

Issue 414

PS

★
May
1987

THE PREVENTIVE MAINTENANCE MONTHLY



OK, LET'S CHECK
THAT HEADSPACE AND
TIMING ONE MORE TIME!

M2 Headspace and Timing
See Page 27

PS THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-414, 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 414 MAY 1987

FIREPOWER

M992 Ammo Carrier	2-5	HAWK	12-13
M113A2-Series FOV	6-7	Vulcan	14
M901/M981 FIST	7	Stinger Missile	15
Vehicles	7	M102-Series Towed	
M113-Series FOV	8	Howitzer	15
M109-Series SP	8	Chaparral	16
Howitzers	9	M16-Series Rifle	17
M2/M3 Bradleys,		M1911A1 Pistol	17
MLRS	10-11	M2 Headspace & Timing	27

GROUND MOBILITY

M978 HEMTT	18	M915-Series	21
M939-Series Trucks	19	M911-Series	21
M44-, M39-,		CUCV	22-23,24
M809-Series	20	Trailers	25

AIR MOBILITY

OH-58	35	Aircraft Hangar PM	40-41
UH-1	36	B-4 Maint Platform	42
UH-60A	37	Adhesive/Sealants	43
Hydraulic Jacks	38-39	MEK & P-D-680	43
Aviation Messages	26		

COMMUNICATIONS

S-250 Shelter	44-45	MX-6707 Matching Unit	47
SB 11-131	45	TD-660 Multiplexer	48
AN/PPS-5 Radar Sets	46-47	Tower Antenna	49

TROOP SUPPORT

Pubs, Audio Visuals,		Air Conditioners	55
SOU's	26	Tool Maintenance	56
Save Fuel Hoses	50	Lyster Bag Care	56
M4K RT Forklifts	51	Gas Lantern	58-59
D7E, D7F Tractors	52-53	End Item Code (EIC)	60
600-Gal Fuel Tanks	54-55		

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:

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

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

R.L. DILWORTH
Brigadier General, United States Army
The Adjutant General

PS, The Preventive Maintenance Monthly (ISSN 0475-2953) is published monthly by the Department of the Army, Washington, DC. Second Class Postage is paid at the Lexington, KY post office and at additional mailing offices.

Postmaster: Send address changes to Cdr. US Army Pubs Ctr, 2800 Eastern Blvd, Baltimore, MD 21220-2896.



Maintenance Excellence Awards

LIGHT UNIT WINNERS

- Active MTOE HHC, 44th Med Bde (FORSCOM)
- Active TDA Miesau Army Depot (USAREUR)
- Reserve MTOE 254th Supply Co (1st Army/FORSCOM)
- National Guard OMS 22, Co C, 728th Maint Bn (PAARNG)

LIGHT UNIT RUNNERS-UP

- Active MTOE 44th Ord Co (USAREUR)
- Active TDA Woebeck Det, 204th MI Bn (INSCOM)
- Reserve MTOE 172nd Trans Co (5th Army/FORSCOM)
- National Guard OMS 8, 1st Bn, 171st FA (OKARNG)

INTERMEDIATE UNIT WINNERS

- Active MTOE 513th Trans Co (FORSCOM)
- Active TDA Consolidated Maint Center, Augsburg (USAREUR)
- Reserve MTOE 310th Field Hospital (1st Army/FORSCOM)
- National Guard OMS 24, 2-104th Inf (MAARNG)

INTERMEDIATE UNIT RUNNERS-UP

- Active MTOE HHC, 84th Engr Bn (WESTCOM)
- Active TDA USAISC, Berlin (USAISC)
- Reserve MTOE 163rd Ord Co (6th Army/FORSCOM)
- National Guard OMS 4, 199th Spt Bn (LAARNG)

HEAVY UNIT WINNERS

- Active MTOE 1st Bn, 6th Inf (USAREUR)
- Active TDA US Army Field Station Berlin (INSCOM)
- Reserve MTOE 969th Maint Co (1st Army/FORSCOM)
- National Guard OMS 1, Co F, 738th Maint Bn (INARNG)

HEAVY UNIT RUNNERS-UP

- Active MTOE Co C, 44th Signal Bn (USAISC)
- Active TDA Logistics Spt Acty, VII Corps (USAREUR)
- Reserve MTOE 410th Evacuation Hospital (5th Army/FORSCOM)
- National Guard OMS 1 (NVARNG)



The Right Stuff— With Your Help



TO KEEP THE M992 ON THE JOB AND YOU WITH YOUR SORE BACK OUT OF THE HOSPITAL, EYEBALL THESE SPECIAL MAINTENANCE POINTS:

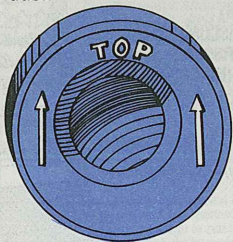
► An auxiliary power unit (APU) handles electricity and hydraulic power for moving ammo. The APU



APU air cleaner uses a dry element. No oil please!

engine air cleaner uses a dry element with a baffle in the cover.

Make sure the cover is mounted so the word TOP is at the top at all times. Then the baffle in the cover can trap dirt and trash like it's designed to do. Also, pay attention to the warning in the cover—don't use oil in this setup. It'll just catch dust.



Mount the cover so "TOP" is up. The baffle will trap the dirt

► If you lose APU power, you've got a backup source of hydraulics. You can engage the manual hydraulic pump system.

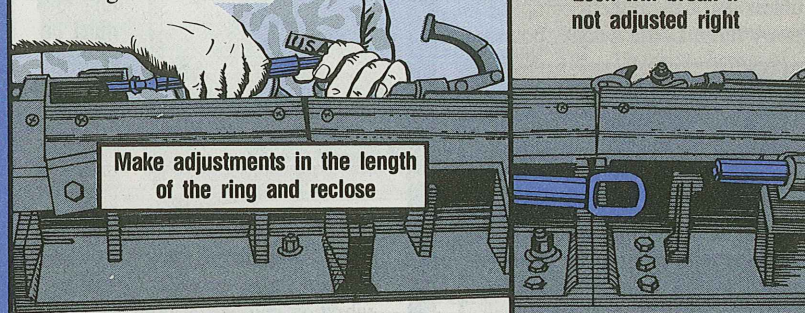
The system engages the backup pump to the main engine. Make sure the system is disengaged, though, before starting the engine or you'll trash the system.

Also, don't pump the system past 150 PSI or you'll blow the hydraulic pump clutch on the main engine.



Don't pump hydraulic pressure past 150 PSI!

► The ammo conveyor center section locks break at the hinges when they're not adjusted right. Slip the rings over the hooks and close the arms. If both sides aren't about equal in tightness, one will carry all the weight... and break.

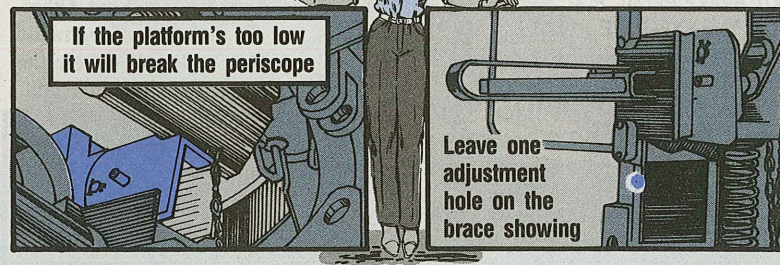


Make adjustments in the length of the ring and reclose

Lock will break if not adjusted right

WHEN STOWING THE COMMANDER'S SEAT, WATCH WHERE YOU'VE GOT THE PLATFORM. IF IT'S TOO LOW YOU'LL BREAK THE PERISCOPE IN THE CUPOLA. TOO HIGH AND THE SEAT WON'T LATCH.

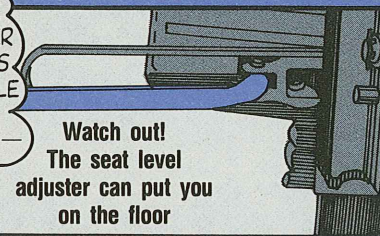
LEAVE ONE ADJUSTMENT HOLE SHOWING ON THE SEAT BRACE AND THE SEAT WILL LATCH JUST RIGHT. OR, ROTATE THE CUPOLA 90 DEGREES LEFT OF FORWARD BEFORE RAISING THE SEAT, OR REMOVE THE PERISCOPE. JUST DON'T BREAK IT!



If the platform's too low it will break the periscope

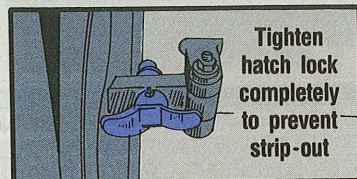
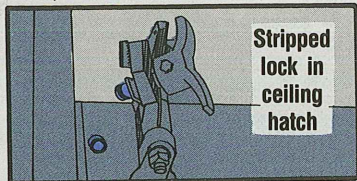
Leave one adjustment hole on the brace showing

WATCH OUT FOR THE SEAT LEVEL ADJUSTER ON THE COMMANDER'S SEAT. IF IT'S HIT WHILE SOMEONE'S SITTING IN THE SEAT—WHAM!—HE'S ON THE FLOOR.



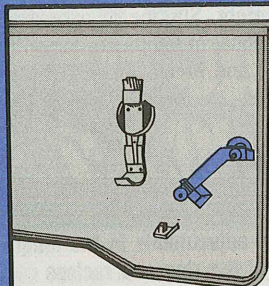
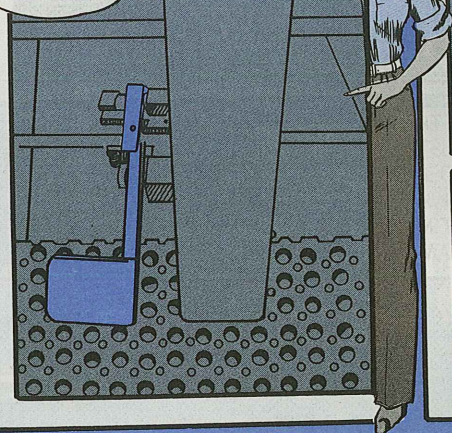
Watch out! The seat level adjuster can put you on the floor

► The middle top door locks will end up stripped of their threads unless you tighten them completely every time. Loose hatches bounce,



and that bouncing does a real job on screw threads.

DON'T USE THE X-Y STACKER FOOT BRAKE PEDAL FOR STOMPING EXERCISE — IT CAN'T TAKE IT. A BROKEN FOOT BRAKE MEANS THE STACKER WILL SHIFT FROM SIDE TO SIDE UNLESS YOU HOLD IT

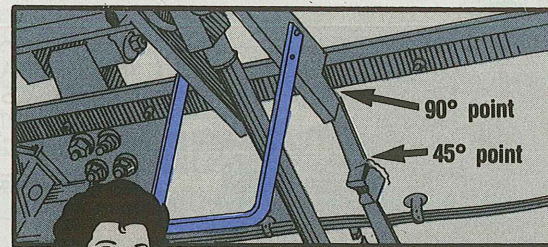
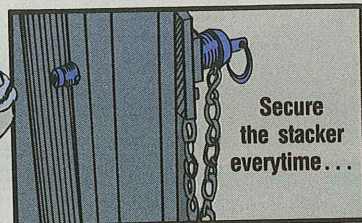


The rear door lock must be correctly locked for cross-country driving

► The lower rear door must be locked using the security lock when traveling cross-country. Otherwise, vibration causes the door to open. An open door will be a missing door if the carrier bottoms out in a ditch or hole.

Make sure the plunger knob is completely forward before moving out.

Also, make sure the stacker is secured before you move out. Otherwise, you'll find a lot of hydraulic leaks and cable damage where the stacker head bangs against the hull.

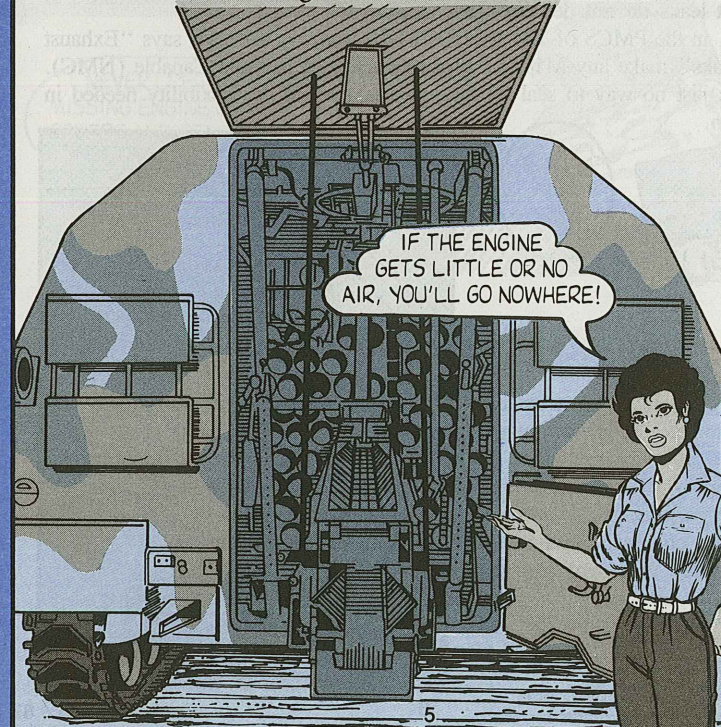


► The upper rear door is hydraulically raised and lowered. There is, however, a mechanical safety lock handle to hold it open at 45- and 90-degree angles.

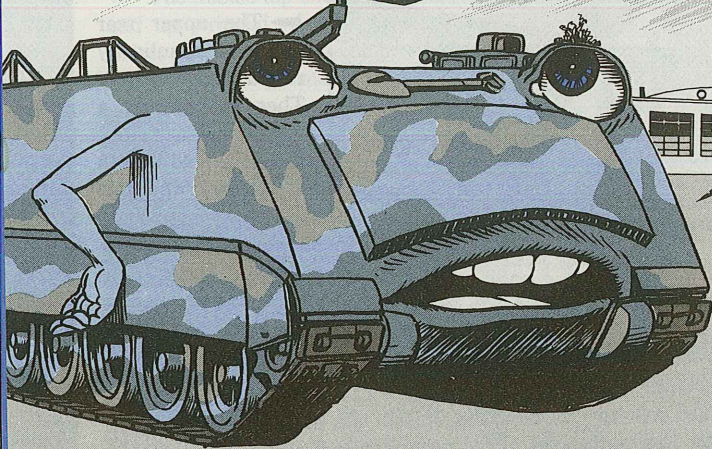


YOU MUST HOLD THE HANDLE AWAY FROM THE VEHICLE ROOF WHEN THE DOOR IS BEING LOWERED OR YOU'LL DAMAGE THE HYDRAULIC SYSTEM.

► Make all scheduled main engine air cleaner checks. Don't shortchange your vehicle just because you have to move the ammo racks to get to the air filters, the summer/winter locking handles or the restriction indicator.



Exhaust Leaks



REMEMBER, A LITTLE EXHAUST LEAK DOES NOT MEAN I'M NMC!

Exhaust leaks do not deadline your carrier.

Item 71 in the PMCS of TM 9-2350-261-10 is wrong where it says "Exhaust system leaks" make any M113A2-series vehicle Not Mission Capable (NMC).

There's just no way to seal all the joints and retain the flexibility needed in the system.

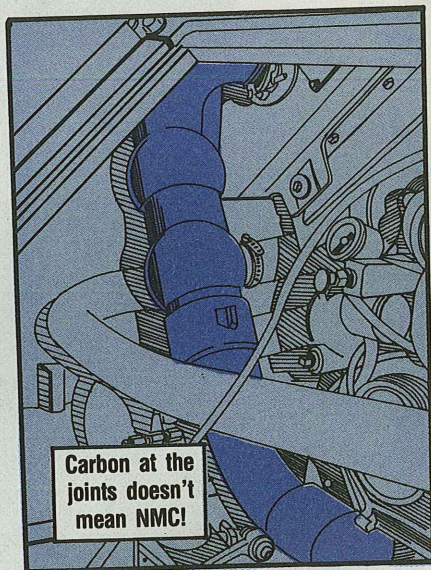


HERE'S THE WORD:

As long as all exhaust system parts are in place, aligned right and mounted tightly, you're good to go even though exhaust gases carbon up joints and connecting clamps...

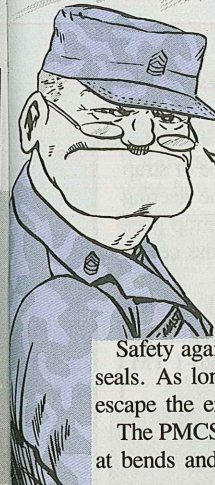
...if the engine compartment access covers and seal are not damaged or missing.

Check out Para 2-14c of AR 385-55, Prevention of Motor Vehicle Accidents.

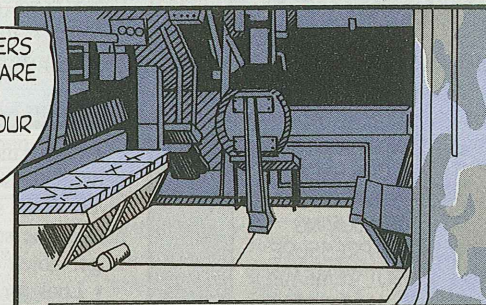


Carbon at the joints doesn't mean NMC!

No Cause for NMC



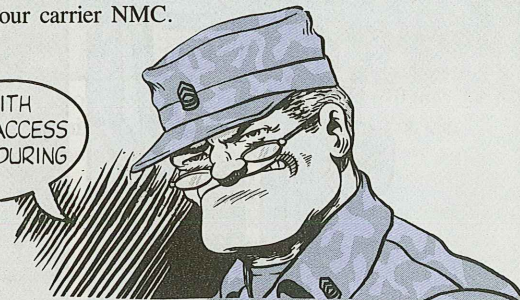
IF THE COVERS AND SEALS ARE NO GOOD OR MISSING, YOUR VEHICLE IS NMC!



Safety against carbon monoxide poisoning is provided by the access covers and seals. As long as the covers and seals are installed right, no exhaust gases will escape the engine compartment into the crew compartment.

The PMCS will be changed to show all this. But until it is, persistent exhaust leaks at bends and joints do not make your carrier NMC.

NEVER OPERATE A CARRIER WITH MISSING ENGINE COMPARTMENT ACCESS COVERS AND SEALS UNLESS IT'S DURING A MAINTENANCE CHECK!



M901/M981...

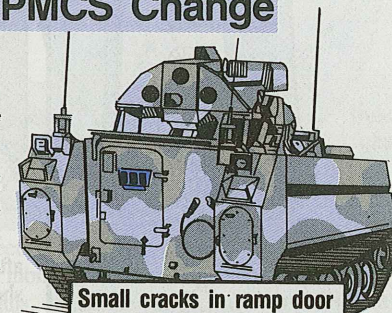
Vision Block PMCS Change

Hold one! No need to mark your M901 TOW or M981 FIST vehicles NMC if the ramp door vision blocks are cracked.

The vision block must either be missing or have a crack that leaks to put a vehicle out of commission.

To tell if vision blocks leak, douse 'em with water when washing your vehicle.

You'll be seeing this new PMCS info in the next update to your -10 TM.



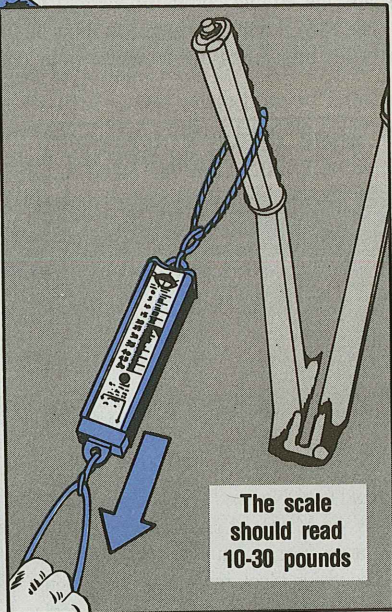
Small cracks in ramp door vision blocks do not make your M901/M981 NMC!

Brake Adjustment Adjusted

Mechs, when you use spring scale, NSN 6670-00-254-4634, to measure the pressure needed to release the lever lock on the differential brakes, make these changes to the procedures in TM 9-2350-261-20-1, TM 9-1450-485-20, TM 9-1450-585-20 and TM 9-2350-247-20-1:

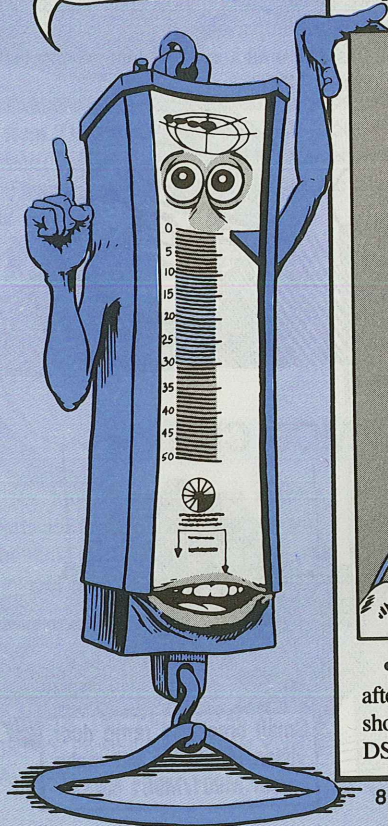
I CAN HELP YOU WITH MEASURING BRAKE PRESSURE ... BUT REMEMBER TO MAKE THESE CHANGES!

- Attach the scale with a rope or strap between the scale's hook and the steering lever. Make sure the rope or strap goes around the steering lever at the center finger notch of the hand grip.
- Look for a reading of 10-30 pounds when the lever lock releases, not the 20-30 pounds as shown in your -20-1 TM.



The scale should read 10-30 pounds

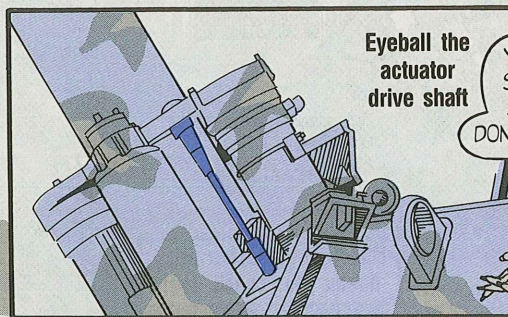
- If you don't get the right reading after making the differential adjustments shown in the TM, sound off to your DS shop.



Variable Recoil Must Work...

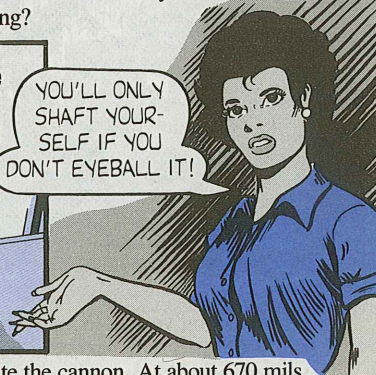
...or you can be in big trouble when firing with the cannon elevated above 670 mils.

The variable recoil system shortens the cannon recoil when the gun is elevated. If it doesn't work, the cannon can slam into the floor. So how do you know when your howitzer's variable recoil system is working?

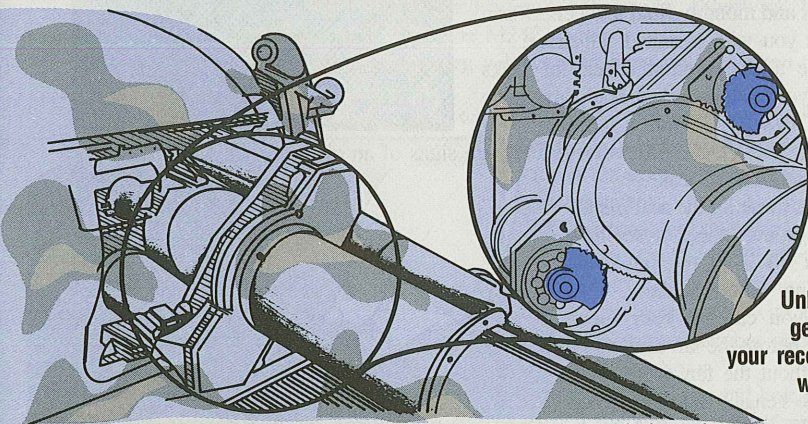


Eyeball the actuator drive shaft

YOU'LL ONLY SHAFT YOURSELF IF YOU DON'T EYEBALL IT!



Eyeball the actuator drive shaft when you elevate the cannon. At about 670 mils, the drive shaft should begin to turn, opening the recoil mechanism gears. You can see the drive shaft without removing the mechanism cover.

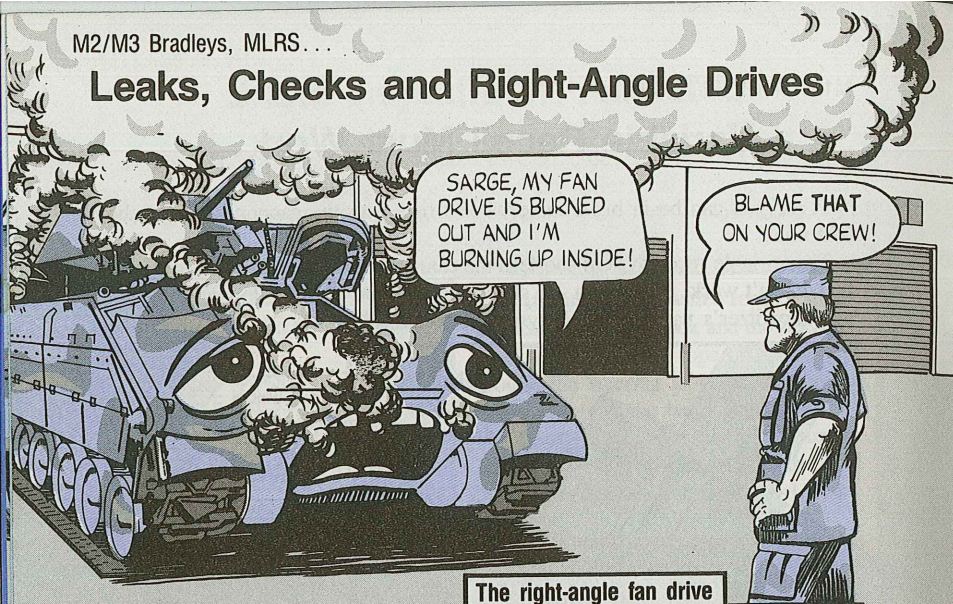


Unless these gears open, your recoil system won't work

If the drive shaft doesn't turn between 1/4 and 1/3 revolution, chances are your mechanism gears need cleaning and lubing.

See LO 9-2350-311-12 for the details. Make the check before any firing at an elevation of 670 mils or higher and make sure you lube at least every 6 months.

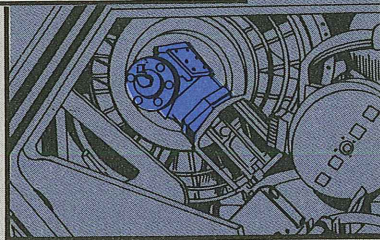
Leaks, Checks and Right-Angle Drives



SARGE, MY FAN DRIVE IS BURNED OUT AND I'M BURNING UP INSIDE!

BLAME THAT ON YOUR CREW!

The right-angle fan drive needs your check, too!



Crews, you've got to rely on more than your -10-1 TM PMCS to maintain the right-angle fan drive. You've got to use your own checks, too.

Using only the after-operation leak check and monthly fluid level check can leave you with a ruined fan drive.

The after-operation check for leaks says your vehicle is not ready/available if a Class III oil leak is found.

OK, that's clear. But what if there are signs of an oil leak—not Class III, but definitely an oil leak?

Don't wait for the next monthly fluid level check to see how much oil is in the fan drive housing. Check it daily. That way you can let your mech know before the fan drive fails.

Without the fan drive, your vehicle's engine cannot stay cool.

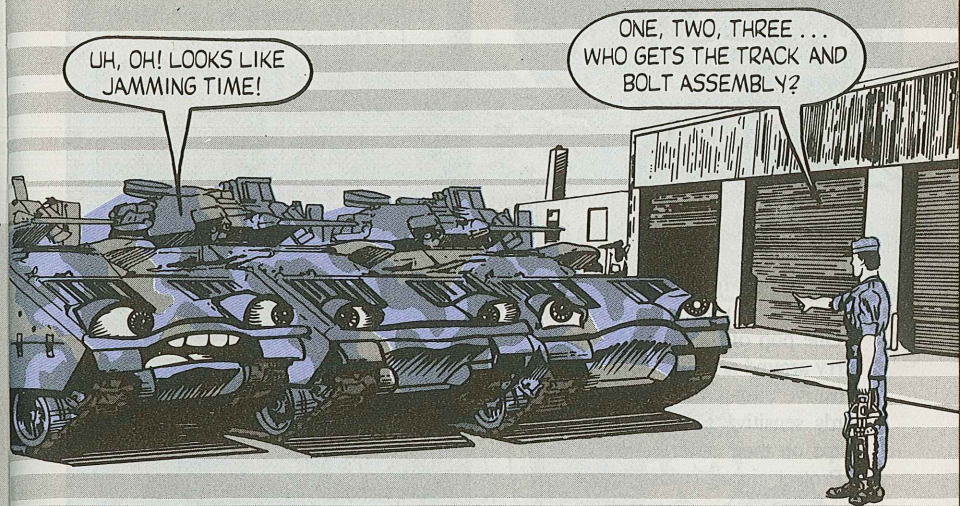
Just because your PM checks don't require it is no excuse for an unserviced fan drive to cause an over-heated engine. Use your own checks, too.

MAY 87

To check the oil level, screw the dipstick completely

10

Keeping Track of Tracks and Bolts



UH, OH! LOOKS LIKE JAMMING TIME!

ONE, TWO, THREE... WHO GETS THE TRACK AND BOLT ASSEMBLY?

You gunners risk a jammed weapon when you fail to keep M242 chain track and bolt assemblies matched when you remove them from your Bradley Fighting Vehicles.

The M242's firing pin must be replaced after 8,000 rounds. Otherwise, the pin's head mushrooms. This can cause the M242 to jam.

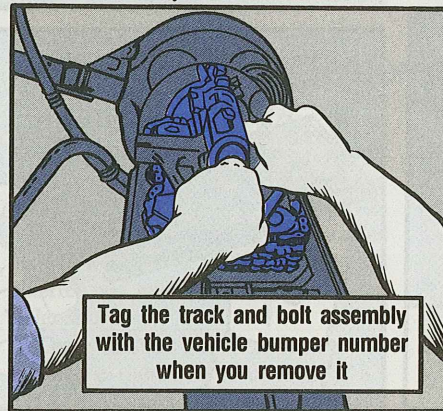
If the assembly is installed in the wrong vehicle, you have no idea when the firing pin needs replacing.

So it's worth your time to remember which track and bolt goes with which

Bradley when assemblies are removed for storage or upper-level maintenance.

ID the track and bolt assembly by tagging it with the Bradley's bumper number. Or use an ammo box for each assembly with the matching bumper number on the outside of the box.

Remove the track and bolt assembly for storage only if your CO gives the word, though. It's his option whether the assembly's stored for security reasons.



Tag the track and bolt assembly with the vehicle bumper number when you remove it

MAY 87

11

Mind Missile Minder Static

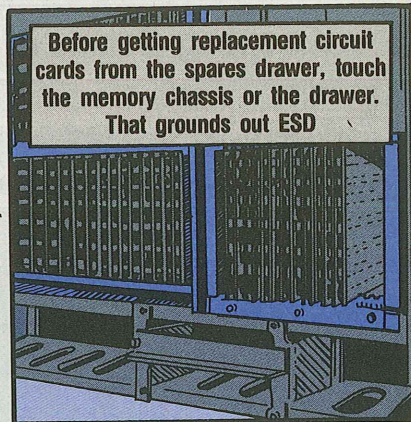
AN/TSQ-73 Missile Minder circuit cards are being zapped before they can do their jobs because operators and organizational repairmen aren't guarding against Electro-Static Discharge (ESD).

One pop of the static electricity you carry around ruins the Missile Minder's sensitive circuit cards. You can ID the cards sensitive to ESD by the orange stripe on their outer edge.

Protect circuit cards like so:

Position the AN/TSQ-73 van so its doors don't face radar transmitter antennas. Keep the van doors shut during operation. Radar waves increase ESD dangers.

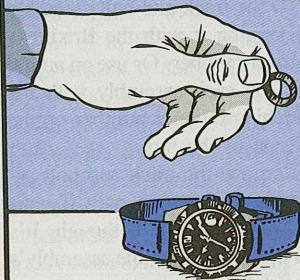
Remove any floor covering from the van that could produce ESD... like carpeting or linoleum.



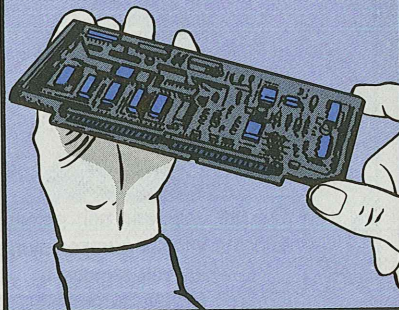
Always use the extractor, NSN 5999-00-467-5063, to remove cards from the memory chassis. It's part of your shelter equipment



Take off all jewelry, like rings or a watch



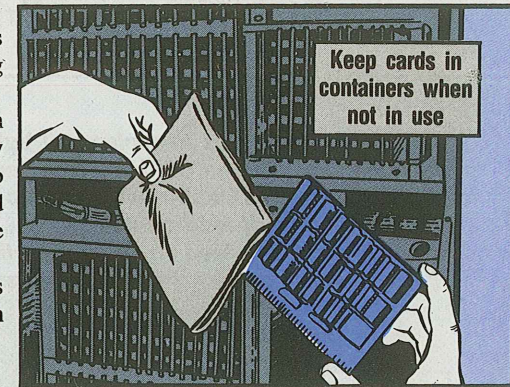
Never touch the card's pins



Install and remove cards carefully. Jamming or jerking cards breaks pins.

Remove a circuit card from its anti-static container only when you're ready to plug into the memory chassis. Put the old circuit card immediately in the new card's container.

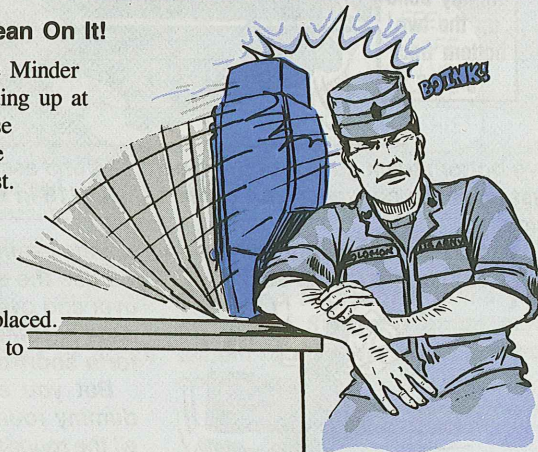
Never take circuit cards outside the van unless they're in their anti-static containers.



Operators, Don't Lean On It!

AN/TSQ-73 Missile Minder teletypewriters are ending up at general support because operators are using the keyboard as an armrest. That breaks off the keyboard... and puts the Missile Minder out of business until the teletypewriter's replaced.

Find something else to lean on, operators.

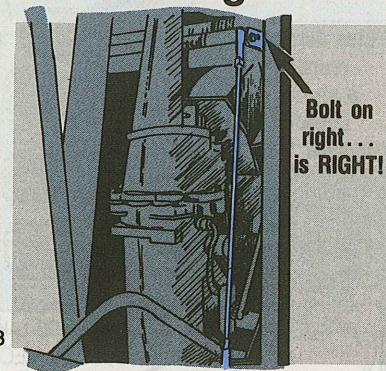


HAWK Missile...

Loader Accelerator Sticking?

If the accelerator on the HAWK loader sticks, eyeball the accelerator linkage rod, mechs. When the latch load limiter modification (MWO 9-1450-500-50-2) was applied, the linkage rod was installed backwards on some loaders. That causes interference with the roll left lock out solenoid.

The accelerator linkage rod bolt should be on the right side of the rod. If it's not, remove and reinstall the rod.

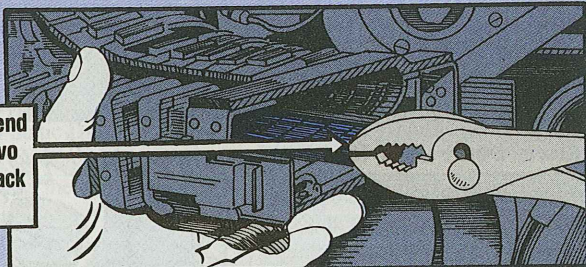


Starve Feeder Problems

Dear Editor,

In our unit, we've had to replace 30 Vulcan feed chutes because poor alignment between the feed chute and conveyor unit tears up feed chute track guides. But we came up with a quick fix that gets a lot more life out of feed chutes.

After you put a new feed chute in, use pliers to slightly bend up the



Slightly bend up the two bottom track guides

two bottom track guides of the feed chute end assembly. They should just clear the conveyor unit guide bar. A 1/16-in bend should do the trick.

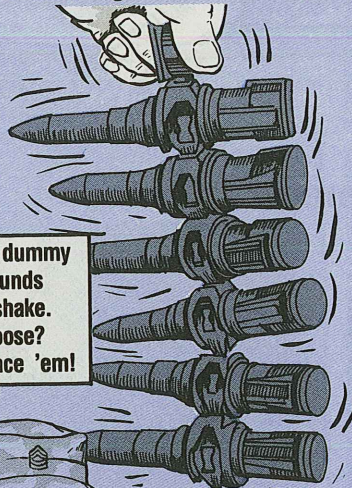
We also had a problem with dummy rounds tearing up the feed chute and declutching feeder assembly. If you use the same dummy round over and over, the round's back plate becomes worn. That makes for a short or long round.

But you can weed out bum dummy rounds just by shaking all the rounds after they're linked. If a round is loose, it's bad and must be replaced. You can check 'em all in minutes.

It's generally a good idea not to use a dummy round for more than a year. Ammo Supply should have plenty of replacements, NSN 1305-00-157-4616 (A781).

W01 Peter Lenzner
Ft Stewart, GA

Give dummy rounds a shake. Loose? Replace 'em!



SOUNDS LIKE YOU'RE FEEDING VULCAN MECHS SOME GOOD INFO

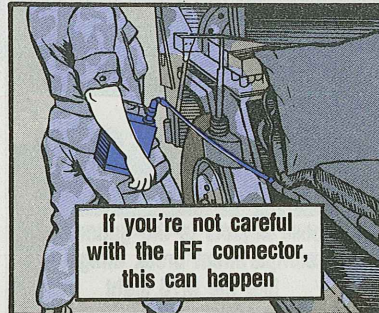
MAY 87

Protect Your Cable

Dear Editor,

Soldiers often accidentally break Identification Friend or Foe (IFF) cable connectors.

The connector should stay attached to the soldier's jacket when he's riding in a vehicle. But it's easily detached when he jumps out of the truck and it catches on



If you're not careful with the IFF connector, this can happen

something—like the seat—and snaps off.

That puts the Stinger IFF out of business.



I FEEL SO SAFE WHEN YOU HOLD ME LIKE THIS!

Here's a simple solution. Always grab the connector with your hand before you get out of the truck—and keep ahold of it while you go to the Stinger storage container. You'll never break another connector.

SFC Richard Middletown
APO New York

(Editor's note: You've got a good hold on the problem!)

Percussion Mechanism Out

YOU CAN NO LONGER GET PERCUSSION MECHANISM, NSN 1015-00-863-1060, AS AN ASSEMBLY. INSTEAD, YOU NEED THESE FIVE PARTS:

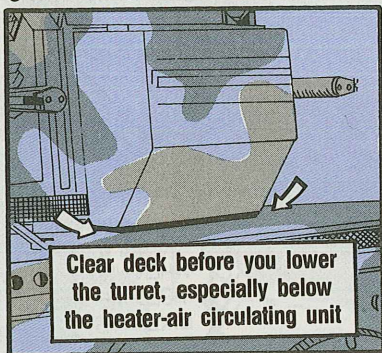
- NSN 1015-00-180-5372—firing pin
- NSN 1015-00-863-1057—guide
- NSN 1015-00-723-6456—firing pin stop
- NSN 1015-00-852-5695—pin
- NSN 5360-00-723-6486—spring



Damage Avoiders

Prevent turret and electrical damage to your Chaparral by minding these tips:

- Electric track motors are being ruined because soldiers aren't clearing the deck underneath the mount before they lower the turret. If something like camouflage netting gets between the heater-air circulating unit and the deck, the turret can't go all the way to stow position. That means the electric track motor can't click off.



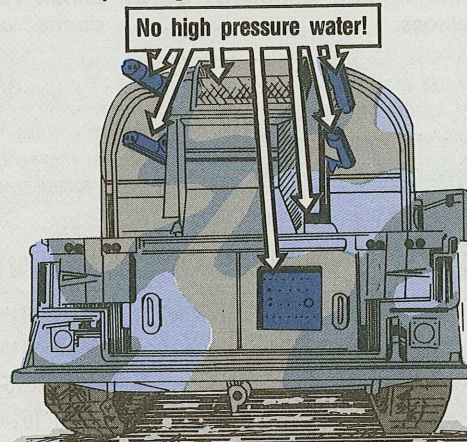
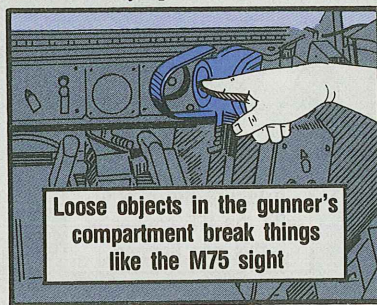
hits a bump going down the road and—BANG!—the sight's broken. That dead-lines the whole system. Secure or remove loose objects before you move out.

Be careful getting in and out of the gunner's compartment, too. Things like the sight, gunner's headset and control panel switches can easily be broken by a misplaced boot.

- Electronic equipment is being shorted out because soldiers are spraying water around the gunner's compartment, the missile rails, the turret well and the rear electrical compartment. High pressure water's fine for cleaning track and the sides of the carrier. But for anywhere else on the Chaparral, clean with a bucket of water, detergent and a brush. That will save electronic equipment.

The motor keeps trying to lower the turret until it wears itself out. Clear the deck before you lower the turret.

- M75 sights are being busted because soldiers are leaving objects loose in the gunner's compartment. Something like a helmet can fly up when your Chaparral



Weed Out Bad Magazines

M16A1 rifles are still malfunctioning because armorers aren't weeding out Cooper magazines and turning them in.

The 30-round magazines made by Cooper Industries don't fit the magazine well, they double feed and they won't feed the last five rounds when fully loaded.

So, armorers, check the bases of all your unit's magazines for "Cooper." If you find any, turn 'em in to your supply support.

SUPPORT SHOULD PACKAGE THE MAGAZINES AND SEND THEM TO:

Commander
Anniston Army Depot
ATTN: SDSAN-DSP-PPC
Anniston, AL 36201

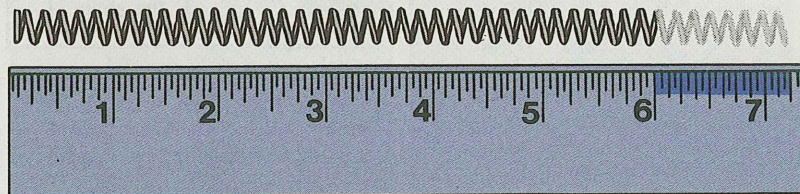
The word's in AMCCOM Message
AMSMC-MML-S 201545Z Jun 85.



M1911A1 Pistol . . .

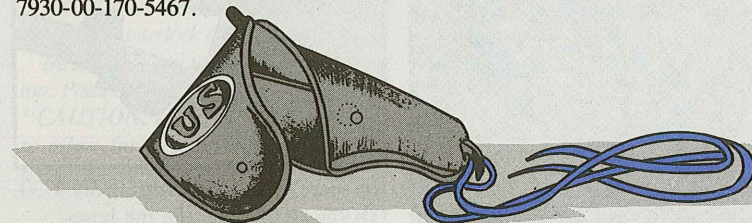
Spring Standard **STRETCH!**

One more time on spring lengths for those M1911A1 pistols, armorers. AMCCOM has changed the recoil spring standard to 6 inches minimum and 7¼ inches maximum free length. As long as your springs are within those limits, they're OK.



M1911A1 Pistol Holster Helpers

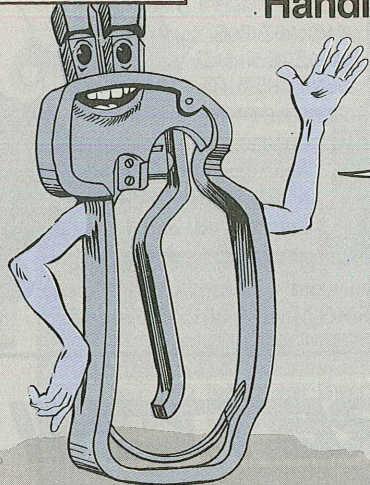
You armorers can now order restraining lace for the hip holster with NSN 1005-00-300-5378. To keep the holster clean and soft, use saddle soap, NSN 7930-00-170-5467.





M978 HEMTT Tanker...

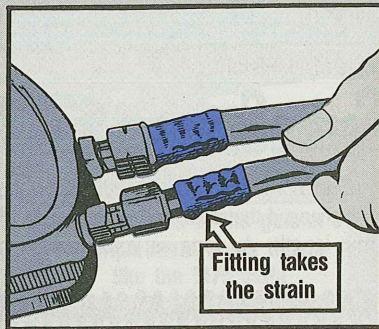
Handle Control With Care



GIVE ME A HAND
WHEN REWINDING
ME ON A SPRING-
LOADED REEL!

concentrated where the hoses join the fittings on the control.

To prevent damage, walk the control back on the reel. Guide the control thru



If you let your HEMTT tanker's hand-actuated valve assembly (deadman control) rewind by itself, the control can be ripped off the pair of hoses.

The hoses wind up on a spring-loaded reel. When you pull, the hoses come out. Let go, and the spring takes over to pull the hoses back onto the reel.

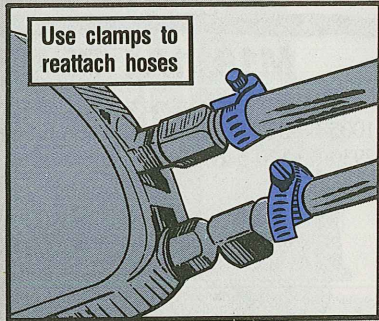
But the control must be horizontal as it passes thru the cutout on the back of the truck. If it's not, it won't go thru. All the strain of the sudden stop is

the hole and back to the reel.

If hoses pull away from the fitting crimped on the end, here's a fix:

Cut off a couple of inches of each hose and push them back on the fittings. Then

Use clamps to
reattach hoses



use screw-type hose clamps, NSN 4730-00-363-4102, to secure the hoses.



Control hits,
so guide in

Air Filter Fouled?

Dear Half-Mast,
When checking air filters on M939-series 5-ton trucks, we've found filters fouled with oil. Where's it coming from?
Mr. W. K.

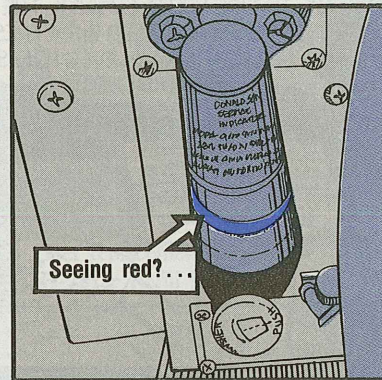
Dear Mr. W. K.,

The fuel tank, transmission and transfer gearcases on M939-series trucks vent into the duct to the air cleaner.

Fuel from an overfilled tank can run thru the vents...and end up in the gearcases. Then, oil from an overfilled gearcase may be forced out thru the vent lines...and end up in the air cleaner.

Or a leaking interlock air cylinder can pressurize the transfer...and push oil into the air cleaner.

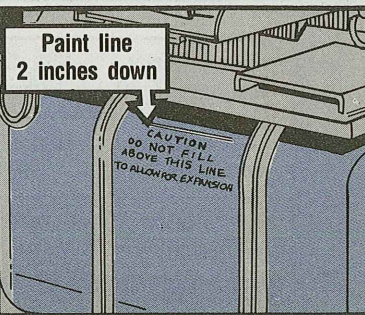
If the air restriction indicator shows red, check the air cleaner. If it's oil clogged, check the levels in the transmission and transfer.



If they're overfilled, drain the excess. Check for fuel diluting the oil, and change the oil if necessary.

If they're low, get your support to check the transfer interlock air cylinder for leaks.

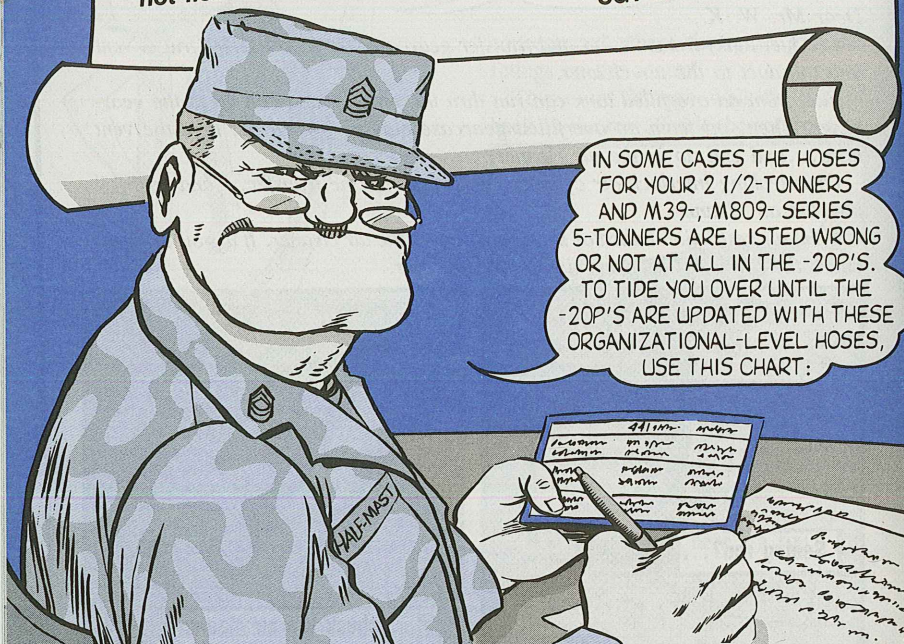
Be sure the fuel tank is not filled to the top. Paint a line 2 inches down and stencil "CAUTION: Do not fill above this line to allow for expansion" in 1-in black letters, like Fig 17 of TB 43-0209 shows.



Half-Mast

Heater Hose Headache

Dear Half-Mast,
 We can't find the right stock numbers for the diverter air hose and defroster duct hoses in heater kits. When I order from the -20P's, the hoses I get are too thick and not flexible enough. What gives?
 SGT J. W. B.



IN SOME CASES THE HOSES FOR YOUR 2 1/2-TONNERS AND M39-, M809-SERIES 5-TONNERS ARE LISTED WRONG OR NOT AT ALL IN THE -20P'S. TO TIDE YOU OVER UNTIL THE -20P'S ARE UPDATED WITH THESE ORGANIZATIONAL-LEVEL HOSES, USE THIS CHART:

	M44/M39-Series	M809-Series
3-in Defroster duct hose (right)	NSN 4720-00-809-2429 (use 21½ inches)	NSN 4720-00-809-2429 (use 18 inches)
3-in Defroster duct hose (left)	NSN 4720-00-809-2429 (use 32½ inches)	NSN 4720-00-809-2429 (use 32½ inches)
4-in Heater diverter air hose	NSN 4720-00-809-2430 (use 19½ inches)	NSN 4720-00-809-2430 (use 15½ inches)

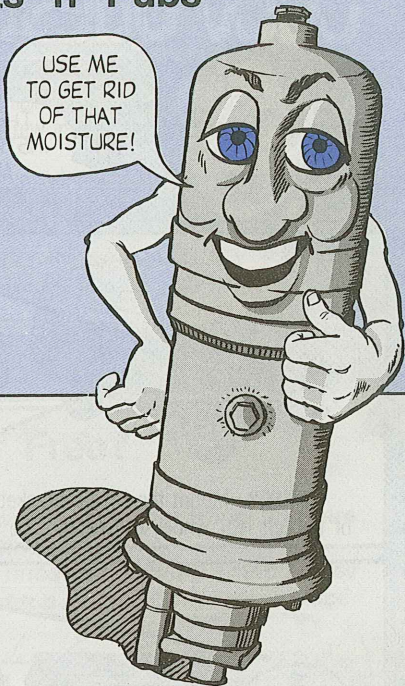
Air Dryer Parts 'n' Pubs

A Bendix AD-2 air dryer has been added to M915 thru M920 trucks. But servicing instructions aren't in TM 9-2320-273-20, and parts aren't in the -20P. This is the same air dryer that's used on M915A1 trucks.

The dryer removes moisture from the compressed air used in the brake system and the transmission.

It replaces the alcohol evaporator that didn't remove moisture, only kept it from freezing.

USE ME TO GET RID OF THAT MOISTURE!



GET A MANUAL FOR THE AIR DRYER FROM:

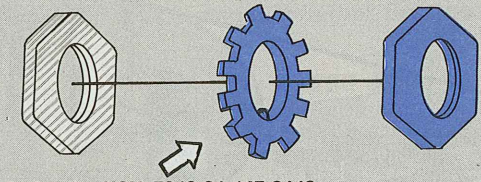
TACOM
 ATTN: AMSTA-MTC
 Warren, MI 48397-5000



Get replacement dehydrator cartridges for the air dryer with NSN 4440-01-087-7216. Refill kits come under NSN 2940-01-081-1391.

M911 Rear Wheel Bearings

Get the adjusting nut lock (tab nut) for the M911's rear wheel bearing with NSN 5310-01-145-9118. The nut lock's part number, listed as Item 13 in Fig 117



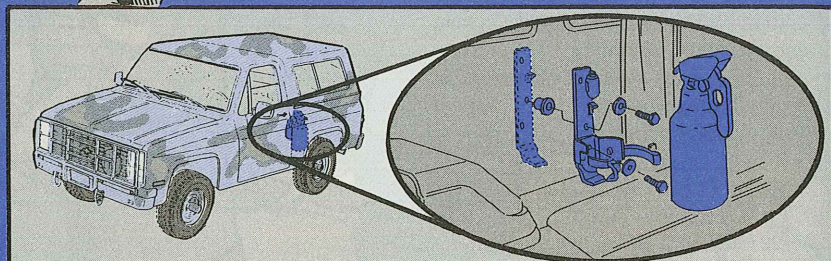
Get tab lock with NSN 5310-01-145-9118

of TM 9-2320-270-20P, is wrong. Tighten the outer nut on the rear wheel's outer bearing to 250-275 lb-ft. That's not in your -20, so make a note.

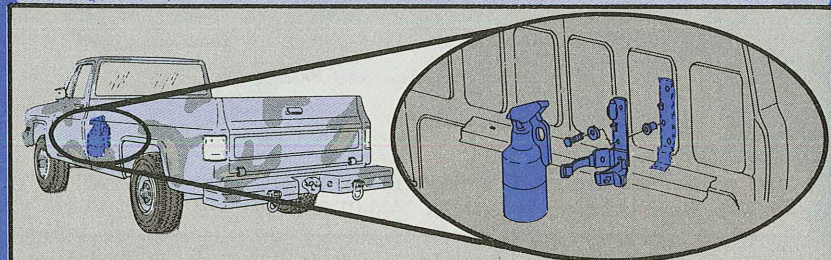
CUCV Questions Answered



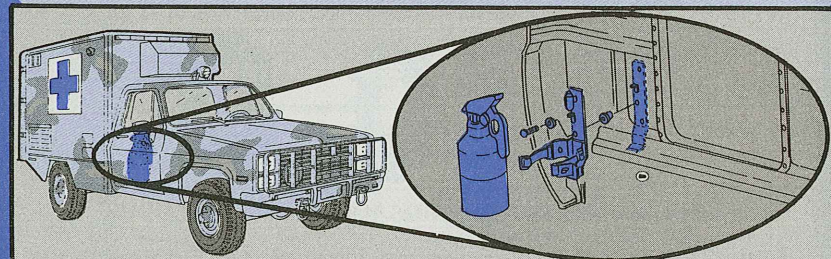
THE WAIT IS OVER, NBC NCO'S. INSTRUCTIONS FOR MOUNTING THE M11'S IN CUCV'S ARE HERE!



• **M1009**—Mount the M11's bracket to the left of the cargo compartment in front of the left rear wheel well behind the driver's door frame.



• **M1008, M1028, and M1031**—Mount it behind the driver's seat on the left side of the cab's rear wall.



• **M1010**—Mount it behind the co-driver's seat on the right side of the cab's rear wall. For the M1010, remove the passenger seat to install the bracket.

To do the job on all CUCV's, you need a 31/64-in drill bit, three expansion shields, NSN 5340-01-150-4105, three cap screws, NSN 5305-01-128-4094, three washers, NSN 5310-01-112-6655, and silicone sealant, NSN 8040-00-877-9872.

Use the sealant to coat the three expansion shields before you put them in the holes. Then coat the three shield faces before you screw in the bracket. That will keep out dangerous engine exhaust gases.

M8 Alarm

The word on installing M8-series alarms in the CUCV should be out shortly. PS will publish the info, so keep your eyes peeled.

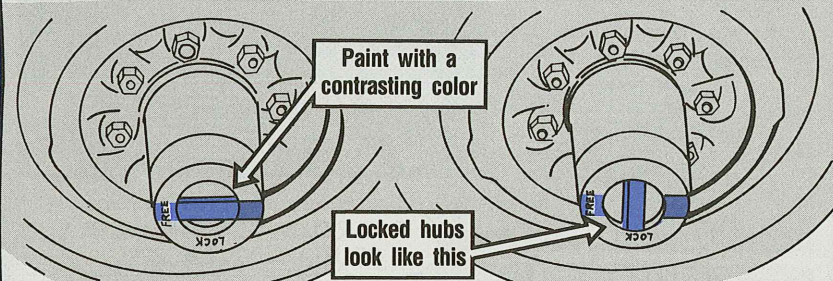
CUCV...

Locked or Free?

Dear Editor,

It's hard to see if the CUCV's four-wheel drive front wheel hubs are locked or free when the vehicle's camouflaged.

I solved the problem by freeing the hubs and painting a strip across them. Use a color that doesn't contrast too much with the camouflage.



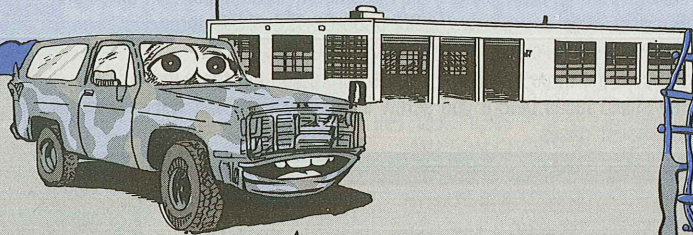
This lets drivers know at a glance whether the hubs are in lock or free.

SSG James W. Wacaster
Ft Richardson, AK



(Editor's note: Picasso couldn't have done it better. No matter which color paint you use, get your CO's OK.)

Manifold Screen Not Needed

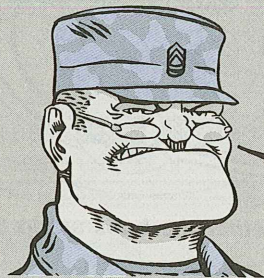
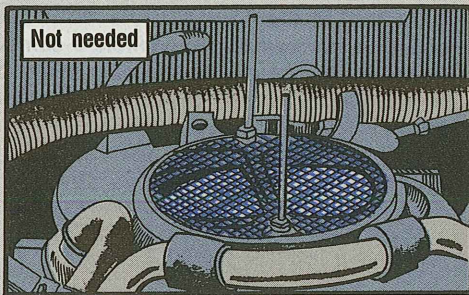


WE CAN'T REPLACE YOU, BUT WE CAN STILL USE YOU!

Your CUCV may have an intake manifold screen—or it may not. No sweat either way.

The wire mesh screen was installed on early CUCV's to keep junk from falling into the manifold.

It was later decided the screen's not needed.

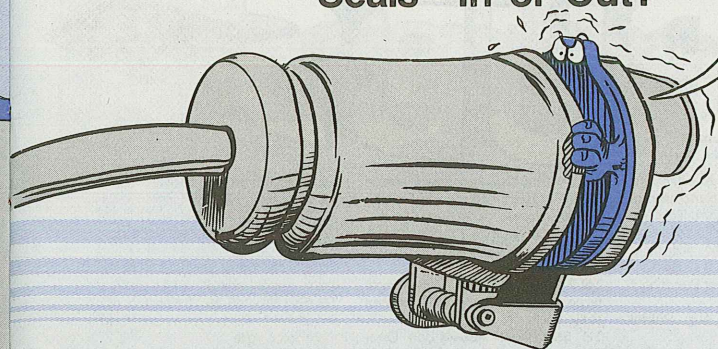


IF YOUR CUCV HAS ONE, LEAVE IT BE. IF NOT, DON'T WORRY!

M1008 CUCV Tailgate

Even though the M1008 CUCV's tailgate is called out and illustrated as an assembly in TM 9-2320-289-20P, you get only the tailgate when ordering NSN 2510-01-155-5857. The mounting hardware and other components, also called out in Fig 124, must be ordered separately.

Seals—In or Out?



THERE'S NO WAY I'M GONNA GIVE THIS CAP A GOOD SEAL!

Dear Half-Mast,

Is a rubber seal needed in a trailer's intervehicular cable connector cover? This is the cable on trailers such as the 1/4-ton, 3/4-ton and 1 1/2-ton jobs. It's not issued with a seal, and we've been told not to add one.

CW4 R. H.

Dear Mr. R. H.,

Don't put a seal in the cover. It does more harm than good.

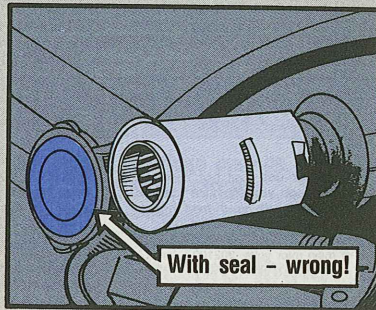
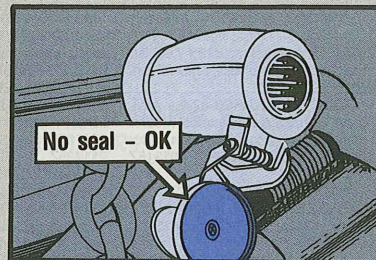
A seal holds the cover part way open and lets water get in thru the indexing slot. The corrosion eats away on the connector pins.

The cover works fine the way it's made. Just make sure:

- *The edge of the cover and the rubber part of the connector are in good shape so they seat together snugly.*
- *The cover spring is still strong enough to hold the cover down firmly.*
- *The cover rivet is tight.*

If the rivet is loose, hold something solid behind it and give it a few taps with a ball-peen hammer.

Half-Mast



PUBS

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

TM 9-4935-396-24P Mar Pershing II Missile
 TM 9-4935-602-14-3 Aug Patriot Missile

TM 9-4935-632-14 Sep Roland Missile
 TM 9-1110-254-14 Jul EOD info, weapon access delay system
 TM 9-4935-602-14-1 and -2 Aug General electric test systems 1000A, 13228950 Patriot
 TM 9-6920-742-10 Jul RETS console target training set, range control station M87
 TB 55-1520-241-20-41 Jan One-

time inspection of CH-47A, B, C transmission
 TB 55-1520-242-20-24 Jan UH-1H/V/M and EH-1 one-time inspection cleanup
 TB 55-1520-242-20-25 Jan Night vision goggle operation UH-1H/V
 TB 55-1520-243-20-12 Feb Inspection of AH-1, TH-1, TAH-1, UH-1C/M main rotor yoke

AUDIO-VISUAL STUFF

Available at battalion or post Learning Center

TEC Lessons

010-071-7414-A Remove a Misfired TOW Missile from M2/M3
 010-071-7427-A Extinguish a Fire on an M2/M3
 010-071-7473-A Identify the Procedures to Consolidate and Reorganize an M2

476-091-1064-A Adjust Breech Mechanism Operating Cam on M109-Series SP Howitzer
 476-091-1156-A Adjust Equilibrated Elevation Systems on M109-Series SP Howitzer
 479-091-2474-A Repair Defective Oil Pump on M3A3 Smoke Generator

479-091-2475-A Operation Test on M3A3 Smoke Generator
 482-091-2027-A Adjust Brakes on M109-Series SP Howitzer
 489-091-1168-A Remove and Install M1 Tank Breech Closing Mechanism
 491-091-1015-A Disarm TOW Missile Manually

Maintenance & Safety-of-Use Messages

AMCCOM SOU-MSG— Advisory, Operational, forward holding lug on M142 machinegun mount for 7.62MM, M60 machinegun breaks. AMSMC-MA, 052000Z Jan 87.

AMCCOM SOU-MSG-87-9— Advisory, Technical/Maintenance, M88A1 MRV hoisting boom operational procedures update, AMCSF, 091315Z Feb 87.

AMCCOM SOU-MSG-87-7— Advisory, Operational, M981 FISTV battery hazard, AMCSF, 041540Z Feb 87.

AMCCOM SOU-MSG-87— One-time inspection on M4K 4,000-lb rough terrain forklift NSN 3930-01-076-4237, brake system. AMCSF, 041530Z Feb 87.

AMCCOM SOU-MSG-87-01— Advisory, Operational, duct type gasoline driven heaters safety hazard. AMCSF, 041630Z Feb 87.

AMCCOM SOU-MSG-86-100— Operational, aircraft tank trucks restrictions/limitations in SOU MSG 86-32, 191100Z Jun 86 lifted, AMCSF-E, 211435Z Jan 87.

CECOM SOU-MSG— Advisory, Operational, Update to MSG DTG 211430Z Nov 86, on AN/MJQ-16/18 diesel generator sets. AMSEL-SF-SEC, 051400Z Feb 87.

TACOM SOU-MSG-87-11— Advisory, Technical/Maintenance, AGT-1500 Engine, power turbine stator actuator fire hazard on Abrams tanks. AMSTA-MCD, 171100Z Feb 87.

TROSCOM SOU-MSG— Maintenance Advisory, three ring canopy release and MA2-30 wrist mounted altimeter maintenance. AMSTR-MES, 161500Z Jan 87.

TROSCOM SOU-MSG-02-87— One-time inspection of duct type gasoline engine driven heaters fuel pressure check valve. AMSTR-MES, 091430Z Feb 87.

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

AVIATION MESSAGES

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

AH-1-87-01, SOF, Technical, Inspection of main rotor yoke, 202100Z Jan 87.
 AH-64-87-01, SOF, Revision to Maintenance Mandatory, connector wire sealing, 301730Z Jan 87.

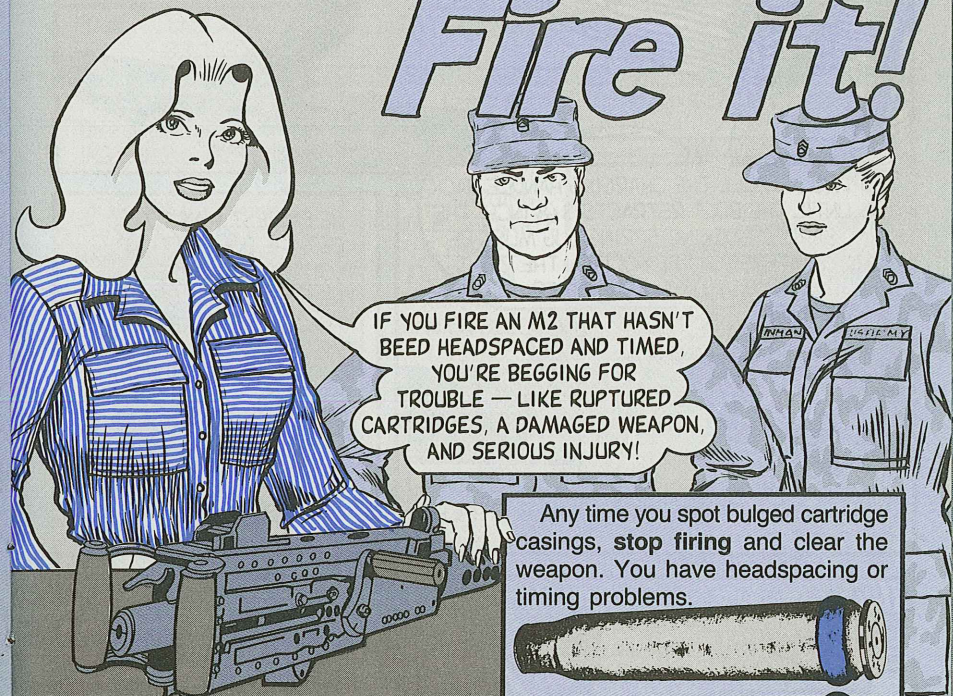
CH-47-87-01, SOF, Maintenance Mandatory, inspection of certain CH-47D aircraft rotor head, 121730Z Jan 87.
 CH-47-87-02, SOF, Maintenance Mandatory, engine cross shaft inspection, 261630Z Jan 87.
 OH-6-87-01, SOF, Operational, aircraft with T63-A-700 engine, flight restrictions, 121900Z Jan 87.

CAT 1 EIR Phone
 AUTOVON 693-2066
 (24 hours)

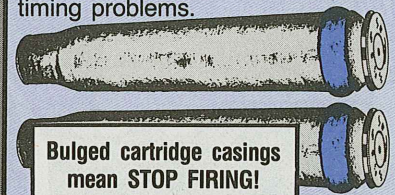
OH-58-87-01, SOF, Operational, aircraft with T63-A-700 engine, flight restrictions, 121900Z Jan 87.
 UH-1-87-01, SOF, Technical, Inspection cleanup, 051500Z Jan 87.
 UH-1-87-02, SOF, Technical, Inspection of main rotor yoke, 202100Z Jan 87.

M2 Machine Gun...

Headspace it, Time it...Then Fire it!



Any time you spot bulged cartridge casings, stop firing and clear the weapon. You have headspacing or timing problems.



Bulged cartridge casings mean STOP FIRING!

Black and White photostats of this material are available from PS for reprinting

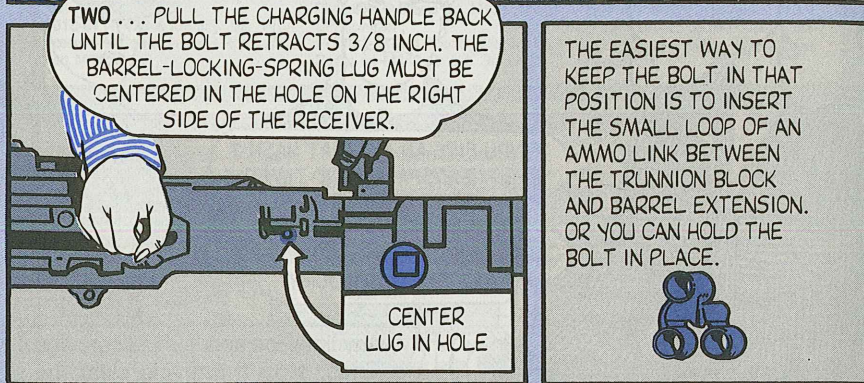
Headspace and time your M2...before firing...
 after assembling the gun...after replacing the barrel.
 And do it every time!

Always make sure your M2 is clear of ammo before you begin headspacing or timing!

HEAD SPACE



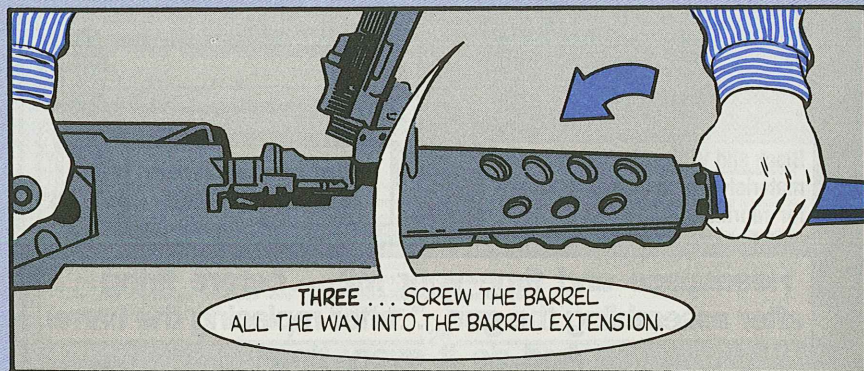
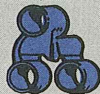
ONE ... RAISE THE COVER COMPLETELY!



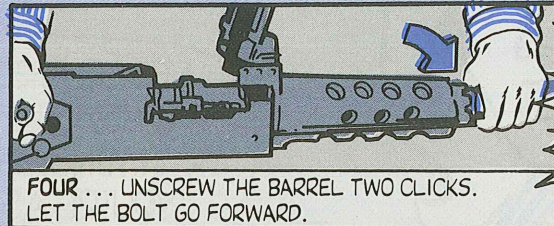
TWO ... PULL THE CHARGING HANDLE BACK UNTIL THE BOLT RETRACTS 3/8 INCH. THE BARREL-LOCKING-SPRING LUG MUST BE CENTERED IN THE HOLE ON THE RIGHT SIDE OF THE RECEIVER.

CENTER LUG IN HOLE

THE EASIEST WAY TO KEEP THE BOLT IN THAT POSITION IS TO INSERT THE SMALL LOOP OF AN AMMO LINK BETWEEN THE TRUNNION BLOCK AND BARREL EXTENSION. OR YOU CAN HOLD THE BOLT IN PLACE.



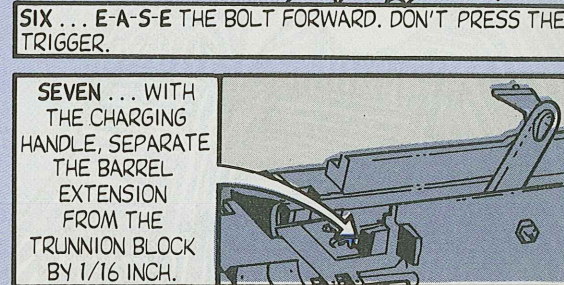
THREE ... SCREW THE BARREL ALL THE WAY INTO THE BARREL EXTENSION.



FOUR ... UNSCREW THE BARREL TWO CLICKS. LET THE BOLT GO FORWARD.

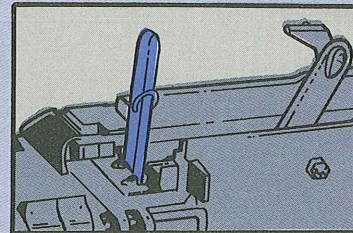


FIVE: COCK YOUR M2 BY PULLING THE CHARGING HANDLE AND BOLT ALL THE WAY TO THE REAR. HOLD IT THERE. THIS COCKS THE WEAPON AND MOVES THE FIRING PIN BACK SO THE HEADSPACE GAGE WILL GO IN.



SIX ... E-A-S-E THE BOLT FORWARD. DON'T PRESS THE TRIGGER.

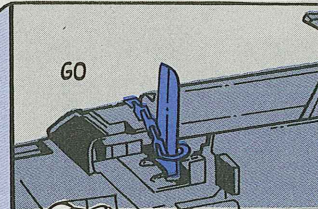
SEVEN ... WITH THE CHARGING HANDLE, SEPARATE THE BARREL EXTENSION FROM THE TRUNNION BLOCK BY 1/16 INCH.



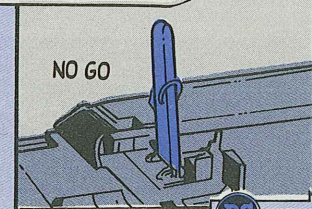
EIGHT ... RAISE THE EXTRACTOR AND INSERT THE GO/NO GO GAGE. HOLD THE CHARGING HANDLE BACK TO KEEP THE 1/16-IN SEPARATION.



NINE ... IF THE GO END GOES DOWN THE T-SLOT TO THE CENTER RING OF THE GAGE AND THE NO GO END WILL NOT GO IN, HEADSPACE IS OK. REMOVE THE GAGE.

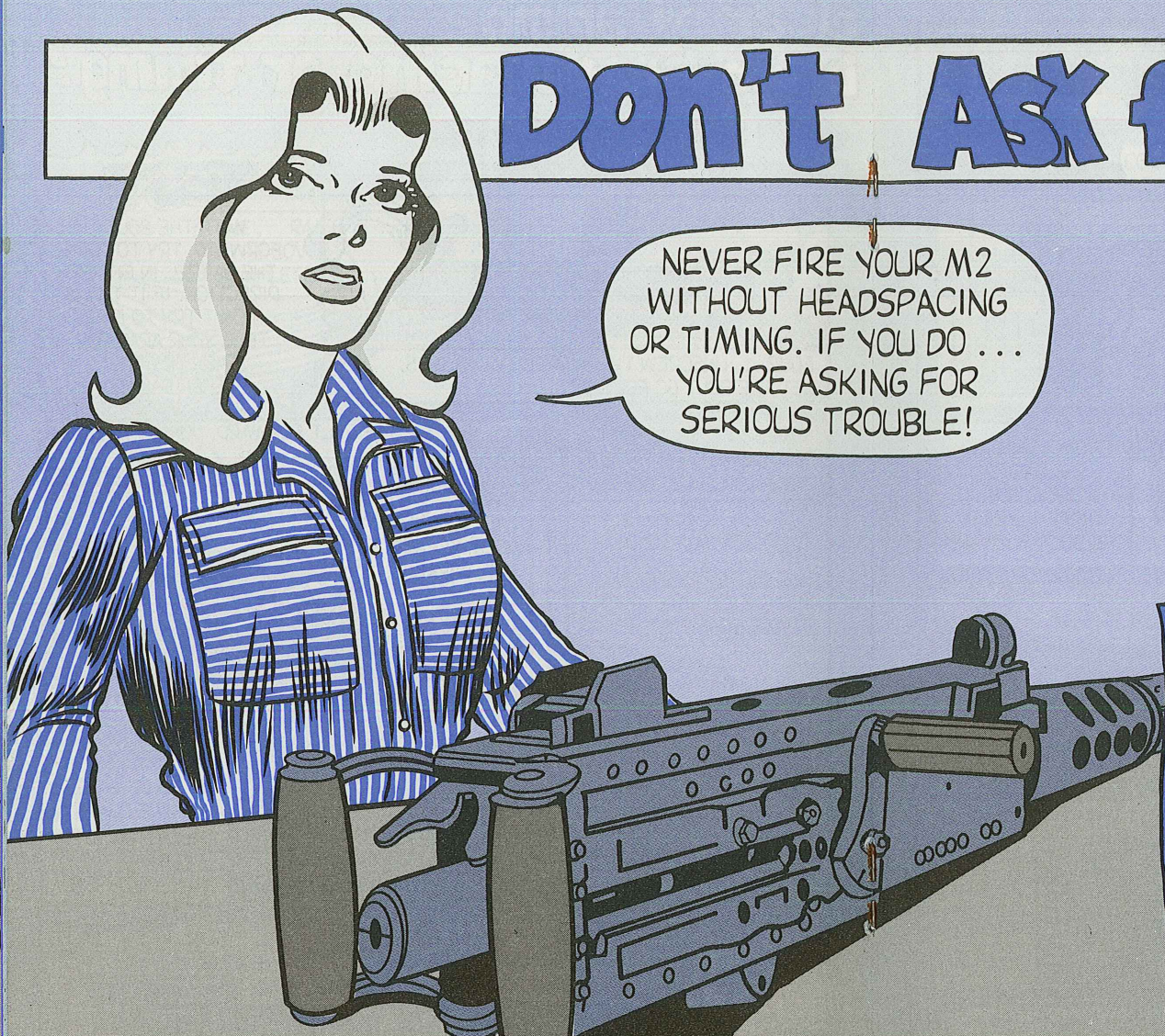


GO



NO GO

Don't Ask for Trouble!



NEVER FIRE YOUR M2
WITHOUT HEADSPACING
OR TIMING. IF YOU DO ...
YOU'RE ASKING FOR
SERIOUS TROUBLE!

Remember these tips:

- *Stop firing if you spot bulged cartridge casings.*
- *Clear your M2 before headspacing or timing.*

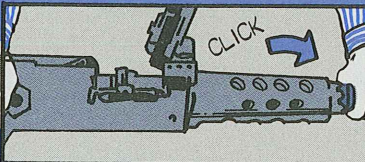
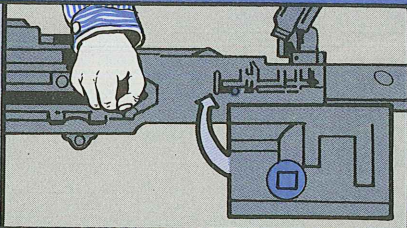
WE HAVE THE WORLD'S BEST EQUIPMENT ... *Take care of it*

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

HEADSPACE TOO TIGHT!

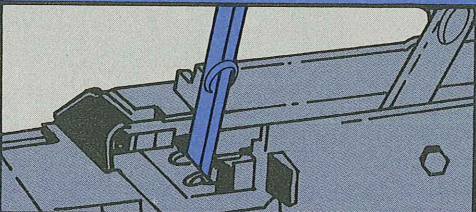
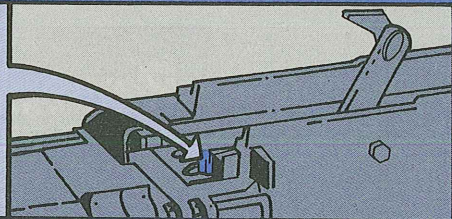
IF THE GO END WON'T FIT, HEADSPACE IS TOO TIGHT. DO THIS:

ONE ... RETRACT THE BOLT UNTIL THE BARREL-LOCKING-SPRING LUG IS CENTERED IN THE RECEIVER HOLE.



TWO ... UNSCREW THE BARREL ONE CLICK.
THREE ... EASE THE BOLT FORWARD.

FOUR ... SEPARATE THE BARREL EXTENSION FROM THE TRUNNION BLOCK 1/16 INCH.



FIVE ... INSERT THE GO/NO GO GAGE AGAIN.

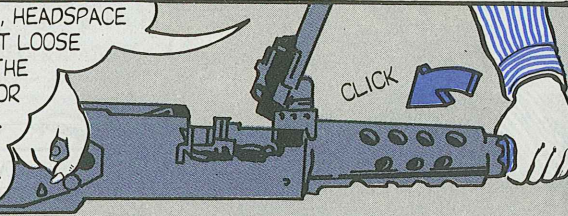
IF THE GO END FITS AND THE NO GO DOESN'T, HEADSPACE IS OK. IF THE GO END STILL WON'T FIT, REPEAT THESE FIVE STEPS UNTIL IT DOES.

DO NOT UNSCREW THE BARREL MORE THAN 5 CLICKS IN STEPS 1-5 BEYOND THE FIRST 2 CLICKS (7 IN ALL). IF YOU HAVE TO GO BEYOND THAT, TURN THE GUN IN TO YOUR ARMORER FOR INSPECTION.



HEADSPACE TOO LOOSE!

IF THE NO GO END FITS, HEADSPACE IS TOO LOOSE. CORRECT LOOSE HEADSPACE BY USING THE SAME 5 STEPS USED FOR TOO TIGHT HEADSPACE. BUT INSTEAD OF UNSCREWING THE BARREL 1 CLICK, SCREW IT IN 1 CLICK.



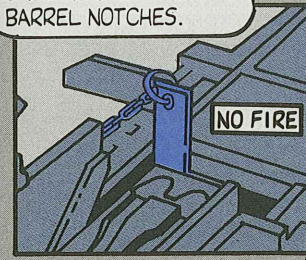
REPEAT THE FIVE STEPS UNTIL GO FITS AND NO GO DOESN'T

TIMING

AFTER THE HEADSPACE IS RIGHT, YOU MUST ADJUST THE TIMING. **ONE ...** PULL THE BOLT ALL THE WAY BACK. THEN EASE IT FORWARD TO COCK THE GUN.

TWO ... PULL THE BOLT BACK FAR ENOUGH TO INSERT THE NO FIRE GAGE BETWEEN THE BARREL EXTENSION AND TRUNNION BLOCK. SLOWLY RELEASE THE CHARGING HANDLE. INSERT THE BEVEL EDGE OF THE TIMING GAGE AGAINST THE BARREL NOTCHES.

THREE ... TRIP THE TRIGGER. IF THE M2 WON'T FIRE, GO TO THE NEXT STEP. IF IT DOES FIRE, YOU'VE GOT EARLY TIMING.



FOUR ... PULL THE BOLT BACK JUST FAR ENOUGH TO REMOVE THE NO FIRE GAGE AND INSERT THE FIRE GAGE. SLOWLY RELEASE THE CHARGING HANDLE.

FIVE ... TRIP THE TRIGGER. IF THE M2 FIRES, TIMING'S OK. IF IT DOESN'T FIRE, TIMING'S LATE.



EARLY / LATE TIMING

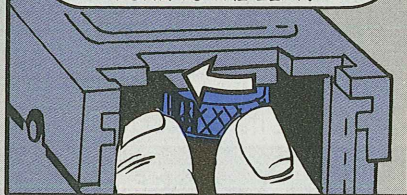


TAKE THESE STEPS TO ADJUST FOR EARLY OR LATE TIMING!

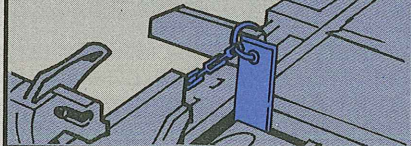
NEVER COCK YOUR M2 WITH THE BACK PLATE OFF. THE DRIVING ROD SPRING CAN SHOOT INTO YOU. THE BOLT MUST BE FORWARD BEFORE REMOVING THE BACK PLATE.

ONE ... REMOVE THE GAGE. COCK YOUR M2. SLOWLY RETURN THE BOLT FORWARD.
TWO ... REMOVE THE BACK PLATE.

THREE ... TURN THE TIMING ADJUSTMENT NUT ALL THE WAY DOWN TO THE LEFT.



FOUR ... PULL THE BOLT BACK JUST ENOUGH TO INSERT THE FIRE GAGE. SLOWLY RELEASE THE CHARGING HANDLE.



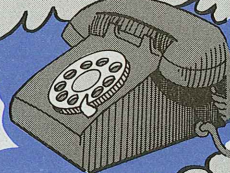
FIVE ... PUSH UP ON THE TRIGGER BAR. YOUR GUN SHOULDN'T FIRE.



SIX ... TURN THE TIMING ADJUSTMENT NUT UP TO THE RIGHT 1 CLICK. PUSH UP ON THE TRIGGER BAR. CONTINUE TO TURN THE TIMING ADJUSTMENT NUT RIGHT 1 CLICK AT A TIME. PUSH THE TRIGGER BAR AFTER EACH CLICK UNTIL THE GUN FIRES.

SEVEN ... AFTER THE GUN FIRES, TURN THE NUT TO THE RIGHT 2 MORE CLICKS. STOP.
EIGHT ... REMOVE THE GAGE. PUT ON THE BACK PLATE. COCK THE GUN. EASE THE BOLT FORWARD.
NINE ... WITH THE BACK PLATE ON, RECHECK THE TIMING TWICE MORE. IF THE TIMING'S STILL NOT RIGHT, DO THE EARLY/LATE TIMING STEPS ONE MORE TIME.

If that doesn't correct the timing, something is wrong. Call your armorer.



ONCE YOU GET THE HEADSPACE AND TIMING PROCEDURES DOWN PAT, YOU CAN DO THEM IN MINUTES. AND THOSE FEW MINUTES WILL SAVE YOU AND YOUR M2 BIG PROBLEMS.



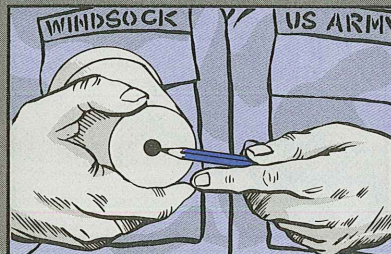
OH-58...

Controlling Grease



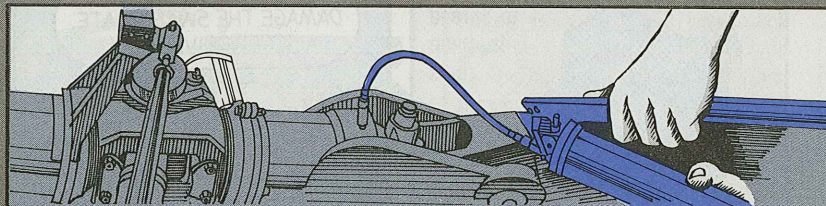
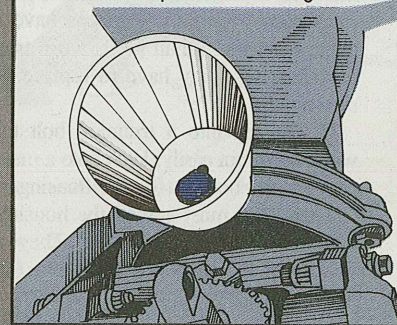
HERE'S ONE WAY TO CUT CLEAN-UP TIME WHEN YOU LUBE THE OH-58'S HEAD.

Instead of letting excess grease ooze out the grease relief fitting and get all over the top of the head, do this:



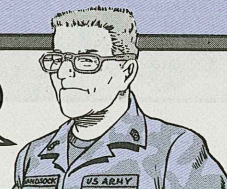
• Punch a hole in the bottom of a small Styrofoam cup. The hole should be the size of the relief fitting.

• Set the cup over the fitting.



• Pump grease into the head fitting on the grip. Excess grease coming out the relief fitting goes into the cup.

THEN — WIPE OFF THE FITTING. NO MORE MESSY CLEAN UP!



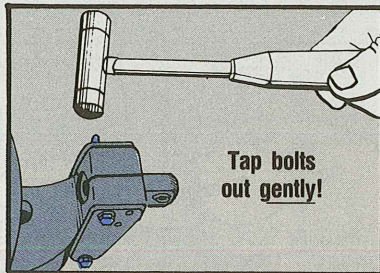
Never Force the Issue



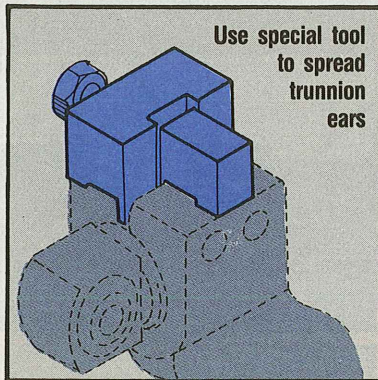
Some Huey mechs are forcing the trunnion bolts off when they remove worn bearings from installed swashplates. They're using a wrench and turning the bolts if they won't come out with hand pressure.

Trouble is, the steel bolts cut threads in the aluminum bore and ruin the swashplate. Then these mechs have to change out more than just a worn trunnion bearing—they have to replace the swashplate, too.

If you run into a trunnion bolt that won't come out easily, latch onto a mallet and tap the bolt out of the housing.



Then, you must spread the housing ears to remove the trunnion. Here again, some mechs force the issue. They grab the handiest tool, like a screwdriver, instead of the work aid shown in Fig 5-38 of TM 55-1520-210-23-1.

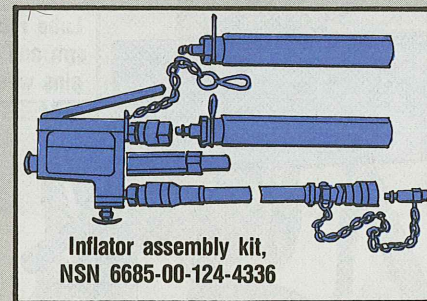


Tire **INFLATION** Safety



You mechanics are gamblin' on a tire explosion if you inflate Black Hawk tires using the equipment you're issued.

You need to order a tire inflator assembly kit, NSN 6685-00-124-4336—like right now!



When you inflate tires directly from the nitrogen servicing cart, there's no way to tell how much pressure's in the tire. Worse, you can't control or stop inflation when the pressure goes over the maximum!

The tire inflator assembly includes a hand-held pressure gage that lets you control and stop inflation from 10 feet away.

Be sure to use a safety cage when you work on main and tail tires.

The tire inflator's listed on Page 1-9 of Change 36 to TM 55-1520-237-23-4. Order it on a DD Form 2765, using AVSCOM Msg AVSAV-ME 032000Z Jul 86 as your authorization.

Jack 'em up

LOOKS LIKE THOSE JACKS COULD'VE USED SOME MAINTENANCE!



When you jack up a \$2 million aircraft and start crawling around and under it, you better be sure the jacks can do the job.

If a worn out or poorly maintained jack fails, neither you nor your aircraft may get back up in one piece.

Inspect and lube all hydraulic jacks periodically as called for in your TM's.

Lube Requirements

Check the hydraulic fluid reservoir of your 3-ton tripod jack daily. Make sure the fluid level is within a half-inch of the bottom of the filler plug hole. Top it off with MIL-H-5606 or MIL-H-6083 hydraulic fluid if it's low.

Lube the pump rocker arm and link pins weekly with oil, MIL-L-7870. Brush a light film of the same oil on the jack's rams and caster legs monthly.

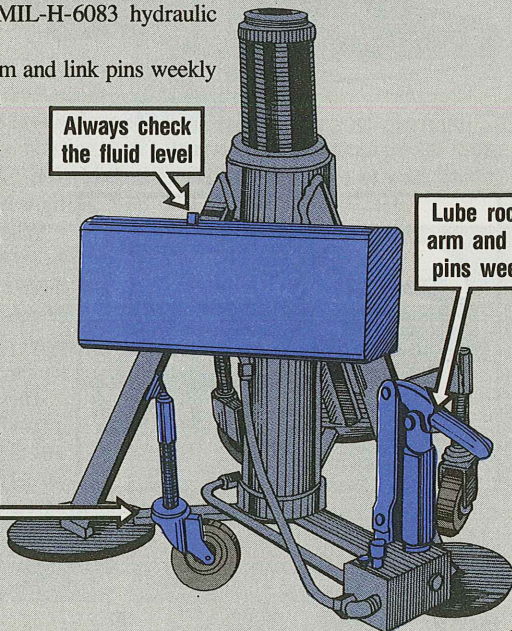
Lube the leg caster horn bearings and wheel bearings with grease, MIL-G-10924. Lube horn bearings monthly and wheel bearings quarterly.

'Course, don't wait for scheduled lube service if any of the lube points look dry or show evidence of lube contamination.

Always check the fluid level

Lube rocker arm and link pins weekly

Grease horn and wheel bearings



Inspection Requirements

At least every 3 months, eyeball your jacks' components for structural defects and cracks. If you find any, don't take any chances—replace the parts. You also need to have the jack assembly tested like it says in Para's 4-26 through 4-32 of TM 55-1730-222-12.

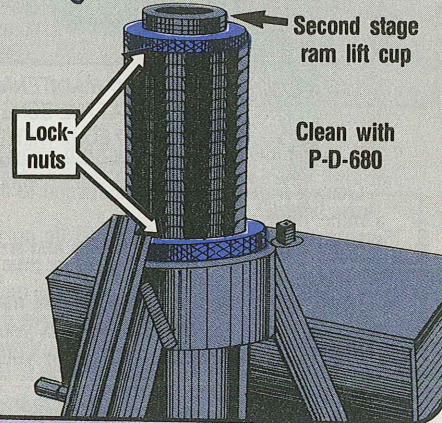
Once a year, purge and flush the hydraulic system and refill it with MIL-H-5606 hydraulic fluid. Then have it tested per Para's 4-26 through 4-32 of the TM.

Cleaning Requirements

Before each scheduled lubrication and inspection, give your jacks a good cleaning.

Use a mild detergent solution to wash the painted surfaces of jack legs, outer cylinders, head, base and footpads. The same detergent you use to wash your aircraft—MIL-C-25769—will do the job. NSN 6850-00-935-0995 gets a 55-gal drum of the cleaner.

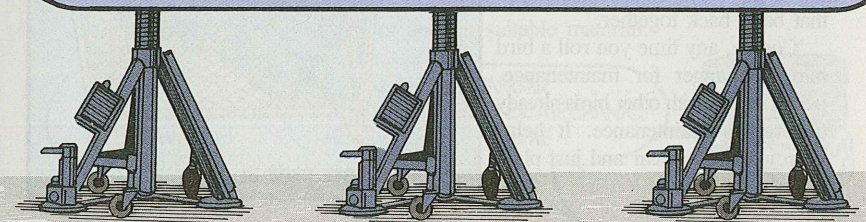
Clean the second stage ram lift cup, ram locknuts and pump assembly with a clean cloth lightly moistened with dry cleaning solvent P-D-680.



Precautions

Be careful not to get any solvent or cleaning compound into the hydraulic system or on lubricated areas. Solvents and cleaning solutions not only dilute hydraulic fluid and lubricants, they'll cause rapid wear and damage to components.

'Course, any time you use a solvent, make sure you're in a well-ventilated area. Wear gloves and goggles to keep it off your skin and out of your eyes.



Too Clamped? Organize!



THIS MAINTENANCE HANGAR LOOKS LIKE A BATTLE ZONE! AIRCRAFT PARTS, TOOLS AND EQUIPMENT ARE STREWN EVERYWHERE!

Getting from one end of the hangar to the other is like weaving your way through a mine field.

Since hangar space is so scarce and so valuable, bird mechs, make the best use of it.

Start by making sure walkways are marked and kept clear of equipment, tools, parts, etc. AR 385-30 has the info you need for painting hangar floors. NSN 8010-00-248-2839 gets a gallon of yellow paint. NSN 8010-00-082-2598 gets 5 gallons.

Store all ground support equipment of one kind, like jacks, ground handling wheels and maintenance platforms, in one place—out of the way—so you won't have to go looking for it next time you need it.

If you don't already have storage bins for disassembled parts, get AVIM to make some for you. Keeping all disassembled parts from one bird together can make your job a lot easier when it comes time to put that baby back together.

'Course, any time you roll a bird into the hangar for maintenance, park it in line with other birds already undergoing maintenance. It helps keep walkways clear and just plain looks a lot better.



Store loose parts in bins!

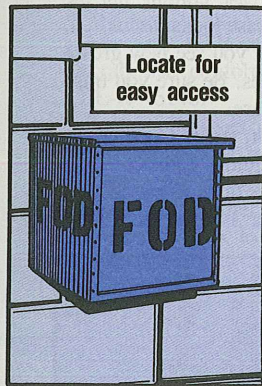


Drip pans are a must

Help keep the hangar clean by using oil pans to catch leaking oil and disposing of oily rags in a self-closing metal can. Clean up oil spills pronto with a sweeping compound.

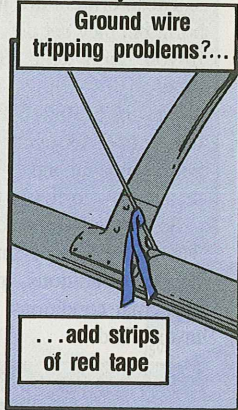


You should have several FOD depositories throughout your hangar, too. Use them for discarded hardware, wire and other trash that can find its way into an engine or transmission.



Eyeball the tag on all fire extinguishers to make sure an inspection is not overdue. If an extinguisher is not fully charged, it won't help much during an emergency.

Static electricity is always a problem in an enclosed area. If one of your birds is leaking fuel, any spark could ignite the fumes and spoil your whole day. So make sure every bird is grounded. And if the ground wire is a tripping hazard, add a few strips of red tape so it can be seen easier.



Another good safety precaution is to cushion sharp objects like cutter blades and stabilator edges with Styrofoam or another suitable material.

A CLEAN, SAFE, AND WELL-ORGANIZED HANGAR WON'T AUTOMATICALLY MAKE YOU A BETTER MECHANIC. BUT IT WILL GIVE YOU THE CHANCE TO BECOME A BETTER MECHANIC. GO FOR IT!



Keep Those Wheels a-Rollin'

I — CAN'T —
BUDGE — THIS —
DARN — THING!



Ever wonder why your B-4A maintenance platforms are so ornery when you're trying to move 'em from Point A to Point B?

Those critters are just naturally stubborn, but they get downright muleheaded if you don't keep the wheel bearings lubed.

TM 55-1730-215-13&P says to lube 'em with GAA every 100 hours of use, but keeping an hourly use chart on maintenance platforms is tough.

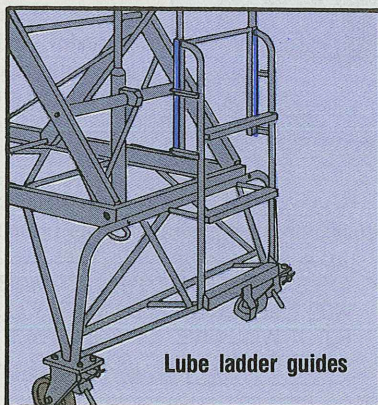
So schedule lubes on your DD Form 314 every two or three months under normal conditions, more often under abnormal conditions, like when you're in the field.

The new wheels, NSN 5340-00-205-5608 (with brake) and NSN 5340-00-724-2647 (without brake), are lots easier to lube 'cause they've got grease fittings. Just slap a grease gun on 'em and pump 'til you see old grease coming out the sides. If the old grease looks discolored, keep pumping until you see new grease coming out the sides. Be sure you trash all the purged grease.

While you're at it, smear GAA on the platform's ladder guides connecting the upper and lower sections of the ladder, like it says in Para 3-13 of the TM.

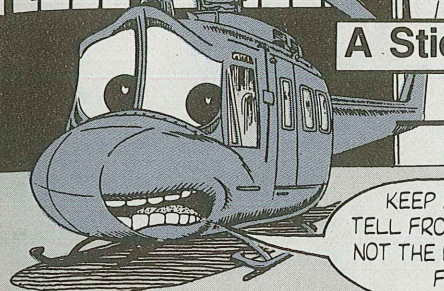


New wheels have grease fitting



Lube ladder guides

A Sticky Subject



KEEP AWAY! I CAN
TELL FROM HERE YOU'RE
NOT THE RIGHT SEALANT
FOR ME!



I'M GONNA
MESS YOU UP!

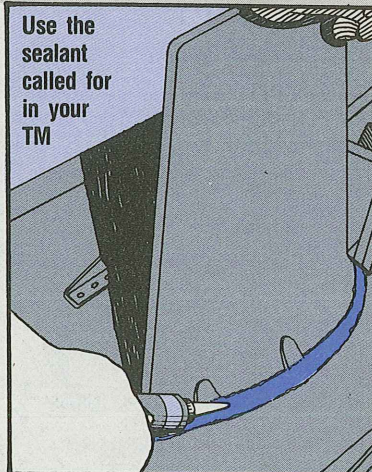
Some RTV silicone compounds are taboo for aircraft use. The note in Para 3-95 of TM 55-1500-204-25/1 explains the rule of thumb when using RTV:

If it smells like vinegar (acetic acid), don't use it. It causes corrosion.

RTV 730 has a strong vinegar odor. So never use it on aircraft instead of what your aircraft's maintenance manual calls for.

The only RTV sealant approved for aircraft use conforms to specification MIL-A-46146.

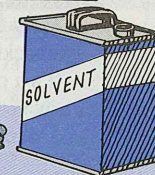
Some adhesives and sealants have several applications, but unless your TM's say you can substitute one adhesive/sealant for another adhesive/sealant, don't do it. Stick to the one called for in your TM's.



Use the
sealant
called for
in your
TM

MEK & P-D-680 ...

Handle With Care!



Bird mechs, anytime you're working with a solvent like MEK (methyleneethyl-tone) or P-D-680, play it safe.

Solvents are toxic and flammable!

- Always wear solvent-resistant clothing and gloves plus a face shield or goggles.

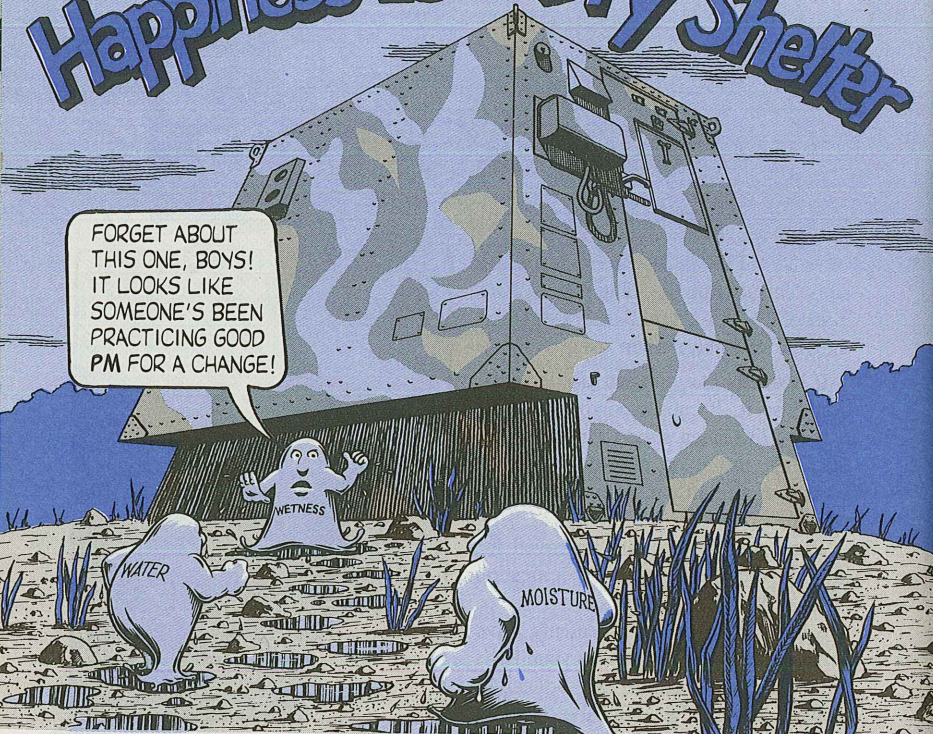
- If you get solvent on your skin, wash the area with soap and water as soon as possible.

- If you have to work with solvent in close quarters or in a poorly ventilated area, use a respirator, NSN 4240-01-015-5194, for filtering organic vapors. CTA 50-970 is your authority for ordering the respirator.

TB MED 502 has the word on respirators and DA Pam 385-3 has the info on protective clothing.

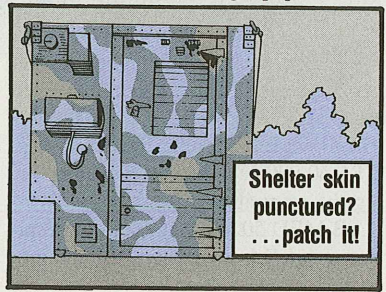
Happiness Is a Dry Shelter

FORGET ABOUT THIS ONE, BOYS! IT LOOKS LIKE SOMEONE'S BEEN PRACTICING GOOD PM FOR A CHANGE!



Moisture in shelters—such as an S-250—is knocking out commo gear. You can knock moisture down and out with a fistful of PM.

It's a constant hassle keeping wetness away from those radios, switchboards, computers and switching equipment. But



Shelter skin punctured? ... patch it!

Look for punctures in the shelter's skin. Get 'em fixed—pronto! TB 43-0124 tells who fixes what and the tools and materials for repair.

To block low blows to the belly of the shelter, eye the ground area before setting the shelter off its vehicle. Rocks or other sharp objects can poke holes.

A puncture underneath lets dampness seep all inside the walls, knocking out electrical circuits as well as commo equipment.

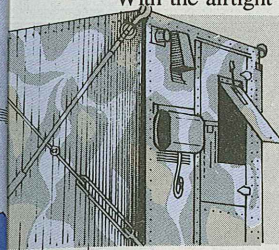
So check the bottom for damage when the shelter's lifted.

Air Beats Wet

When the door and louvers are closed, differences in inside and outside temperatures add to moisture buildup.

Keep fresh air moving around inside your shelter to dry things off.

With the airtight door closed and the

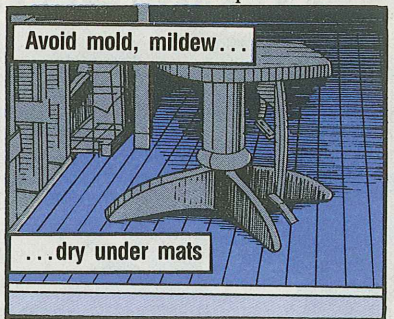


Close door, open louvers, turn on fan

louvers open, turn on the ventilating fan to push the air around.

Dry Under Mats

Moisture under floor mats leads to mildew and mold buildup.



Avoid mold, mildew...

...dry under mats

Stomp these commo wreckers out by wiping off the mats, top and bottom, with a clean, dry cloth.

Radio Sets, Installation Kits...

Updated SB Sent Out

IF YOU DIDN'T GET YOUR NEW SB 11-131 (NOV 86), VEHICLE RADIO SETS AND AUTHORIZED INSTALLATIONS, HAVE YOUR PUBS CLERK ORDER ONE!



SB 11-131

3-51. VEHICLE, COMMERCIAL, UTILITY, CARGO, M1009

SINGLE INSTALLATIONS

Radio set	Installation kit type no.	Installation kit NSN	Installation instructions
AN/VRC-12	MK-2415/VRC	5820-01-175-7412	Book Plan Ref. No. 811
AN/VRC-24	MK-2451/VRC-24	5820-01-185-9227	Book Plan Ref. No. 837
AN/VRC-43	MK-2416/VRC	5820-01-175-2109	Book Plan Ref. No. 812
AN/VRC-44	MK-2417/VRC	5820-01-175-2110	Book Plan Ref. No. 813
AN/VRC-45	MK-2418/VRC	5820-01-175-2105	Book Plan Ref. No. 814
AN/GRC-1			
AN/VRC-49			
AN/GRC-2			
AN/VRC-47	MK-2419	5820-01-175-2100	Book Plan Ref. No. 815



THE SB HAS THE LATEST INSTALLATION KIT INFO FOR YOUR VEHICLE, INCLUDING THE CUCV, HMMWV, ABRAMS AND BRADLEY. ORDER THE SB LIKE IT SAYS IN DA PAM 310-10!

Charge Battery for Peak Performance

MACON... I CAN'T FIGURE OUT WHY THIS RADAR'S NOT RECEIVING!

IT SOUNDS TO ME LIKE THE BATTERY NEEDS CHARGING!

Put your best into the charging time of your AN /PPS-5() radar set's BB-622/U battery so you'll get the best out of your power source.

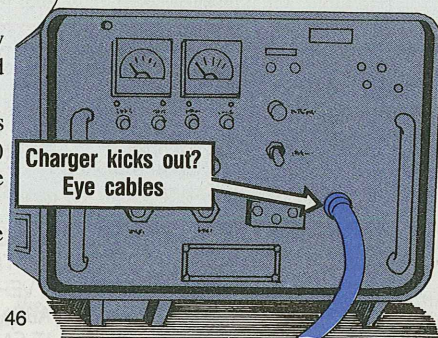
Here are some tips to help:

Use only the PP-4127/U battery charger. Keep the battery cover off and watch for gassing.

If the charger kicks out before 15 hours and keeps cutting off at 8.1 (+ or - 0.1) volts after resetting, make sure the cable connections are clean and undamaged.

Eyeball the top terminal nuts to be sure they're clean and tight.

Try charging again.



If the battery fails to charge right after an extra 24-hour waiting period, turn it in. If charging time goes past 20 hours, look for a short or a bad charger.

Heavy gassing in three of the four cells—with the charger going—is a sure tip-off to a short. Check each cell. If any are shorted, turn the battery in.

Those tips are for initial charging. And remember, never discharge a battery below 5.2 volts. During recharging, the charger will trip when the battery is fully charged, usually at 8.1 (+ or - 0.1) volts.

Once it trips, let the BB-622 cool. Press the charge circuit ON. If the charger shuts off in 5 to 15 minutes, the battery's ready.

If your fully-charged battery won't power your radar for at least 4 hours, turn it in for another one.

MX-6707 Matching Unit...

Shed the Water Pain

High pressure water will drown your matching unit—and so will rain that gets by an improperly tightened reinforcing ring.

To head off water damage:

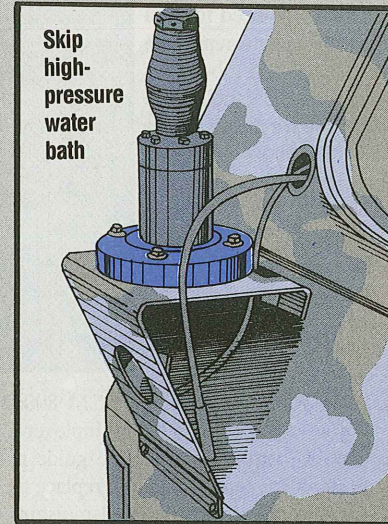
- Lay off using the high-pressure water hose to clean the unit.
- Keep the steel reinforcing ring, NSN 5985-01-012-5425, in place, but not too tight.

Torque the mounting bolts to 100 lb-in, like it says on Page 2-19 of TM 11-5820-401-20-1.

Tightening too much cracks the plastic cover, letting water in.

Be sure to drain the unit at least quarterly. During wet weather or in areas where the humidity's high, do it more often.

Skip high-pressure water bath



Use Shelf for Support

IF YOU COULD HOLD
ON JUST ANOTHER SECOND...



Leave the balancing act to the circus clowns!

When you pull a TD-660 multiplexer out of its AN/TRC-145 radio terminal set rack, use the support shelf.

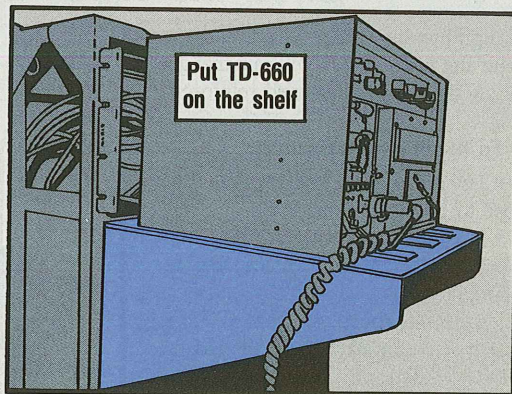
There's no need for you operators and unit repairmen to balance a 50-lb multiplexer on the rack's edge while you handle the cables and work in the back. Pull it out and set it on the shelf.

Newer Track-145's—serial number 47 and higher—have the shelf.

If the shelf's damaged, replace it. If you've got an older AN/TRC-145 without a shelf, add one. Order on a DD Form 1348-6 using FSCM 80063 PN SCD681135 from RIC B16.

If you're working on the multiplexer's plug-in panels, use a light touch. Before you push them in, be sure the guide pin mates with the case receptacle.

With all the panels installed, replace the front cover. It keeps the panels in place. The cover also keeps dirt and moisture out of the case.



Double the Height

We've said it before, and we'll say it again...

...BE CAREFUL OF ELECTRICAL DANGERS when you're putting up mast or tower antenna.

If you don't—and the antenna falls against a power line—ZAP!—you're gone. That happened recently. Don't let it happen to you.

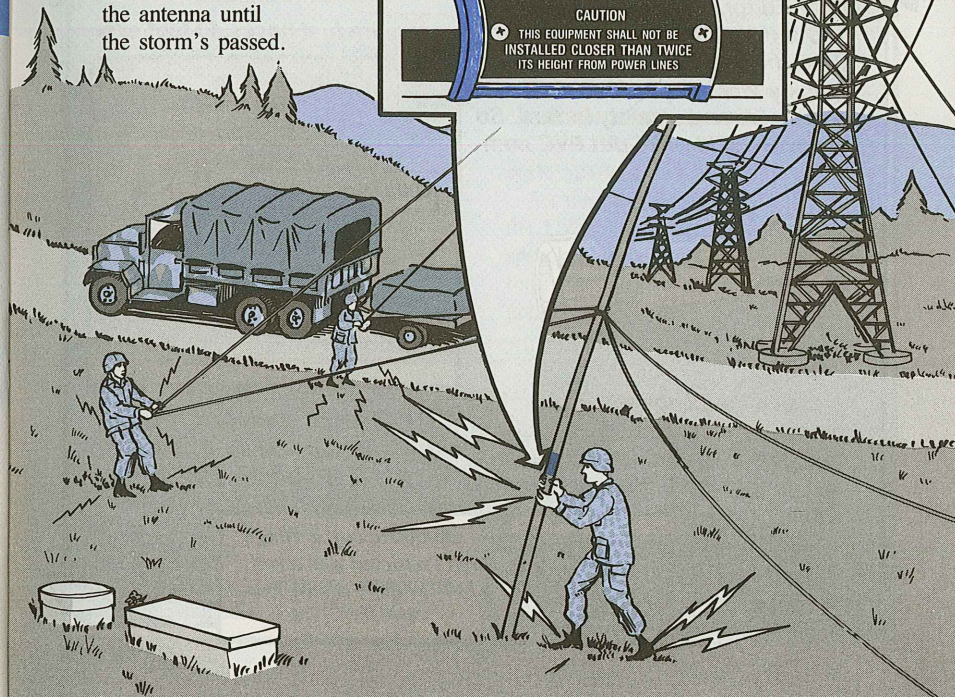
Be sure there's plenty of room between the mast and any power lines. Stay at least twice the height of the antenna away from the lines.

To jog your memory next time you set up an antenna, put a warning label on the mast. Get the label with NSN 9905-00-511-8751.

It's authorized by SB 11-614 (Jun 67).

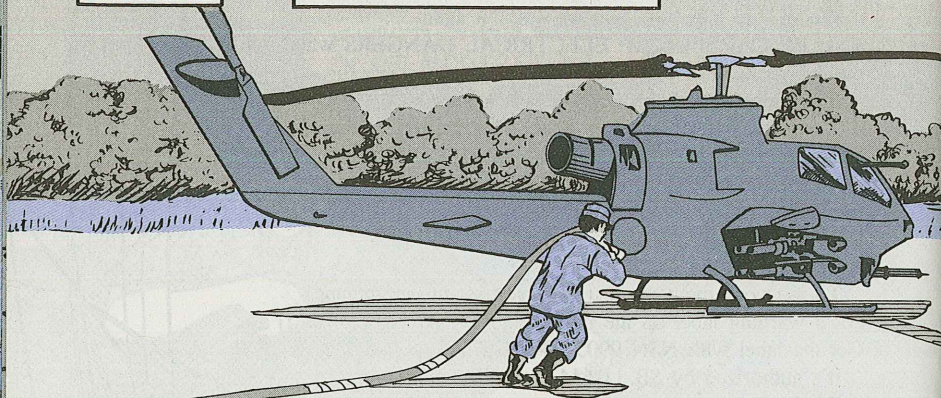
Don't set up an antenna if there's a hint of an electrical storm. You could get zapped by lightning. Keep away from the antenna until the storm's passed.

Get warning label!



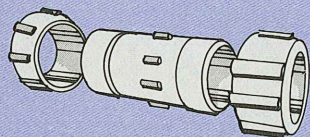
TROOP
SUPPORT

Skids Save Hoses

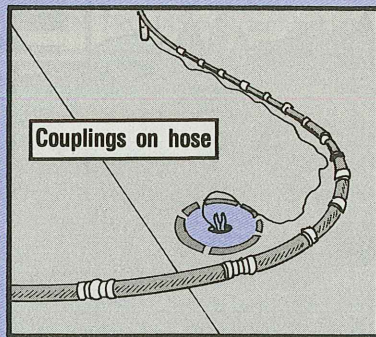


Dear Editor,

Our refueling personnel drag high pressure fuel hoses 40 feet every time they refuel an aircraft. This quickly wears out a hose. That's expensive and a safety hazard. So we made skids. We put PVC com-



Couplings on hose



pression couplings every 18 inches along the hose. Now the couplings take the wear and tear, the hoses last longer and the operation is safer.

(Editor's note: You've smoothed out a rough situation for hoses that aren't retrieved with a reel. Find couplings, FSC 4730, in the Federal Item Identification List.)

Mr. Robert L. Harris
Mr. David A. Gholson
Ft Hood, TX

D7E, D7F Tractors...

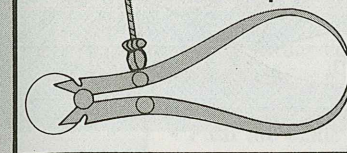
Worn to the Limit?

Here's how to tell when your dozer needs new track parts.

Roller & Links

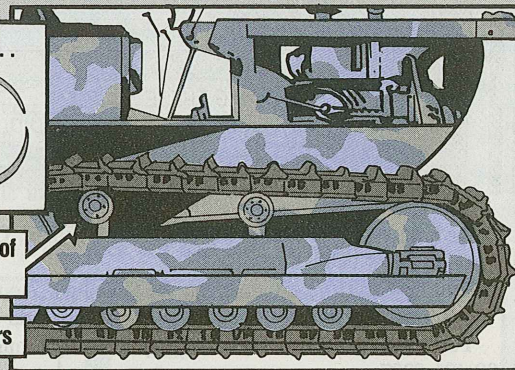
Use caliper, NSN 5210-00-229-3035, to measure the diameter of the track rollers and track carrier rollers. Replace track rollers if they measure less than 7 7/8 inches. Replace the carrier roller when it's less than 6 3/4-inches.

Use calipers...



...to measure the diameter of the track carrier rollers...

...and track rollers

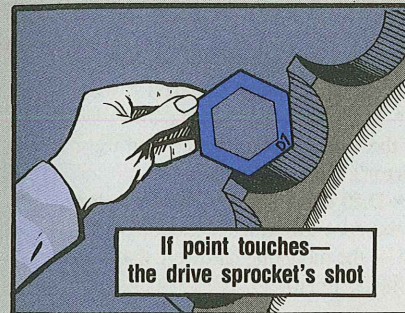


Sprocket Wear

Use a drive sprocket wear gage to check sprocket wear. Get one that'll measure D7, D8 and D9 sprockets with NSN 5210-01-225-1132.

Set the point of the gage marked for the D7 between the teeth of the drive sprocket. If the point doesn't touch bottom, the sprocket's OK. If it touches, get support to replace it.

If point touches—the drive sprocket's shot

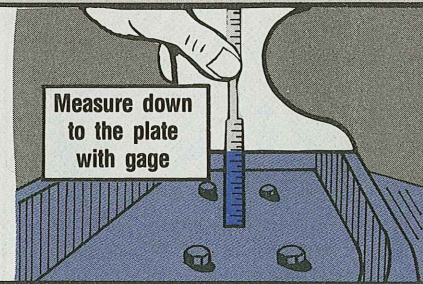


Track Shoes

Use broad-based depth gage, NSN 5210-00-221-1902, to measure the height of the grouser. Set the base across two adjacent grousers and measure down to the plate. If it's less than 1 1/2 inches, replace the shoe.

Your authority to order the caliper and gages is Appendix A of CTA 50-970.

Measure down to the plate with gage



M4K RT Forklifts...

Add Rearview Mirrors



Backing an M4K forklift is dangerous business. Ground guides are a **must** to “see” what’s behind you.

Rearview mirrors mounted on the floodlight mounting bars can help, too. Get your commander’s approval before you add the mirrors.

You need two 5-ton truck convex wide-angle mirror assemblies, NSN 2540-00-401-8337.

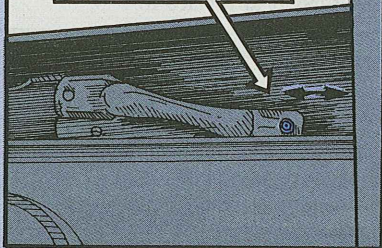
Here’s the fix:

- Using a vise, bend the mirror mounting arm ends at 45-degree angles, in opposite directions.
- Bend the mirror’s attaching bracket at a 90-degree angle.
- Hold one end of the mirror’s mounting arm against the hole you drilled.
- Mark the location on the lower ledge of the floodlight mounting bar for the mirror’s support bracket.

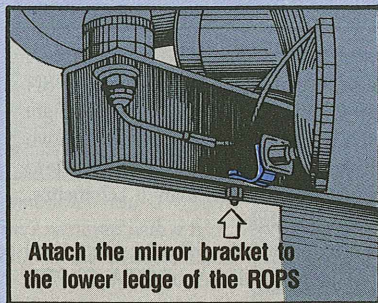
- Drill a 1/4-in hole in the lower ledge at the spot the bracket mounts.

Use the mounting hardware that comes with the mirror.

Drill hole 2 3/4-in from the ROPS frame



- Drill a 1/4-in hole in the back of the floodlight mounting bar, 2 3/4 inches from the ROPS frame.



Attach the mirror bracket to the lower ledge of the ROPS

D7E/F, D8 Tractors...

Turn Your Fan to Keep Cool



If the engine in your Cat D7 or D8 tractor is running cold or overheating, it could be the fan blades are not adjusted properly.

Your Cat’s blades can be set to either pull air in thru the radiator or to push air out thru it.

Set the blades to match the season. For hot weather, turn the blades to push air out thru the radiator and carry heat away from the engine.

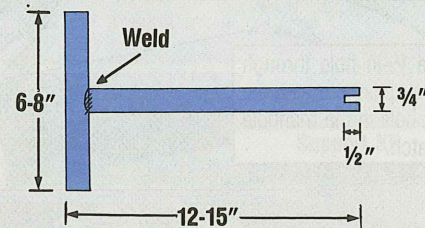
For cold weather, reverse the blades to pull air thru the radiator and blow the warmed air back over the engine. That helps keep the engine up to operating temperature—where it runs best.

To change the fan, you’ve got to adjust each blade—with the engine off—like so:

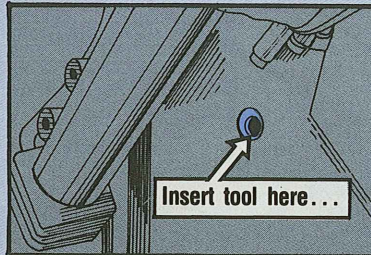
- Push the blade in toward the hub.
- Twist the blade to the opposite angle.
- Let the blade spring back out and lock in position.

If a blade won’t push and turn, stop! Forcing it can bend the blade or shaft. Get your mechanic to free up the blade.

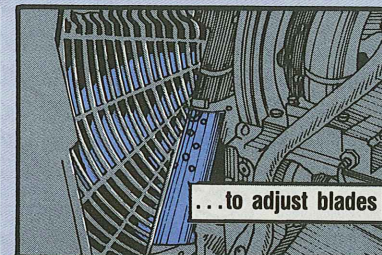
If you don’t want to remove the screen guards to get to the blades, you can make this tool from 3/4-in pipe.



To use it, line a blade up with the access hole. Fit the tool over the end of the blade and push in to turn the blade. Then line up the next blade and repeat the procedure.



Insert tool here...



...to adjust blades

When you’re finished, make sure all blades face the same way. Otherwise, you’ll cut down air flow thru the radiator. You’ll also get vibration that’s rough on the fan and bearings.

Fight Fuel Filching

In the dead of the night fuel filchers are using the dispensing valve to drain your tanks dry.

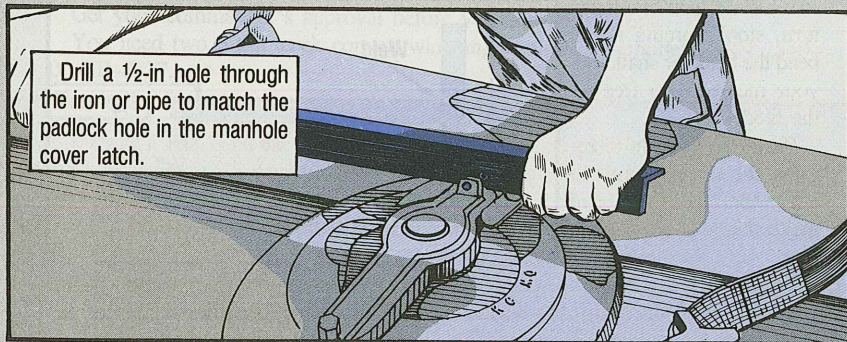
Locking the valve to the manhole cover stops them in their tracks.

Here's how:

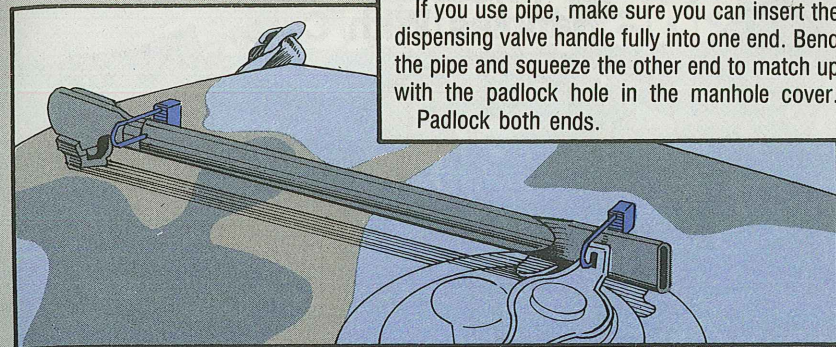
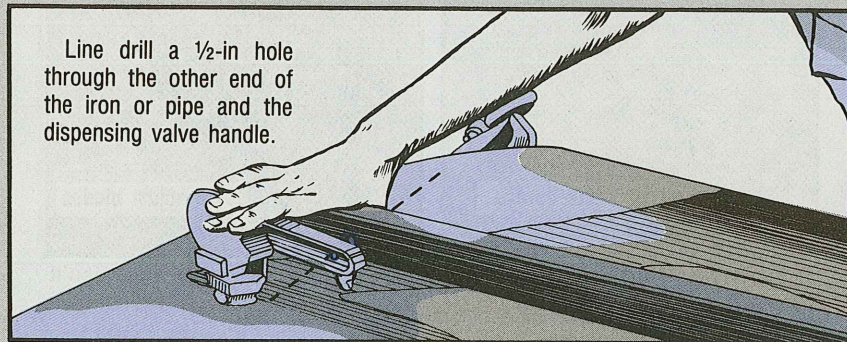
Get a piece of flat iron, angle iron or pipe. Cut it to reach from the valve cam handle to the manhole cover latch.



Drill a 1/2-in hole through the iron or pipe to match the padlock hole in the manhole cover latch.



Line drill a 1/2-in hole through the other end of the iron or pipe and the dispensing valve handle.



If you use pipe, make sure you can insert the dispensing valve handle fully into one end. Bend the pipe and squeeze the other end to match up with the padlock hole in the manhole cover. Padlock both ends.

Air Conditioner . . .

Get the Grommets Out!

Don't use the heat mode on your horizontal compact air conditioner (9,000, 18,000 and 36,000 BTU) if the heating element still has grommets.

The grommets decompose and give off gases that can make you sick. Take the grommets out and install the bracket modification kit.

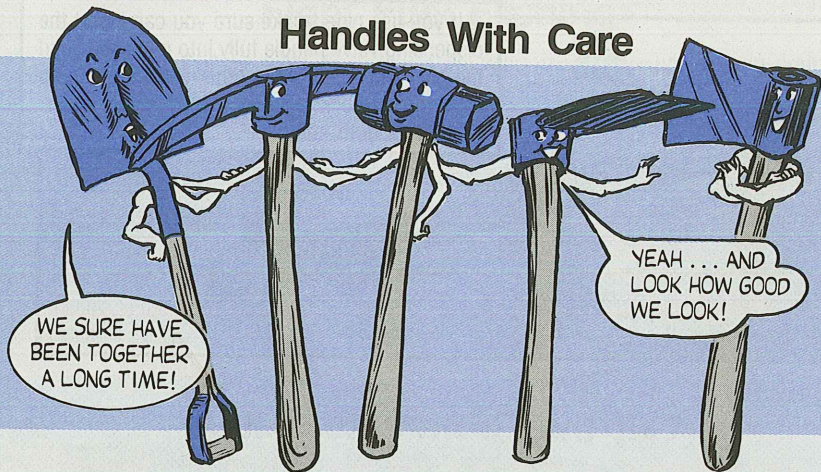
HERE'S WHAT YOU NEED:

BTU	Air Conditioner Characteristics	Support Kit NSN 4520-01-163
9,000	230V 1Ph 60Hz	4915
9,000	115V 1Ph 60Hz	4915
9,000	208V 3Ph 60Hz	4917
9,000	208V 3Ph 400Hz	4917
18,000	230V 1Ph 60Hz	4916
18,000	208V 3Ph 60Hz	4916
18,000	208V 3Ph 400Hz	4916
36,000	208V 3Ph 60Hz	4918
36,000	208V 3Ph 400Hz	4918



YOU'LL FIND THIS INFO IN
TROSCOM MSG AMSTR-MCFG
182000Z SEP 86.
SEE YOUR TROSCOM LAR
FOR THE MESSAGE

Handles With Care



Wood handles on pioneer tools and engineer-type tools need to be painted or rubbed with linseed oil.

- If the handle is on a tool stored outside, paint it to protect against weather. Follow local SOP for paint color—usually the same as the vehicle's basic color, not in a camouflage pattern.



Paint handle...



...or use linseed oil

- If the handle is on a tool kept inside, rub it with linseed oil. This prevents drying, cracking and splintering. Get a gallon of linseed oil with NSN 8010-00-152-3245.

When a painted handle shows exposed wood, strip it and repaint it.

When an unpainted handle starts to feel dry, give it another rub with linseed oil.

Cleaning and Storage



I NEED A BIGGER BOX!

You can get sick as a dog if lyster bags are not cleaned and stored right.

A wet bag tossed in a corner is a haven for bacteria!

So before you store, scrub the inside of the bag with a chlorine solution. Use a 6-oz jar of calcium hypochlorite, NSN 6810-00-255-0471, stirred into one gallon of water.

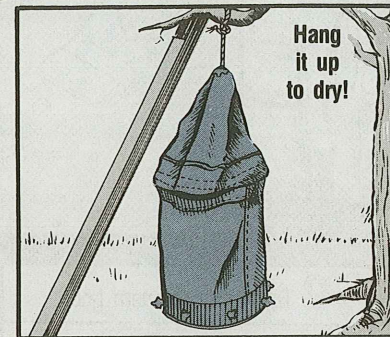
Rinse the bag several times with clean, fresh water to get rid of all the cleaning solution.

Hang it up until it's dry... **completely dry!**

Fold the dry bag and wrap it in kraft paper, NSN 8135-00-160-7752.

Store it in a new fiberboard box. NSN 8115-00-428-4124 gets ten boxes, 24 x 24 x 10 inches.

Store the box in a clean, dry place.

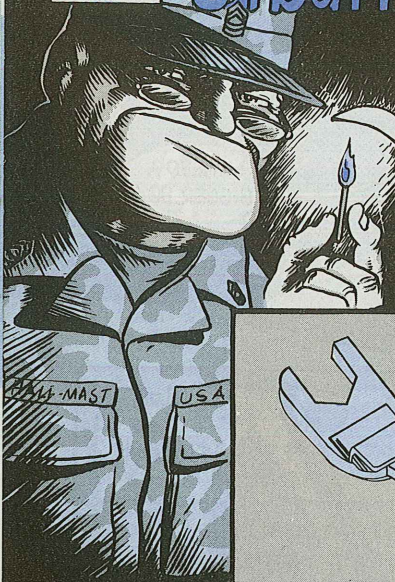


Hang it up to dry!



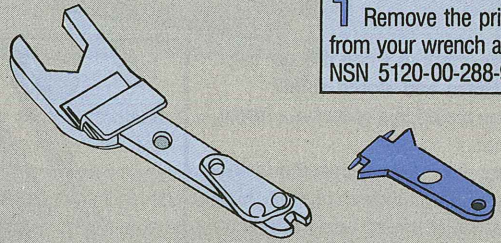
GOT A GOOD IDEA? A SUREFIRE SUGGESTION? A SUPPLY OR MAINTENANCE QUESTION? WRITE ME: MSG HALF-MAST, THE PREVENTIVE MAINTENANCE MONTHLY, LEXINGTON, KENTUCKY, 40511-5101.

Carbon Keeps You In The Dark



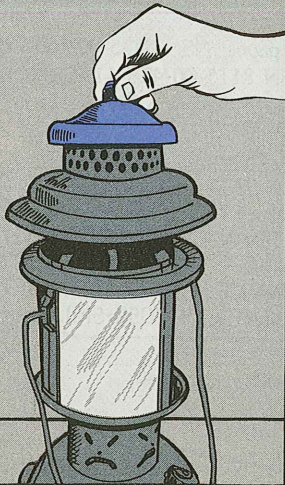
A CLOGGED GENERATOR TUBE TIP ON YOUR LANTERN WILL DIM AND THEN KILL THE FLAME! CARBON CLOGS THE TIP. YOU CAN'T STOP THE CARBON, BUT YOU CAN KEEP THE TIP CLEAN!

WHEN THE FLAME TURNS YELLOW AND GROWS DIM, DO THIS:

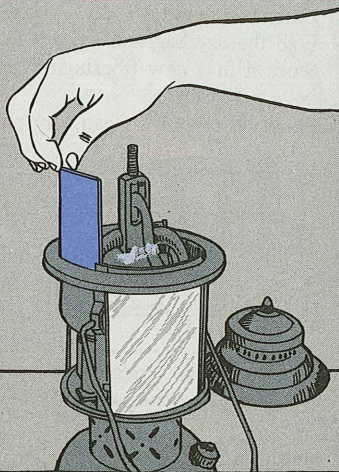


1 Remove the pricker tool from your wrench assembly, NSN 5120-00-288-9687.

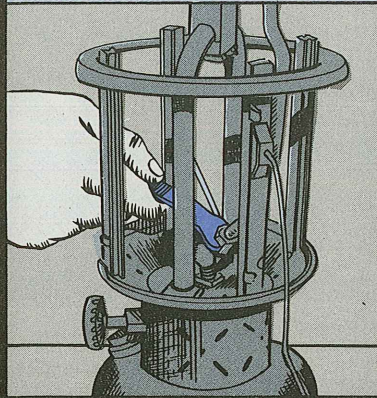
2 Take off the lantern hood.



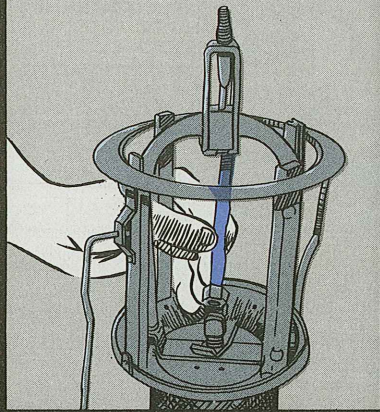
3 Slide out the glass.



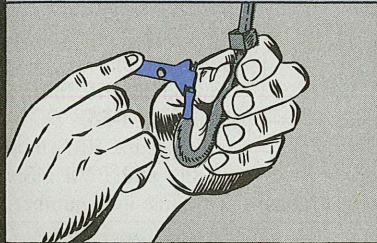
4 Use the wrench to unscrew the nut that holds the generator tube.



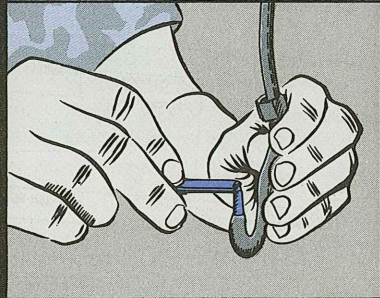
5 Take out the generator tube.



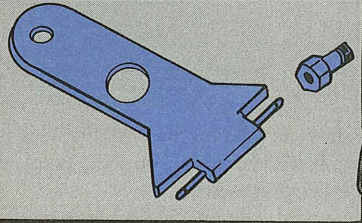
6 Don't clean the tip while it's still on the tube. You'll just ram the carbon deposit into the tube.



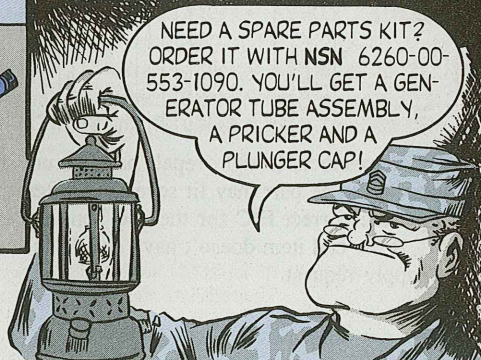
7 Remove the tip with the wrench.



8 Clean the hole in the tip with the pricker tool.



9 Reassemble the lantern.



NEED A SPARE PARTS KIT? ORDER IT WITH NSN 6260-00-553-1090. YOU'LL GET A GENERATOR TUBE ASSEMBLY, A PRICKER AND A PLUNGER CAP!

FOOD

**is a
real
downer**

Pick up...

***...tools, trash,
rags, grass, sticks,
paper, hardware,
wire...***

...so your birds don't come crashing down!