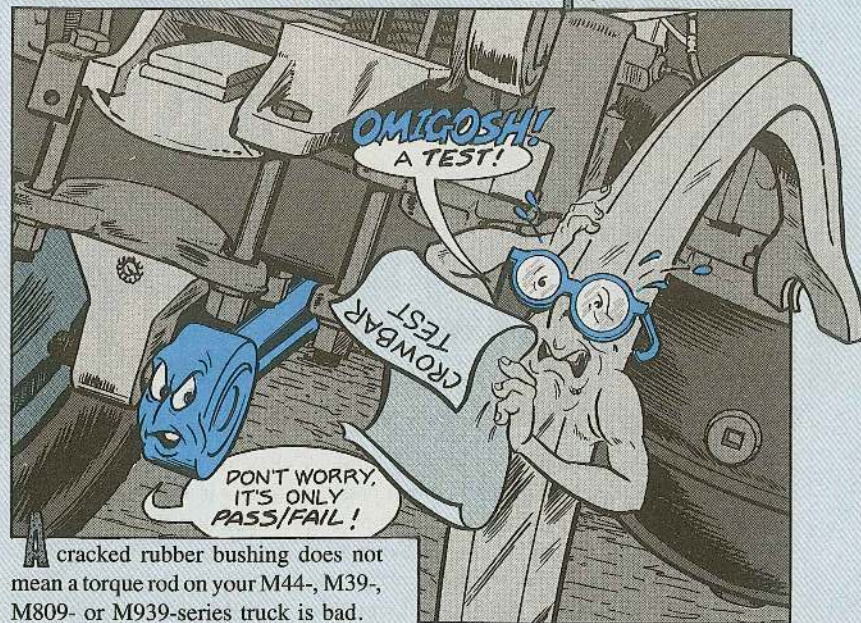
Measure the distance between the straight edge and the top of the pump pulley.

Then measure the distance between the straight edge and the bottom of the pump pulley.



Replace the pump mounting bracket, NSN 2530-00-230-3596 if the difference between top and bottom measurements is more than 1/16 inch.

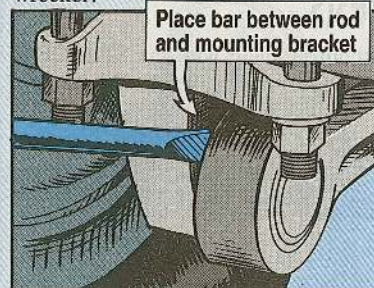
Crowbar Test for Torque Rods



A cracked rubber bushing does not mean a torque rod on your M44-, M39-, M809- or M939-series truck is bad.

Test the rod by placing the flat end of a 3-ft crowbar, NSN 5120-00-242-0762, between the torque rod and the mounting bracket. You can also use the 36-in pinch bar, NSN 5120-00-224-1372, carried on the 5-ton wrecker.

Place bar between rod and mounting bracket



Push on the end of the bar so that the hook end moves 4 to 6 inches. Release the pressure on the crowbar.

IF THE TORQUE ROD GOES BACK TO ITS ORIGINAL POSITION, IT'S OK!

IF NOT, REPLACE THE ROD.



Troubleshooting a



Hold one before you ship a sluggish-shifting CUCV to your DS shop for a new transmission. The problem may not be as serious as it seems.

Start with the obvious. Drive the truck on a level spot. Put the transmission in PARK, apply the parking brake and keep the engine running. Pop the hood. Pull out the transmission dipstick and check the fluid level.

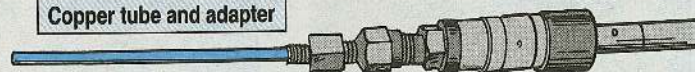
Fluid level OK? If so, take a close look at the fluid. Is it nice and red or is it brown and smells burnt? If the fluid is off-color or smells funny, the transmission needs a fluid and filter change. The how-to info is in Chapter 5 of TM 9-2320-289-20.

If the oil's OK, check the vacuum system. A loss of vacuum pressure also causes transmission shift problems. Pull off the air cleaner assembly.

STE/ICE Tests

You can pinpoint the transmission's vacuum problem with the STE/ICE-R vehicle test meter (VTM) and a piece of 1/8-in copper tubing, NSN 4710-00-177-8605, six inches long.

Copper tube and adapter

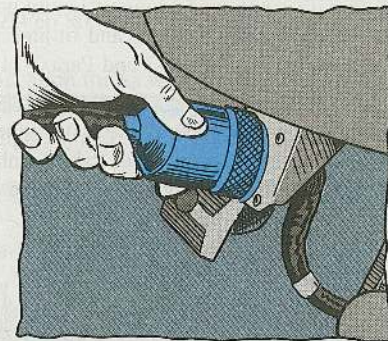


Troubled Transmission

Here's how:

Hook the VTM to the DCA connector. Run confidence test 65, ID entry test 60, vacuum test 45 and RPM measurement test 60. Use vehicle ID number 14 or 21.

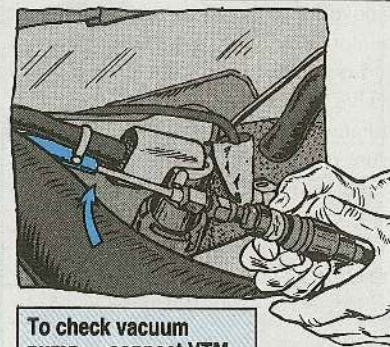
Hook VTM to the DCA connector



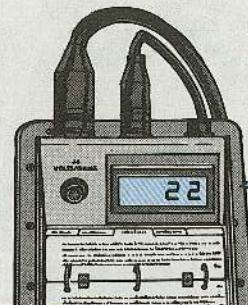
Put the W4 cable on the VTM. Connect the red striped TK 22 transducer to the other end of the W4 cable. Hook adapter TK 19 to the transducer. Put the piece of copper tubing in brass adapter, NSN 4730-00-288-9928, and then hook the adapter in the TK 19 adapter.

Start with the vacuum pump, NSN 2990-01-149-4966. Remove the bottom vacuum line on the regulator valve that's mounted on the fuel injector pump.

Connect the VTM to the bottom vacuum hose by carefully pushing the copper tubing into the vacuum line.



To check vacuum pump... connect VTM to bottom vacuum hose



Pump is good if reading is between 18-25

Start the truck's engine and let it idle at 625 RPMs. If the pump is good, you'll get a reading between 18 and 25 in-Hg. Any reading under 18 means the system does not have enough vacuum pressure to shift right. The problem is in the vacuum pump or hoses and fittings. Replacement procedures for the pump and hoses are in Para 3-7 and Para 3-21 of TM 9-2320-289-20.

Pump pressure good? Move on to the regulator valve. Reconnect the bottom vacuum hose at the regulator valve. Unhook the top one at the connector. Run the copper tubing straight into the hose connector on the regulator valve.

Regulator valve check.
Adapter in upper fitting

Correct reading
is between 7-13

Rev the truck's engine to 1,200 RPMs. If the reading is below 7 or above 13 on the vacuum gage, the regulator is out of adjustment or bad.

Loosen the two bolts that hold the valve to the fuel injector pump and rotate the regulator valve until the pressure reading is within the right limits. Tighten the bolts.

If the pressure cannot be adjusted to within limits or if there is no vacuum reading at all, replace the regulator valve, NSN 4820-01-158-6836.

Replace regulator valve if
pressure cannot be adjusted

THE STE/ICE
FOUND THE PROBLEM,
SO WE CAN FIX IT
OURSELVES!

BUT
WHAT IF
WE STILL
HAVE
SHIFT
PROBLEMS?

THEN
SHIP THE
TRUCK TO
DS FOR
FURTHER
TESTS
AND
REPAIRS!

Wrecker Towing Update

Some important info on towing and lift towing with your 5-ton wrecker is in TACOM Msg AMSTA-CM-S 130915Z Feb 90. In case you missed it, here's the short version of how it goes.

All 5-ton wreckers can pintle tow most 5-ton trucks with a payload of 10,000 lbs or less. No wrecker can tow vans with a maximum payload of 15,000 lbs. The maximum speed limit is 20 MPH on the highway and 10 MPH for cross-country.

HERE'S A CHART ON WHICH
5-TONNERS CAN BE LIFT TOWED
WITH YOUR 5-TON
WRECKER.

LIFT TOWING

DISABLED 5-Tonner (without payload)	WRECKER		
	M936	M816	M543A2/M62
M923, M925, M927, M929, M930, M931, M932, M935	YES	YES	NO
M928, M934, M936	NO	NO	NO
M813/A1, M818	YES	YES	YES
M814, M815, M816, M817	YES	YES	NO
M819, M820/A1/A2, M821	NO	NO	NO
M543A2	YES	YES	NO

If you need a copy of the message, see your local TACOM Logistics Assistance Representative or write:

US Army Tank-Automotive Command
ATTN: AMSTA-CM-S
Warren, MI 48397-5000

Hood Fastener Locks Passenger Seat



The U-type friction clip will not lock the passenger seat in place on 2½-ton and M39-series 5-ton trucks if it's worn.

The old clip is still available, but the setup on the M809s works much better. You can make the changeover yourself.

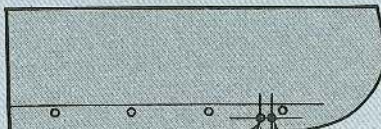
Here's how:

Order a hood catch fastener, NSN 2590-00-040-2075, and 2 screws, NSN 5305-00-068-0513, and 2 nuts, NSN 5310-00-061-7325, for each truck you are going to convert.

Find the center of the cab and count the capscrews until you find the 5th one toward the passenger side.

Measure back toward the center of the cab. From the center of the 5th capscrew, drill a ⅝-in hole ½ inch from the center of the capscrew and ⅜ inch from the back panel.

Drill a second ⅝-in hole 1½ inches from the center of the 5th capscrew and ⅜ inch out from the back panel.



REAR OF CAB FLOOR, PASSENGER SIDE

Drill ⅝-in hole 1½ inches from center of 5th capscrew and ⅜ inches from edge of back panel

Drill ⅝-in hole ½ inch from center of 5th capscrew and ⅜ inch from edge of back panel

Mount the hood catch fastener with the two screws and nuts.

New Ball Joint Inspection

The truck headshed has decided the inspection called out in TM 9-2320-280-20 is no good for checking the front and rear lower ball joints on the HMMWV.

Now they want you to do it like this:

- Chock the rear wheels front and rear.
- Raise the front wheels about 2 inches off the ground. Block the vehicle with jack stands.

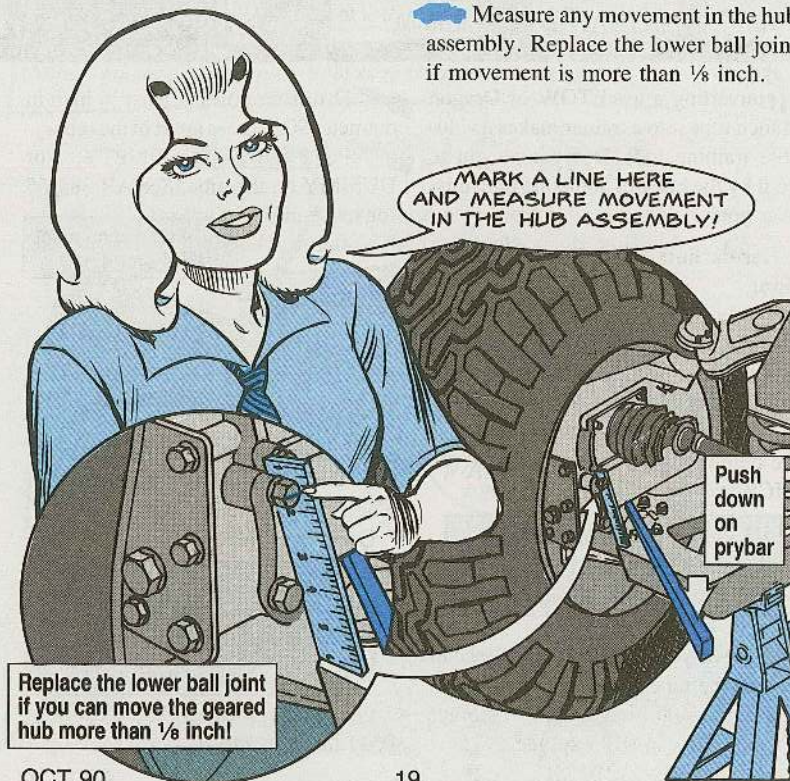
Mark a line across the head of the top bolt holding the steering arm cover. Make sure the mark is parallel with the lower control arm. This helps you get an accurate measurement.

Put a prybar between the lower control arm and geared hub.

Set a 6-in ruler upright between the lower control arm and the screw you just marked.

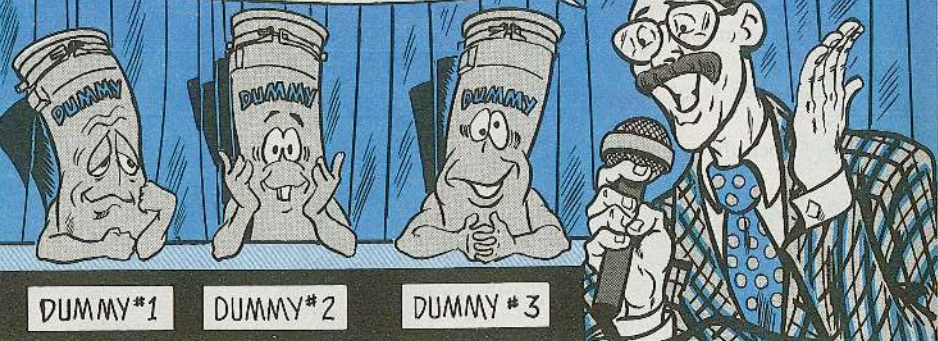
Push down on the prybar to try to move the hub.

Measure any movement in the hub assembly. Replace the lower ball joint if movement is more than ⅜ inch.



Turning Launchers into Trainers

NOW THE MOMENT WE'VE ALL BEEN WAITING FOR. WILL THE REAL DUMMY PLEASE STAND UP.



Converting a used TOW or Dragon launch tube into a trainer makes a valuable training tool. But you've got to do it by the book or someone may mistake your trainer for a live round.

Here's how to make the conversion:

File a missile firing data report for the fired missile. AR 702-5 has details.

Get the National Inventory Control Point (NICP) to OK the use of the launch tube as a trainer. Some tubes are being reused for live firing. Write NICP at:

US Army Missile Command
ATTN: AMSMI-LC-MM
Redstone Arsenal, AL 35898-5679

Have your local ammo inspector certify the tube is clear of explosives. Even tubes that have been in storage a long time can still explode.

Drill four holes at least 1/4 inch in diameter 90 degrees apart in the tube.

Paint INERT, EMPTY, or DUMMY on the tube. See AR 385-65 for more info.



Put the new trainer on your property book. This gives you a record of where the tube came from.

Questions? Write:

Commander
US Army Missile Command
ATTN: AMSMI-LC-AM
Redstone Arsenal, AL 35898-5679

Or call them Commercial (205) 876-0341 or DSN 746-0341.

AMG Warning Light Sub

Dear Editor,

The aircraft warning lights on the Antenna Mast Guide's (AMG) antenna amplifiers burn out. No lights mean aircraft pilots can't see the antennas, which means you can't raise the antennas at night.

We've found a 2 1/2-ton truck taillight bulb, NSN 6240-00-019-0877, works fine as a substitute. Your motor pool will have some.

Through hard experience, we've learned to check the lights before we raise the antenna. That's simpler than lowering the mast to replace a bulb.

SFC Frank Beakes
Ft Bliss, TX

(Editor's note: Your warning light suggestions glow with good sense. Thanks.)

Mount NSN Change

The NSN for the M66 ring mount used with the M2 and other machine guns has been changed to NSN 1005-00-890-2610. Make a note until TM 9-1005-245-14 is updated.

Mortar Flange Nuts

There is a new flange nut available for 22 MM sub-caliber practice ammo. The nut stops erosion of the firing pin boss on the 60 and 81 MM mortars. Order the nut with NSN 1315-01-163-5428.

HERE'S
SOMETHING
TO GET
FIRED UP
ABOUT!



SOMEBODY DIDN'T PAY
ATTENTION TO HIS ELEVATION
ASSEMBLY PM!

Don't Be a Weak

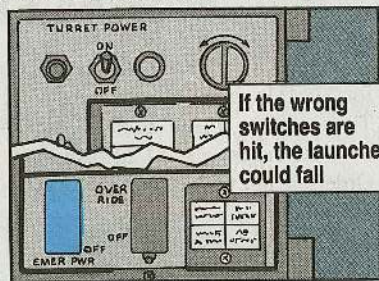
OUCH!

SLAM

If the wrong switches are hit without the stand in place, the erection locks disengage and the launcher could fall. That damages the launcher, erection chains and erection arms... and crushes anyone underneath.

There are a few points you need to link up to M901A1 elevation chain PM, repairmen.

When you and the crew depressurize and repressurize the hydraulic system to work on the elevation's chains, do it by the book—Para 3-3 in TM 9-2350-259-20. And use the launcher support stand any time you work on the launcher in the erect position.



If the wrong
switches are
hit, the launcher
could fall

When you adjust the chains, put the turnbuckle locking clips someplace safe, like your pocket. The small clips disappear quicker than your paycheck.

Link in Chain PM

Be very sure you replace the clips and that the clips are securely mounted in the turnbuckle's holes. No clips mean the turnbuckle can work off, letting the chain whip loose and destroy the bearings.



Never try to make a clip in an emergency. Homemade clips won't

hold. Get new clips, NSN 5340-00-010-3090, from your PLL clerk.

When it's time to lube the elevation assembly, use GIA for the bearings and WTR (Wide Temperature Range General Purpose Aircraft Grease) for the gears, shafts, and chains. Make sure your crews know they're supposed to use GIA on the elevation assembly, too.



Chaparral Missile System...

FLIR Help

Dear Editor,

During travel, dust blows back on the Chaparral's Forward Looking Infrared Radars (FLIR), penetrating through small holes in the FLIR cover and caking the lenses. The crew has to clean the lenses or they get bad FLIR readings.

Save time by tying a plastic bag over the FLIR before you move out. When you're ready to operate, just pull the bag off.

Bill Hazelton
Ft Bliss, TX



(Editor's note: You've bagged the solution to dirty FLIRs. Good job. NSN 8105-01-183-9768 gets 125 bags.)

Handy Handguard Help



Your new M16A2s may be stiff at first and it'll be harder to pop the handguards off. Prying the handguards will damage them or the sliping.

The best way to do the job is the way TM 9-1005-319-10 says:

Set the M16 down on the buttstock. Grip the handguards.



Hold buttstock and handguard

Have a buddy circle the sliping with both hands and pull the sliping down.



Pull down on sliping

Lift up and out on the handguards.



Pull off handguard

To put the handguards back on, snap each one on—first at the top, then at the bottom—while your buddy holds down the sliping.

If you can't get somebody to help you, twist the sliping slightly and cock one side down. The handguard on the down side should snap right on or off.



Twist sliping slightly and cock down

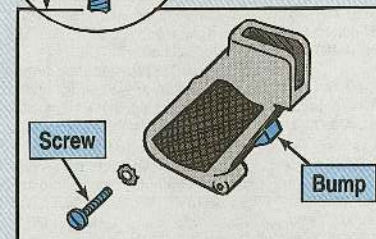
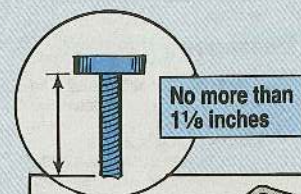
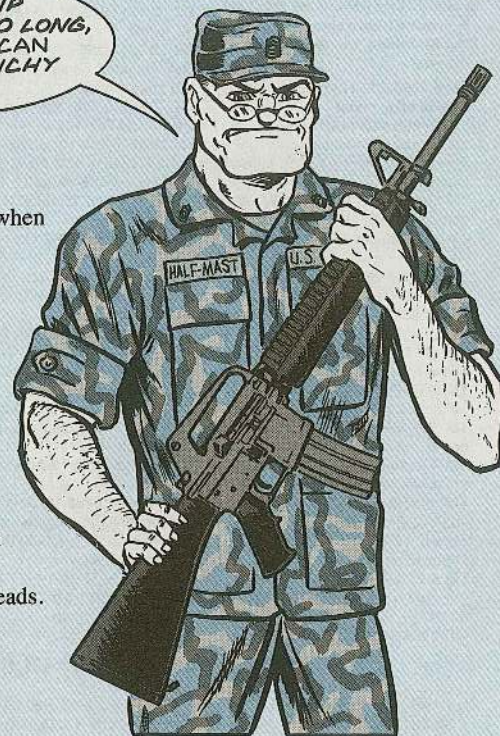
No luck? Call your armorer.

Wrong Grip Screw Dangerous

IF THE GRIP SCREW IS TOO LONG, YOUR RIFLE CAN BECOME A TOUCHY SUBJECT!

Use a screw that's too long when you put on an enhanced rifle grip—the one with the bump between the second and third fingers—on M16s and M231s and you'll have a weapon that can accidentally fire.

Armorer's, check for long screws by taking them out and measuring them. Always measure the shank length. That's from the bottom of the head (with the washer removed) to the end of the threads.



If the screw's longer than 1½ inches, replace it with a 1½-in long screw, NSN 5305-01-268-1191, or 1-in long screw, NSN 5305-01-147-0777.

The word's in AMCCOM Safety-of-Use Msg 09-90, AMSMC-MA 261915Z March 90. Your local AMCCOM Logistics Assistance Representative (LAR) can get you a copy.

PUBS

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

TM 5-2090-202-12&P May Cradle, twin-jet bridge boat
 TM 5-4930-220-13&P May 600-gal trailer-mounted fuel tank
 TM 9-1425-648-10-1 Apr MLRS launcher
 TM 9-1425-473-L Apr TOW air-borne system
 TM 9-1425-646-20 Apr MLRS launcher
 TM 9-2350-259-10 Apr M901A1 ITV
 TM 9-2350-255-PCL Mar M1/1PM1 tank
 TM 9-2350-261-20-2 Jul M113-series FOV
 TM 9-4935-1587-24P Apr Chaparral missile system
 TM 9-6115-541-10 May Auxiliary power unit for M1 tank
 TM 9-6115-541-23&P May Auxiliary power unit for M1 tank
 TM 9-6115-646-14&P May PU-495A/G, PU-495B/G power units
 TM 9-6115-653-14&P Feb PU-732/M power unit
 TM 9-6115-655-14 Nov 89 trailer-mounted generator, model CTMGSA-15 (LT) and model CTMGSA-15 (HY)

TM 9-6920-647-14 Apr Trainer (MLRS)
 TM 10-3930-638-24P Mar M4K 4,000-lb RT forklift
 TM 10-3930-643-12-HR Apr M10A 10,000-lb RT forklift
 TM 10-3930-643-20 Jan M10A 10,000-lb RT forklift
 TM 10-3930-643-24P Jan M10A 10,000-lb RT forklift
 TM 10-3930-643-34 Jan M10A 10K RT forklift
 TM 10-3950-263-24P Feb Crane, truck mounted, container handling, 140 ton capacity
 TM 10-4510-206-24P Apr Bath unit, model PBU100
 TM 11-5805-262-12 Jun SB-22/PT and SB-22A/PT switchboards
 TM 11-5805-382-12 Jul TD-660/G, TD-660A/G and TD-660B/G multiplexers
 TM 11-5820-890-20-2 Oct 89 AN/VRC-87, AN/VRC-88, AN/VRC-89, AN/VRC-90, AN/VRC-91, and AN/VRC-92 radio sets and AN/VIC-1(V) Intercom
 TM 11-5820-890-20P Oct 89 AN/PRC-119, AN/VRC-87, AN/VRC-88, AN/VRC-89, AN/VRC-90 and AN/VRC-91/92 radio sets
 TM 11-5820-947-24P Mar MK-2312/VRC electronic equipment auxiliary kit
 TM 11-5895-1220-12 Jul AN/GRC-215 radio set
 TM 11-7440-283-12-1-1-1 Feb Cannon battery computer system computer (BCSC), OL-200A/GYK-29(V) gun direction
 TM 11-7440-283-12-1-1-2 Feb OL-200A/GYK-29(V) gun direction cannon BCSC group
 TM 11-7440-283-12-1-2-1 Mar AN/

GYK-29(V) fire direction system, MLRS/Lance
 TM 11-7440-283-12-1-2-2 Mar AN/GYK-29(V) fire direction system, MLRS/Lance
 TM 55-1510-204-23P-4 Mar OV-1B/C/D and RV-1D, OV-1C, OV-1D, RV-1D
 TM 55-1520-210-CL Apr UH-1H/V op/crew checklist
 TM 55-1520-214-CL May OH-6A op/crew checklist
 TM 55-1520-234-23P-1 Feb AH-1S (MOD) tools
 TM 55-1520-234-23P-2 Feb AH-1S (MOD) tools
 TM 55-1520-237-23P-5 May Repair parts and special tools list UH-60A and EH-60A
 TB 1-1520-239-20-10 Jun Inspection of flight control servos on AH-64A
 TB 55-1510-217-20-10 Apr OV-1D/RV-1D inspect ele trim tabs, rud trim tab
 TB 55-1520-228-20-52 Mar OH-58A/C landing/search light
 TB 55-1520-228-20-53 May OH-58A/C rail rotor yoke
 TB 55-1520-237-20-117 May Inspection of main rotor pitch control horns UH-60A/L, EH-60A
 TB 55-1520-240-20-45 Jun Inspect right hand aft bellcrank sup structure 42 CH-47D
 TB 55-1520-241-20-52 May CH-47C/D pitch link retaining hardware
 TB 55-2840-231-20-10 Jun T63-A700/720 turbine engine recall for OH-58A/C and H-6
 CTA 50-900 Aug Clothing and individual equipment
 FM 20-22 Sep Vehicle recovery operations

Maintenance & Safety-Of-Use Messages

AMCCOM SOU-MSG-25-90—Advisory, M60 series machine guns, AMSMC-MA 132000Z Jul 90.
 AMCCOM Maintenance Advisory 90-15—Motor assembly on M157 smoke generator sets, AMSMC-MAR-ED(A) 161600Z Jul 90.

CECOM SOU-MSG—Advisory, Follow-up to CECOM SOU-MSG-89-12-02, ANTRC-170(V)2 and (V)3 radio terminal sets used with multi-service communications systems, AMSEL-SF-SEP 121800Z Mar 90.

MICOM SOU-MSG-90-09—Technical, TOW 2 power cable, AMSMLC-AM 311130Z Jul 90.

TACOM SOU-MSG-90-19—Advisory/Operational, M992 FAASV, AMCPM-FAASV 261700Z Jun 90.

TACOM SOU-MSG-90-20—Advisory, Technical/Maintenance, Small unit support vehicle, follow-up to TACOM SOU-MSG 90-08, AMSTA-MCA 011200Z Jun 90.

TACOM SOU-MSG-90-26—Advisory, Technical/Maintenance, M113 family of vehicles, AMSTA-M 131300Z Jul 90.

TACOM SOU-MSG-90-28—Advisory, Operational, M9 armored combat earthmover, AMSTA-M 131630Z Jul 90.

TACOM SOU-MSG-90-29—Operational, M901A1 improved TOW vehicle and M981 fire support team vehicle, AMSTA-M 172000Z Jul 90.

TACOM SOU-MSG-90-30—Operational, M2A2/M3A2 Bradley fighting vehicles, AMSTA-M 261730Z Jul 90.

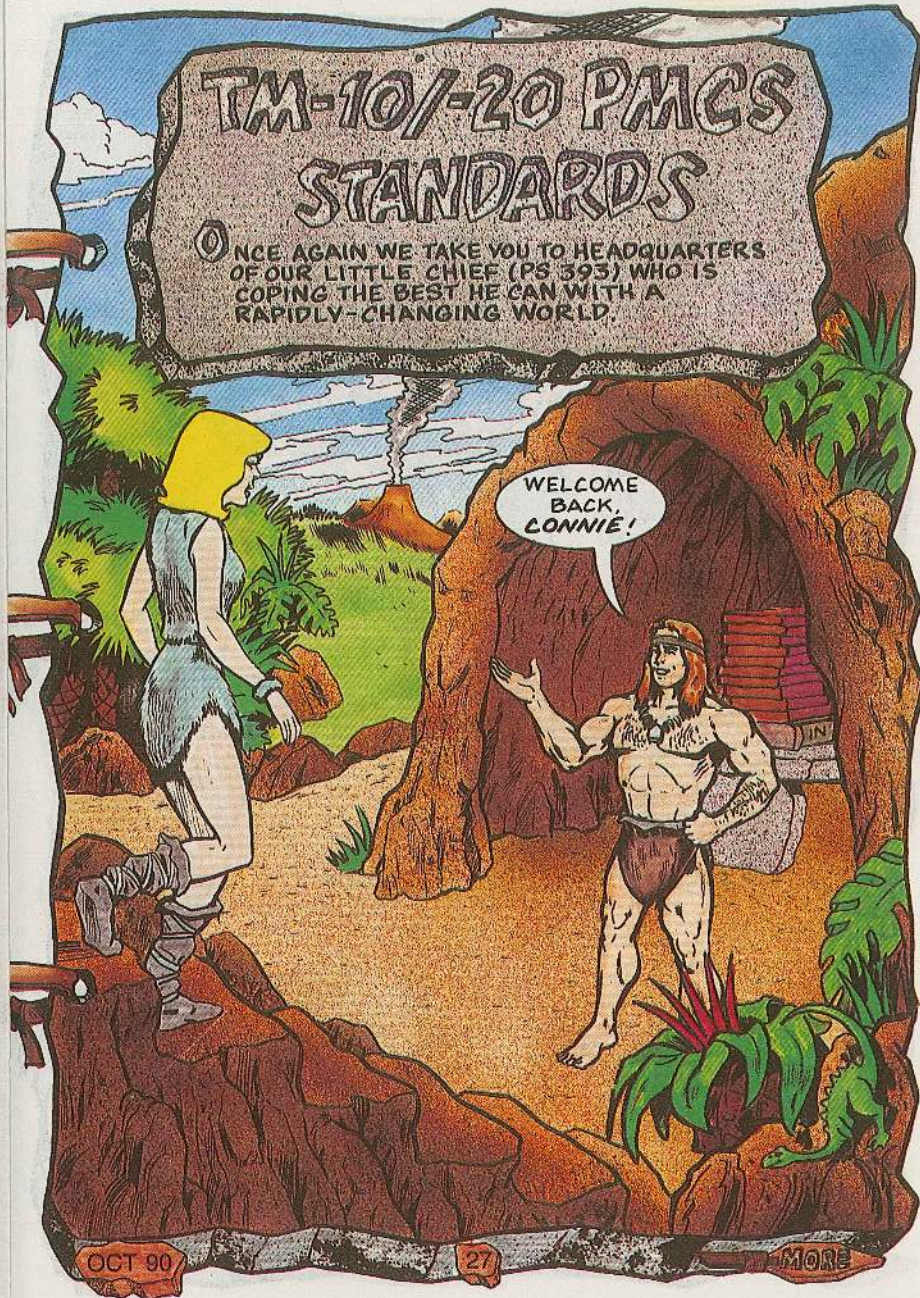
TACOM SOU-MSG-90-27—Advisory, Technical/Maintenance, M151-series 1/4-ton trucks, AMSTA-M 271200Z Jul 90.

TROSCOM SOU-MSG-17-90—Advisory, Failing well drilling system, truck mounted, AMSTR-MES 271435Z Jul 90.

TROSCOM Maintenance Advisory MSG-90-21—Firetruck, 32P-19 series, turn signal switch modification, AMSTR-MES 121400Z Jul 90.

TROSCOM Maintenance Advisory MSG-90-20—Nonconforming replacement part for US divers J/K valve stems, AMSTR-MES 121415Z Jul 90.

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





IT'S BEEN A LONG TIME!

GOOD TO BE HERE, CHIEF.

I THOUGHT I'D DROP BY TO TALK ABOUT THE NEW -10/-20 STANDARDS. HAVING ANY PROBLEMS?



WELL, TO TELL YOU THE TRUTH, I HAVEN'T HAD A CHANCE TO DIG INTO THE DETAILS.

I'VE BEEN CONCENTRATING ON KEEPING MY GEAR FULLY MISSION CAPABLE!

BUT KEEPING EQUIPMENT FIT TO FIGHT IS JUST THE BEGINNING!

THERE'S A LOT MORE TO DO!

YOUR EFFORTS HAVE REALLY PAID OFF! YOUR UNIT HAS A VERY HIGH READINESS RATING!



NOW, HOW DID I KNOW YOU WERE GOING TO SAY THAT!

YOU MUST HAVE JUST READ THE NEW AR 750-1 IN MAINTENANCE MANAGEMENT UPDATE 12.

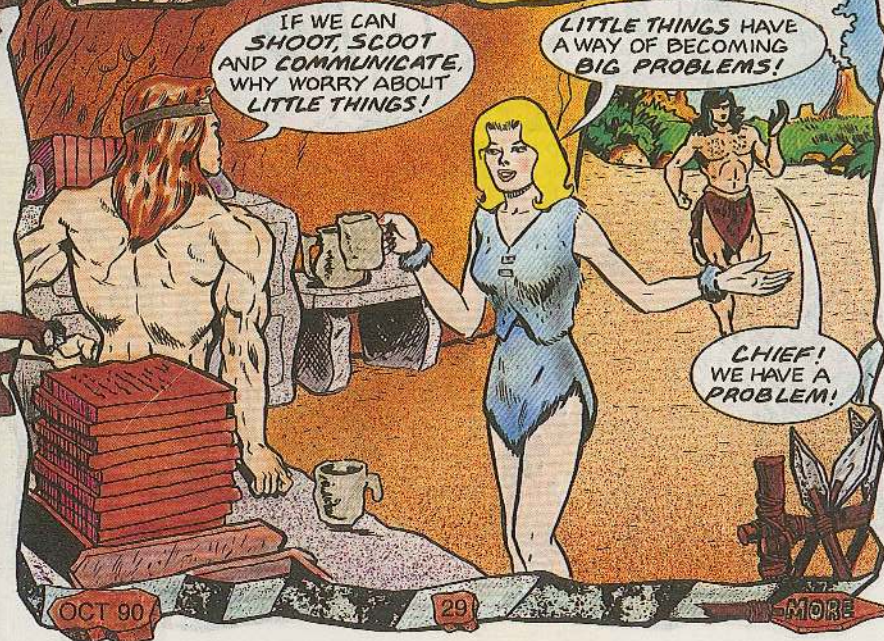
IT INTRODUCES THE NEW MAINTENANCE STANDARDS!



TELL ME, WHY ALL THE EMPHASIS ON WHAT WOULD SEEM TO BE NON-CRITICAL MAINTENANCE?

THANK YOU!

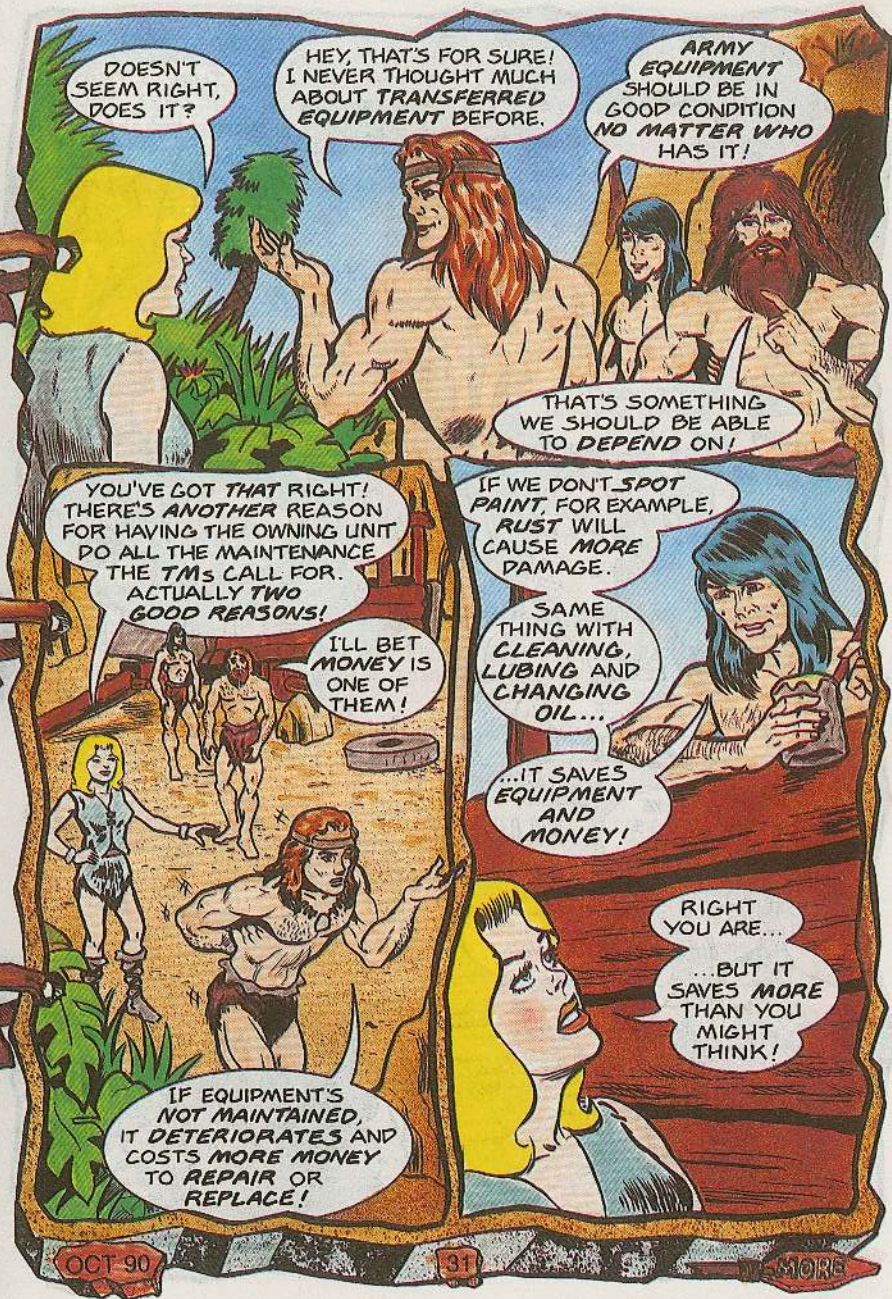
CARE FOR SOME JUICE?



IF WE CAN SHOOT, SCOOT AND COMMUNICATE, WHY WORRY ABOUT LITTLE THINGS!

LITTLE THINGS HAVE A WAY OF BECOMING BIG PROBLEMS!

CHIEF! WE HAVE A PROBLEM!





AH-64 Apache...

Now You See It, Now You Don't



You're playing with dynamite if you use a bore brush, broomstick or other probe to clear your Apache's 30-MM cannon after gunnery exercises.

Ramming something down the barrel could cause a high explosive round to explode.

Instead, follow the instructions in Task 4-7-1 of TM 9-1090-208-23-1 to clear the weapon.

Then visually check—from the breech end—to make sure no round is in the barrel or chamber.

Use a flashlight—day or night.

Check the breech first. If the breech is clear, shine the light down the barrel from the muzzle end. If you can see the light shining in the receiver through the barrel, you know the barrel is clear.



Aviation Messages

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

OH-58-90-07, SOF, Maint, all OH-58A/C, one time, recurring inspection and replacement of P/N AN320-6, NSN 5310-00-176-8110, nuts, 212300Z Jun 90.

UH-1-90-04, SOF, Maint, all UH-1H, V and EH-1H, X series, one time, recurring inspection and replacement of P/N AN320-6, NSN 5310-00-176-8110, nuts, 212200Z Jun 90.

T-42-90-01, SOF, Maint, U-8F, T-42A, confiscated BE-65, BE-65-80 and BE-65-B80, one time inspection/modification of fuel filler and fuel filler caps, 212000Z Jun 90.

U-8-90-01, SOF, Maint, U-8F, T-42A, confiscated BE-65, BE-65-80 and BE-65-B80, one time inspection/modification of fuel filler and fuel filler caps, 212000Z Jun 90.

CH-54-90-01, SOF, Maint, CH-54A/B, one time inspection and replacement of P/N AN320-6, NSN 5310-00-176-8110, nuts, 281900Z Jun 90.

UH-60-90-ASM-02, ASM, UH-60A/L and EH-60A, change to main rotor pitch control horn retirement life, 061830Z Jun 90.

OH-58-90-ASM-04, ASM, OH-58A/C, MWO changes, 061900Z Jun 90.

OH-58-90-ASM-05, ASM, OH-58 and UH-1 series lubricants, 062200Z Jun 90.

UH-1-90-ASM-04, ASM, OH-58 and UH-1 series lubricants, 062200Z Jun 90.

OH-58-90-ASM-06, ASM, OH-58A/C, installation/adjustment of the linear actuator, 201900Z Jun 90.

UH-1-90-ASM-05, ASM, UH-1H/V and EH-1H/X, swashplate outer ring assembly update, 072000Z Jun 90.

AH-1-90-ASM-04, ASM, AH-1 series, helmet sight assembly boresighting, 281630Z Jun 90.

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

OCT 90

Banish Blade Pin Abuse

Dear Editor,

Rotor blade pin abuse is on the rise!

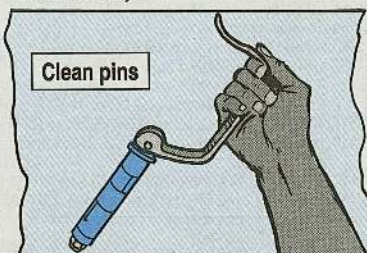
Some mechanics use a hammer to remove or install pins. That leads to beat-up pin heads and nuts.

It also distorts the clip tension, which makes adjusting tension difficult or impossible.

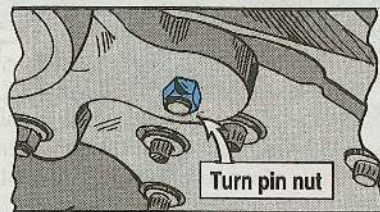
These simple procedures can end blade pin removal and installation problems:



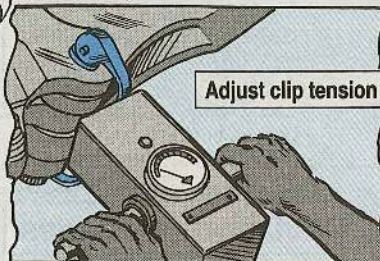
- ✓ Align the blade sling properly;
- ✓ Clean the blade pins and link holes;



- ✓ Lift spring clip to vertical position, then turn the pin nut clockwise or counter-clockwise a few turns—it often makes pin removal easier;



- ✓ Adjust clip tension to 50-60 pounds using dial indicator gauge, NSN 6635-00-578-5285;



- ✓ Make sure the gap between the attaching pin washer and the blade link is 0.002 to 0.060 inch like it shows in Fig 5-2-5 of TM 55-1520-238-23-3.

Stay away from those deadly hammers!

James R. Pleasant, Jr.
Ft Hood, TX

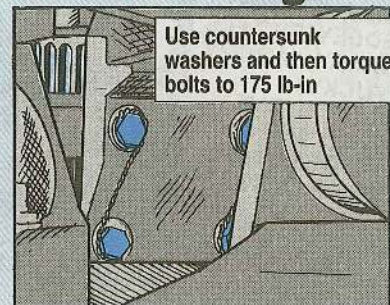
(Editor's note: You've said it all!)

Stabilizer Hardware Change

Flat washers under the mounting bolts for your Huey's stabilizer let the bolts vibrate loose. A loose stabilizer damages the bird's hub.

So replace those flat washers as soon as possible with countersunk washer, NSN 5310-00-149-9146, like it says in AVSCOM Msg UH-1-90-ASM-01.

Then torque the bolts to 175 lb-in like it says in Fig 5-5 of TM 55-1520-210-23-1.

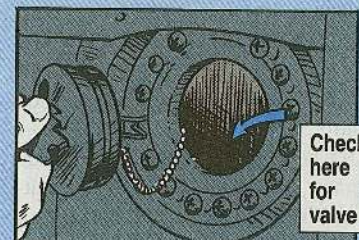


Rollover Vent Valves

Dear Editor,

We've found that some of our UH-1s never had fuel tank rollover vent valves installed per MWO 55-1520-210-30-43.

It's easy to check. Just open the fuel filler cap and look for a valve in the top of the right hand aft fuel cell. Please pass the word.



Shawn Carey
Windsor Locks, CT

(Editor's note: The word's out. Units that have UH-1s without rollover vent valves should report it in writing to:

Cdr, AVSCOM
ATTN: AMCPM-UH-1
4300 Goodfellow Blvd
St Louis, MO 63120-1798)

Make Clean the Routine

DIRTY, DUSTY,
OILY, GREASY,
GOOEY, FILTHY,
GRIMY, MUDDY,
YUCKY!
THAT'S THE
ONLY WAY
TO DESCRIBE
SOME BIRDS
THAT FLY FOR
MONTHS AT A
TIME WITHOUT
A GOOD
CLEANING.



Here are some Do's and Don'ts for keeping your bird clean:

DO wash and clean your bird twice a month unless your aircraft TM or unit SOP says otherwise. That's the minimum cleaning cycle recommended by TM 55-1500-344-23, Aircraft Weapons Systems Cleaning and Corrosion Control.

DO wash your bird weekly if you operate in coastal areas where salt-laden air and rain are the norm. Salt deposits lead to corrosion.

DON'T use compressed air to remove dirt and debris. It could penetrate access panels and seals.

DO observe all safety precautions spelled out in Table 3-1 and Para 3-5.1.3 of the cleaning TM when you use any kind of solvent to clean your bird.

DON'T let cleaning solutions contact plastic or rubber components any longer than you have to.

DO make sure static vents/ports are not fouled by tape adhesive transfer. Cover vents by cutting a circle of barrier material, NSN 8135-00-282-0565, to the same size as the vents and apply preservation tape, NSN 7510-00-916-9659.



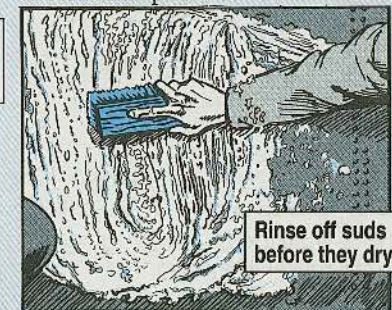
DON'T use the same mop, brush, cloth or sponge for plastic or Plexiglas windows that you use on your bird's skin. If you do, you'll scratch the plastic.

DO clean up spilled oil, hydraulic fluid, grease and fuel immediately, before it has a chance to soak in.



DON'T let suds dry before rinsing them off. If you do, you'll wind up with white streaks and have to start over again. Rinse surfaces before washing to reduce skin temperature. You can also help prevent streaking by washing lower surfaces first and working upward and out, like it says in Fig 3-6 of the TM.

DO drain any trapped water and lubricate per your bird's maintenance manual after you finish washing your bird. Water that's not removed or displaced will cause corrosion and failure of lubricated parts.



Finally, be sure to observe all warnings and cautions in the cleaning TM during the entire cleaning operation.

Know Before You Go

Here are heights and weights of these shelters:

Shelter Mounted System	Weight Tons	Height
AN/TSQ-138	15.4	11 ft 7 inches 3.51 meters
AN/MLQ-34	12.1	11 ft 10 inches 3.61 meters
AN/MSQ-103C	12.5	12 ft 4 inches 3.76 meters

*When you load the system on a semi-trailer to transport it, you need to add the 4-6 feet trailer height to the system height. This would mean an AN/MSQ-103C loaded on an M127 or M872 semi-trailer would be 17 feet high.

Play it safe!

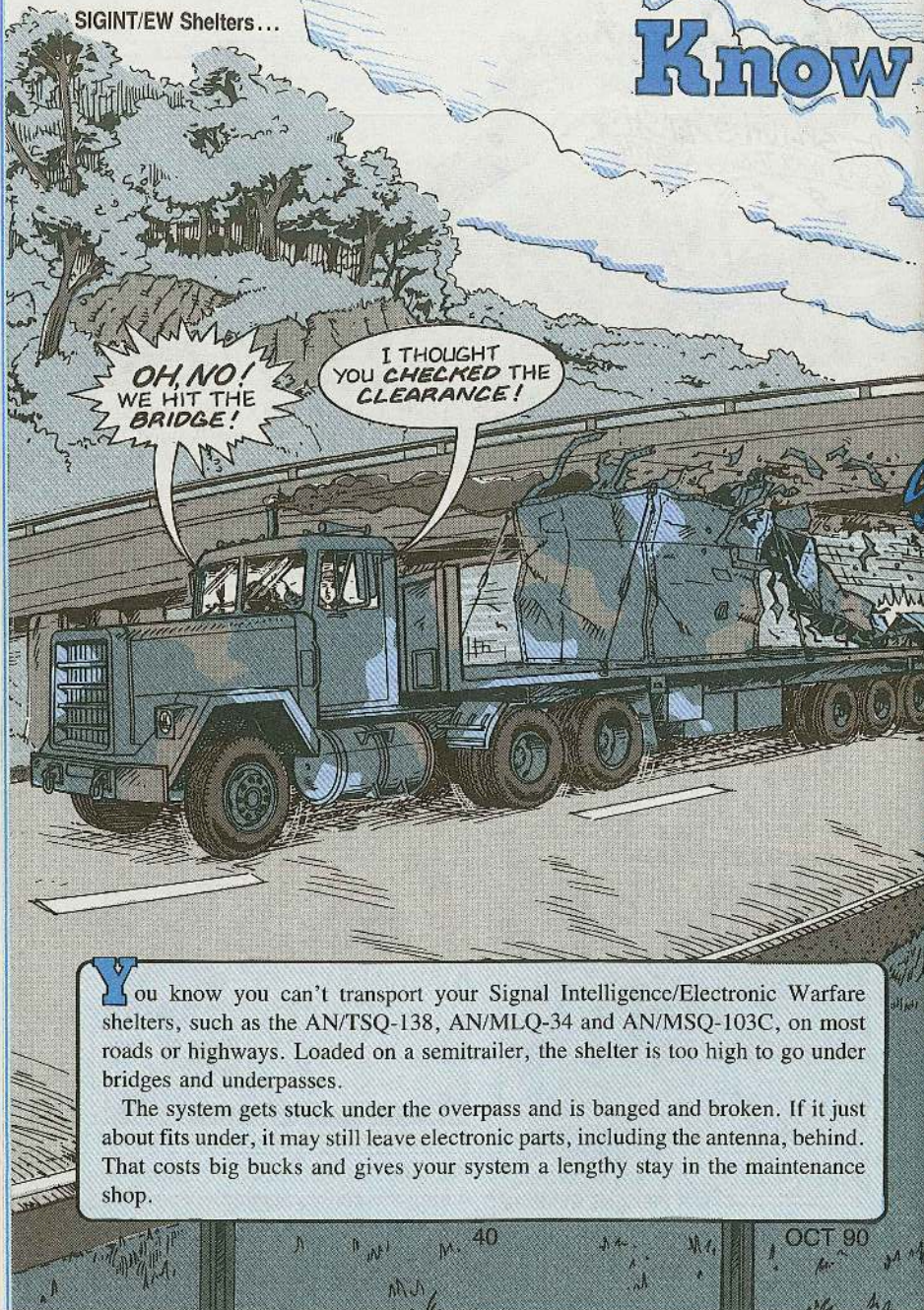
Always take the shelter off the carrier before loading the carrier on a semitrailer. Load the shelter on a separate semitrailer.

Check it out!

TM 55-5811-900-14 tells how to load the AN/TSQ-138 and AN/MLQ-34 shelters on the semitrailer.

Have a plan!

Also, plan the route to take and follow the United States and foreign highway and transportation guidelines.



You know you can't transport your Signal Intelligence/Electronic Warfare shelters, such as the AN/TSQ-138, AN/MLQ-34 and AN/MSQ-103C, on most roads or highways. Loaded on a semitrailer, the shelter is too high to go under bridges and underpasses.

The system gets stuck under the overpass and is banged and broken. If it just about fits under, it may still leave electronic parts, including the antenna, behind. That costs big bucks and gives your system a lengthy stay in the maintenance shop.

Antenna Peak Points



Here are some pointers to keep your mast antenna doing its job for you:

Use all the guy assemblies. Make sure they're staked and tied right and tight.

For soft or sandy soil, drive the top of the ground stake at least 2 inches below the surface. That leaves the anchor hook just above the ground.

In hard ground, drive in the stakes until only the cable connection hole shows.

Safety First

Put safety first when erecting this antenna. Put tip caps, NSN 5985-00-930-7223, on all the elements. Wrap them in place with electrical insulation tape, NSN 5970-00-816-6056.

In a pinch, you can tape other items, such as tennis balls or rubber tubing, onto the antenna elements.

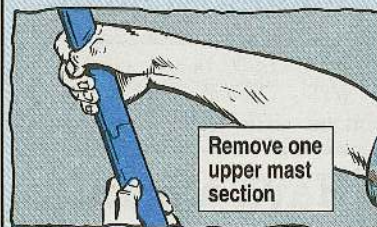


Erection Tip

Keep the antenna away from overhead electric power lines. Pick a spot that's at least twice the mast's height away from power lines.

CECOM SOU Msg AMSEL-SF-SEC 201800Z Mar 90 authorizes the removal of one upper mast section to help take stress off the entire mast. Reducing the mast height means you need to shorten the lower pulling guy wire.

Since one section is removed, the antenna can be raised by one person using the assembly procedures in Para 2-6 of TM 11-5985-357-13.

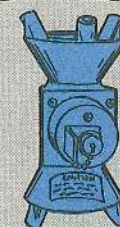


Mast Sections Matter

The feedcone on the mast top may look like a good substitute for a football, but it's too fragile to be tossed like one. Handle it carefully.

Check the mast sections for cracks before you store them. If you find an open crack that's longer than 1/4 inch, replace the section.

Also, clean the sections before slipping them together for storage. Otherwise, you'll have a hard task pulling them apart later.



Feed cone is fragile. Don't toss it around

Notch guy plate...



Nighttime Notch

...and swaging sleeve here

For night erection, save time by notching the top guy plate.

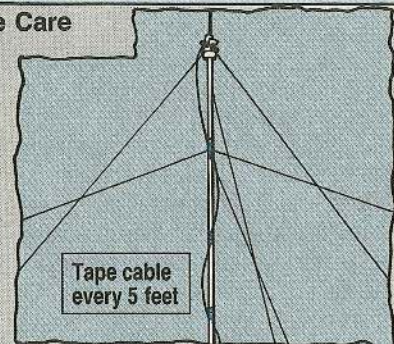
Cut a small notch in the red plate and on the swaging sleeve of each of the red guy wires. You can then pick them out quickly in the dark.

Cable Care

Take the strain off the coax cable and its connector by using the PF-211 strain relief.

Then, tape the cable to the mast just below the feedcone. Tape it every 5 feet or so.

Protect your cable at ground level, too. Hatches, doors and vehicle wheels can damage the cable and cause you to lose your commo signal.



Put a block next to the cable to keep it out of tight places.

Never run the cable along the ground in heavy traffic areas.

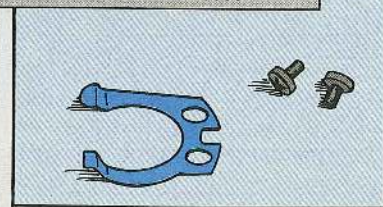
Run the cable over the roadway using lance poles. If you must lay the cable on the roadway, put boards or limbs on the ground beside the cable and protect it.



Keep your contacts in touch with these PM tips:

Check the horseshoe contact on the threaded ring inside the base of the AS-1730 element to make sure it's not broken or missing. Get a new one with NSN 5999-00-921-0630. If the screws are missing, order new ones with NSN 5305-00-054-5635.

Get horseshoe contact with NSN 5999-00-921-0630 and screws with NSN 5305-00-054-5635



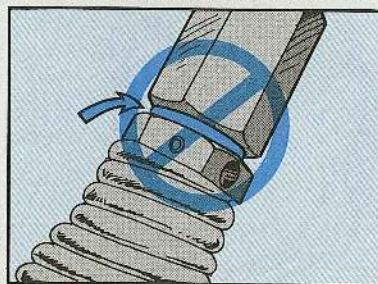
Keep in Touch

Good contact's a must between your AS-1729 antenna and the MX-6707 matching unit. If the contact's poor, you'll get high reflected power to your transmitter, which stops your commo signal cold.



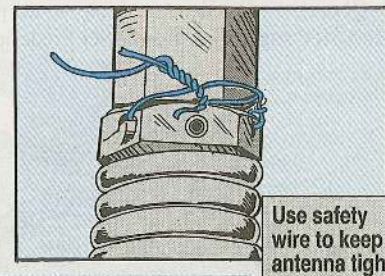
Adjust the threaded ring of the AS-1730 element with load tightening tool, NSN 5120-01-172-8079. Put the tool into the slot. A notch on the tool shows when the ring is tightened right. Don't turn past the notch.

Screw the AS-1730 element on the MX-6707 matching unit. Look for the red O-ring. If you can see the red O-ring, tighten the antenna element.



There's no need to overtighten the antenna to keep it in place. Use safety wire, NSN 9505-00-293-4208, to protect against the normal vehicle vibration which can shake the antenna loose.

Clean the contact on top of the matching unit by rubbing it with a rubber pencil eraser.



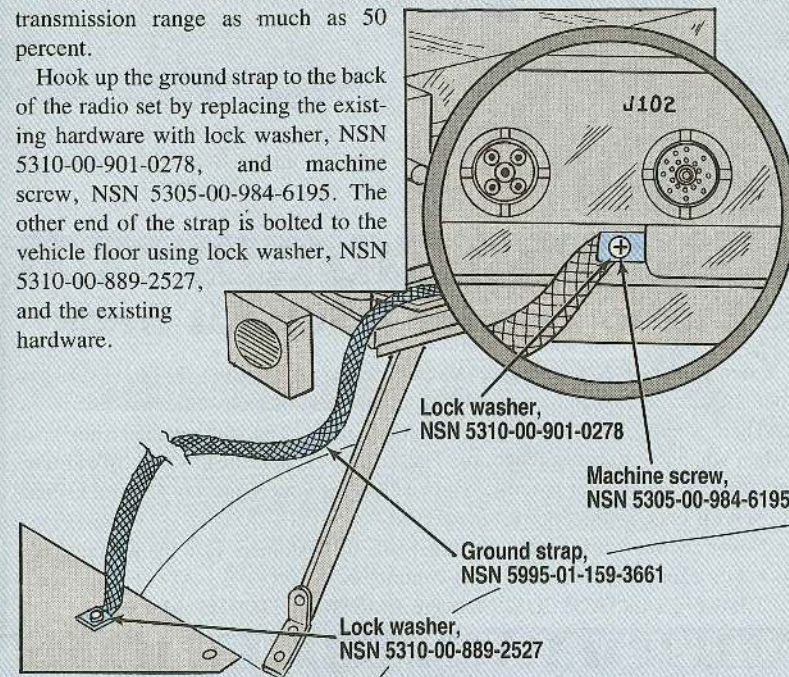
Use safety wire to keep antenna tight

AN/GRC-213A Radio...

Two Straps Are Better

Two ground straps are better than one for your AN/GRC-213A radio set installed in the M1009 CUCV. This extra strap, NSN 5995-01-159-3661, boosts transmission range as much as 50 percent.

Hook up the ground strap to the back of the radio set by replacing the existing hardware with lock washer, NSN 5310-00-901-0278, and machine screw, NSN 5305-00-984-6195. The other end of the strap is bolted to the vehicle floor using lock washer, NSN 5310-00-889-2527, and the existing hardware.



Calibrate No More

There's no need to calibrate some pulse generators. Thanks to an adopted SMART suggestion from SSG Frederick J. Phillips.



THESE GENERATORS NO LONGER REQUIRE CALIBRATION:

Manufacturer/Model No.	NSN 6625-
Syston 112	00-161-9245
Syston 114A	00-041-0095
Hewlett Packard 214B	01-103-9550
Hewlett Packard 8013B	01-010-3524
Hewlett Packard 222A	00-930-8215

Make a note on your master calibration list until TB 43-180 is updated. The word's in SMART Message 85.

15- 30-KW Generators...

Static Exciter—Send it Back

Your 15- or 30-KW generator's static exciter, NSN 6115-00-363-3957, is a bummer if it was manufactured by Applied Systems Research, Inc.

There's no insulation behind the rectifier plate. The static exciter shorts out when you try to start the generator. These static exciters are covered by warranty and will be repaired at no cost. You need to get your Warranty Control Officer to send it back to the contractor.

Never try to fix it yourself. Repairs made by customers void the warranty and the item cannot be returned to the contractor.

The word's in TROSCOM Message AMSTR-ST 202030Z Mar 90.

Jump Generator on Safe Ground



When you jump start 60-KW DED generators, you hook the negative cable to the frame. But if there's not a starter ground wire, the wiring harness or special relay box is knocked out.

But you mechanics can make a cable to lead voltage to ground.

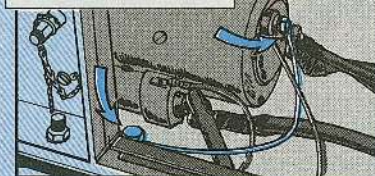
Here's what you need to make the cable:

Item	Qty	NSN
wire, electrical	12 in	6145-00-705-6674
lug, terminal	2 ea	5940-00-804-0520
sleeve, insulation	2 ea	5970-00-914-3118
marker, wire	1 ea	7690-00-422-9667

After you make the cable, hook it up like so:

- ✓ Clean away all grease and paint from the frame bolt nearest the starter.
- ✓ Connect one end of the cable to the frame bolt.

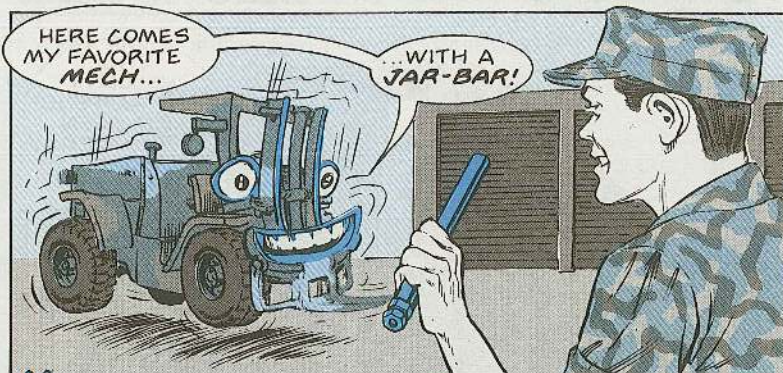
Attach ground cable to starter and frame bolt



- ✓ Connect the other end of the cable to the negative terminal of the starter.

For more info, see TROSCOM Safety of Use Message SOU-MES-02-90 (15 Feb 90).

Axle Shaft Removal Made Easy



You have to bang on the axle shaft with a hammer to loosen the tapered dowels. These dowels lock the axle shaft to the hub on the M4K forklift.

But Michael Tomes of AMSA 63 at Ft Knox has a SMART idea to make the job easier. He uses a jar bar and a smaller hammer. A couple of whacks and the dowels just pop loose.

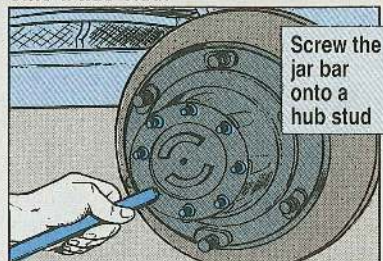
Here's his idea:

1 To make the jar bar, weld 2 nuts, NSN 5310-00-880-7745, to 12 inches long, 1 inch diameter steel rod.



2 Follow the word in Para 2-39(f) of TM 10-3930-638-24&P to remove the wheel and hub nuts.

3 Thread the nuts of the special tool onto a hub stud.



4 Hit the tool a couple of licks with a ballpeen hammer—until the bushing loosens. Always use eye protection when hammering.



5 Repeat this jarring experience for each stud on each wheel.

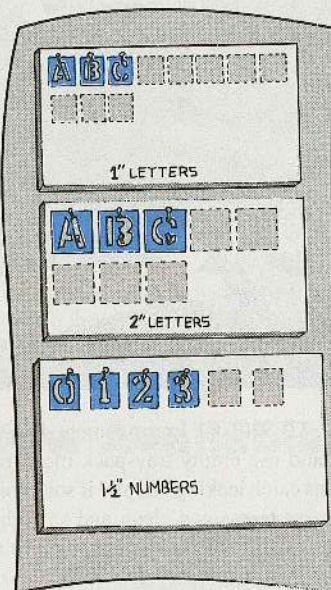
E-A-S-Y AS 1-2-3, A-B-C

Dear Editor,

Metal stencils (like in the No. 1 Common shop set) are thrown every-which-way in toolroom boxes and bins. It's terribly frustrating and time-consuming to find a particular stencil when you need it.

I came up with a way to find the stencils in a hurry. Just hang them in alpha or numeric order on boards. Use a different board for each style and size stencil. Then hang the boards on the tool room wall.

PV2 R.J. Sanchez
APO Miami



(Editor's note: Way to go! Sounds like your hunting days are over.)

M532 Switch NSN

The NSNs are no good for the starter switch and thermal release heater on the air compressor for the M532 laundry unit.

The heater (Item 9) now comes with the starter switch (Item 7) under NSN 5930-00-259-7306. Make a note on Fig 31 in TM 10-3510-208-20P.

Vehicles...

Drip Pan Solution



Take a TIPS (Tool Improvement Program Suggestion) from SFC Santiago Holguin and use empty tray-pack meal trays for drip pans under vehicles.

The pans catch leaking oil, and if something runs over one, it's not a big loss.

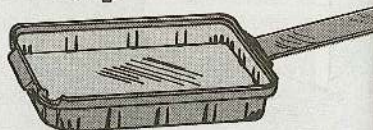
Field mess teams can clean and save the trays for the maintenance section.

Be sure to dispose of any oil caught in the pan in accordance with your local SOP.

Oil Change Help

Using a drain pan when you change the oil in a vehicle makes the job easier and faster.

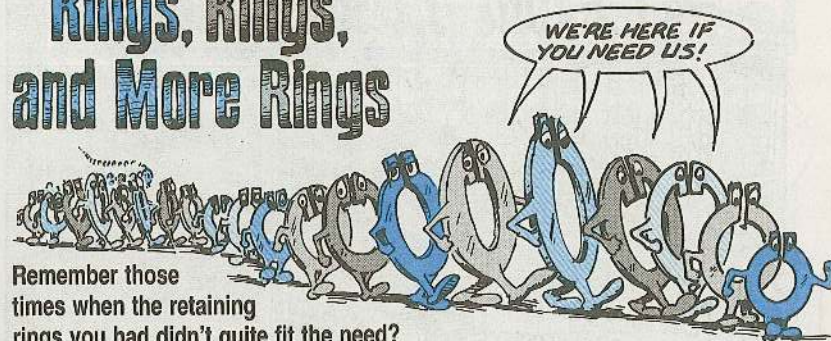
These pans have a long handle you can use to push the pan under the vehicle. There are also handles on the pan and a pouring lip to make it easier to dump the old oil in a waste oil container.



Here's what you can get:

NSN 4910-00-	Capacity	Height
387-9592	4 gal	5 inches
287-2944	6 gal	5 1/4 inches

Rings, Rings, and More Rings



Good news! You can get a wide range of different size internal and external retaining rings by ordering a retaining ring assortment on DD Form 1348-6 using CAGE 39428 PN 98605A010 and RIC S91.

This assortment has 109 internal rings ranging from 3/8 inch thru 1 3/128 inches, and 112 external rings ranging from 1/4 inch thru 2 5/32 inch. Internal and external pliers also come with the assortment. The retaining ring assortment costs \$51.31.

Lubrication...

New GAA Now Available

NSNs for GAA are terminal items on the AMDF. That's because there is a new version of GAA (Grease, Automotive and Artillery) available that gives better corrosion protection and withstands higher temperatures.

Get the new grease with:

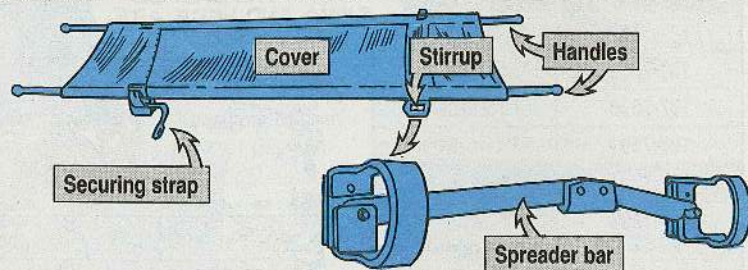
NSN 9150-01-	Size
197-7688	2.25-oz tube
197-7689	6.5-lb can
197-7690	1.75-lb can
197-7691	120-lb drum
197-7692	35-lb can
197-7693	14-oz can (cartridge for grease gun)



Canvas Litter Parts

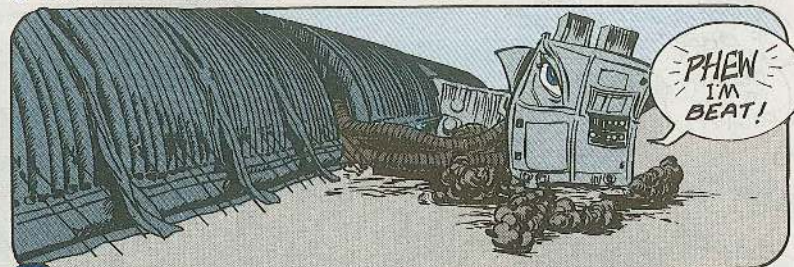
Be sure your canvas litter is ready to go when you need it. Here's a rundown of the parts used on the folding pole, NSN 6530-00-783-7205, and rigid pole, NSN 6530-00-783-7905, litters:

Item	NSN	Folding pole litter	Rigid pole litter
Cover	6530-00-784-1035	X	
Cover	6530-00-784-1250		X
Handle	6530-01-247-7157	X	X
Spreader bar/stirrup	6530-00-784-3450	X	X
Securing strap	6530-00-784-4105	X	
Securing strap	6530-00-784-4335		X
Securing strap w/quick release	6530-00-784-4205	X	X
Headless nail	5315-00-784-2170	X	X



MUST Utility Packs...

Air Duct Foam Removal

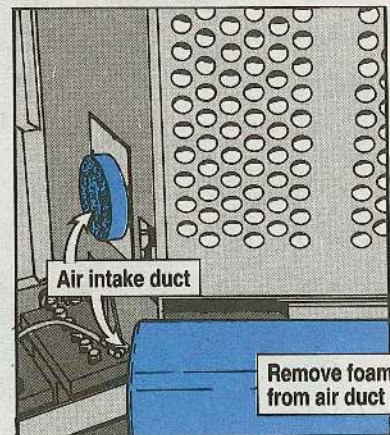


The foam lining the engine air inlet duct crumbles and gets sucked into the turbine engine. That's not good for the engine!

The answer is to remove the foam. That eliminates the problem. It also makes your pack noisier, but you already need hearing protection when working around it.

Look inside the duct on your U-pack. If you find foam, remove it before you use the pack.

The authority for this is TROSCOM Maintenance Advisory Msg 89-35, AMSTR-MES 222100Z Aug 89.



Map Holders

Dear Half-Mast,
How can we get map holders to keep maps neat and orderly?
SSG D.B.



Dear Sergeant D. B.,
Here're some different size map holder tubes:

NSN	Inside diameter (inches)	Length (inches)
8110-00-		
271-1510	5	24
271-1508	4	39
271-1509	4	43

Half-Mast

Ways to Breathe Easier

HUFF-PUFF! I'M OUT OF BREATH! I NEED AIR TO DO MY JOB RIGHT!

M17 MASK PREVENTIVE MAINTENANCE STATION

INTERESTING!

Make sure the chin part of the nosecup assembly is over the facepiece chin stop during PMCS.

Eyeball the louvers on the inlet valve caps to make sure they're horizontal and slope down. Out-of-position louvers let rain in the inlets. This makes breathing harder.

Drink nothing but water through the drinking tube. Anything with sugar causes slime to form in the tube and ruins the quick-disconnect valve.

Take care to unzip the hood before you take off the mask. Lots of hoods get zapped because they're still zipped. Clean the mask and carrier when you come back from the field, even if you never took the mask out. Dirt and moisture get in the carrier even when it's snapped shut. That can lead to mildew and dry rot.

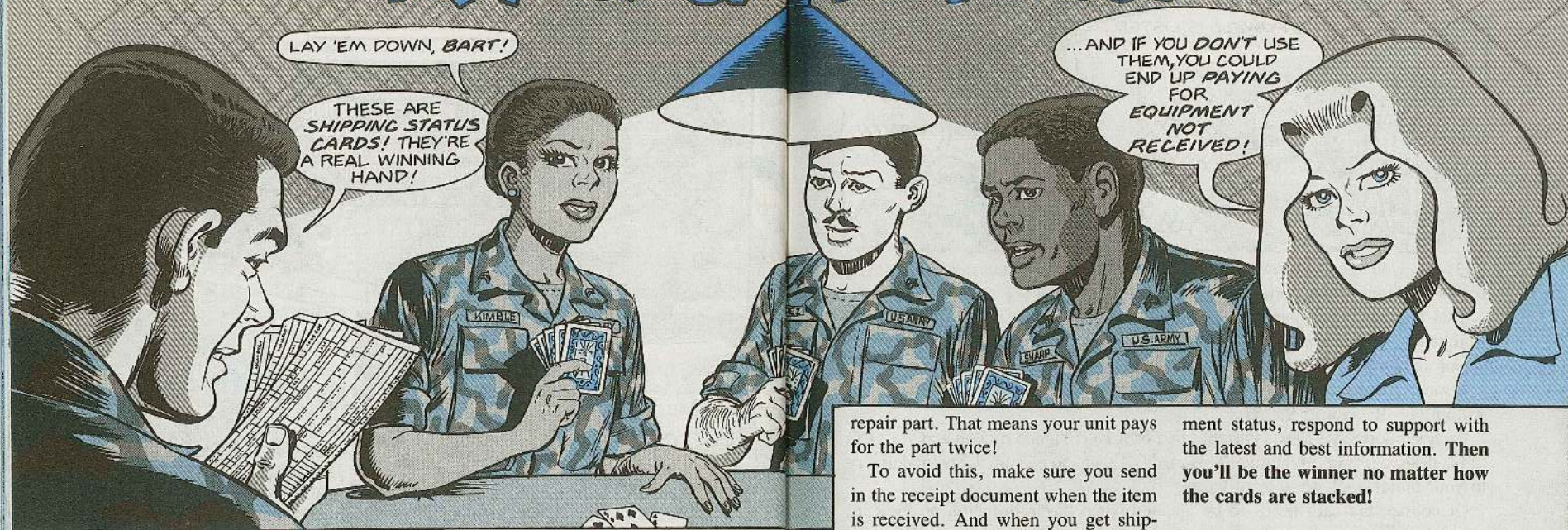
Eyeball the buttons, too. If they can't hold the flap tight, the nosecup seal won't work right and your mask fogs up.

MY NOSECUP IS OK, BUT WHAT ABOUT MY VALVES?

Rotate the outlet and inlet valve discs with your finger. If they stick, get new ones from your NBC NCO. Inlet discs that stick make it hard to inhale. Sticky outlet discs cause the lenses to fog.

FOLLOW THESE FEW STEPS AND YOU AND YOUR MASK WILL BOTH BREATHE EASIER!

TALK BACK TO SUPPORT



repair part. That means your unit pays for the part twice!

To avoid this, make sure you send in the receipt document when the item is received. And when you get ship-

ment status, respond to support with the latest and best information. **Then you'll be the winner no matter how the cards are stacked!**

The supply system will deal you a winning hand if you play your cards—status cards—right.

Supply status cards or listings are support's way of asking you—the PLL clerk—something. The 3-place Document Identifier Code (DIC) of AS1 on the status card clues you in that support's asking you for shipment status.

After you receive the shipment status card or listing, be sure to send back an answer to support. They need your feedback so they'll know what steps to take.

If a receipt document is not received from the unit within 30 days after the

item is shipped, the computer generates a BH- status card to supply support. Support will send you an AS-card or listing asking you if you received the materiel that was shipped.

If the receipt document has not been received within 60 days, the computer creates a pseudo receipt to clear the records.

When a pseudo receipt clears the computer, it means that your unit pays for the item *even if you didn't receive it!*

If you didn't get the repair part, your piece of equipment is still not mission capable. You'll have to re-order the

The diagram illustrates the structure of a DA Form 2765-1 (APR 76), a document used for shipping and release of materials. The form is divided into several sections, each with specific fields and callouts explaining their purpose:

- Top Section (Header):**
 - Document identifier code indicating shipment status:** ASIAKZ0232001779258
 - Media and status code from supply request:** EA00001
 - Unit of issue:** 1
 - Document number from your request:** K4ABC9200001
 - Address code of receiving activity:** K4XYZ
 - Fund code from your request:** ZGAVRS2
 - Priority:** 3003
 - Government bill of lading transportation control number, or other shipment unit number:** K4ABC12050002XXB229
- Routing Section:**
 - Routing identifier code of the activity making shipment:** 1
 - Stock number of item shipped:** 1
 - Quantity shipped:** 1
 - Suffix code if card refers to a partial issue:** 1
 - Hold code explains why shipment may be held up after release by support:** 1
- Release Section:**
 - Estimated date shipment will be released. For SAILS system the date the item was shipped:** 1
 - Distribution code from your requisition:** 1
 - Mode of shipment code:** 1
 - Date item is available for shipment. For SAILS system, this is the estimated date the material was released to transportation:** 1

The form also includes a vertical label on the left side: **DA FORM 2765-1, APR 76**.

ID is Required



Usually you need to show some sort of ID before you can cash a check, even if you've shopped the same store for the last ten years.

That goes for repair parts and supplies at supply support shops like your DS Maintenance Company, Quick Supply Store or Self-Service Supply Center, too.

Not only must you identify yourself with your government ID card but you must also be listed on a current DA Form 1687, Notice of Delegation of Authority—Receipt of Supplies.

Each support store files a current DA Form 1687 signed by you and your CO or his designated representative. This card OK's you to pick up items for delivery to your motor pool, shop or office.

Of course, the card needs to be updated when the information on the card changes.

If you need to add personnel, be sure to enter "Added, previous editions remain in effect" in the REMARKS block.

NOTICE OF DELEGATION OF AUTHORITY - RECEIPT FOR SUPPLIES				DATE
For use of this form, see DA Pam 710-2.1. The proponent agency is DDCSLOG.				15 Aug 89
ORGANIZATION RECEIVING SUPPLIES		LOCATION		
19th Engr Bn		Ft Knox, KY		
LAST NAME FIRST NAME MIDDLE INITIAL		SOCIAL SECURITY NUMBER	AUTHORITY	
HILL, Don C.			REG	REC
			YES	YES
			Don C. Hill DC-H	
SIGNATURE AND INITIALS				
AUTHORIZATION BY RESPONSIBLE SUPPLY OFFICER OR ACCOUNTABLE OFFICER				
THE UNDERSIGNED HEREBY ☒ DELEGATES TO ☐ WITHDRAWS FROM THE PERSON(S) LISTED ABOVE.				
THE AUTHORITY TO: Request and/or Receive Class 2, 4, 9 supplies as shown above.				
REMARKS				
Added, previous editions remain in effect.				
I ASSUME FULL RESPONSIBILITY				
UNIT IDENTIFICATION CODE		DDAAC/ACCOUNT NUMBER		
NAT422		M607F1		
LAST NAME FIRST NAME MIDDLE INITIAL		GRADE	TELEPHONE NUMBER	EXPIRATION DATE
Fields, James C.		MAJ	134-4687	31 Dec 90
				Signature
				James C. Fields

DA FORM 1687
JAN 82

To delete personnel, prepare a 1687 that lists the names of the persons deleted. Put an "X" in the WITHDRAWS FROM block. Circle this block using colored pencil or ink. In the REMARKS block, put "Deleted. Other personnel listed remain in effect."

AUTHORIZATION BY RESPONSIBLE SUPPLY OFFICER OR ACCOUNTABLE OFFICER	
THE UNDERSIGNED HEREBY ☐ DELEGATES TO ☒ WITHDRAWS FROM THE PERSON(S) LISTED ABOVE.	
THE AUTHORITY TO:	
REMARKS	
Deleted. Other personnel listed remain in effect.	
I ASSUME FULL RESPONSIBILITY	

DA FORM 1687
JAN 82

AOAP...

Usage Reporting

Since the DD Form 2026 is how you report usage for combat and selected tactical vehicles, it's important that you put the correct odometer reading in the REMARKS block.

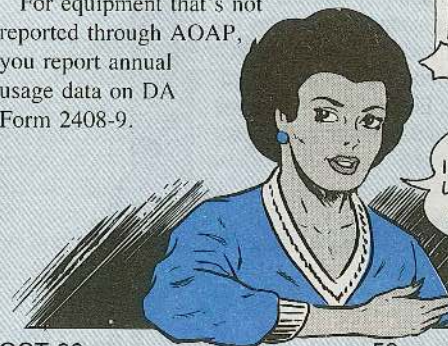
Show whether the odometer reading is for miles (MI) or kilometers (KM). If the end item you're reporting has no odometer but does have an hourmeter (HR), show the total number of hours from the hourmeter.

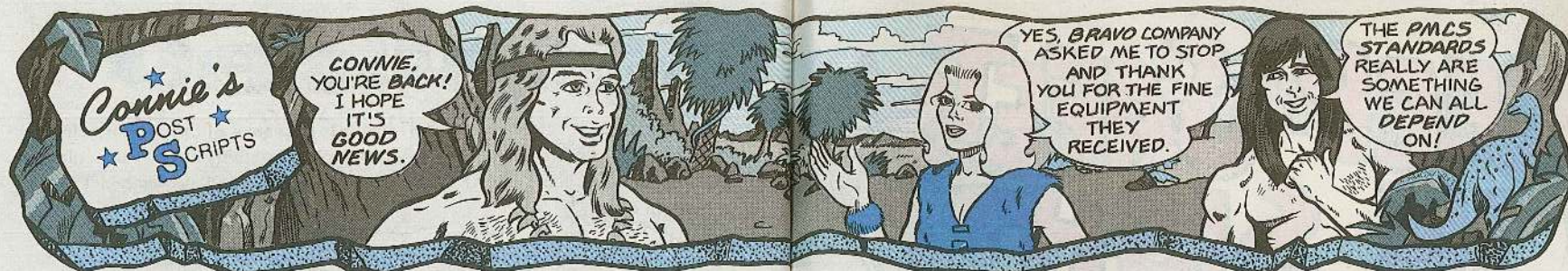
If your equipment has an odometer and an hourmeter, put the odometer reading on the DD Form 2026.

For equipment that's not reported through AOAP, you report annual usage data on DA Form 2408-9.

OIL ANALYSIS REQUEST		REVISION CODE
TO: DR. ANALYST	LT. HADP	13
FROM: EQUIPMENT	FORCES COM	5
DATE SAMPLE TAKEN	10 AUG 89	14
DATE SAMPLE TAKEN	10 AUG 89	15
DATE SAMPLE TAKEN	10 AUG 89	16
DATE SAMPLE TAKEN	10 AUG 89	17
DATE SAMPLE TAKEN	10 AUG 89	18
DATE SAMPLE TAKEN	10 AUG 89	19
DATE SAMPLE TAKEN	10 AUG 89	20
DATE SAMPLE TAKEN	10 AUG 89	21
DATE SAMPLE TAKEN	10 AUG 89	22
DATE SAMPLE TAKEN	10 AUG 89	23
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DATE SAMPLE TAKEN	10 AUG 89	26
DATE SAMPLE TAKEN	10 AUG 89	27
DATE SAMPLE TAKEN	10 AUG 89	28
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DATE SAMPLE TAKEN	10 AUG 89	98
DATE SAMPLE TAKEN	10 AUG 89	99
DATE SAMPLE TAKEN	10 AUG 89	100

DD FORM 2026
1 NOV 77





1990 DOD Maintenance Awards

The Army's first Secretary of Defense Maintenance Phoenix Award winner and a medium category winner, is the 1st Bn, 29th Inf Regiment, Ft Benning, GA.

Another Army winner is the 1140th Sig Bn, Camp Foster, Okinawa, Japan, for one of the two DOD small category awards.

The Marine Attack Squadron 331 was selected as the other small category winner and the USS Carl Vinson, US Pacific Fleet, was selected as one of the large category winners.

The other medium winner was the Shore Intermediate Maintenance Activity, Mayport. The 28th Bombardment Wing, Ellsworth AFB, SD, was named as the other large category winner.

Battery Transport/Storage Rack

Lead-acid batteries are usually placed on a standard pallet for storage or transporting from the battery shop to units. Sometimes the batteries are not fastened down and are damaged during movement.

CW2 Roger A. Ashmus of the 702d Maint Bn of the 2d ID has developed a shipping and storage container that protects batteries.

The containers can be:

- Stacked three high;
- Used for other small repairable exchange items, like generators and starters;
- Handled by forklift or the HEMTT's crane.

To get plans for the containers, write to:

MSG Half-Mast
The Preventive Maintenance Monthly
Lexington, KY 40511-5101

WD6S Water Distributor

Starter, NSN 2920-00-890-5025, is no longer available. Now get a starter by ordering on a DD Form 1348-6 using CAGE 16764, PN 1113273 from RIC S9C. Put "no substitutes" in the Remarks block and 2B in card columns 65 and 66. The terminal stud on the solenoid of the new starter is larger than on the old starter. Ream out the terminal end on the wire so it fits.

New Plug for M151-Series Truck

Use NSN 2920-00-064-7811 to get the spark plugs for your trucks. This replaces NSN 2920-01-151-7782, which is no longer available.

M224 Mortar Staff

Your direct support can convert the cleaning staff for the M224 mortar into a three-piece unit that's easier to transport. The info's on Page 3-4, TB 43-0001-36-7 (Jul 88). If you don't have a copy, see your local AMCCOM Logistics Assistance Representative or write Half-Mast.

M39 Tachometer Cable Update

You're in for a surprise when you order the tachometer cable for the M39-series truck. The NSN shown for Item 1 in Fig 207 of TM 9-2320-211-20P fits only the gasoline models. The M39A1 diesels use cable, NSN 6680-00-089-2005, and the -A2 multifuels use NSN 6680-00-732-0561.

1.5-KW GED Adapter Substitute

The straight adapter, NSN 4730-01-256-6366, used in the 1.5-KW GED generator's fuel system is out of stock. Until the adapter is available, you can use coupling, NSN 4730-00-287-1614, and adapter, NSN 4730-00-900-3296. These items are in the No. 1 and 2 Common shop set fitting kit.

Would You Stake Your Life *right now* **on**

the Condition of Your Equipment?

Distribution: To be distributed in accordance with DA Form 12-34-C-R, for TB-43-series.
 ☆ U.S. GOVERNMENT PRINTING OFFICE: 1990 — 748-004/20011

KEEP SAFETY IN SIGHT!



Wear Eye Protection