

Issue 421

PSDecember
1987**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

THE ANNUAL
INDEX JUST
ARRIVED,
SARGE. WE'LL
FIND THAT
STORY, NOW!

WHERE IS THAT
LEAD-ACID BATTERY
MAINTENANCE STORY?

Approved For
Public Release;
Distribution Is
Unlimited

1987 Index (See Page 27)

US
GTM

Prevent Combat Vehicle Fires



**NO SPARK,
NO FUEL,
NO FIRE!**

Most combat vehicle fires can be prevented. Fires start, not from a flame, but from poor maintenance and bum inspections. Changing that is your job.

For a fire to start, there must be a source of combustion and material to burn. Remove those two things, or keep them from meeting, and you've prevented fire.

The primary source of combustion in a combat vehicle is the electrical system. Look over all wiring for frayed or worn insulation and burned or arcing marks. Make sure connections are tight.

Hot engine parts, such as exhaust pipes and manifolds, are sources of combustion you must live with. Keep material that burns away from them.

Materials that burn are fuel, hydraulic fluid and transmission oil. So inspect hoses and fluid lines for signs of rubbing, dents or kinks and leaks. Wet spots and stains tip you off to leaks. Look for moisture on the lines and components. Make sure clamps and fittings are tight and all the heat shielding is in place.

Report any problems that you can't fix.

Eye your fire fighting equipment. Some vehicles are equipped with automatic fire extinguisher systems. They work—provided the sensors are clean, connections are tight, bottles are filled and pressurized and safety pins removed.

You are the **only** one that can make a combat vehicle safe from fire. Remove the sources of combustion. Remove the materials that burn. Those you can't remove, keep them from meeting.

DEC 87



THE
**PREVENTIVE
MAINTENANCE**
MONTHLY

7B 43-PS-421, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user.

ISSUE 421

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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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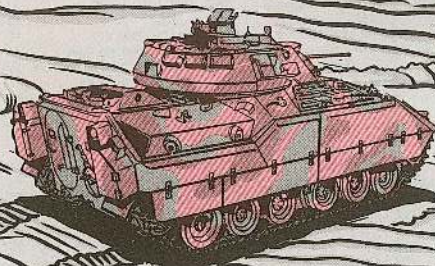
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DEC 87

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Go the Extra Mile!

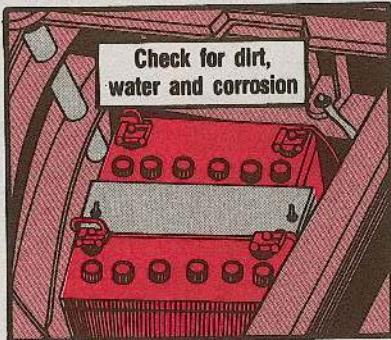
OUR TRIP'S NOT FINISHED.
WE'VE GOT ONE MORE
MILE TO GO!



You know you need to do your PMCS to keep your M2/M3 in fighting shape. But sometimes you need to give it even more PM to keep it strong and healthy.

Go the extra PM mile with these tips.

**Check for dirt,
water and corrosion**



short across connections and discharge the batteries.

If you spot a problem, report it.

Remember, the batteries will not be recharged unless you switch on the turret power switch once you've got your M2/M3 started. That's how you recharge the batteries. Don't worry about this with M2A1/M3A1's. Their batteries recharge anytime the engine's running.

Remember the Battery

Out-of-sight, out-of-mind can leave you out-of-action when it comes to the turret emergency batteries. Discharged batteries mean no back-up power.

Check the batteries for loose clamps and low electrolyte—like TM 9-2350-252-10-2 says. Also check for corrosion on terminals and water and dirt on top of the battery and in the battery tray. Corrosion, dirt and water on top can

Lubing Lowdown

If it moves, lube it. That means hatch hinges, seat slides, cargo and driver hatch switches, ballistic shield door hinges and the commander's hatch pop-up release pins. Giving them a couple of squirts of CLP once a quarter keeps moving parts moving smoothly.

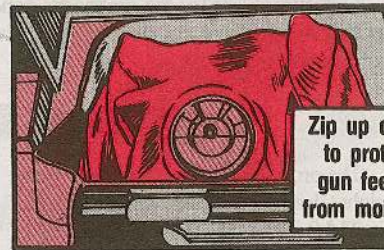
Keep things like
the commander's
hatch pop-up
release pin lubed



Zip Out Moisture

Anytime the 25-MM gun is installed but not in use, make sure its cover is on and zipped tight with the window over the bolt position indicator and its tabs in place. Otherwise, when it rains, water comes in at the gun rotor mount causing major damage to the feeder.

Zip up cover
to protect
gun feeder
from moisture



Boresighting

When you boresight the Integrated Sight Unit (ISU), use only the 1/8-in flat-tip screwdriver that comes in your tool kit. If you use a larger screwdriver—or your dogtags—you round out the screw. You won't be able to boresight and DS has to pull the ISU to replace the screw.

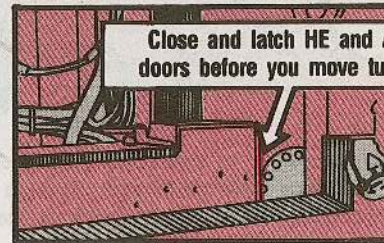
Use right
screwdriver
for
boresighting
screw



Latch Out Damage

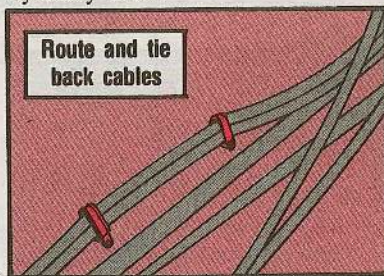
Make it a habit to eyeball the High Explosive (HE) and Armor Piercing (AP) ammo doors before you traverse the turret. If the doors open or unlatch, they could be ripped off or could shear cables.

Close and latch HE and AP
doors before you move turret



For Mechs Only

Mechs, when you put things like the turret distribution box or the relay assembly back on, don't just stick 'em in and forget 'em. Lock all the mounting hardware down tight. That keeps components from vibrating off the shelf and taking a hard fall. Also route and tie all cables back so they won't be tripped over or damaged by heavy boots.



Route and tie back cables

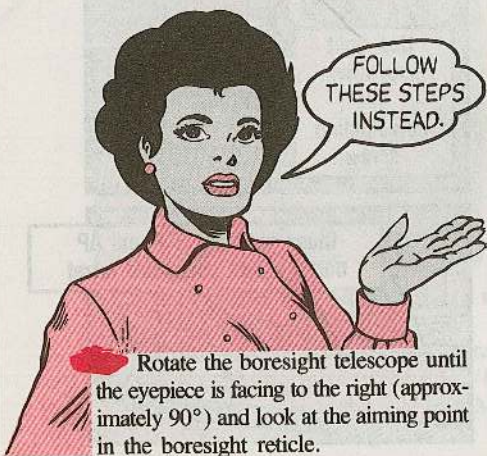


Covers prevent sand from causing bad readings

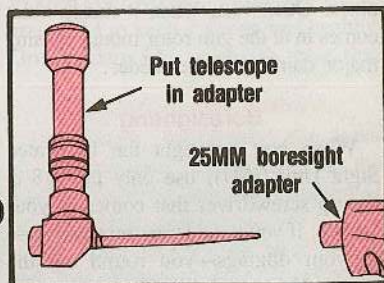
Keep the covers for the diagnostic panel's J1, J2, J3 and J4 connectors on and locked when you're not running tests. Even a grain of sand in a connector could cause a bad reading.

Sight in on Sight Problems

The procedure for checking your boresight telescope's accuracy on Page 2-209 in TM 9-2350-252-10-2 is not quite right! The 25MM boresight adapter is omitted.

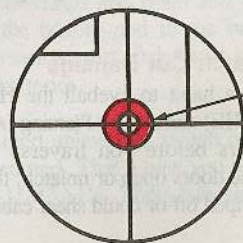


FOLLOW THESE STEPS INSTEAD.



Put telescope in adapter

25MM boresight adapter



Aiming point should stay in reticle

Rotate the boresight telescope until the eyepiece is facing to the right (approximately 90°) and look at the aiming point in the boresight reticle.

Rotate the telescope approximately 90° to the left and look at the aiming point in the boresight reticle again. If the aiming point moved out of the reticle, the boresight telescope's not accurate.

Replace the telescope and repeat these two steps.

If the aiming point stayed in the reticle, rotate the telescope and adapter together back to the right about 90°. You may need to hold the telescope in the adapter to keep it from slipping.

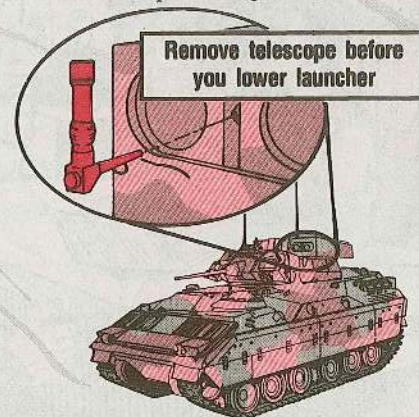
If the aiming point stayed in the reticle, you're in business. If it moved out of the reticle, the adapter's not accurate.

Replace the adapter and repeat all four steps.

If you still don't have any luck, report it.

Boresight Telescope

After you've finished boresighting the TOW launcher, remove the boresight telescope. If the telescope's still in when you lower the launcher, you'll break the boresight bracket. Then the launcher has to be sent to depot for repair.

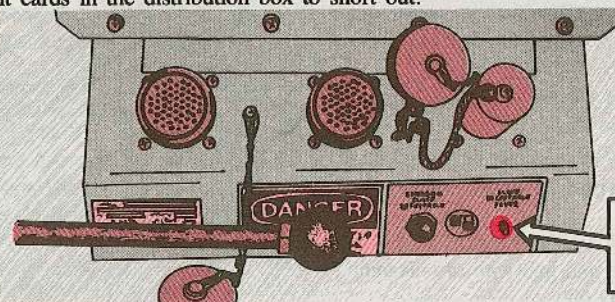


Remove telescope before you lower launcher

Green Light to Slave

Never, never, never slave a Bradley unless the SLAVE RECEPTACLE POWER light is green.

Slaving a Bradley when the light is red will cause the batteries to explode or circuit cards in the distribution box to short out.



Slave start ONLY when light is green

So always make sure the light is green before you slave.

If the light's broken, your mech can replace it with NSN 5961-01-152-8907.

Insure master switch is in the OFF position in both vehicles prior to connecting the slave cable.

Missing Mounting Bolts?

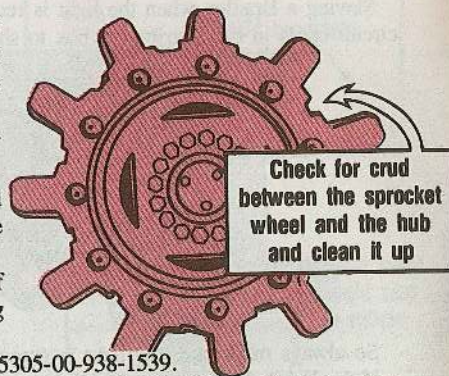


Loose or missing mounting bolts on M1 tank sprockets cause damage. Loose bolts wallow out the holes, and become missing bolts. Missing bolts let the sprocket move against the hub, breaking other bolts and causing a thrown track.

Bolts loosen because they were either not torqued tight or there was rust, dirt or grease between the hub and the sprocket wheel.

Next time you have a loose or missing bolts, do this:

- Remove the sprocket wheel and clean the wheel and hub with a wire brush.
- Wipe down the mating surfaces of the sprocket and hub with dry-cleaning solvent, P-D-680.
- Replace missing bolts with NSN 5305-00-938-1539.
- Use a dab of anti-seize compound, NSN 8030-00-251-3980, on the bolts when you put them in.
- Torque each bolt to 250-280 lb-ft.



When Operating,

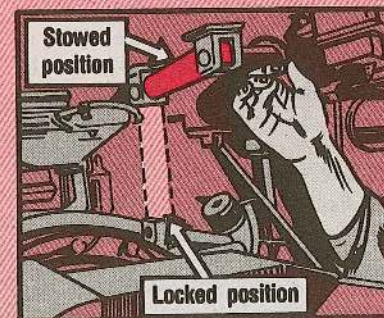
I SURE HOPE YOU SECURED THAT TRAVEL LOCK. 'CAUSE WE'RE IN FOR A BUMPY RIDE!

Stow the Lock!

The travel lock on M1A1's lies flat against the gun mount when it's not

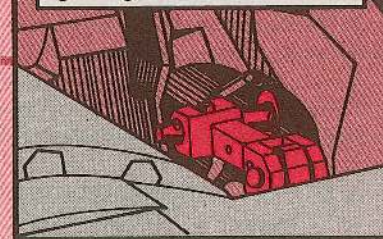
A place for everything and everything in its place—keep that in mind when you're operating with the main gun out of elevation travel lock.

The travel lock on M1's and IPM1's



must be stowed against the turret roof and secured with its locking pin. If it's not, movement of the main gun will damage the lock.

M1A1 travel lock lies flat against gun mount when stowed



locked. Movement of the tank or gun can cause the lock to be jammed against the turret roof. To prevent bending or breaking secure the lock with its locking pin.

Let your mechs know if you need quick release locking pins.

For M1/IPM1 tanks use NSN 5340-01-087-9778 and for M1A1 tanks use NSN 5340-01-143-0641.

Grind the Plug

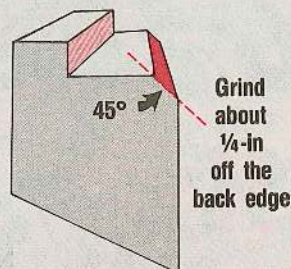
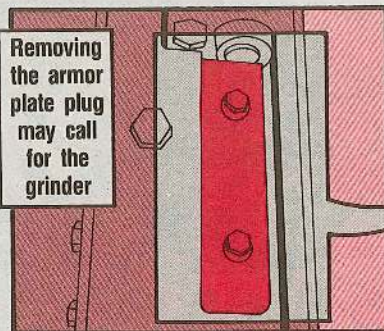
The armor plate plug you crewmen have to remove to get at the locking pin for the number 4 or 5 left-side skirt can be a bear to get out.

The plug fits above the skirt and on the NBC armor plate. In some cases

there's not enough clearance for the plug to come out easily.

To fix the problem, get your mechs to grind about a quarter of an inch off the back edge of the plug.

They'll need to prime and paint the plug according to TM 43-139. Details on this fix can be found in Para 2-5f of TB 43-0001-39-3 (Jul 87).



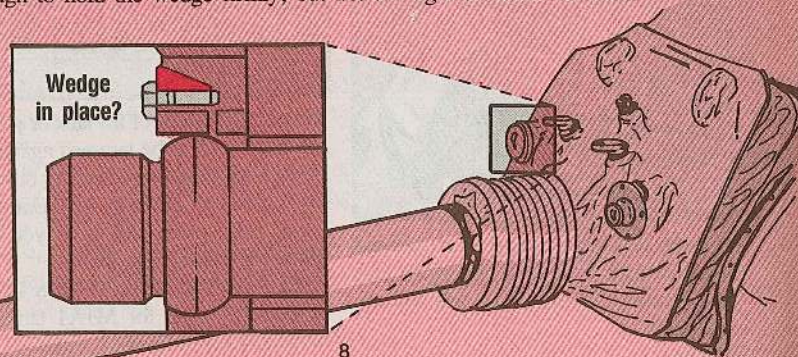
Wedge the Telescope

The wedge assembly on your tank's M105D articulated telescope holds the front end of the scope steady.

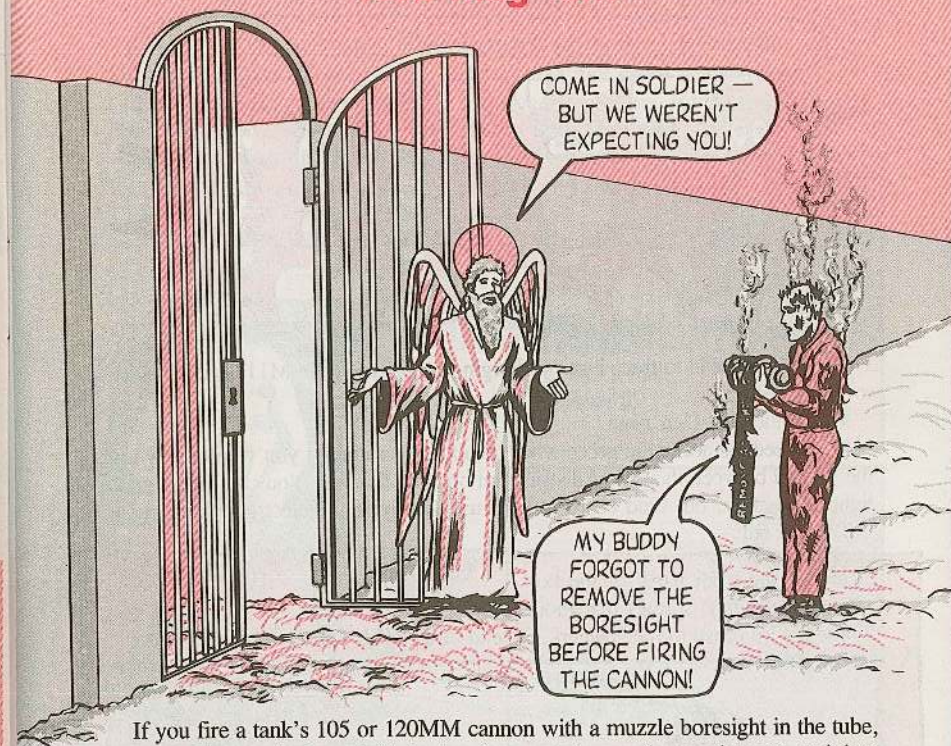
If it's missing or loose, cross-country operation or firing messes up the scope and boresight adjustments.

If the wedge is missing, your tank must go to DS to get it replaced.

If the bolt holding the wedge is loose, torque it to 30-35 lb-in. That's tight enough to hold the wedge firmly, but not too tight to break the bolt.



Red Flag 'em



If you fire a tank's 105 or 120MM cannon with a muzzle boresight in the tube, you can damage the boresight device, the gun tube or other equipment, or injure a buddy.

To help you remember to remove the M26 or M27 boresight device, tie a red flag to the end of it. The M26A1 and M27A1 come with a red flag already attached.

Pay attention to what the red flag means—there's a boresight device in the tube and the gun's not ready to load and fire.

Need a flag? Use NSN 8345-00-227-1511.

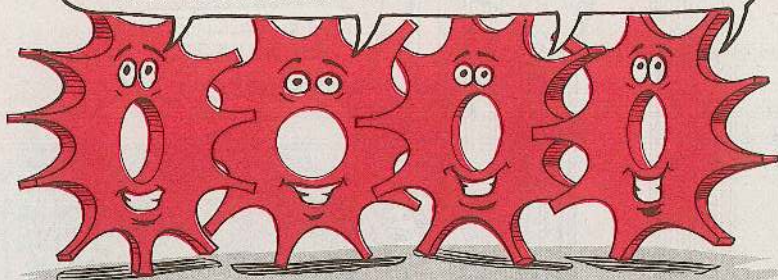
As a second check, always look through the breech before you load that first round of ammo.

Impact Socket for T-142 Track

You've always wanted a thinwall impact socket to use on M60-series tank track centerguides—now you can get one. Snap-On has a winner in PN IMFS422, CAGE 55719. It's a 6-pt, 3/4-in square drive, 1 5/16-in socket that fits with 1/8-in to spare. Use it instead of trying to grind down a standard impact socket. That just weakens the socket walls and makes it dangerous to use.

No Charge for Washers?

KEEP US CORROSION FREE AND WE'LL KEEP IN CONTACT!



You may be able to trace battery charging problems on an M113-series carrier to four washers.

Watch the Batt-Gen gage.

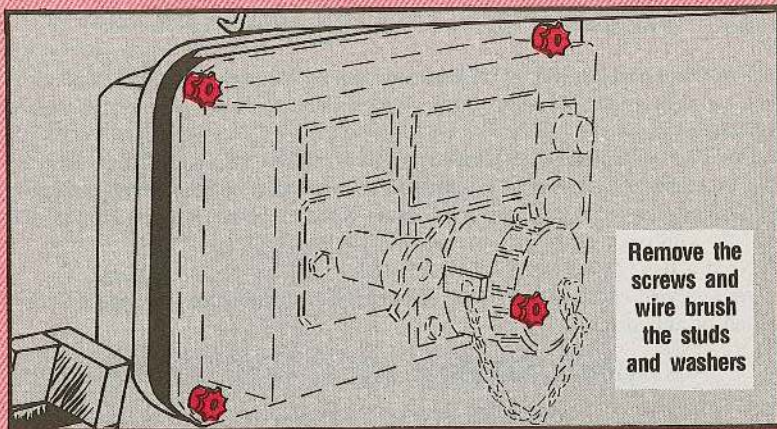
If the needle's not in the green when the engine's running, you've probably lost the ground between the power distribution box and the hull. You can have a good tight connection, but crud corrosion or rust is ruining the electrical connection.

To find out:

Remove the front panel of the box.

Remove the four screws that mount the box to the hull.

Take a wire brush to the washers, the end of the studs and the back of the box.



Remove the screws and wire brush the studs and washers

Reinstall the box and the front panel.

With the box grounded right, your charging problem will be "washed" away.

Bum Obturator Spindle Nuts

Breech spindle nuts, NSN 5310-00-821-2414, made under contract number DLA 500-86-M-5406 are bums. Using one will cause a misfire.

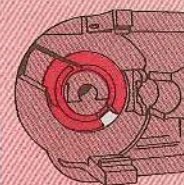
Identify the nuts by the contract number on the package. If the number is DLA 500-86-M-5406, take a file to the threads. Then throw the nuts away.

Make sure the spindle nut is tight.

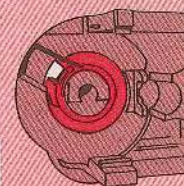
HERE'S HOW TO TELL
IF NUTS ALREADY
INSTALLED ARE OK!



Slot at
5 o'clock,
the nut's bad.
Replace it!



Slot at
11 o'clock,
the nut's good



M101A1 Howitzer TM Changes

TM 9-1015-203-12 (27 Feb 87) has a couple of errors in the fire control alignment tests and measurements section.

On Page 3-71, Para 6 should read:

6. Position weapon so that end of cannon tube is within 12 inches of plummet and within 100 mils of center traverse of bottom carriage.

On Page 3-81, Para 2 should read:

2. Turn cross-leveling knob (1) to center cross-level bubble (2). Use Test Target Method (Page 2-46) or Distant Aiming Point Method (Page 2-40).

Make a note until these changes show up in an update to your TM.

The Filler Block, BLOCK

I THINK MY
FUEL LINE IS
CLOGGED!

SPIT

SPUTTER

Solve engine stalling, sputtering and low power output problems with M110A2 howitzers or M578 recovery vehicles by having deteriorating fuel cell filler blocks replaced.

Filler blocks on both vehicles crumble and clog fuel lines and filters.



Never try to pump out the fuel tanks; it causes more damage to bladders and filler blocks

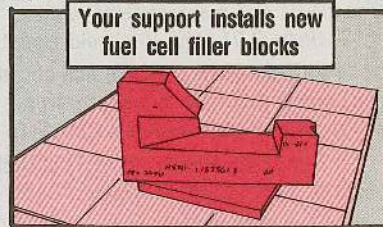
Find out if your troubles are caused by filler block crud.

Disconnect the fuel lines and take off the filters. If the lines and filters are plugged, replace the filters and clean the lines.

Run the engine for about 10 minutes. If the lines and filters clog again, turn the vehicle in to DS.

Your DS can get the left filler block kit with NSN 2910-01-111-7082 and the right kit with NSN 2910-01-111-7083.

Your support installs new
fuel cell filler blocks



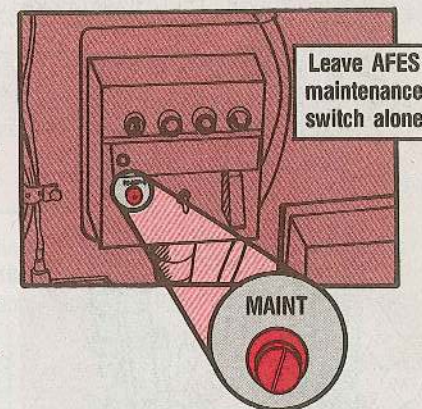
Leave That Switch Alone

Crewmen, leave the Automatic Fire Extinguisher System (AFES) test and alarm panel maintenance switch alone.

If you turn the switch, the fire detection system is turned off.

The system automatically shuts itself down 3 hours after the master power switch is cut off. That protects your vehicle against any fire that might start after you leave the vehicle.

The maintenance switch should be turned off **only** when performing maintenance on the AFES system—otherwise leave it alone.



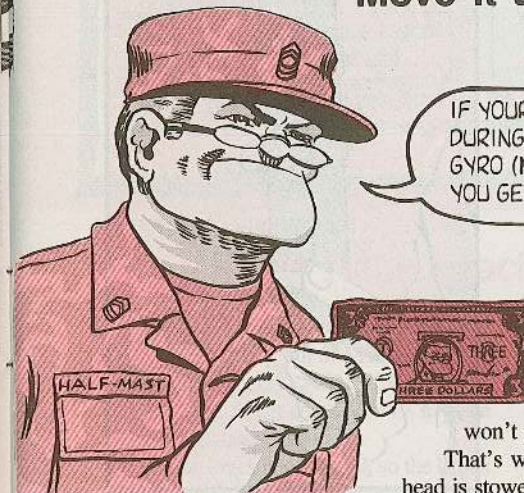
Leave AFES
maintenance
switch alone

MAINT

M981 FISTV...

Move It and Lose It

IF YOUR M981 MOVES EVEN SLIGHTLY DURING START UP OF THE NORTH SEEKING GYRO (NSG), ANY FIRING COORDINATES YOU GET LATER WILL BE ABOUT AS GOOD AS A THREE—DOLLAR BILL!



HALF-MAST

Movement ruins the NSG's readings, which means the gyro won't provide accurate grid coordinate info. That's why you must make sure the targeting head is stowed before you turn on the NSG... and

that's why your M981—vehicle and turret—shouldn't move for the entire 10 minutes the NSG needs to establish a true point for coordinates.

If there's any accidental movement, start again so you'll be certain to get correct firing coordinates.

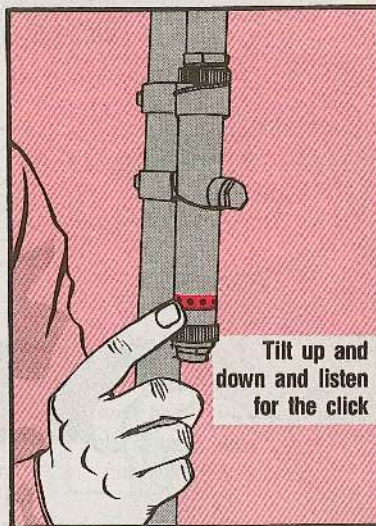
Click Must Be Quick

TELL YOUR OPERATOR YOUR
CLICK IS NOT QUICK ENOUGH!

If the gas piston doesn't click right away when you pull your before operations checks on your M60 machine gun, you're sure to have firing problems in the field.

The cylinder may be clean enough for the piston to slide, but not clean enough to slide fast like it should. After you fire 100 rounds or so, the gas system plugs up. You start having problems, like short recoil or failure to chamber.

The piston should slide like it's on ice when you tilt your M60 up and down.



Tilt up and
down and listen
for the click

If the click seems slow in coming, do the tilt test several times. If the click still is slow, clean the gas cylinder real good like it says in your -10 TM.

Plate Makes Difference

There are two different M3A1 bolt and guide rod groups in the field: one with a narrow rod plate and one with a wide plate.

A wide plate means you need to field strip your submachine gun in a different order than your TM says.



Rod with wide plate

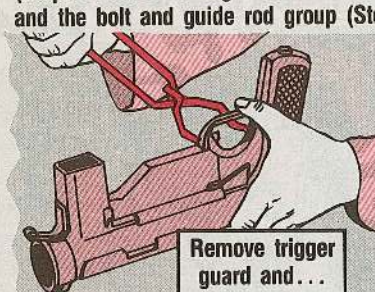


Rod with narrow plate

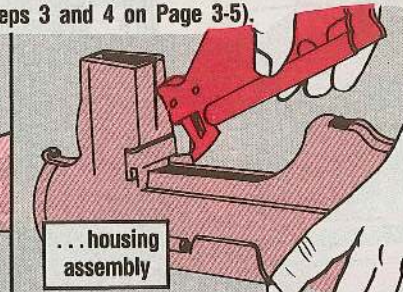
Check
which
plate
you
have

Do it like this:

Insure the bolt's forward. Remove the trigger guard and the housing assembly (Steps 5 and 6 on Page 3-6 of TM 9-1005-229-12) before you remove the barrel and the bolt and guide rod group (Steps 3 and 4 on Page 3-5).



Remove trigger
guard and...



...housing
assembly

When you reassemble your gun, put the bolt and guide rod group and the barrel on before you install the housing assembly and trigger guard.

M231 Firing Port Weapon...

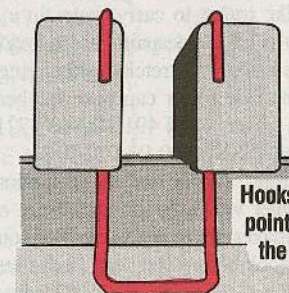
Rack Bracket Help

Armors, keep M231 firing port weapons from falling out of M12 racks with mounting bracket, NSN 5210-01-230-3181. The bracket keeps M231's in place when you open the rack.

Put the bracket in the rack so the hooks face the gun. The bent part of the bracket holds the M231 upright.

You need one bracket per gun.

Reverse the brackets to store other weapons without interference.



Hooks should
point toward
the M231

MOUNTING



Mounting a CUCV or M880-series truck's tubeless radial tire is a f-r-u-s-t-r-a-t-i-n-g experience without a bead seater.

You put the tire on the rim, snap on the air hose and pump, and pump, and... it's like trying to carry water in a strainer. Air rushes out as fast as it goes in. No need for despair—use a bead seater.

It's a skinny, stretchy rubber ring that plugs the space between the tire and rim on one side so air can push the bead out against the rim. For the M1009's, use 15-in seater, NSN 4910-00-437-7215. Other CUCV's and M880's take the 16-in seater—NSN 4910-01-022-9721.

Careful. Never use one to mount a 16-in CUCV tire on a 16.5 M880 rim, or the other way around. Either tire can be mounted on the other rim, but mixing 'em makes for a big bang that could lift you out of this world.

So look before you seat. Both tires are clearly marked for size. Rims are marked too—on the outside of CUCV rims and on the inside of M880 rims.

FRUSTRATION

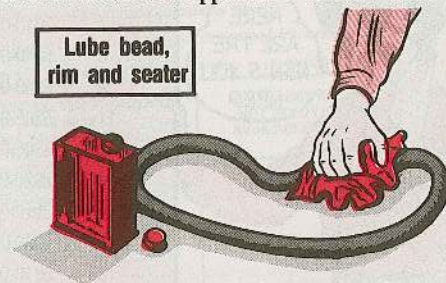
Here's how to use a bead seater:

- Lay the mounted tire and rim flat with the air valve side down.

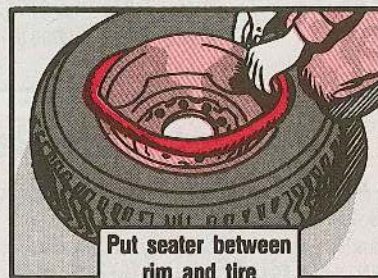
- Swab some rubber lubricant on the tire bead and rim edge that's facing you. NSN 2640-00-256-5526 gets a quart of lubricant. See appendix C of TM 9-2610-200-24 for other sizes.

Applying the lube is tricky. Make sure you have a good even coat. Too much, and the seater will slip out too soon to do any good. Not enough, and the seater won't slip out. That means you'll have to let the air out of the tire and start over.

Lube bead,
rim and seater



- Push one side of the seater between the tire and rim. Work it around the rim. It'll be tight, so you'll have to stretch the seater to get it over the rim edge and fill the last few inches.



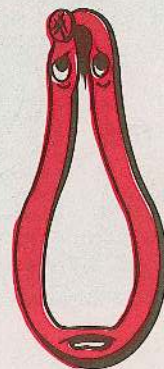
Put seater between
rim and tire

- Put the tire back on the vehicle and tighten the lug nuts before inflating.

If air escapes during inflation, lift the tire around the edge to help the bead seat against the rim. The seater will be forced out as the bead seats.

- If both beads haven't seated properly when tire pressure reaches 40 PSI, let all the air out, rotate the tire 90° on the rim, re-lube and inflate.

WHEN IT COMES
TO STORAGE,
CLEAN ME AND
KEEP ME IN THE
DARK BUT NEVER
LEAVE ME
HANGIN'! I'LL
ROT IF LEFT
GREASY OR
IN SUNLIGHT!



Fuel Filter Parts

You'll find Fig 18 in TM 9-2320-289-20P short of NSN's when you're ordering parts for the CUCV's fuel filter.



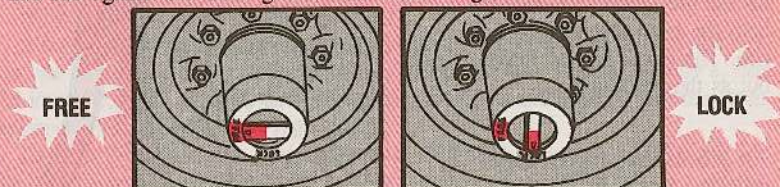
Item #	NSN	Name
1	2910-01-156-0045	Filter Assembly, Fuel
2	2910-01-156-8361	Filter Element
3	5330-01-213-9966	Seal, O-ring
4	2910-01-210-1322	Base Assembly
5	5330-01-219-3991	Seal, Drain Plug
6	5340-01-211-3086	Plug, Vent
7	2910-01-210-1323	Heater Assembly, Fuel
8	5340-01-197-1199	Clamp, Filter
9	5340-01-202-2622	Bracket, Filter Mounting
11	5305-01-211-3032	Screw, Thread Forming
12	5305-01-211-3031	Screw, Thread Forming
13	2920-01-212-4771	Water Sensor
14	2910-01-209-0473	Plug, Drain
15	5930-01-208-6292	Vacuum Switch
18	5310-00-637-9541	Washer
20	4720-01-192-8533	Hose, Fuel Filter
24	4720-01-148-2771	Hose, Fuel Filter Drain

Front Hubs Revisited

Oops! Painting the CUCV's four-wheel drive front hubs like it says on Page 23 of PS 414 can lead to hub damage.

The handle painted all the way across can let you set the hub between LOCK and FREE or in FREE—and you can't tell the difference.

Then, driving your truck with the hub between LOCK and FREE lets the outer hub rub against the inner gears. This ruins the gears.



So instead of painting the entire handle, just paint around the FREE and LOCK and half the handle. Then you'll know for sure if the hub's in two- or four-wheel drive.

Extinguisher Update

Item 53 of the PMCS on Page 2-76 in TM 9-2320-272-10 says that some of the M939-series trucks are NMC if the fire extinguisher's contents indicator is not in the green area, the valve is damaged or the seal is broken.

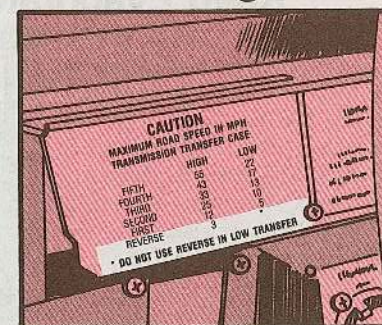
The M932 tractor's not listed, but the same thing applies.

The next update to the -10 TM will have these two changes to the fire extinguisher PMCS—

TM 9-2320-272-10						
Table 2-2. Operator/Crew Preventive Maintenance Checks and Services (Cont'd)						
NOTE: These checks are to be made in the order listed, within designated interval.						
B-Before operation		D-During operation		A-After operation		M-Monthly
ITEM NO	INTERVAL				ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled or adjusted as needed	EQUIPMENT IS NOT READY/ AVAILABLE IF:
	B	D	A	W		
53						
		MISCELLANEOUS EQUIPMENT FIRE EXTINGUISHERS (when installed)				
		a. Check gage (2) for level of contents. Check that valve (1) is undamaged. b. Check for broken seal.				Contents indicator is not in green area, valve damaged or seal broken.

M939-Series Shift Warning

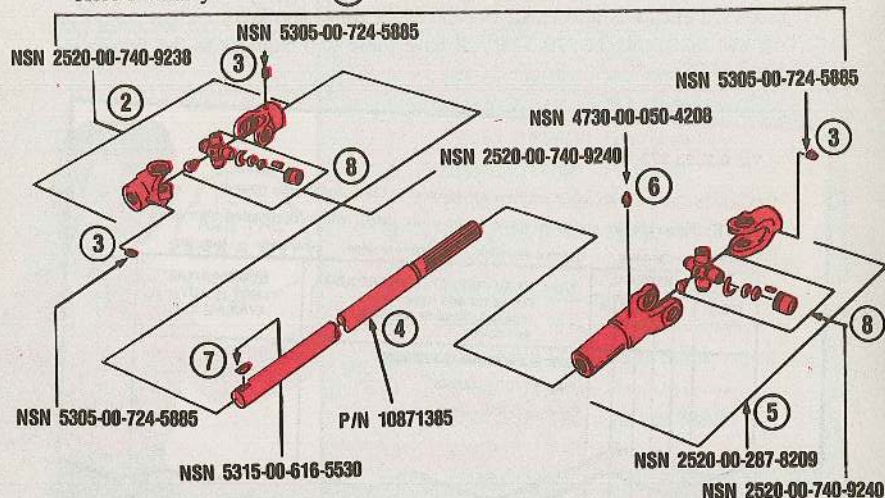
Heads up, drivers! That shifter warning plate on your M939-series truck's dash means what it says! Operating in reverse while in low range will crack the transfer case and make your truck NMC. Check out the caution found on Page 2-57 of TM 9-2320-272-10.



Shaft Parts Not In TM

Parts for M51-series dump trucks' dump hoist propeller shaft were left out of TM 9-2320-211-20P.

Here's what you need: ① NSN 2520-00-293-5131



ITEM NO	DESCRIPTION	ITEM NO	DESCRIPTION
1	Propeller Shaft, Dump Hoist	5	Universal Joint, Hoist Propeller Shaft
2	Universal Joint, Propeller Shaft	6	Fitting, Lubricant
3	Setscrew, Yoke Assembly	7	Key, Woodruff
4	Shaft, Dump Hoist Assembly	8	Parts Kit, Universal Joint

Trucks...

Keep Evaporator Bottle Filled

An empty plastic evaporator bottle on trucks with air brakes will melt.

That big diesel engine gets hot enough to soften, bend and crack an empty plastic bottle. So, make sure your truck's evaporator bottle is full of alcohol when you take off—in hot or cold weather—year round.



You can no longer order windshield assemblies for 2½- or 5-ton trucks. Complete windshields are made up for you by DS. So, when you have a broken or cracked glass or other problems, remove the assembly, take it to DS and trade it for another one.

M915-Series/M915A1...

New Water Pumps

Take note, mechs. When you get a new water pump for the engine in an M915-series or M915A1 truck, it will come with gaskets, gasket connector and O-rings needed for installation. So don't order them separately. This is different from what the -20 TM says.



The Pusher Axle



Pulling a balancing act on a pusher axle wheel of an M920 is a lot like balancing on a log in a pond.

But falling from a log only gets you wet. Fall from the wheel and you might break your neck.

This third rear axle takes some of the weight off the other axles when the truck's carrying a heavy load. When the wheels are lowered to the ground—under air pressure—they take over some of the load weight.

When the axle is raised, the wheels are free rolling. If you step on one, it'll spin right out from under you and you'll take the pusher axle plunge.

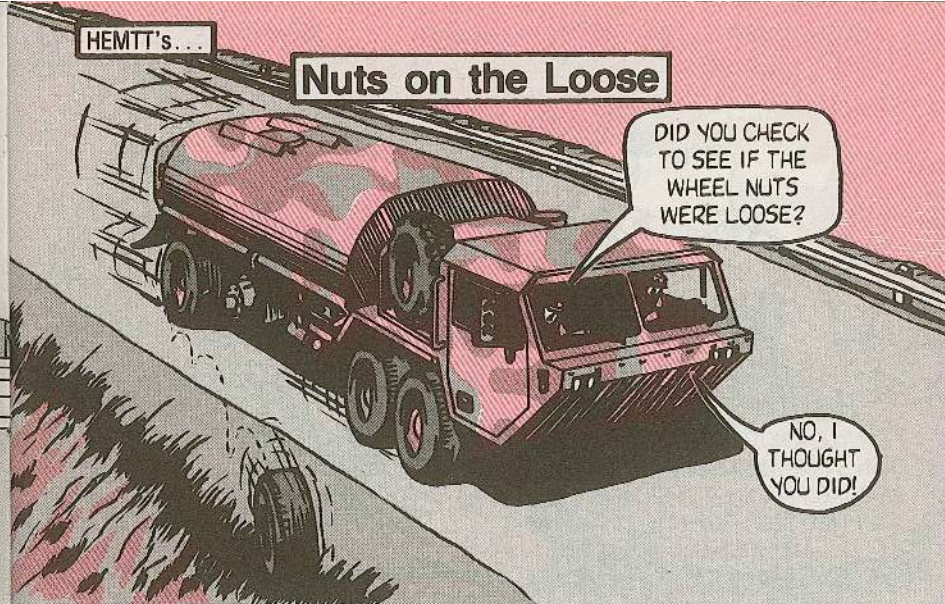
So never use the pusher axle wheels for a step.

For extra safety, lower the wheels to the ground when parking your truck...

... AND DON'T STEP ON THE WHEELS, EVEN WHEN YOU THINK THEY'RE ON THE GROUND!



Nuts on the Loose



HEMTT wheel nuts can loosen by themselves. This leads to bent or broken studs and even a run-away wheel.

Before you take off, take a look at the nuts on each wheel.

Look for chipped paint, shiny spots or rust around a nut. If you see any, report it.



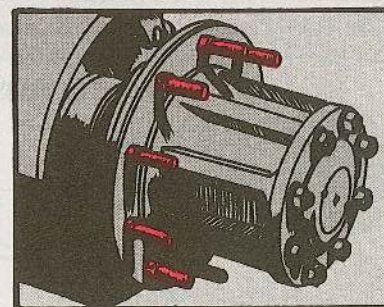
YOUR MECHS WILL RE-TORQUE EACH LOOSE NUT BY BACKING OFF THE NUT, THEN TORQUING IT TO:

	Front	Rear
all (except M984E1)	575-625 lb-ft	450-500 lb-ft
M984E1	575-625 lb-ft	575-625 lb-ft

If studs are bent or broken, replace 'em. Studs and nuts are in TM 9-2320-279-20P—except for the rear wheel studs for the M984E1. They are:

Right - NSN 5307-01-234-9512

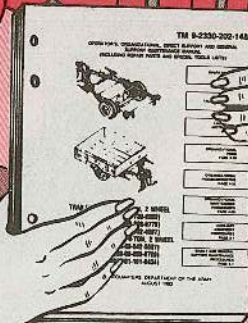
Left - NSN 5307-01-233-9958



Getting Your Bearings

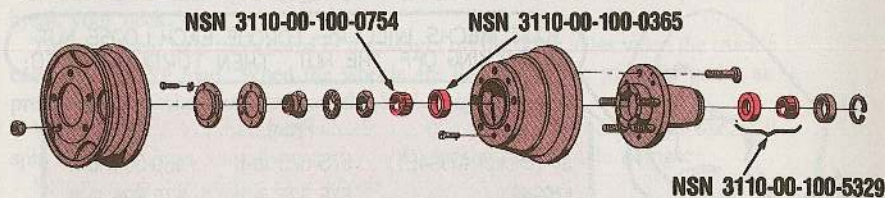


MAKE A NOTE OF THESE NSN'S FOR INNER AND OUTER BEARINGS BECAUSE THE ONES IN TM 9-2330-202-14 & P ARE WRONG!

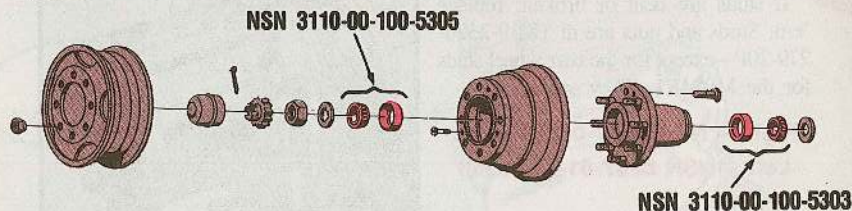


NSN's for the inner and outer bearings on M101- and M116-series ¾-ton trailers, in Figures 19 and 20 of TM 9-2330-202-14&P, are wrong.

Here's what you need for M101, M101A1, M116 and M116A1's:



For M101A2's and M116A2's use these NSN's:



Prevent Freeze-ups



OK, FELLA, HERE'S THE WAY TO KEEP US BOTH FROM FREEZIN'!

A quick way to foul up your M149, M149A1, M149A2 or M625 water trailer is to let water freeze in the pipes and faucets.

To prevent freeze-up:

Shelter the tank, especially if the temperature is below 0°F.

Keep the manhole cover closed.

After each use, close the valve at the front of the tank and drain the pipes through the faucets.

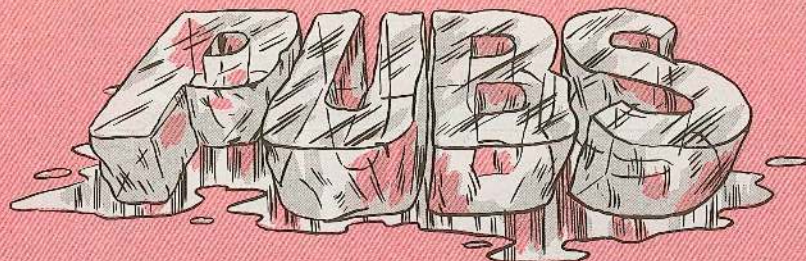
Use an immersion heater in the steel tank. Never use it in a fiberglass tank. You could melt the tank.

The best immersion heater for the job is NSN 4540-00-266-6834. You'll find it in Chapter 5 of TM 10-4500-200-13 (Dec 69). It has a steel disk that provides a cover for the tank, as well as a support for the heater assembly.

If you already have an M67 immersion heater, use it. You'll have to adjust the heater bracket to make it fit the tank, tho.

FOLLOW THE INSTRUCTIONS ON PAGES 2-31 AND 2-32 IN TM 9-2330-267-14 & P





This is a selected list of recent pubs of interest to unit maintenance personnel. This list was made from a printout provided by the Adjutant General.

TM 3-4240-288-12&P Aug M20 NBC equipment
TM 5-4320-302-24P Aug Pump unit, Model US2520 HCCD-1
TM 5-6115-614-12 Jul 86 200-KW DED generator set
TM 5-6115-614-24P Jul 86 200-KW DED generator set
TM 9-1000-257-BD Sep BDAR for M102 towed howitzer
TM 9-1425-386-L Oct Pershing II missile
TM 9-4935-601-14-6&P Aug 485/R485 oscilloscope (Patriot missile)
TM 9-5855-1882-24P Nov AN/UAS-12D night vision sight
TM 9-6695-274-14 Aug AN/GSM-286 and AN/GSM-287 calibration set
TM 9-6920-470-24P Oct TOW weapon
TM 11-2300-475-13&P-1 Sep MK-2462/GRC-193 installation kit

TM 11-2300-475-13&P-4 Sep MK-2458/GRC-193A installation kit
TM 11-5805-727-20P Aug OA-9102 (V)/FSC, OA-9103(V)/FSC and OA-9098/FSC
TM 11-5805-767-12 Sep C-11767/TTC-41(V) terminal control device
TM 11-5815-615-10 Sep AN/UXC-7 Lightweight digital facsimile
TM 11-5820-538-23P Jul AB-577/GRC and MK-806/GRC
TM 11-5820-867-23P Sep AN/GSQ-187 sensor monitor set
TM 11-5820-870-23P Sep R-2016/GSQ radio frequency monitor
TM 11-5820-872-23P Sep RT-1175/GSQ radio repeater
TM 11-5820-982-24P Sep C-11643/TRC
TM 11-5895-205-14 Sep AN/MSC-29
TM 11-5895-1160-23P Sep AN/TSC-99 communications central
TM 11-6625-602-40 Sep Telephone AN/USM-181(I) test sets
TM 11-6625-3138-24 Sep AN/GYK-29(V) gun direction test program set (TPS) for computer system, tested with AN/USM-410(V)(2)

TM 11-6625-3165-24P Oct SG-1207/U signal generator
TB 55-1520-214-30-10 May OH-6A/H-6
TB 55-1520-236-20-1 Aug AH-1P/E/F
TB 55-1520-238-20-22 Aug AH-64A
TB 55-1520-238-20-23 Aug AH-64A
TB 55-1520-241-20-44 Aug CH-47A/B/C
TB 55-1520-242-20-30 Jul UH-1C/H/M/V and EH-1H/X
TB 55-4920-431-35 Oct Electronic sequence unit multipurpose test set
MWO 9-2350-255-20-5 Sep Modification of M1, IFM1
MWO 55-1520-240-20-2 Aug CH-47D
FM 5-34 Sep Engineer field data
FM 20-31 Oct Electric power generation in the field

SMART Message

SMART MSG #76—Lists a new cargo tie down device, NSN 1670-00-725-1437, for the AAL on M872-series semitrailers.

Maintenance & Safety-of-Use Messages

AMCCOM Maintenance Advisory—Inspection of M1A1 traverse mechanism gearbox, AMSMC-MAW, 011245Z Sep 87.

AMCCOM SOU—Operational, Installation of canister insert, NSN 4240-01-177-2675, in M101A1 canister insert M10A1 canister in M24/M25/M25A1 protective masks, AMSMC-MA, 311945Z Aug 87.

CECOM SOU—Advisory, Operational, Leaking LI-S02 batteries manufactured by Power Conversion Inc., under contract DAAB07-85-C-H334, Lot No. 03878, AMSFL-SF-SEE, 041255Z Sep 87.

TACOM SOU MSG-87-59—One-time inspection of M110A2 SPH FOV, M578 RV, power plant sling, NSN 4910-00-140-6876, AMSTA-MCC, 291900Z Jul 87.

TACOM SOU MSG-87-64—One-time inspection of M48A5/M60 AVLB panel ramp assembly male end, NSN 5420-00-642-3117, AMSTA-QHB, 111700Z Sep 87.

TACOM SOU MSG-87-65—Operational, Supersedes SOU-MSG-87-58, Inspection and operational limits for material handling crane winch cables used on the M.A.N. vehicles, AMSTA-MTC, 020900Z Sep 87.

TACOM SOU MSG-87-67—One-time inspection of tires on M880-series 1 1/4-ton trucks, AMSTA-MTA, 151500Z Sep 87.

TACOM SOU MSG-87-67—Advisory, Operational, Swapping bias non-directional cross-country tire and split-rim wheels from M939-series trucks with other styles causes a safety hazard, AMCPM-TVM, 171600Z Sep 87.

TROSCOM Petroleum MSG-22—Technical Advisory, Requirements and restrictions for mixed fuel loads in commercial petroleum tank vehicles, STRGP-FT, 211700Z Sep 87.

TROSCOM SOU MSG-15-87—One-time inspection of aircraft crash and structural fire fighting truck type A/S32P-19 and -19A, leaf spring

bracket welds, AMSTR-MES, 281945Z Aug 87.

TROSCOM SOU MSG-16-87—One-time inspection of tires on trailer-mounted 600 GPH reverse osmosis water purification units, NSN 4610-01-093-2380 and NSN 4610-01-234-2196, AMSTR-MES, 091201Z Sep 87.

TROSCOM SOU MSG-87-24—Maintenance Advisory, replace lock nut on the power cable of the FF-2 automatic opening device (AOD) with locking nut, NSN 5310-00-689-2569, AMSTR-MES, 111330Z Aug 87.

TROSCOM MSG-87-27—Maintenance Advisory, Discharging Halon 1301 fire extinguisher with mechanical overrides, AMSTR-MES, 151900Z Sep 87.

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

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GOT A SUPPLY OR
MAINTENANCE PROBLEM?
WRITE ME AT PS!
LEXINGTON, KY 40511-5101





Beware of the Big

Corrosion is a cancer. It can strike anytime, anywhere, without warning. The longer it goes undetected, the worse it gets... and the harder it is to treat. But regular checkups by you mechs and crew chiefs can stop corrosion before it knocks one of your birds out of the sky.

Keep 'em clean. Dirt, dust, grime and crud hold moisture, which is all that's needed for corrosion to get started. Follow the guidelines in TM 55-1500-333-24 on how often you should wash your bird and what materials to use.

Check drain holes and other areas of your bird where moisture could get trapped



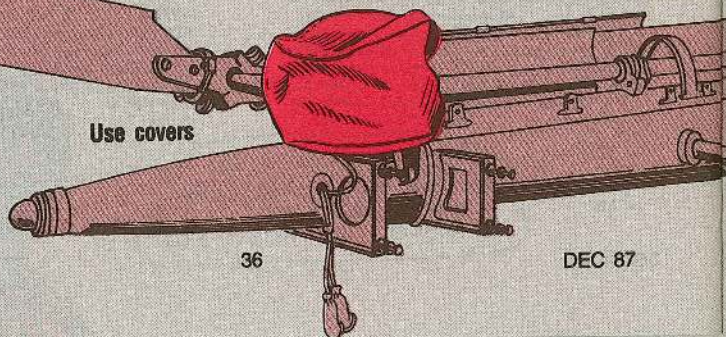
Check drain holes



Look behind soundproofing

or absorbed. Clean and dry fuel drains and areas where soundproofing, felt-foamed plastic, foam rubber and the like are used.

Clean up all chemical spills and dropped food as soon as possible. That means cleaning up after crews and passengers have eaten. Store removed components in a dry place. Use covers and packaging to protect components from moisture. Never stack components of different metals on top of each other.



Use covers

Wipe down the outside of the rams on hydraulic cylinders daily.

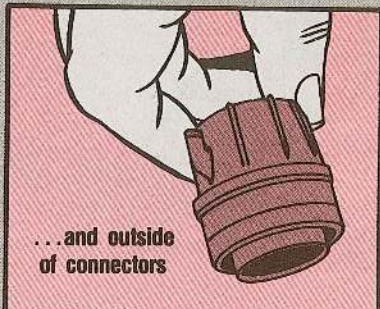
Use preservative coatings to protect avionics and electrical hardware. NSN 8030-00-546-8637 gets a 16-oz aerosol can of corrosion preventive compound. It's electrically non-conductive, so you can use it on the inside of cannon plugs. After you reconnect electrical connectors, coat the outside with non-conductive corrosion preventive compound, NSN 8030-01-041-1596.



Clean hydraulic cylinders daily



Protect inside...



...and outside of connectors

Look for evidence of corrosion during every inspection.

When steel corrodes, it forms a red dust. Most other metals on aircraft form a grayish-white powder or dust.

Treat corrosion when you find it. Don't put it off. Treatment could involve paint stripping, cleaning, corrosion removal, repairs and surface finishing. Be sure you observe all safety precautions and use the general treatment methods described in Section 5 of TM 43-0105, Corrosion Control for Army Aircraft.



Remove ALL corrosion

THERE'S NO MAGIC CURE FOR CORROSION, BUT REGULAR CHECKUPS AND A LITTLE PM KEEP IT UNDER CONTROL



Rotor Blade Tiedown Fix

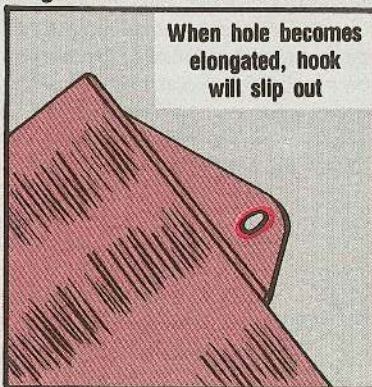
HOLD ON, I'VE GOT
THE PERFECT FIX FOR
THOSE TIEDOWNS!

Dear Editor,

When you tie down only one rotor blade of a Cobra, the wind can whip the blades up and down, causing severe wear and tear on the rotor hub's elastomeric bearings.

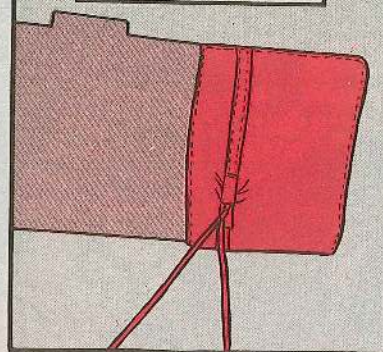
We tried tying down both blades on the flightline, but the blades still moved up and down enough to bend the tiedown hook attached to the blade in front because of the severe angle from blade tip to tow rings. Then the hook slipped out of the blade's tiedown hole in the tip cap...and we were back to where we started.

So we made covers for our Cobra's rotor blade tips from canvas and sewed 1-in tubular webbing,



When hole becomes
elongated, hook
will slip out

Canvas cover over rotor
blade tip does the job



NSN 8305-00-268-2455, completely around the cover to use in place of the thin tiedown strap that comes with the bird. Covers for 540-series blades and K747 blades have slightly different dimensions because of different blade shapes.

We use a buckle, NSN 5340-00-057-6956, to tighten each tiedown strap so the blades are held firm, parallel to the runway. With both blades tied down, they can't rock back and forth and damage bearings in the rotor head.

Tony Flores
Ft Lewis, WA

(Editor's note: Sounds like you've tied down all the loose ends and solved a nagging problem. Good job!)

AH-1...

Water in the Hydraulic System?

Dear Editor,

Some of our Cobra crew chiefs used to have problems with water getting into the hydraulic system.

We found that water was seeping in around the reservoir filler neck. On occasion, water would get in because the top of the reservoir was pitted and rusted through.

So we sealed the filler neck like it says in Para 7-14 of TM 55-1520-236-23-2. If that didn't work, we replaced the reservoir, NSN 1680-00-872-1154.



Seal the
filler neck

CW3 L. D. Cornell
Ft Rucker, AL

(Editor's note: Thanks for sharing the info!)

A Handier Way To Handle Wheels

DON'T BREAK YOUR BACK
HAULIN' AROUND YOUR BIRD'S
GROUND HANDLING WHEELS ...

... JUST MAKE YOURSELF A
TOWING DEVICE LIKE THIS ONE!

Dear Editor,

We used to haul our ground handling wheels around by sitting them on top of the tow bar between the tow bar legs. But the wheel assemblies are so heavy—especially the Cobra wheels—that our mechs sometimes hurt their backs picking them up.

So we came up with a modified towing device to hook the wheels directly to the tow bar without lifting the wheels. No more sprained backs and lost time.

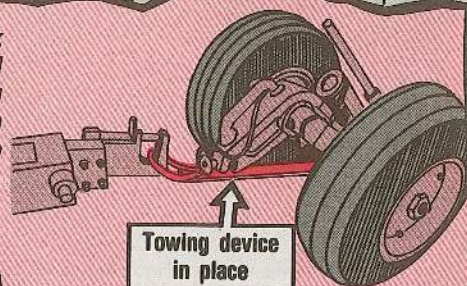
It's basically the same device shown in Fig 1-7 of TM 55-1520-236-23-1. But, instead of putting a handle on the work aid, we shaped a piece of 5/16-in round steel stock into a loop and welded it onto the bottom section, like so:



The modified
towing device

Just slip the loop onto the hook assembly of a tow bar leg and you're ready to go. 'Course, you need two sets of wheels for each bird, so you hook up one set to each leg of the tow bar. No strain, no pain!

Jim Bullion
Ft Lewis, WA



(Editor's note: Sounds simple to make and easy to use, but some mechs may prefer the towing work aid shown in the TM. Either one will do the trick.)

UH-1...

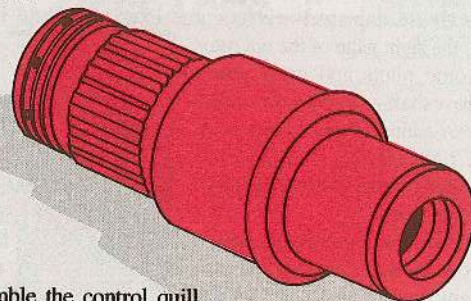
Double Take the Threads

Take a second look at the threads of the control nut (Item 12 in Fig 11-33 of TM 55-1520-210-23-2) next time you reinstall your Huey's tail rotor quill assembly.

Make sure there's no dirt or grit on the threads. When the nut's tightened, dirt, grit or sand can cause it to crack.

Clean all parts of the quill assembly, including the control nut and control tube, with P-D-680 solvent, NSN 6850-00-274-5421. Dry all parts thoroughly with filtered, compressed air.

Be sure
control nut
is clean



When you reassemble the control quill, don't overtorque the retaining nut, Item 19 of Fig 11-33 in the -23-2. Torque it to no more than 300 lb-in, like it says in Para 11-152g.

DEC 87

41

Reflections on Inspections

SOME CREW MEMBERS SHOW NO RESPECT FOR THEIR BIRDS WHEN DOING THEIR PRE-FLIGHT INSPECTIONS!

THEY STEP WHERE THEY SHOULDN'T STEP AND GRAB WHAT THEY SHOULDN'T GRAB TO SEE WHAT THEY SHOULD SEE!

Then their bird is in worse shape than when they started their inspection. Crew members should take the time to pull up a maintenance stand or ladder to climb up top. But some grab the tail-

Navigation light is not a grab handle!

Never stand on the stinger!

boom navigation light to pull themselves up onto the stinger. Neither the light nor the stinger are made to support a person's weight, so the components or the airframe or both are damaged—rivets come loose and sheet metal tears.

To check the sight gage of the tail rotor gearbox, some pilots and crew chiefs grab the driveshaft—or even the roller chain—as they swing around from the left side to the right side.

That eventually warps driveshaft couplings' grease seals.

The point is, crew members, take it easy on your birds when you do pre-flights, or any kind of inspection for that matter. Step and grab only in places designed to support your full weight. And use maintenance platforms to get nose to nose with components high up.

CH-47D Door Pin NSN

The pins used to hold the side access doors open on Chinook engines are not in the -23P TM.

If pins are missing, order new ones with NSN 5340-00-901-3888

Take care when lowering cover

Until you replace missing pins, be careful when you lower the upper access cover. The cover can hit and cut the shielding on the engine harness electrical cable assembly.

It could also slam into the N1 actuator and cause a heap of trouble.

Reduce the chance of damage by closing the door as gently as possible.

Assembly gets cut here

AVIATION MESSAGES

CAT 1 ER Phone
AUTOVON 893-2066
(24 hours)

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

H-1-87-05, SOF, Maintenance Mandatory, Inspections for manifold junctions, 102000Z Aug 87.

AH-1-87-06, SOF, Operational, Lifting restrictions for the firing of the TOW GM system, 202030Z Aug 87.

AH-84-87-17, SOF, Technical, Revision to inspection of aft equipment bay area, 141400Z Aug 87.

AH-84-87-18, SOF, Operational, Operation of engine chop collar, 201300Z Aug 87.

CH-47-87-09, SOF, Technical, CH-47A, B, C, recurring inspection of forward and aft transmission, 101400Z Aug 87.

UH-1-87-08, SOF, Maintenance Mandatory, Revision to inspections for grounding of fire warning detector, 071300Z Aug 87.

UH-80-87-09, SOF, Technical, Cyclic stabilizer slew switch, 111300Z Aug 87.

MIM-AH-1-87-XSOF-07, Tail rotor driveshaft, spherical couplings, 271900Z Aug 87.

MIM-CH-47-87-XSOF-05, Health indicator test (HIT) procedures for T55-L-7C engines, 241830Z Aug 87.

MIM-UH-1-87-XSOF-06, Extension of service life on crew seat back covers, 032130Z Aug 87.

MIM-UH-1-87-XSOF-07, Tail rotor driveshaft spherical couplings, 271900Z Aug 87.

MIM-UH-80-XSOF-01, Use of pilot cover, NSN 1560-01-129-1259, 251600Z Aug 87.



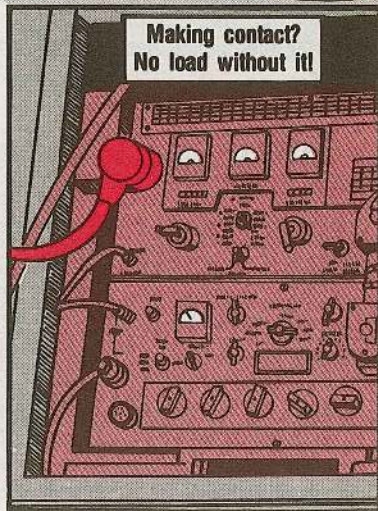
I'VE GOT YOU BEAT THIS TIME!

You've got an unbeatable hand when you pair up your AM-3349 amplifier with your RT-662 or RT-834 receiver-transmitter.

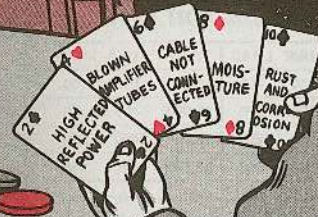
They work best when you've tuned and loaded the antenna to match the output from the radio's amplifier. If the two are not alike, you'll get high reflected power from the antenna that'll blow amplifier tubes.

The only tools you need to make this pair work together are operating instructions in TM 11-5820-520-10 and common-sense PM.

Make sure the CX-10171 cable is making contact between the radio and its antenna. Without it, you won't be able to tune and load. That invites reflected power.



YOUR CARDS ARE NO GOOD UNLESS OPERATORS BACK 'EM UP WITH ACTION!



Make Solid Contact

Be sure the antenna cable is connected to both the amplifier and the antenna, usually the AB-652 mast base.

At the AB-652, you've got a couple of other checks to make. Look at the contact. Make sure rust or corrosion's not keeping your CX-10171 from making good contact.

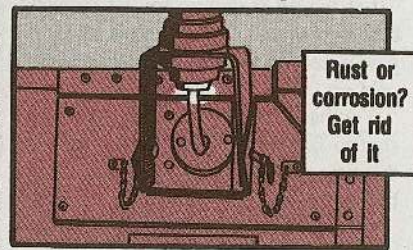
If it is, shine the contact with a stiff brush. The one from your weapon's cleaning kit will do.

Once it's shiny, lube it lightly with silicone, NSN 6850-00-880-7616.

Always keep the mast base's ceramic bowl clean and dry. Moisture is an enemy of commo gear.

Make sure the mating surfaces between antenna sections are bright and shiny, by rubbing them with a pencil eraser. Then, coat the surfaces with a light film of silicone.

Make sure the cable feeding the mast base has all its conductors. If any are broken off, cut the cable back far enough to expose them all. That insures good contact.



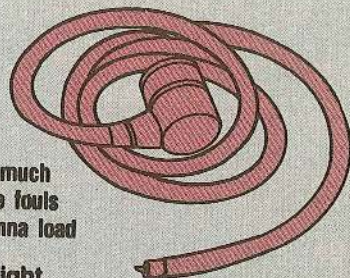
Cut Cable to Fit

Cut the cable to fit the installation. Cable comes in a standard 6-ft length. You may not need that much. Extra cable becomes part of the antenna and fouls up tuning and loading. Cut it to fit.

Head off another problem by keeping the same receiver-transmitter and amplifier on the same team. They're aligned at support. Pairing either with another component will throw off your operation.

So, if one goes bad, send both back to support.

Too much
cable fouls
antenna load



Tuning Time's Tight

Get a head start with tuning by using the "factory" numbers on your tune and load chart.

These numbers will get you close, but you'll still have to go through the procedure in the TM.

If your chart is missing, order a new one with NSN 7640-00-003-8085.

15 FOOT WHIP ANTENNA 1/4 TON VEHICLE

FREQ	TUNE	LOAD	FREQ	TUNE	LOAD	FREQ	TUNE	LOAD
2,000	500	200	8,000	450	700	15,000	550	850
2,500	500	300	8,000	450	800	16,000	400	900
2,750	500	400	10,000	500	850	20,000	400	950
5,000	450	600	13,000	600	850	29,999	400	950

Replace damaged or missing chart

Set the frequency on your RT-834's first five dials only. The last dial, 100 Hz, is used for fine tuning once you're in OPERATE.

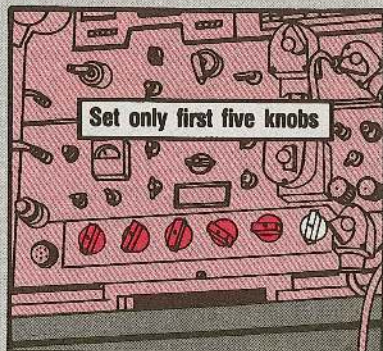
Clock Watching's a Must

Let the set warm up for 10 minutes before you start. That sudden blast of power needed for tuning can damage a cold set.

You have only two minutes once you start to fine-tune all five dials. Go past that time and you can blow a final amplifier tube.

If two minutes have gone by and your tuning's not completed, put the HV RESET switch in OPERATE and your RT's SERVICE SELECTOR switch in STANDBY.

Set only first five knobs



Wait five minutes for cooling. Then move through the 2-minute exercise again. Remember, you have to tune and load daily as well as when you change frequencies. Atmospheric conditions affect the tune and load routine.

Even if you use the same frequency for a long time, you should turn the dials. This'll keep the contacts shiny.

If tune and load meter needles are not centering, try turning both knobs slowly at the same time and in the same direction you want them to go. They should center.

Tune s-l-o-w-l-y together



Haste Makes Hash of Commo

Forget setting a speed record when you handle the controls. If you race past a stop, you can throw the tuning gear off the coupler assembly. You won't be able to tune.

When you move the dial to OPERATE, give the set a minute to cool down. That gets rid of the heat built up during tuning.

Your final time trial is to put the RT in STANDBY for two minutes before shutting down the radio. That cools the set before you shut down the heat exchanger.

Put the HV RESET switch in OPERATE before you switch the set off. This'll make sure the set will start the next time. If the switch is left in TUNE, the high voltage reset relay will fail to energize, leaving you with a dead set when you try to start it again.

WHAT A
ROMANTIC
SUNSET!

NO TIME TO ENJOY
IT, THO! THERE ARE
MANY OTHER TOWNS
WITH MANY OTHER
RADIO OPERATORS
WHO ARE ALL TOO
WILLING TO GAMBLE
WITH THEIR SETS!



AN/UGC-74...

Save Cables and Keyboards

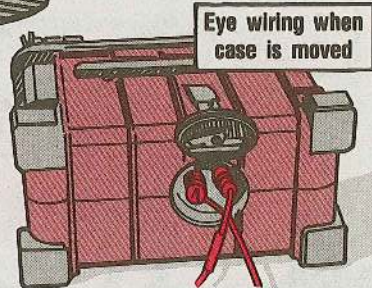


It's all in the way you move the case of your teletypewriter set. Yanking off or slamming on the case damages cables and keys. This knocks out commo gear.

Take the power and clock/data cables which feed through the case's rear panel door. They'll get the worst end of it when you're not looking. The cables will get crimped, cut or broken.

When you open or close the case, guide the cables through the door.

Give cables extra protection by wrapping them with insulation tape, NSN 5970-00-644-3167.



48



Using a screwdriver or pry bar to force open the case once the latches are loose is a big NO-NO! This damages the case.

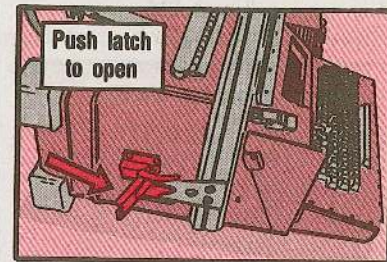
Instead, use the latches to pry open the case. Once they're released, slip the latches back inside their slots and push. That moves the case far enough to let you pull it open without a hitch.

Make sure there's a ground strap between the UGC-74's GND terminal and an earth ground or the shelter's rack.

Use stranded, insulated wire no smaller than 14 AWG. Stranded wire, NSN 6145-00-578-7516, works fine.

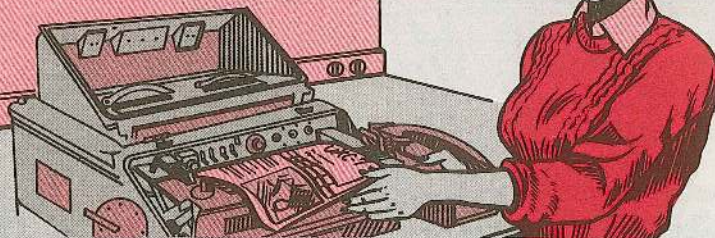
Make the ground wire at least 8 inches long. If it's shorter than that, the terminal can break when you pull the set out of the case.

Keep the keyboard safe from dropping debris and dirt when you're getting ready to move the terminal or are through with it for a while. Slip the case assembly over it. DEC 87



PM Keeps Image in View

IF YOUR COPIES ARE NOT
CLEAR YOUR FACSIMILE
MAY NEED PM

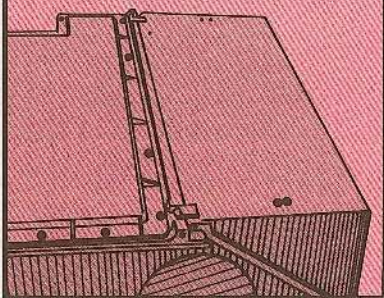


Your lightweight digital facsimile will zip an image from one user to another fast as greased lightning, unless it's been zapped by poor PM.

To make sure it's sending or receiving clear copy, pull peak PM.

When the facsimile gear is mounted in

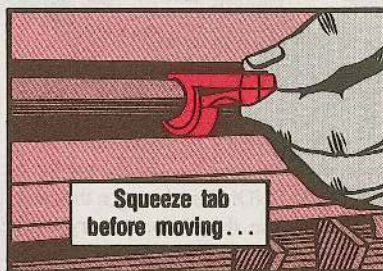
Cover gear when it's idle



a vehicle, keep the cover on the facsimile when you're not using it. Otherwise, dust and dirt will clog moving parts.

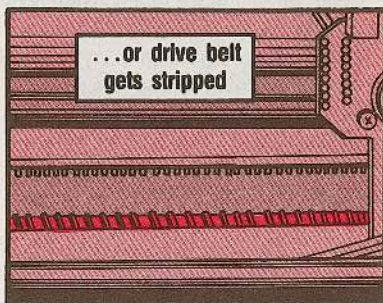
Forget about oiling or lubricating the AN/UXC-7. No lube is needed. Lubing gums up parts, making them stick.

Always squeeze the margin release tab before resetting the margin. Shifting the

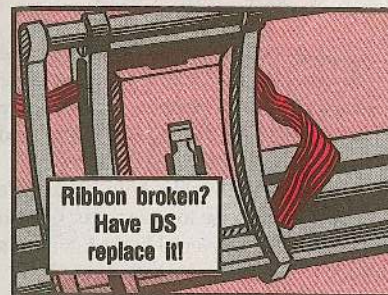


Squeeze tab
before moving...

tab without releasing it wears the teeth on the drive belt. This causes belt slippage.



...or drive belt
gets stripped

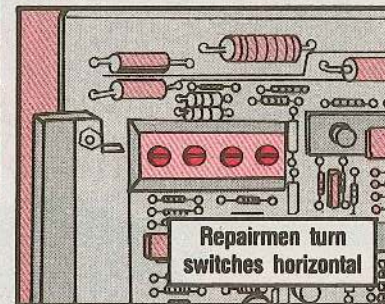


Ribbon broken?
Have DS
replace it!

Keep an eye on the power impulse ribbon. If it's crimped or broken, report it.

If your facsimile fails to get the image, eye the FM printed circuit board on the

modern. If the first and fourth AT1 attenuator switches are vertical, your facsimile is set up for civilian commercial telephone circuits only. Get your repairman to set all four switches horizontal for military circuits.



Repairmen turn
switches horizontal

Antennas...

Risky Business

Crewman, you run the risk of being seriously hurt when your antennas are tied down wrong.

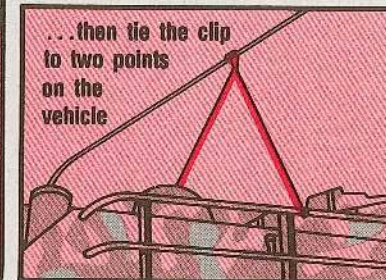
Make sure the antennas are tied down like it says in TM 11-5820-401-10-2. That way the antennas stay away from overhead high voltage power lines.

Here's the way it goes:

- The antenna goes under the clips. Putting it in the top of the clip will let it jump out during movement.
- After the antenna is clipped, use a rope to tie the clip to a couple of different points on the vehicle. That keeps the antenna in place.



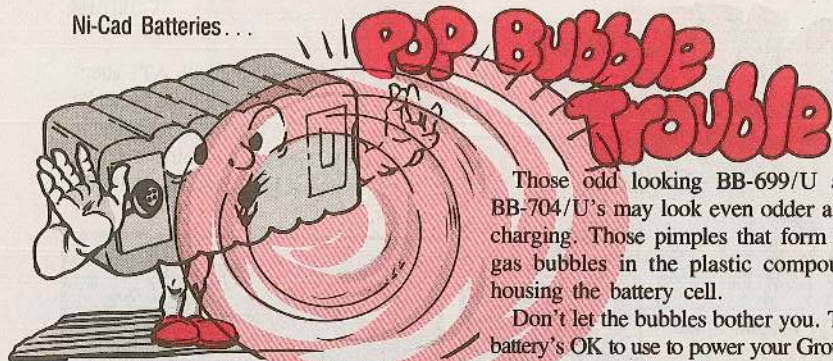
Antenna goes UNDER
the clip...



...then tie the clip
to two points
on the
vehicle

WHEN TYING DOWN TWO OR MORE
ANTENNAS, MAKE SURE THE
ANTENNAS AREN'T TOUCHING.
YOU COULD DAMAGE YOUR RADIOS.

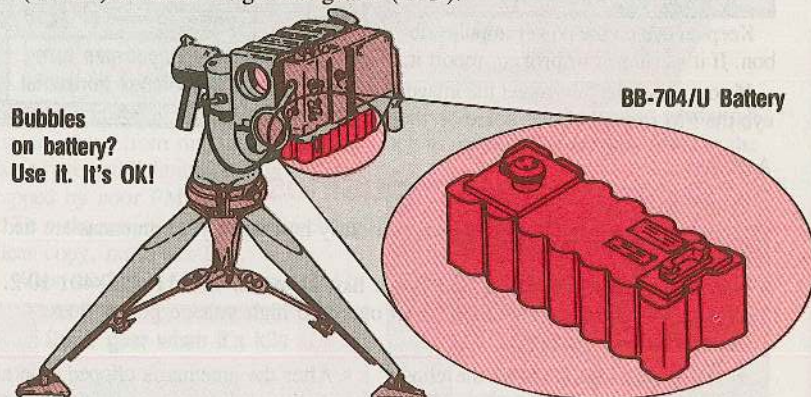




Those odd looking BB-699/U and BB-704/U's may look even odder after charging. Those pimples that form are gas bubbles in the plastic compound housing the battery cell.

Don't let the bubbles bother you. The battery's OK to use to power your Ground

Vehicle Laser Locator Designator (G/VLLD), Modular Universal Laser Equipment (MULE) or Laser Target Designator (LTD).



**Bubbles
on battery?
Use it. It's OK!**

To get rid of the bubbles, take the battery outside. Let it stand for 24 hours.

Then poke a hole in each bubble with a sharp point, such as a safety pin, at an angle to avoid hitting or damaging a cell.

Be safe. Make the hole on the side of the bubble away from your face.

charging batteries

Charge your BB-704/U at a .4-amp rating and your BB-699/U at a .18-amp rating for 14 hours.

IF THE BB-704/U HOLDS A 27-VOLT CHARGE AND THE BB-699/U HOLDS AT 29.5 VOLTS, THE BATTERIES ARE A-OK.



Splicing Kit Parts

The MK-356/G splicing kit, NSN 5975-00-657-2183, is no longer available as a kit.

But you can order the parts separately.
They are:

ITEM	NSN
Cotton bag	8105-00-810-9875
Magazine	5975-00-659-9905
Splicing sleeve	5940-00-818-1774
Compressing tool TL-582/U	5120-00-679-2380

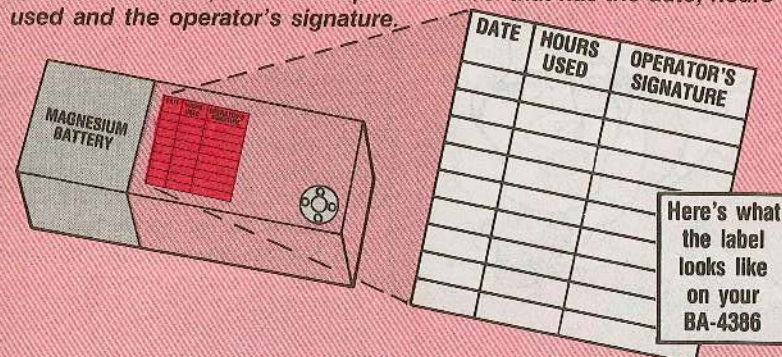


Battery Use Labels

Dear Editor,

After a battery has been used, it's almost impossible to keep track of how much life is left in it.

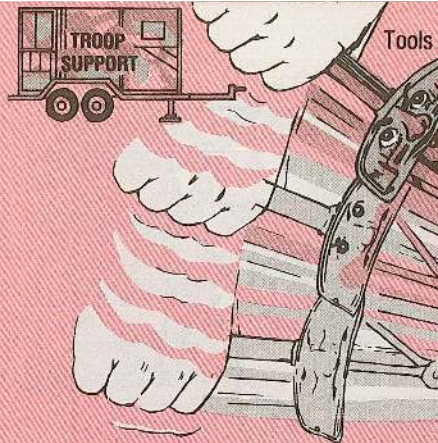
To track the amount of hours our BA-4386/PRC-25 and BA-5598/U batteries are used, I've come up with a label that has the date, hours used and the operator's signature.



Now we get full use from our batteries by reading status of the battery on the label.

SFC Norman Purdue
Muncie, IN

(Editor's note: That's tagging a problem. Smaller or larger labels could be used for other size batteries.)



Tools.

Torque Talk

I'D LIKE TO TORQUE WITH YOU!

Skimpy...

That's what TM 9-243, Use and Care of Hand Tools, is when it comes to info on torque wrenches.

Here are some good words to fill out the TM torque info.

MAINTENANCE INSTRUCTIONS THAT COME WITH THE WRENCH ARE FOR READING! KEEP THEM HANDY AND USE THEM LIKE A TM.



Choose a wrench so that the torque of the bolt you're tightening falls in the middle 2/3 of the scale. The ends of a torque wrench scale are not as accurate.

CLEAN PARTS in drycleaning solvent. That means the threads, the mating surfaces, and also the head of the wrench.



NEVER GREASE or OIL a bolt unless your TM says to. Lubed threads reduce run-up friction and could cause overtorque.

TORQUE the nut, not the bolt unless your TM says otherwise, and stop turning when the torque is reached.



Sometimes, because of limited space, you have to tighten a bolt at the head end. You'll use up some of your torque getting the bolt moving in the hole, or to align parts. So torque to the high side of the torque range.

SLOW and STEADY when you turn the wrench to get an accurate torque. A herky-jerky motion ruins a reading. You'll get error.

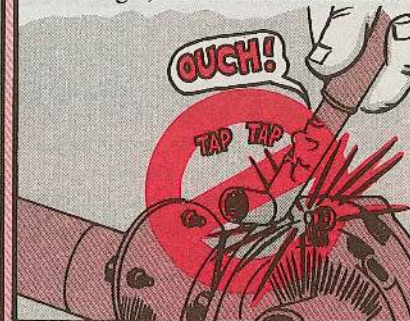


RETORQUE by backing off the nut. Never use your torque wrench to back off a nut. You will knock off the wrench's calibration. Always back off nuts with a standard wrench. Torque to the specs called for in the TM.



SEIZURES ruin readings. About the time you reach the correct torque reading—during the last few turns—you may get a popping effect. The wrench stops turning. Back off with a standard wrench and then retorque.

NEVER TAP or HAMMER with a torque wrench. A torque wrench is delicate. Bang it, and the calibration is shot.



DROPPING or TOSSING a torque wrench knocks it out of whack. It's a finely tuned tool. If you drop it send it to DS for calibration.



A TORQUE WRENCH IS A VALUABLE TOOL. TREAT IT WITH CARE, USE IT RIGHT, AND IT WILL GIVE YOU YEARS OF SERVICE

Storing Torque Wrenches

Dear Half-Mast,

What setting do you leave a torque wrench on when you're through for the day? I've been told to zero it, put it on 20 percent of maximum, and that it doesn't matter where you set it. What's right?

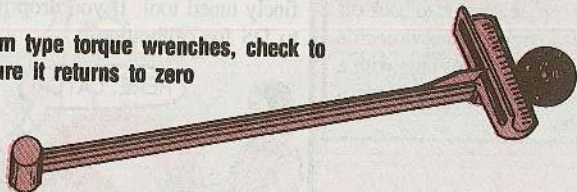
SFC W. G. C.

Dear Sergeant W. G. C.,

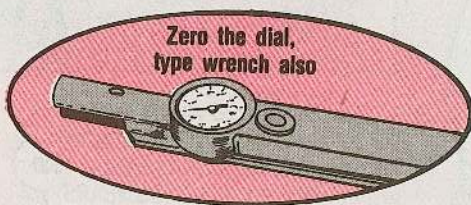
Follow the manufacturer's instructions that come with the wrench. If the instructions don't cover storage, or you've lost them, here's what you can do.

Set micrometer-type torque wrenches at 20 percent of maximum range before storing. You'll find this in Para 29b on Page 19 of TB 9-5120-202-35, *Calibration Procedures for Torque Wrenches*; and in Para 6-153a on Page 6-42A of TM 55-1500-204-25/1, *General Aircraft Maintenance Manual*.

For beam type torque wrenches, check to make sure it returns to zero



For the rest of the torque wrenches (unless your local SOP says differently) zero them before you store them. This takes the pressure off the spring. The wrench will last longer and give better service.



Zero the dial,
type wrench also

Half-Mast

Tools...

Cabinet Lock-up



Dear Editor,

Locked, but not secure.

That's the way it is with the cabinet that's part of the No. 1 Common shop set.

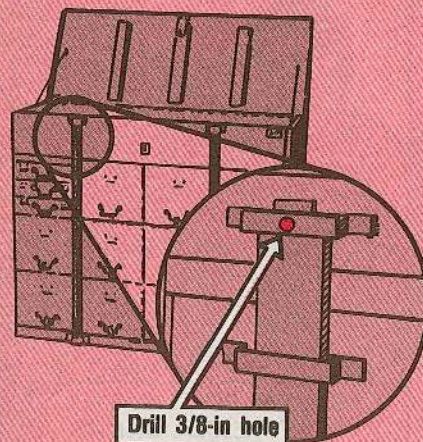
Even with the lid closed and locked, sneaky Petes can get in the cabinet by lifting the corner of the lid and lifting the lock bars out of the bottom brackets.

I came up with a fix that puts a stop to that.

You'll need a 1/2-in electric drill, a 3/8-in drill bit, two 3/8-in straight headed pins, NSN 5315-00-815-8840, and two clips, NSN 5340-00-237-7779.

Here's the fix:

- Drill 3/8-in holes through the top bracket of the bar support and the bar, on both sides of the cabinet.
- Install the 3/8-in straight-headed pins through the holes in the bar.
- Put the clips through the holes in the pins, on the inside of the cabinet.



Drill 3/8-in hole

SSG Raymond A. Smith
USAR, Willmar, MN

(Editor's note: Good idea! It's sure to stop sticky fingers.)

Supply...

The FSCM is CAGED!



TM'S AND SUPPLY FORMS STILL SHOW FSCM. WHAT ABOUT THEM?

WHEN THEY ARE UPDATED, THEY'LL SHOW CAGE, TOO!



SO THE FSCM IS ON ITS WAY OUT, RIGHT?



YEP! CAGE WILL SOON BE IN ALL THE MANUALS AND EVERYWHERE ELSE FSCM HAS BEEN

Field Fiche

Dear Editor,

Taking fiche to the field is a slippery proposition. They're easily dropped, scattered, and lost.

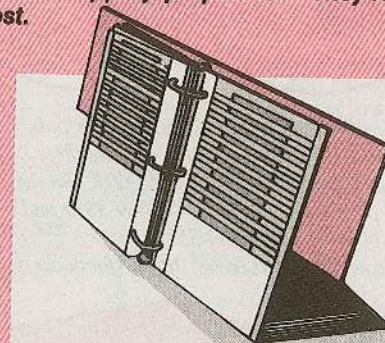
Here's a tip to pass along to troops who have to use fiche while in the field.

Take ten fiche holder pages, NSN 7460-01-040-5785. Put them in two three-ring binders, NSN 7510-00-579-2751—five holders in each binder.

In one binder, put DA Pam 25-30, SB 700-20 and the AMDF. In the other, put your most used SC's.

When you go to the field, your two books are always handy with most of the info you need at your fingertips.

SSG Jerry O. Crow
Jersey City, NJ



(Editor's note: Now we don't have to fish for a good idea. You've caught one for us. Thanks, Sarge.)

H-M-M-M. ANOTHER REQUEST WITH JUST A PART NUMBER AND FSCM. I'D BETTER LOOK IT UP ON THE MCRL-I.

GREAT! THE PART NUMBER AND FSCM CROSS TO AN NSN. WAIT A MINUTE...

THIS SAYS CAGE, NOT FSCM.

WHAT'S A CAGE?

WHAT'S WRONG WITH FSCM?

I'LL ANSWER THAT!

CAGE MEANS COMMERCIAL AND GOVERNMENT ENTITY CODE

FSCM JUST DIDN'T HAVE ALL THE INFO NEEDED. CAGE NOT ONLY HAS THE MANUFACTURER CODES BUT ALSO THE NON-MANUFACTURER CODES.

Keeping 'em Together

Dear Half-Mast,

During our trips to the field we take our TM's, like we're supposed to.

By the time we get to the field, the pages of the loose leaf pubs are all over the place.

Have you found a good way to keep TM's together, and to pack them to haul to the field?

CW4 S. R.

Dear CW4 S. R.,

Keep TM pages together by threading electrical ties through the binding holes. NSN 5975-00-074-2072 gets 100 ties 6½-in long.

Before you insert the ties, run a piece of fiber re-enforced tape over the

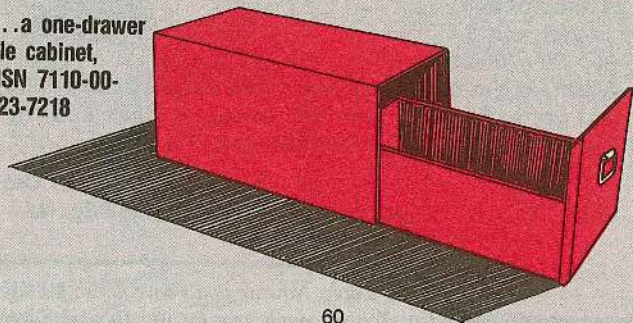


binding holes, on both covers of the pub.

Of course, there are the old standbys...the 2-in deep three-ring binder comes with NSN 7510-00-149-0604. Get the binder with posts for 2- to 3½-in thick pubs with NSN 7510-00-889-3519 and binders for pubs 3- to 5½-in thick with NSN 7510-00-889-3520.

Carry pubs in a locker trunk (footlocker), NSN 8460-00-243-3234, or...

...a one-drawer file cabinet, NSN 7110-00-823-7218



THE INDEX IN THIS ISSUE CAN HELP YOU ALL YEAR ROUND



Washer Bench Stock Benched

The washer assortment, NSN 5310-00-275-4290, listed as a basic shop item on Page 56 of PS 407, is better for bench pressing by a healthy wealthy weight lifter than bench stock. The washer assortment includes 2,100 washers—150 each of sizes up to 3½-in in diameter, weighs 300 pounds and costs \$158! It's not your average maintenance shop stock. Order flat washers individually by the size you need.

AOAP Form 2026

When you fill out DD Form 2026 to include with your sample, enter the sampled vehicle's odometer reading in the REMARKS block. If your vehicle has no odometer, enter the hour meter reading.

If the lab gets a sample without that entry, they'll have to track down the info. That means more work for you and dollars out of Uncle Sam's pocket.

MRSA Msg AMXMD-MO 151600Z May 87 has the word.

Let AOAP Decide

Page 7 of PS 419 is misleading. The info applies only to vehicles not covered by the Army Oil Analysis Program (AOAP).

If your truck or other vehicle is covered, send in a sample when you suspect the lube is contaminated. Then follow the lab's recommendations if they say to change it.

Lube NSN Wrong

The solid film lubricant NSN on Page 13 in PS 417 is wrong. The current NSN is 9150-00-754-0064.

Distribution: To be distributed in accordance with DA Form 12-5-R, for TB-43-series.

TMDE Hotline Updated

Folks at the Central TMDE Activity can help with questions on Test Measurement and Diagnostic Equipment, training, calibration, maintenance, parts support, MTOE or TDA authorizations, publications, turn-in of obsolete or unneeded equipment and management.

Call the TMDE Hotline, AUTOVON 745-4104, or toll-free 1-800-451-3428 any time for assistance. When you get an answer, give your name, address and telephone number, type of equipment and a complete description of your problem. Also, let them know what you've already done so they'll have a good starting point.

Bad 25-MM Boresight Adapter

Eyeball all 25-MM Boresight adapters for the M2/M3 Bradley's M242 chain gun right now. If part number 12524010 is stamped on any adapter, turn it in to your supply ASAP. The adapter is unreliable. It could lead you to believe your gun is boresighted right when it is not. Use only those adapters stamped with part number 12524144.

The Word is COOLANT

Whoops! One very important word is wrong in the antifreeze chart on Page 6 of PS 419. That word is water! COOLANT is the right word. Change the word water in the second column to coolant and you won't freeze up. This is in line with the guide on Page 2 of TB 750-651.

Would You Stake Your Life ^{right now} on the Condition of Your Equipment?

U.S. GOVERNMENT PRINTING OFFICE: 1987-548-004/60013

For Your Clothing To Keep You Warm,

THINK:

DIRTY CLOTHES
DON'T BREATHE!



LEAN

TIGHT
CLOTHES
CAUSE
OVERHEATING!



PENED

TRAPPED DRY
AIR INSULATES!



AYERED

WET CLOTHES
WILL FREEZE!



RY

PIN: 061635-000