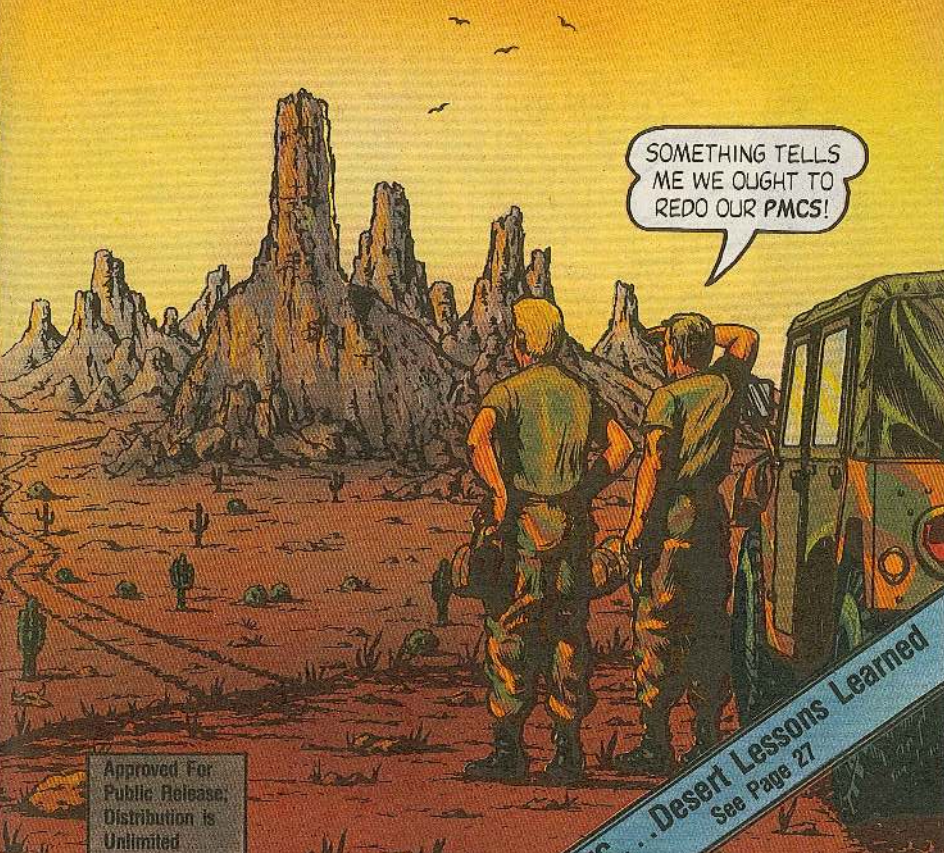


Issue 424

PS

March
1988

THE PREVENTIVE MAINTENANCE MONTHLY



SOMETHING TELLS
ME WE OUGHT TO
REDO OUR PMCS!

Approved For
Public Release;
Distribution is
Unlimited

NTC... Desert Lessons Learned
See Page 27

GIVE 'EM the WORD!

UNITED STATES ARMY INVESTIGATION ACCIDENT REPORT
 (Fill out DA Form 285-100, the equipment report is DA Form 285-100-1, the accident report is DA Form 285-100-2)

SECTION A - ACCIDENT INFORMATION

1. NAME OF ACCIDENT: _____

2. DATE OF ACCIDENT: _____

3. TIME OF DAY: _____

4. LOCATION: _____

5. TYPE OF EQUIPMENT: _____

6. NAME OF OPERATOR: _____

7. NAME OF COMMANDER: _____

8. NAME OF WITNESS: _____

9. NAME OF INVESTIGATOR: _____

10. NAME OF REPORTING OFFICER: _____

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DA Form 285—
Investigation
Accident Report—
is not a paper tiger.
It's more like a lion.
It roars.
It reverberates.
It shakes things up.
It's designed to drive home the point that when it comes to accidents,
once is more than enough!

What DA Form 285 does not do, however, is take the place of an Equipment Improvement Recommendation (EIR, SF 386).

When faulty equipment contributes to an accident—or if improved equipment could help prevent an accident—send in an EIR.

BLOCKS 32 AND 33
ON DA FORM 285 CALL
FOR SOME CONSTRUCTIVE
THINKING AND ACTION
ON YOUR PART!



Accident prevention and equipment improvement go hand in hand. It's a heap sight easier to help design out an unsafe condition than to suffer the inevitable results of not doing so.

MAR 88

PS

THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-424, 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 424

MARCH 1988

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

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

By Order of the Secretary of the Army:

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

Official:

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

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Brake Boosters—One More Time

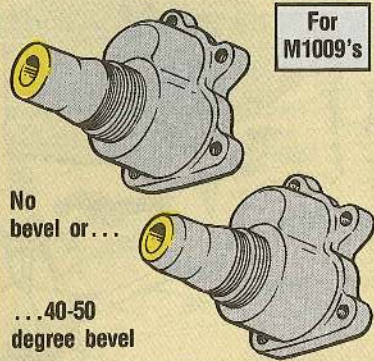
I FOUND THE RIGHT
BRAKE BOOSTER FOR
THAT M1008!

OH MYGOSH!
I-I-THINK
IT'S TOO LATE—
I'VE ALREADY
INSTALLED THE
OTHER ONE!

HEY—I
THOUGHT
THEY FIXED
THESE
BRAKES!

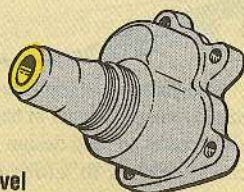
Here's how you tell the difference:

For
M1009's



For all
others

20-30
degree bevel



Hydraulic brake boosters on M1009 CUCV's are different from the ones used on all other CUCV models.

If you put a booster from an M1009 in an M1008, the driver will have trouble stopping his truck.

To identify the booster, look at the pushrod end—where the pedal attaches. If the housing is machined flat, or has a 40- to 50-degree bevel, it's booster, NSN 2530-01-154-1294. Use it only on M1009's.

If the booster pushrod end has a shallower, 20- to 30-degree bevel, it's NSN 2530-01-157-3005. Use it on all other models.

You can tell what booster is installed on a truck. Using a flashlight, look under the dash at the end of the booster.

If the wrong booster's installed, change it—ASAP!

Front Brake NSN Changes

PAGE 2-187 OF
TM 9-2320-289-20P
IS WRONG WHEN IT COMES
TO THE FRONT BRAKE
PARTS. HERE'S HOW
IT SHOULD BE:

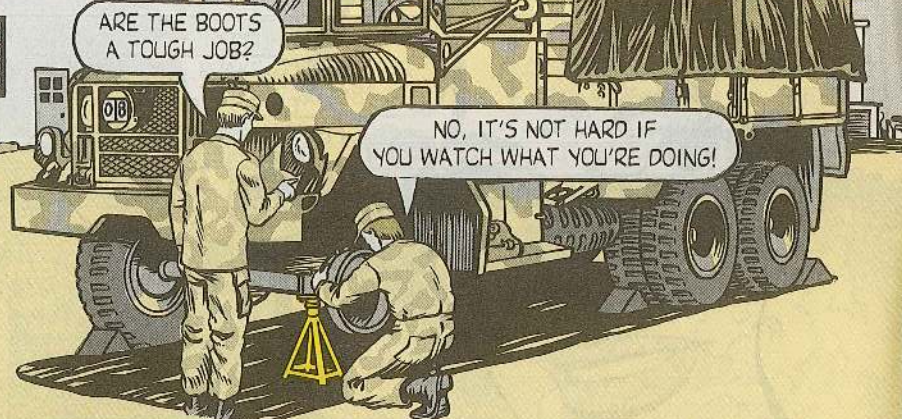
TM 9-2320-289-20P

(1) ILLUS- TRATION	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO	(b) ITEM NO	SMR CODE	NATIONAL STOCK NUMBER	FSCM	PART NUMBER	DESCRIPTION	USABLE ON CODE
						GROUP: 1204 FRONT BRAKE CALIPER ASSEMBLY COMPONENTS AND RELATED PARTS FOR ALL EXCEPT THE UTILITY VEHICLE	
80	2	PAOFF	2530-01-160-4750 2530-01-177-6473	14892 11062	2208730 14002543	CLPR ASM BRK L H HSNG FRT BRK CLPR L	194.208.210.230.231.252 EA 1
82	7	PAOZZ	5340-01-163-1401	11862	5468581	CAP, DUST BRAKE	194.208.210.230.231.252 EA 2
80	8	PAOFF	2530-01-176-2002 2530-01-177-6474	14892 11062	2208740 14002544	CLPR ASM BRK R H HSNG FRT BRK CLPR R	194.208.210.230.231.252 EA 1
82	14	PAOZZ	5340-01-152-7155	14892	4150514	SPR, BRK CLPR SUPT	194.208.210.230.231.252 EA 2
82	15	PAOZZ	5305-01-148-8203	14892	2238200	SCREW, SPECIAL	194.208.210.230.231.252 EA 2
	16				4150515		194.208.210.230.231.252 EA 2

CUCV Glow Plug Control Module NSN

If you've traced the glow plug problem to a bum modulator, get your DS to put in a new circuit board, NSN 2920-01-219-7842. It's cheaper than a complete modulator assembly, and it's quicker and easier to install.

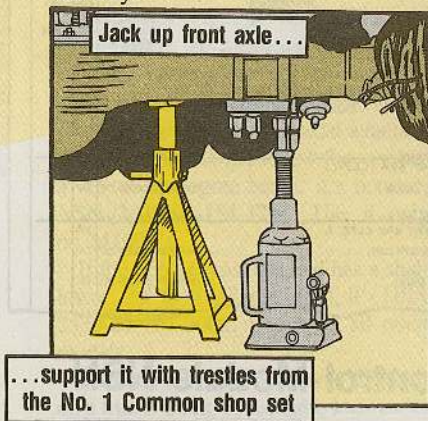
New Boots for



Replacing the steering knuckle boots on a 2½-tonner is a tough job—even when you do it right. Do it wrong, and you've got a double handful of aggravation. **Here's the easiest way:**

Jack up the front axle and support it with trestles from the No. 1 Common shop set. Set 'em so you've got enough room to turn the wheels and get to the clamps. Or better yet, get more elbow room by pulling the front wheels.

Remove the steering knuckle boot guard and push the brake hose up out of the way.



Take off the boot clamps. Use a knife to cut the old boot along the zipper. Tear it off and throw it away.

Old Knuckles

Here's the tricky part...



The boot, NSN 2530-00-741-0883, comes with an adhesive. If you need more, order 8 ounces with NSN 8040-00-298-1946.

Reuse any good hardware. If the clamps are shot, NSN 5340-00-707-1100 gets the smaller, inner clamp with hardware, and NSN 5340-00-707-1099 the outer one, also with hardware.

Use NSN 5305-00-984-6200 to order the clamp screw, and NSN 5310-00-707-1097 to get the nut.

Place the boot inside-out over the axle housing with the zipper side away from the axle. If you've got it right, the zipper will be at the front on the left wheel and at the rear on the right.

Close the zipper. Apply a generous amount of adhesive to the zipper teeth and the cloth. Do not put adhesive on anything else.

Let the adhesive set for 3-5 minutes.

Align the word TOP on the boot with the top center of the steering knuckle. Work the boot ridge over the axle housing groove. Set the inner wire clamp in the groove made for it.

Take a second to make sure the boot ridge is in the axle groove and the clamp is in its groove. Then tighten.

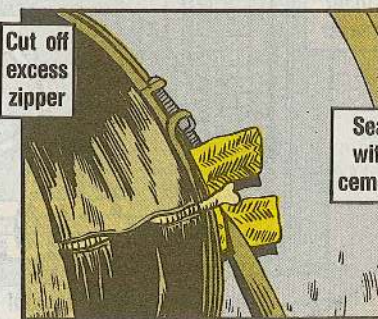
Grab the boot on each side and twist your wrists as you pull the boot right-side out. Work the outer boot ridge over the groove in the knuckle.

Put on the outer clamp and tighten.

Lock the zipper with fine wire. Cut off any excess wire and seal the zipper with adhesive.

Put the guard back on and reconnect the brake hose. That's it, you're done.

MAR 88



Ground Wire

Heads up, soldiers!

If you stand on wet ground and touch a 5-ton expansible van or M313 semitrailer that's not grounded, you can be electrocuted.

Prevent electrical shocks with a simple pigtail ground wire, like so:

Disconnect all outside power sources.

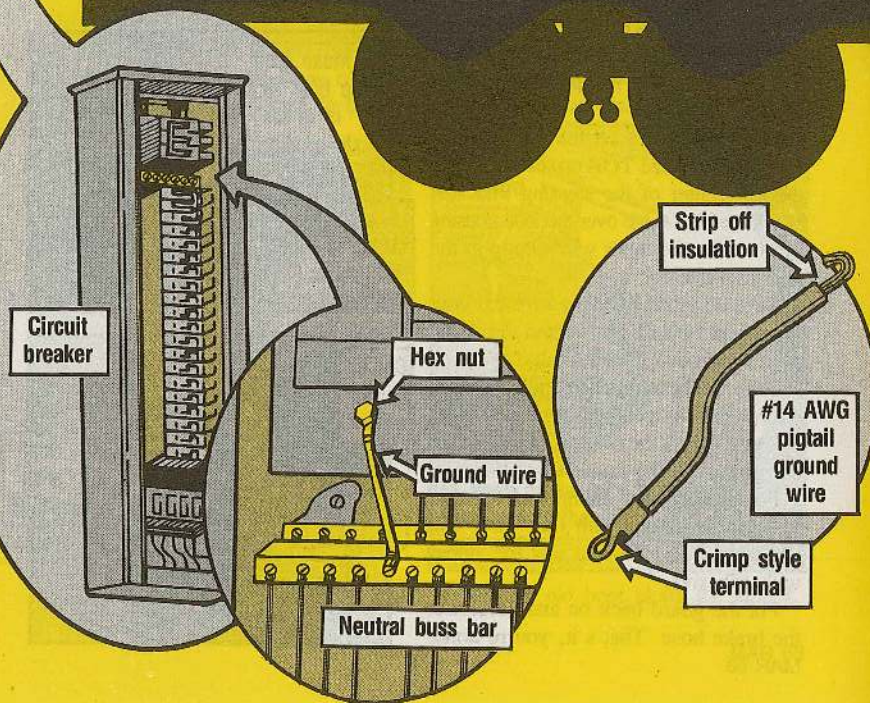
Cut off about six inches of #14 AWG wire and fasten a crimp-style terminal to one end. Get the wire with NSN 6145-01-230-2516 and the terminal with NSN 5940-00-230-0515.

Strip off about 3/4-in of insulation from the wire's other end.

Remove circuit breaker panel cover.

Connect the end of the wire with the terminal to the 1/4-20 stud above the neutral buss bar at the rear of the circuit breaker panel inside the rear of the van.

Use a 1/4-20 hex nut, NSN 5310-01-149-5395, and a 1/4-in lock washer, NSN 5310-00-209-0786.



Stops Shock

Connect the other end to one of the unused hold-down screws in the neutral buss bar.

You're not finished yet. Use an ohmmeter to make sure you've got good ground. The neutral side of the outlets should have almost no ohms. If this checks out, you're back in business.

Any time you hook the van to a generator, it's best to ground the generator and van to the same spike. See Para 2-25 of TM 9-2320-272-10 for more info.

Never use the pigtail ground if the van is used for missile or other electronic control equipment. These vans use special grounding called out in the equipment's TM's.

For more info on this, see TACOM Safety-of-Use Message 87-48, AMSTA-MTB 082000Z Jun 87. If you don't have a copy, see your TACOM LAR or write Half-Mast.

M939 Series 5-Ton Trucks...

Brake Valve NSN

Use NSN 4820-01-109-5983 to get the air brake No. 2 doublecheck valve on M939-series trucks. Make a note until the valve appears in next change to TM 9-2320-272-20P.

NSN Change

The NSN's have changed for the lower tubes listed in TM 9-2320-272-20P for the hydraulic power steering system. Use NSN 4710-01-190-8490 to get Item 5, Fig 162, and NSN 2530-01-190-8376 to order Item 1 of Fig 162 in the -20P TM.

Wiper Motor Bolt NSN

Use NSN 5305-00-995-3442 to get the mounting bolt for the M939's windshield wiper motor, Item 11 in Fig 28.8 of TM 9-2320-272-20P. The TM is being updated.
MAR 88

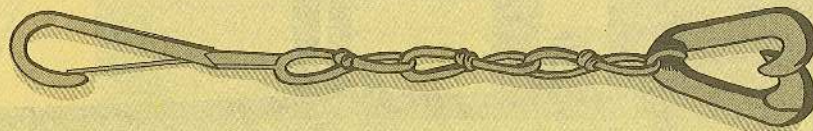
Making Couples Compatible

If your semitrailer gets hitched to a M931A1 or M932A2 5-tonner, it's not a marriage made in heaven.

This coupling has its share of friction—especially in the turns, where the trailer's landing gear shoes rub the tractor's tires. That's not good for either party. You end up with bad tires and busted landing gear.

No need for divorce, tho. There's a way to work things out and stop the friction.

Here's what you need for each leg:



ITEM	NSN
Double loop chain (12 inches)	4010-00-186-9414
Links, end lap (2 each)	4010-01-144-1734
Snap hook (1 each)	5340-01-034-6798

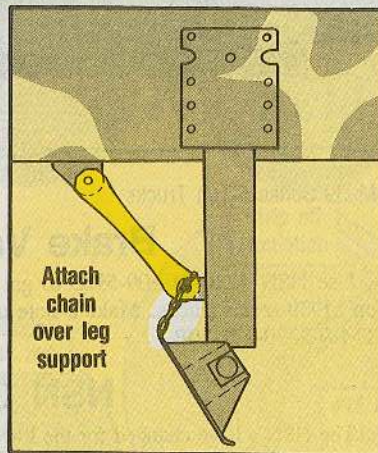
Here's how:

Fasten the snap hook on one end of the chain and a lap link on the other.

On the rear side of the landing shoe, drill a 3/8-in hole in the middle of the flange.

Put an end lap link in the hole and crimp.

Attach the chain and bring it over the leg support and fasten it. This'll hold the shoe out of the way while the landing leg is up so the shoe won't rub the tires while turning.



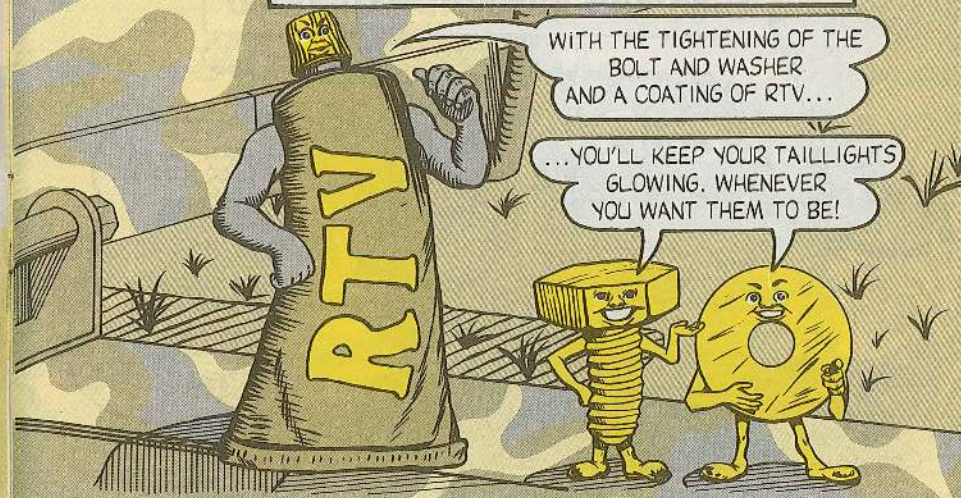
M900-Series Fuel Tankers

The landing legs on the M967, M969 and M970 5,000 gallon fuel tankers are too short to couple the trailer to the fifth wheel of the M931A1/M932A1 tractor.

You can help this odd couple make ends meet with a simple switcheroo. Get your commander's OK to replace the landing gear shoes with NSN 2590-00-177-9980. These are the shoes used on the M872 semitrailer.

Use the ground boards under the landing gear, too. This raises the tanker's front end enough to hook up.

Keep the Ground Connected



The bolt that holds the taillight ground wire to the frame of a two-wheeled trailer vibrates loose and lets water corrode the ground connection.

Before you know it, the taillights go haywire. Unpredictable taillights are accidents waiting to happen.

There's an easy fix. Clean the connection between the terminal and frame. Tighten the bolt and lock washer over the terminal. Coat the bolt and terminal with RTV sealant, NSN 8040-00-118-2695.

RTV seals out moisture and keeps the bolt tight.



M796, M796A1 Trailers...

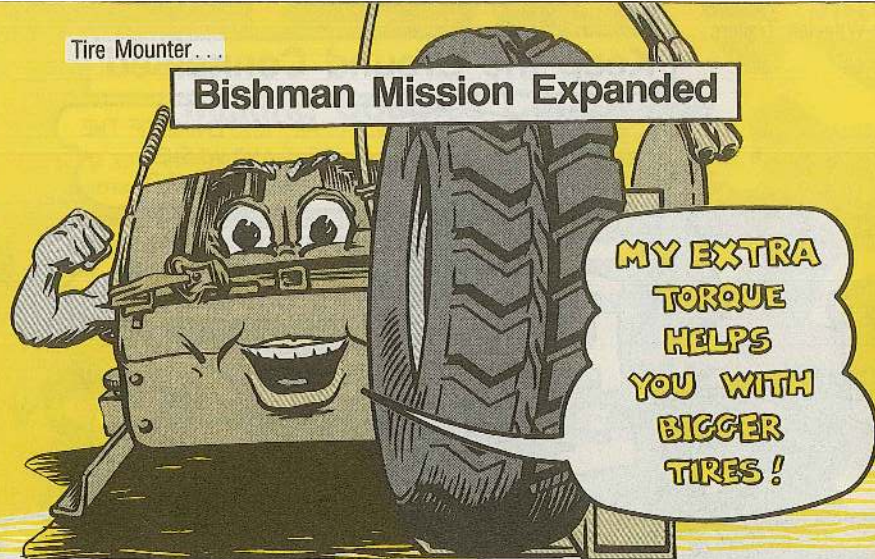
TM Socket Correction

Part of the tool listing for hub and drum replacement on Page 4-88 of TM 9-2330-287-14&P is wrong.

It takes a 3-in, 8-point by 3/4-in square drive wheel-bearing socket to replace the M796 bolster trailer's hub and drum—not the 6-point socket listed in the TM. Order it with NSN 5120-00-104-4076.

The M796A1 takes a 3 3/8-in wheel-bearing socket to do the job. It's not called out in the TM, but you can order the socket with NSN 5120-01-105-8593. Both sockets will be listed as special tools in the next revision of the TM.

Bishman Mission Expanded



You can make changes to your Bishman 931A tire mounter/demounter, NSN 4910-00-675-1478, that will make it easier to work on heavy-duty tires, up to size 14.00x24.

One change increases the torque of the orbit motor.

Tires...

Branding Keeps 'em Around

Branding tires with "US GOVT" labels will keep 'em from strayin'. Order 100 labels with NSN 2640-01-108-7256. Put 'em on with vulcanizing fluid—NSN 2640-00-242-3467, and cleaning fluid—NSN 2640-00-138-8324.

The other tire brands listed in Appendix C of TM 9-2610-200-24 are no longer available.

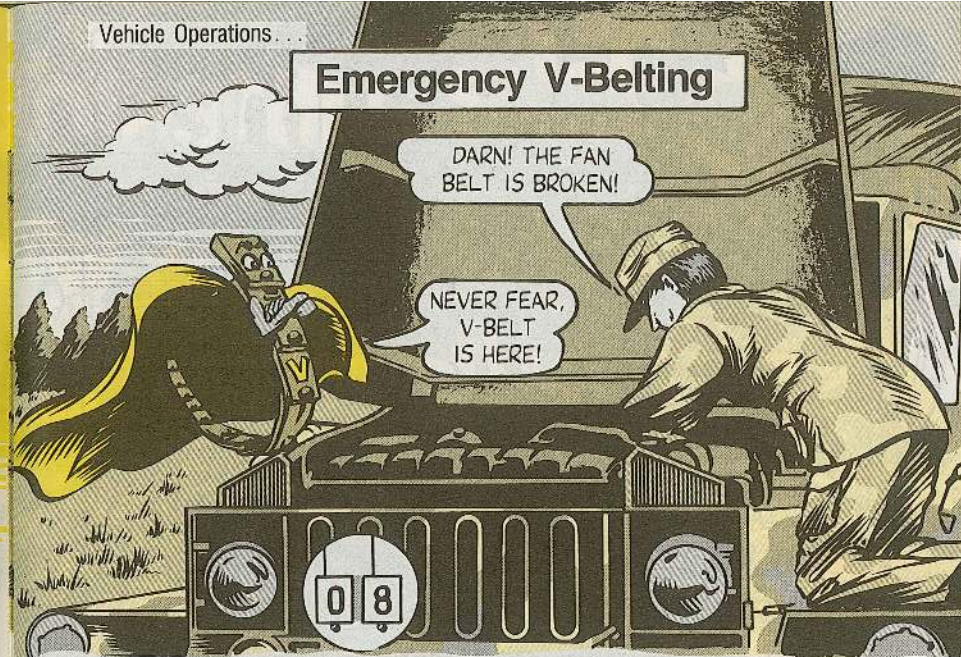
The label is yellow, so it's up to your command to decide if it goes on the outer or inner sidewall. Camouflage may be a factor.

Get a copy of the changes from:

AMCCOM
ATTN: AMSMC-MAT-T
Rock Island, IL 61299-6000
AUTOVON 793-1913/2509
Comm (309) 782-1913/2509



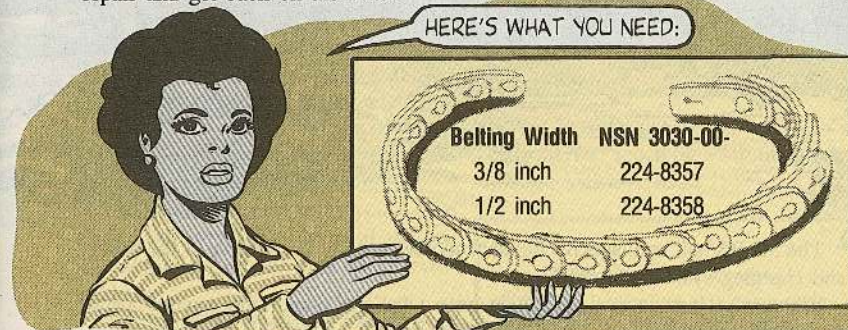
Emergency V-Belting



Have you ever been stuck miles from anywhere after a belt on your truck's engine broke?

Well, you won't be stranded if you carry a length of adjustable link belting that's long enough to replace the longest belt. You can make a temporary emergency repair and get back on the road.

HERE'S WHAT YOU NEED:



Belting Width NSN 3030-00-

3/8 inch 224-8357

1/2 inch 224-8358

Instructions come with the belting.

Get a connecting tool with either CAGE 76157, PN Veelos Tool, or CAGE 24161, PN 7469-700. Order on a DD Form 1348-6 from RIC S9C.

You don't need the tool, but it makes it easier to connect the belting. You can also use a screwdriver to spread the link slot.

Take Time to Recharge

POW

LET'S GET OUTTA HERE!
WITH NO POWER, WE'RE
JUST SITTING DUCKS!

KABOO

For Operators

- Allow about 15-20 minutes of engine operation at high idle—1,200-1,400 RPM—to recharge the LLM batteries following each cycle of LLM operation. (Several cycles may be made, one after another, but battery charging time must be increased by 15-20 minutes per cycle or you'll wind up with batteries that don't have any power left.)

Once batteries are drained, you'll have to turn off everything electrical and run the engine at high idle until the batteries recharge.

Normal engine operation will recharge the hull batteries for engine starting.

Operate the LLM with the engine running at high idle. Only then will you generate enough power to operate and charge the batteries.

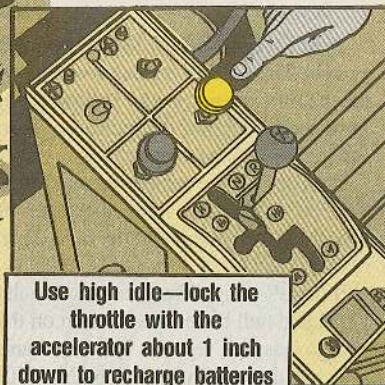
MAR 88

The MLRS hull and launcher/loader module are only as effective as the battery and charging systems onboard.

With perfect batteries and a charging system that's working right, you can operate on battery power alone for just 20 minutes.

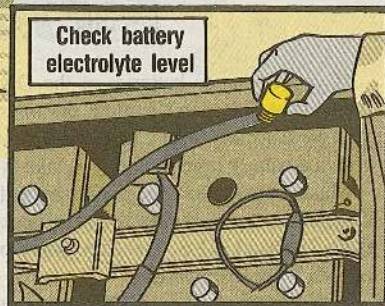
If the 10 batteries and the charging system are not in tiptop shape or if you don't give the entire system an opportunity to recover after use, you'll come up short—maybe at a critical time.

That's because engine starting and LLM cycling operations together use up more juice than the charging system can replace immediately.



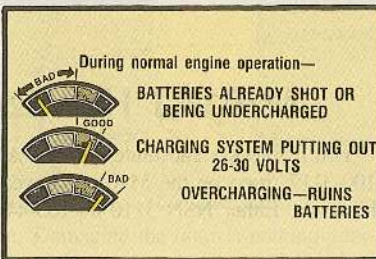
Use high idle—lock the throttle with the accelerator about 1 inch down to recharge batteries

Check the battery electrolyte level often. If it's low, tell your mech. Run the engine at high idle long enough to recharge the batteries.



Check battery electrolyte level

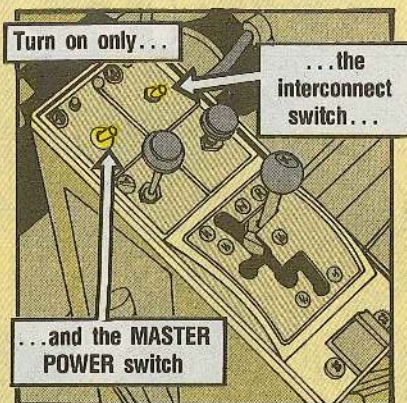
For a rough idea of the condition of the batteries, watch the instrument panel voltage indicator.



Turn on only the LLM interconnect switch. The voltage indicator will show the state of charge in the yellow zone. Note the position of the indicator. Turn off the interconnect switch.

Turn on only the vehicle master switch. The indicator will show the state of charge of the batteries in the hull. Turn off the switch.

If there's a big difference between the LLM and hull batteries as shown on the voltage indicator, report it. Your mechanic will use the battery tester, NSN 6630-00-105-1418, from the No. 1 Common shop set to check the batteries.



For Mechanics

If you exchange batteries at the DX point or at DS, don't assume the ones you pick up are OK. Check each one with the battery tester before you take it.

Make sure battery post clamps and connections are clean and tight. Check them by hand. Use wrenches only to tighten loose hardware.

If batteries check out OK and you still have charging problems, check the charging voltage of the alternator. Eyeball Pages 6-478 and 6-479 of TM 9-1450-646-20-1.

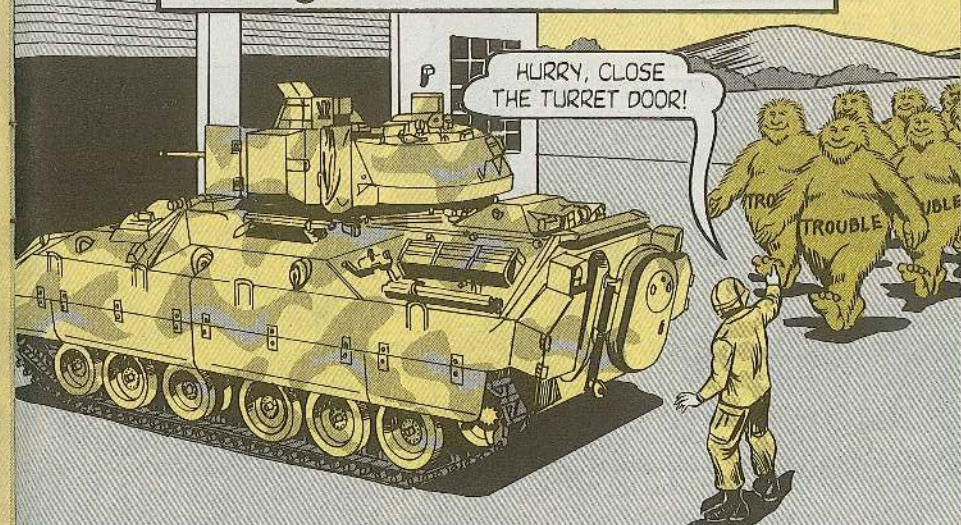


M101A1 Howitzer Bearing News

You'll find six substitutes on the AMDF for wheel bearing, NSN 3110-00-100-3117, used on the M101A1 towed howitzer. Only two of them will work, however. Either NSN 3110-00-100-4467 or NSN 3110-00-100-5936 is OK.

M2/M3 Bradleys...

Closing Out Turret Door Troubles

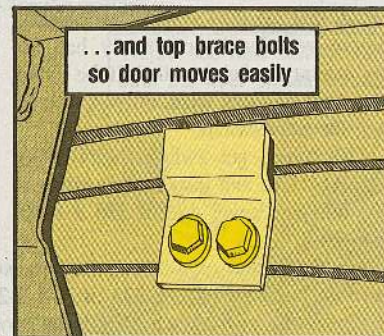
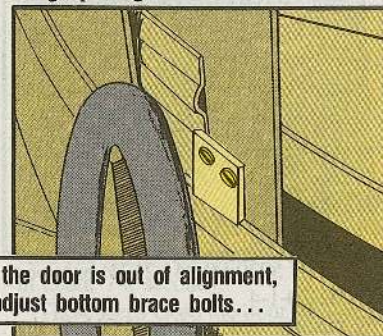


When you forget to close the turret door before turning the turret, trouble comes marching in.

An open door gets dented, banged, busted and knocked out of alignment. Then it won't slide so you can close and lock it.

Shut and latch the door every time you're going to turn the turret.

If the door's already messed up so it won't slide evenly, adjust the track brace bolts at the floor and ceiling. Get the track as level as you can and tighten everything up snug.



Never turn the turret with the door open. Damaging the door is nothing compared with the injuries that could happen if a buddy got caught in a turning turret.

Cold Start Switch Switch

THE COLD START FUEL PUMP IS BUSTED!

LOOKS LIKE YOU FORGOT TO SWITCH THE SWITCH.

All Bradley and some MLRS vehicles need a different cold start switch on the driver's instrument panel to head off engine damage and cold start fuel pump failure.

The switch now installed stays on when the driver turns it on. If he doesn't turn it off (and many don't), diesel fuel gets pumped past the piston rings and into the engine oil. If the switch is left on long enough, the cold start fuel pump burns up, too.

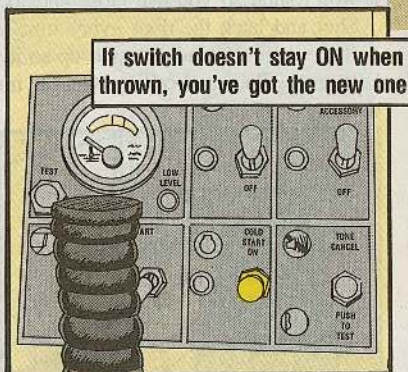
You mechs can prevent this damage by installing a momentary-hold type switch—it only works when the driver holds it ON.

For you MLRS mechs, make sure first of all that the new switch is necessary. Some vehicles have already had the momentary switch installed. If the switch does not stay ON when thrown, you've got the new switch.

Otherwise, get switch, NSN 5930-00-941-2174, and install it according to the info on Page 7-480 of TM 9-1450-646-20-4.

Bradley mechs, you'll need the same switch, NSN 5930-00-941-2174, but your info is found on Page 7-232 of TM 9-2350-252-20-1-4.

Check the new switch after installation by pushing and holding it ON. If the cold start light comes on, and then goes off when you release the switch, you're OK to go.



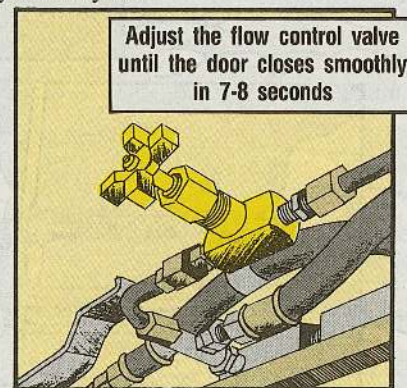
Rear Door Closing Adjusted

HOLD ONE, SOLDIER—THERE'S AN EASIER WAY!

You can correct a jerky or slow-to-close upper rear door on your ammo carrier in five easy steps:

1. Activate the primary or backup hydraulic system.
2. Open the upper rear door.
3. Turn the flow control valve counter-clockwise until it's fully open.
4. While closing the door, slowly turn the flow control valve clockwise until the door closes smoothly.
5. Open the door and repeat Step 4. Continue to operate and adjust the valve until you get no jerks and the door closes in about 7-8 seconds.

These steps close the door on system overpressure and cylinder damage. They will be added to TM 9-2350-267-10, but you can use them now.



Easier Smoke Generator or System Leak Check

Dear Editor,

Here's a way to check the smoke generator system for fuel leaks without starting the engine and creating clouds of smoke.

You don't expose soldiers to the hazard of a hot engine and the fumes of diesel smoke.

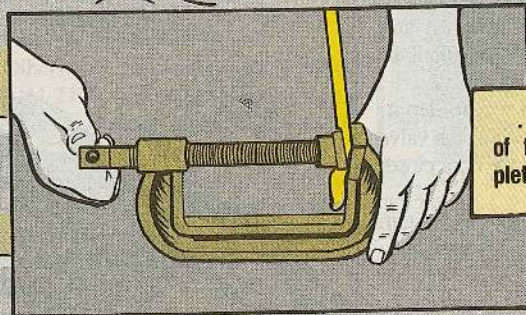
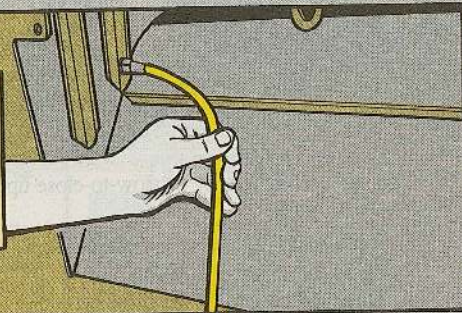
Here's our method:

1. Assemble a 24V DC power source and connector cable to provide power to the smoke generator fuel pump. You'll need 9 feet of 2-conductor stranded 10-gage cable with alligator clamps on one end and a plug-type connector on the other. The clamps come with NSN 5999-01-046-9397 (you'll need 2). The wire is NSN 6145-00-617-0310 (54 cents per foot).

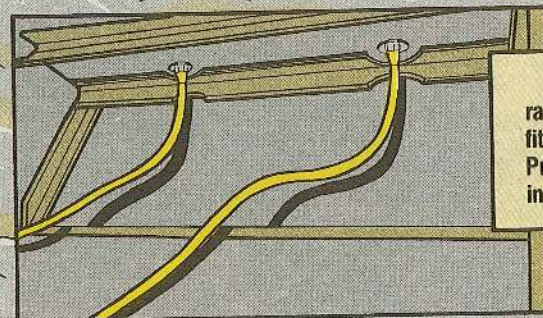
You can make the connector from plug, NSN 5935-01-173-7302; end seal plug, NSN 5935-00-369-7862; plug, NSN 5935-01-087-0152; and dust boot, NSN 2530-01-084-0009.

Connect Pin B to the positive lead, Pin A to the negative lead and Pin C to the dummy pin.

2. Connect two fittings, NSN 4730-00-069-1186, and two flare nuts, NSN 4730-00-902-8990, to two copper tubes about 75 inches long and 3/4-in diameter...

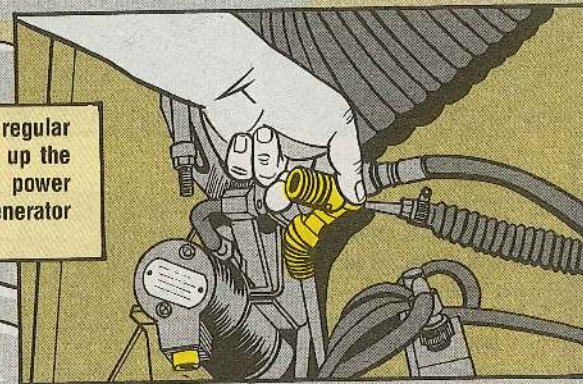


...then squeeze the free ends of the tubes, but don't completely close them off.



3. Remove the smoke generator nozzles and screws in the fitted end of the copper tubes. Put the other ends of the tubes into a bucket.

4. Disconnect the regular power cable and hook up the connector end of the power cable to the smoke generator fuel pump.



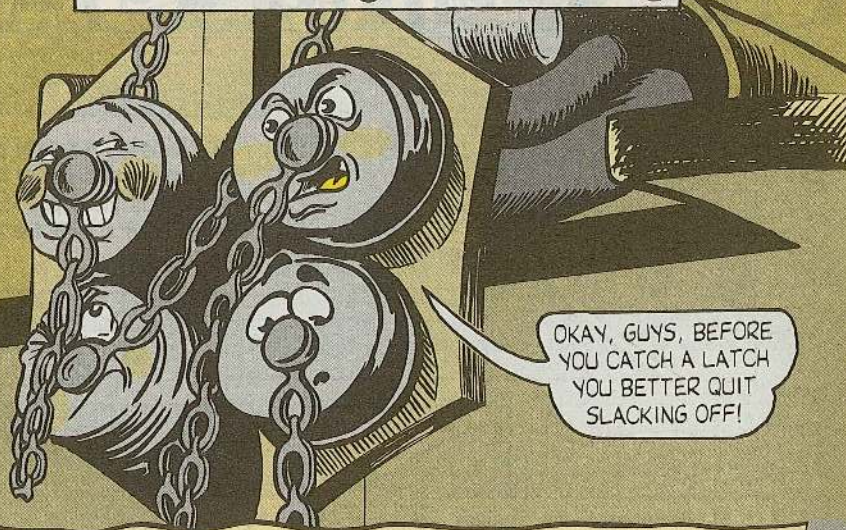
Connect the alligator clamps to your 24V DC power source (a battery cart or the vehicle's batteries). The system will pressurize and you can check for leaks without the heat or smoke.

No smoke, no fuel spillage and better inspections—that's what you'll have with this method.

Andre' Straus
Gen Spt Ctr, Benelux

(Editor's note: Doing it better, safer and easier is the way to go.)

Cross Chaining Cuts Catching



OKAY, GUYS, BEFORE YOU CATCH A LATCH YOU BETTER QUIT SLACKING OFF!

Dear Editor,
Missile storage bin inner support cable assemblies constantly have to be replaced because the latches on the missile cases catch the bracket's dust cap chains.

We've come up with a simple solution. Take the slack out of the dust cap chains by cross-chaining the caps. Put the top right cap on the lower left connection and vice versa. That way there's no hanging chain to catch on case latches.

Also, make sure the case latches are closed before you slide the case into the bin.

SFC David Wilkins
SSG Clifford Newman
Ft Stewart, GA

(Editor's note: Sounds like you chained down and latched up that problem.)

Add Protective Screen

When small pebbles are drawn through the air inlet grille on your M667 carrier, the stuff hits the fan and damages the fan tower.

Get your mechanic to make a screen to keep out stones. Here's what's needed:

ITEM	NSN
Wire mesh	5335-00-231-1261
Wire twisters	5120-00-305-2306
Lacing wire	9505-00-293-4208

HERE'S HOW TO DO IT!



Remove air inlet grille and retainers

Grille assembly

Retainers

Remove the air inlet grille and the two retainers from the engine compartment cover. Put the four screws and washers in a safe place.

Lay the grille down flat. Measure and cut the wire mesh to cover only the top surface of the grille. Use wire twisters to tie the screen to the grille.

Lock the mesh on the grille with lacing wire.

Screw the grille and retainers back on the engine compartment cover. All done.

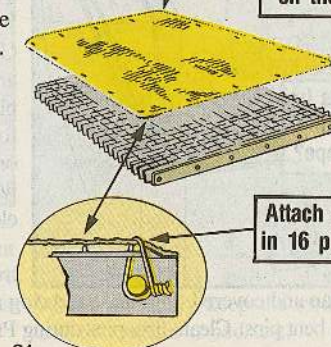
With the screen, you're back in business.

TB 43-0001-39-3 has the word.

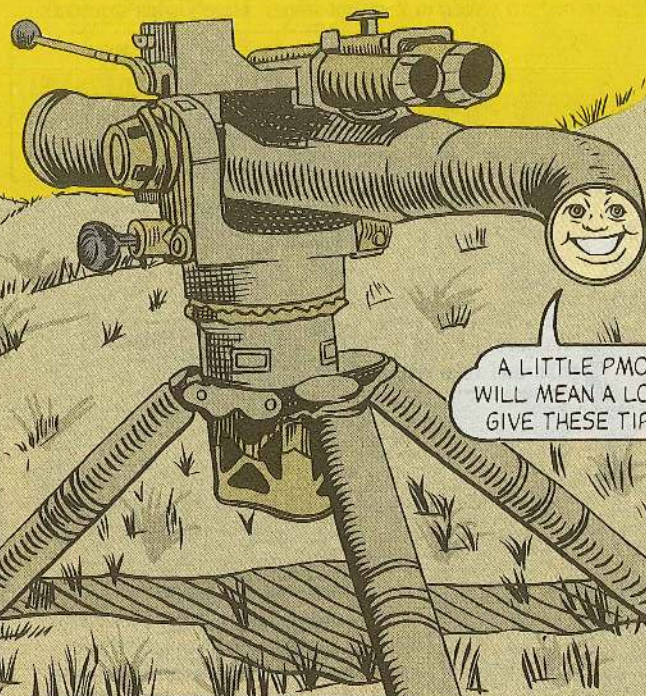
Cut wire mesh to cover only the top surface of the grille

Lock the mesh on the grille

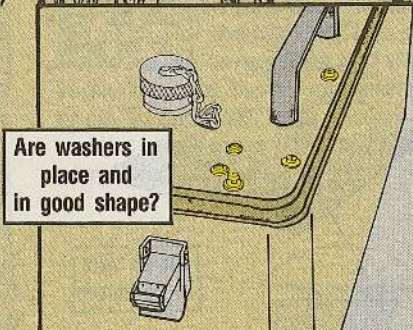
Attach wire in 16 places



Short but Sweet



A LITTLE PMCS HELP
WILL MEAN A LOT TO ME.
GIVE THESE TIPS A TRY



Are washers in
place and
in good shape?

Follow these PM tips to keep your TOW on target...and out of the shop.

- Make sure the washers on the Missile Guidance Set (MGS), instructor console, and the power supply modulator are in place. Eyeball the bottom of the washers for cracks and chunked out spots. Even one missing or damaged washer can let water in components and cause major electrical damage.

- Keep the MGS's receptacle and the traversing unit's W1 and post amplifier

plugs clean and covered. Dirt and sand clog receptacle holes and cause bad connections and bent pins. Clean dirty pins during PMCS. Report plugged receptacle holes.

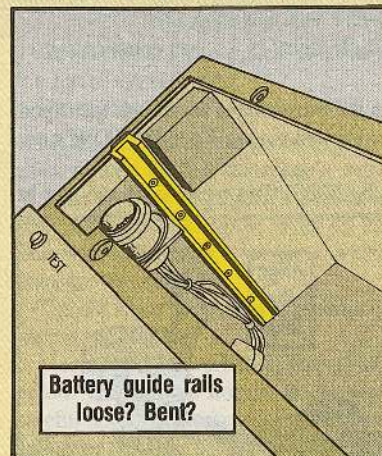
When your TOW's through firing, immediately plug the amplifier cable in its protective boot and latch the MGS cover.



When you're not
using it, keep the
post amplifier
cable plugged in
its protective boot

Be careful to keep cable connectors off the ground.

- Feel the MGS battery guide rails for



Battery guide rails
loose? Bent?

looseness and bends. Loose rails let the battery bounce around in the MGS. Bent rails make it hard to install or remove the battery. Tell unit maintenance about loose or bent rails.

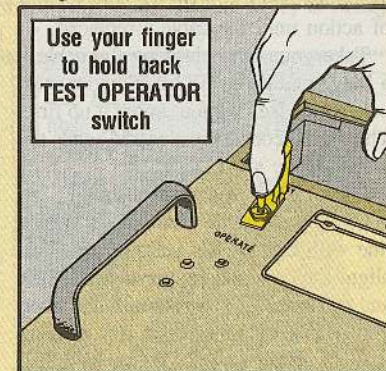
- Be sure the MGS is hooked up to the traversing unit and day sight tracker



Be sure the
MGS is hooked up

before you turn on the power. Otherwise, trapped voltage zaps MGS transistors.

Forget about trying to give yourself an extra hand during PMCS checkout by using a rubber band to hold back the



Use your finger
to hold back
TEST OPERATOR
switch

TEST OPERATE switch. The rubber band won't fully keep the switch back and that means a bad test.

MGS cable's the Key

PUSH ME AROUND AND I'LL PUT YOU OUT OF BUSINESS!



TOW missile systems are going down again...and again...and again because some operators handle the Missile Guidance Set (MGS) cable roughly and carelessly. The MGS shoots down the TOW more than anything else.

Does it really take much to use the MGS cable right? No...just common sense, a steady hand, and these cautions:

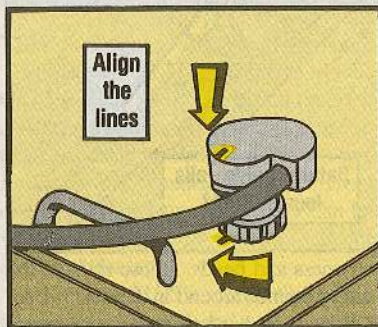
Never jerk and yank the MGS cable from the traversing unit through the tripod to the MGS—you'll rip the cable out of the azimuth cavity. Then the TOW's out of action until the cable's replaced.

Take your time plugging the cable into the MGS. Too many operators get in a hurry and bang the cable's connector onto the J1 jack without lining it up first. That bends connector pins and sends the TOW to the shop.

Look before you start pushing!

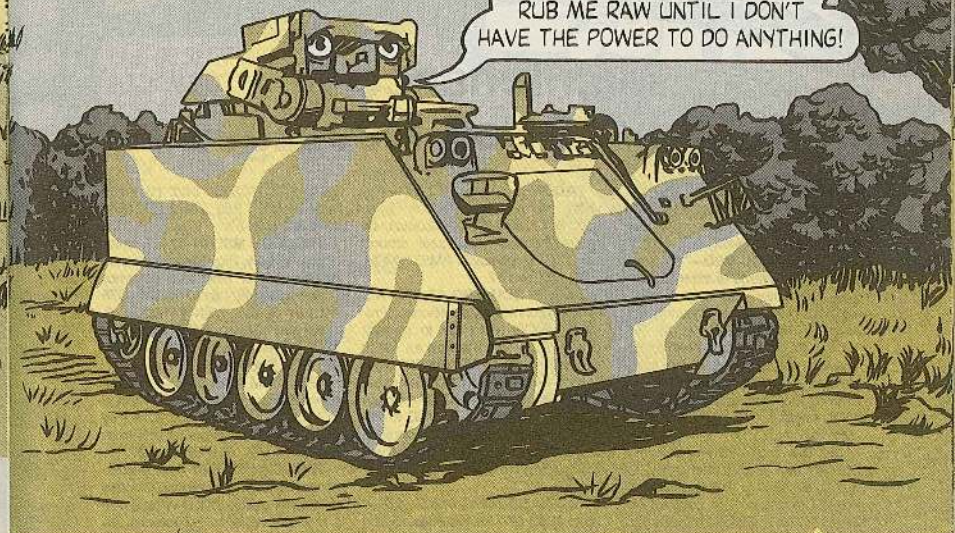
Line up the cable connector's yellow line with the MGS's yellow line. This aligns the keys and keyways on the jack and connector. If you get resistance when you push the connector in, try jiggling it to the right or left. If you still feel resistance, stop! One hard push will turn a minor problem into a major repair. Call your mech.

Get it? Look before you start pulling and pushing and flicking!



Slipping Up on Slip Ring Problems

THOSE FLOORPLATES JUST RUB ME RAW UNTIL I DON'T HAVE THE POWER TO DO ANYTHING!



As the slip ring cable goes, so goes your M901's turret. If the cable's damaged, the turret's powerless.

Do this as part of your BEFORE PMCS:

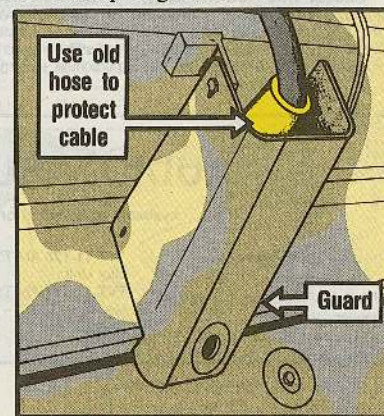
Make sure the plastic protective grommet, NSN 5325-01-025-4479, is firmly stuck around the left floorplate's cutout for the slip ring cable.

Also, feel the floorplate's mounting bolts for looseness. Loose bolts let the floorplate shift during operations, which damages the cable.

Tighten loose bolts. Report missing or slipping grommets.

Mechanics, take off the cable guard before you pull the floorplate. Be very careful not to pinch the cable when you pull up or put down the floorplate. Tighten floorplate bolts tight.

Give the cable extra protection by splitting 6 inches of old rubber hose and glueing it to the cable where it goes by the floorplate.





Maintenance & Safety-of-Use Messages

AMCCOM SOU-MSG— Advisory, Operational, Warns of M1 and M1A1 Tank loaders toe guard safety hazard, AMSMC-MA, 291945Z Dec 87.

AMCCOM SOU-MSG— Advisory, Operational, Warns of safety hazard when Bradley Fighting Vehicle system's gun gyro is disconnected, AMSMC-MA, 042230Z Dec 87.

CECOM SOU-MSG— Advisory, Operational, Deadlines lithium-sulfur dioxide batteries made by Saft America, contract No. DAAB07-85-C-H326, lot No. 0788A, AMSEL-SF-SEE, 2022157Z Nov 87.

CECOM SOU-MSG— Advisory, Operational, Deadlines lithium-sulfur dioxide BA-5590/U batteries made by Power Conversion Inc., contract No. DAAB07-85-C-H334, lot No. 02870, AMSEL-SF-SEE, 171200Z Nov 87.

CECOM SOU-MSG— Advisory, Warns of a hazardous electrical ground connection fault between the chassis of the TS-421C Audio Oscillator, NSN 6625-00-435-2588, and the A/C power plug, AMSEL-SF-SEC, 181210Z Nov 87.

CECOM SOU-MSG— Advisory, Provides new shut down procedures for Test and Repair Station, AN/MSM-105V, NSN 6625-01-095-9312, AMSFL-SF-SEC, 081445Z Dec 87.

TACOM SOU-MSG-87-84— Advisory, Technical/Maintenance, Follow up to SOU MSG 87-78. Recommends replacement of poor seal around M901 ITV cargo hatch, AMSTA-MCB, 071300Z Dec 87.

TACOM SOU-MSG-87-57— Advisory, Technical, Maintenance, Provides PMCS reference to prevent brake failure when pulling an M870 semitrailer with an M916/M920 truck tractor, AMSTA-M, 241430Z Aug 87.

TACOM SOU-MSG-87-76— Operational, Follow up to SOU MSG 87-25, prohibits using a 15-ton tilted trailer, NSN 2330-01-080-8141, to carry a D5B dozer, AMSTA-FHV, 141620Z Oct 87.

TACOM SOU-MSG-87-87— Follow up to MSG 87-76. Deadlines 15-Ton tilted trailers and provides guidance for one-time inspection, AMSTA-M, 081400Z Dec 87.

MICOM MSG-86-1— Advisory, Provides guidance to check for improper markings on TOW practice missiles, AMSMLC-AM, 131700Z Nov 87.

TROSCOM MSG-87-35— Maintenance Advisory, Warns of breaks to the main parachute container bottom flap stiffener used on interim ram air parachute systems, MT1-XX, NSN

1670-01-212-3335, and provides replacement info, AMSTR-MES, 021510Z Dec 87.

TROSCOM MSG-87-37— Maintenance Advisory, Provides maintenance procedures for electronic governor control unit, NSN 6110-01-134-0576 used on 30-KW, NSN 6115-00-118-1248, and 60-KW, NSN 6115-00-118-1253, generator sets, AMSTR-MES, 021700Z Dec 87.

TROSCOM MSG-87-38— Maintenance Advisory, Configuration change to Aircraft Crash and Structural Fire Fighting Truck axle spring brackets, AMSTR-MES, 161500Z Dec 87.

TROSCOM MSG-87-41— Maintenance Advisory, Operational, Provides procedure to correct low voltage output at convenience receptacles on 5/10-KW Gen. sets, NSN 6115-00-465-1044 and -1030, AMSTR-MES, 291500Z Dec 87.

TROSCOM SOU-MSG-22-87— Deadlines M3, Toxicological Agents Protective Coveralls, NSN 8415-00-099-6962, -6968, -6970 and 8415-01-105-2535 made by Interstate Mfg. Co. (Frederick), AMSTR-MES, 291500Z Dec 87.

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

NTC...

Desert Lessons Learned

THE DESERT WILL GIVE YOUR EQUIPMENT THE TOUGHEST TEST IT'S EVER HAD. IF YOU HAVEN'T CAREFULLY DONE EVERY BIT OF PM, YOUR EQUIPMENT WON'T HAVE A CHANCE

Every Chance You Get:

- ★ Measure oil and water levels
- ★ Watch gages for warning signs
- ★ Eye batteries for cracked cases or low fluid levels
- ★ Clean your gear
- ★ Cover unused glass surfaces
- ★ Report faults to your mechanics

BE PREPARED. DO YOUR PMCS LIKE YOUR -10 TM SAYS. READ AND HEED TB 43-0239, MAINTENANCE IN THE DESERT

AUDIO-VISUAL STUFF

Available at battalion or post Learning Center

TV Tapes

TVT 9-37 PMCS on the M99A1 Recovery Vehicle

TVT 11-176 AN/TYC-39 Video Display Unit

TVT 11-177 AN/TYC-39 Automatic Message Switch - Random Access Storage Unit

TVT 11-188 AN/TYC-39 Communications Equipment Support Group

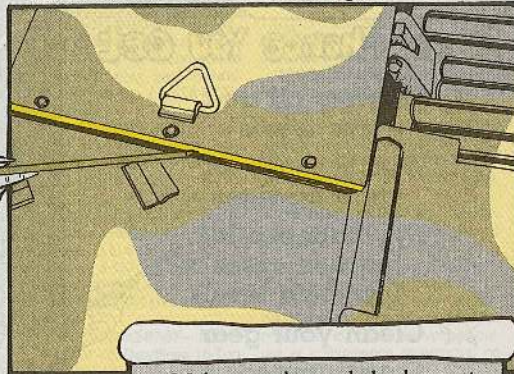
Black and white photostats of this material are available from PS for reprinting

Tanks

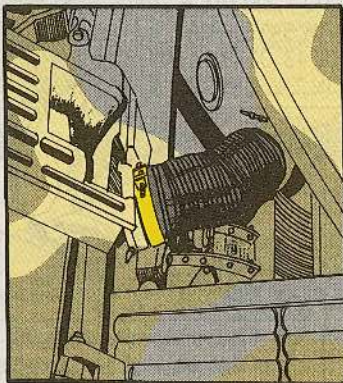
Check the air induction system every day. Just 30 miles of driving in the desert with a plugged-up air intake can ruin an expensive engine.

On the M48A5 and M60-series tanks, pull the inspection plugs on both air cleaner boxes to look for dirt. Make sure all the bolts in the cover on the air cleaner box are in and tight.

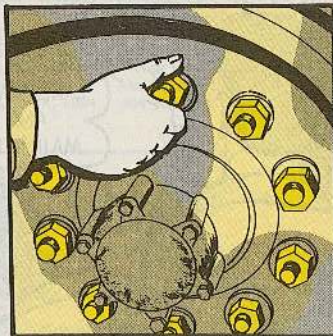
EYEBALL THE AIR CLEANER BOX SEALS FOR DAMAGE...LIKE CRACKS OR BREAKS.



Make sure air hoses are connected and in good condition. Report any problems.



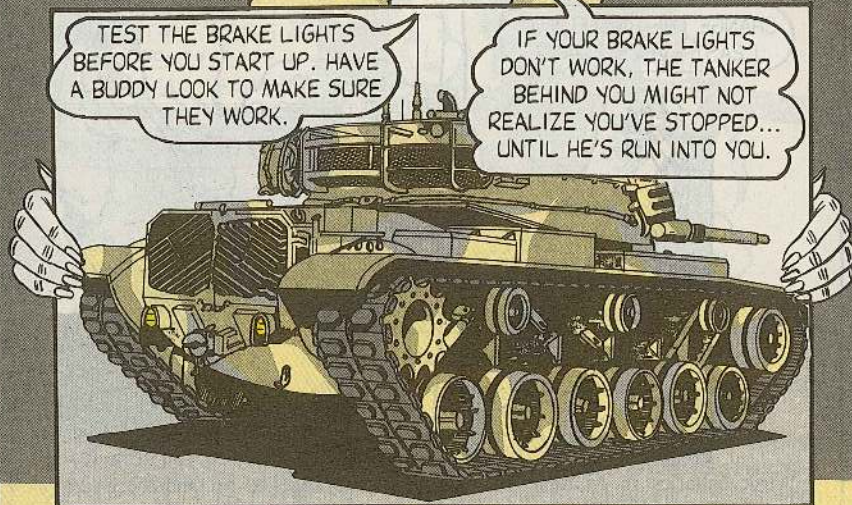
Make sure the roadwheel mounting and drive sprocket bolts are tight before you start up and at every halt. Look for shiny spots, rust or



any signs of looseness. Rough terrain shakes bolts loose. Loose bolts damage things like final drives and drive sprockets.

TEST THE BRAKE LIGHTS BEFORE YOU START UP. HAVE A BUDDY LOOK TO MAKE SURE THEY WORK.

IF YOUR BRAKE LIGHTS DON'T WORK, THE TANKER BEHIND YOU MIGHT NOT REALIZE YOU'VE STOPPED... UNTIL HE'S RUN INTO YOU.



Drive cautiously. Driving in a convoy in the desert creates clouds of dust. Stay at least 50 meters behind the tank in front of you. That gives you plenty of stopping room.

Never neutral steer in soft sand. Sand builds up in the final drive sprockets and your track's thrown in a flash.

Before you load the main gun, look down the barrel for obstructions. In the desert, rocks and sand thrown up by other vehicles can fly into the barrel. Even a rock no bigger than a golf ball can result in a blown barrel.

Keep optics covered when you're not using 'em. Blowing sand can pit and ruin

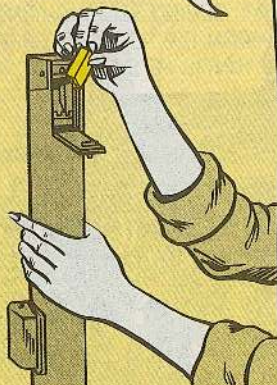
Cover optics



optics in minutes. Use only cleaning compound, NSN 6850-00-227-1887, to clean lenses. Other compounds can scratch them.

MILES

CHANGE THE BATTERY AT
LEAST EVERY 3 DAYS



Weak batteries in Multiple Integrated Laser Engagement Systems mean your MILES can't sense or send. Three days in the desert is the max for MILES batteries.

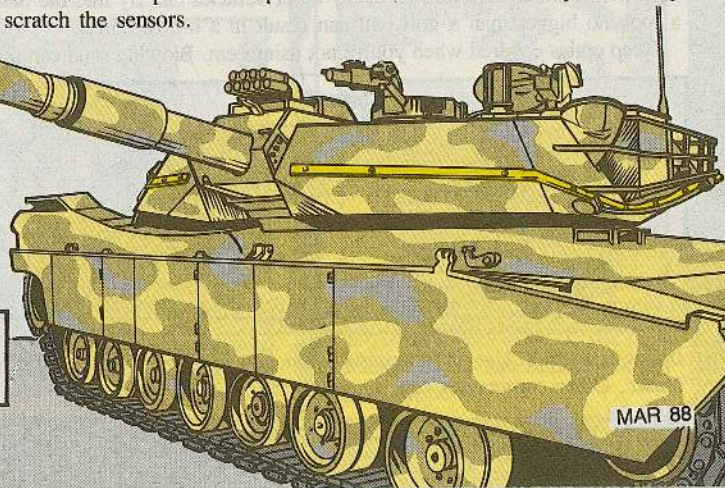
WHEN YOU
TAKE OFF YOUR
MILES TORSO
BELT, LAY
IT DOWN.
DON'T
DROP IT!



The belt's heavy. If you drop it, sensors are knocked off and the buzzer's broken. Never hang anything—like your canteen—from the torso belt. You'll break the wire that runs between the sensors and buzzer.

Clean all MILES belts daily, especially the one on your vehicle. Dirt and oil shorten a belt's life and keep sensors from sensing. Brush off dirt from the belt. Rub out oil with a damp cloth. Wipe the sensors clean with a dry cloth only. Brushes scratch the sensors.

Clean
MILES
belts



MAR 88

NO ROUGH STUFF WITH
THE VIPER MILES

THAT MEANS
TREAT IT LIKE A
REAL WEAPON

MILES

THAT'S RIGHT! NEVER
TOSS IT DOWN OR THROW
IT IN A TRUCK

Keep it in its case until you're to use it. Otherwise, you'll damage an expensive piece of equipment.

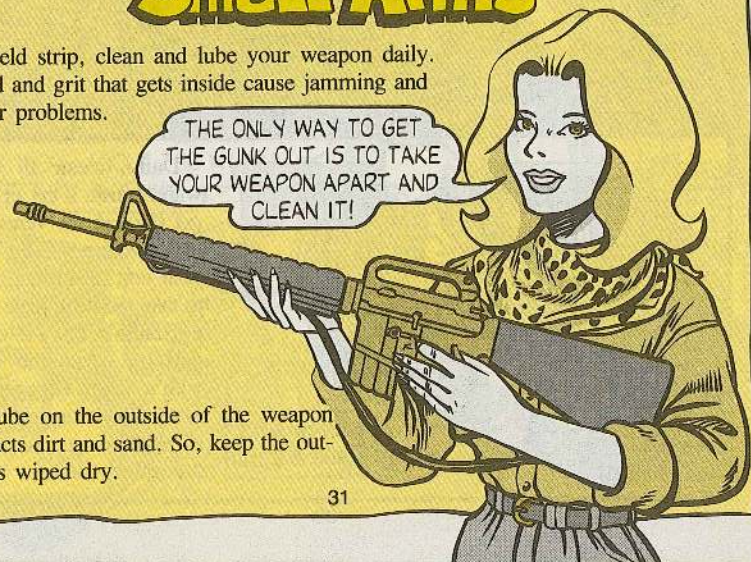
Remember, a MILES missile system that uses an ATWESS cartridge has a dangerous backblast. Never stand directly behind the launcher when you load or fire... it could be your last stance.

Small Arms

Field strip, clean and lube your weapon daily. Sand and grit that gets inside cause jamming and other problems.

THE ONLY WAY TO GET
THE GUNK OUT IS TO TAKE
YOUR WEAPON APART AND
CLEAN IT!

Lube on the outside of the weapon attracts dirt and sand. So, keep the outside wiped dry.





NOW, LET'S GO
OUTSIDE FOR
SOME MORE TIPS!

COMMO

IN THE HEAT OF
THE DESERT, YOU'VE
GOT TO GIVE YOUR
COMMO EQUIPMENT
ROOM TO BREATHE

IF YOU PILE OTHER GEAR
ON AND AROUND COMMO,
HEAT QUICKLY BUILDS UP
IN YOUR RADIO AND BURNS
OUT CIRCUIT CARDS.
THEN YOU'RE SILENT
IN THE MIDDLE
OF NOWHERE!

Daily, clean all vents
with a brush. If the air can't
get through the vents, the
radio overheats. In the field,
your unit repairman needs
to take the back plate over
the radio's fan off every
day and clean the vents
with a brush. Clogged fan
vents are the biggest cause
of burned-out receiver-
transmitter motors.

Clean vents
with a brush

If you have radio sets AN/PRC-25
or AN/PRC-77, push the pressure
relief valve on the battery box out
to make sure it doesn't stick. Brush
the valve's screen clean. Sand can
clog the valve and block the screen.
If battery gas can't escape...
KABOOM.

BEFORE YOU LEAVE FOR THE
FIELD, MAKE SURE ALL YOUR COMMO
EQUIPMENT'S SECURELY LOCKED
DOWN TO THE VEHICLE

DRIVING IN THE DESERT
CAN BE LIKE RIDING A
BUCKING HORSE. UNLESS
LATCHES AND MOUNTS
ARE TIGHT, COMMO
EQUIPMENT CAN
BOUNCE OUT!

Bulldozers

The rocky, grating soil of the desert wears the cutting edges and end bits on
the blade real fast. Eyeball your bulldozer's cutting edge and end bits everyday.

THE CUTTING EDGE PROTECTS THE
BLADE. IT SHOULD NOT BE LESS THAN
3/4 INCH—ABOUT THE WIDTH
OF A PENNY.

Cutting edge
protects
the blade

Blade

Shelters

PARK YOUR VEHICLE-MOUNTED SHELTER SO THE VEHICLE'S FRONT END POINTS SOUTH!

THIS KEEPS THE SHELTER'S DOOR IN THE SHADE MOST OF THE DAY AND HELPS COOL THE INTERIOR IN THE DESERT HEAT.

Hang water-soaked burlap over air inlet filter

If your CO approves, help cool shelters without air conditioning by hanging water-soaked burlap cloth covers over the door air inlet filter. Wet the cloth often. Run the shelter's ventilation fan with the door closed.

Clean all door, side and exhaust vents daily when you're in the field. That lets air in and out of the shelter.

PUT GENERATORS IN FRONT OF THE VEHICLE AWAY FROM THE SHELTER'S DOOR. THIS HELPS KEEP EXHAUST GASES AND NOISE OUT OF THE SHELTER!



AIR MOBILITY

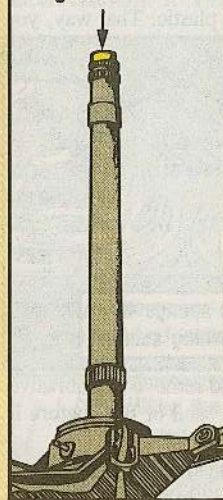
OH-58 Kiowa...

Cast an Eye to the Mast

There's only one way moisture can get inside your bird's main rotor mast and do a corrosion number.

That's through the top of the mast when the protective cap's not sealed.

Moisture gets in here



Some mechs forget to re-seal the cap when they remove it during the Phase Maintenance corrosion check.

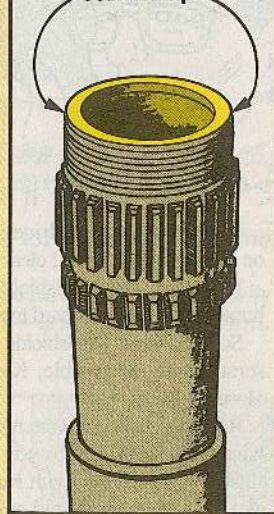
Or maybe they think sealant's not necessary, that the cap'll keep moisture out by itself.

W-R-O-N-G!

If you find corrosion inside the tubular steel shaft, you have to remove it and send it to AVIM for repair, just like it says in Para 6-93c of TM 55-1520-228-23.

If you don't find or suspect corrosion, no problem. Just be sure that you put a dab of sealant, NSN 8030-00-616-9191, around the lip of the cap before you re-install it.

Seal the lip



AVIATION MESSAGES

CAT 1 EIR Phone
AUTOVON 693-2086
(24 hours)

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

CH-47-87-12, SOF, Maint Mandatory, CH-47D, Inspection of transmission bearings, 022130Z Nov 87.
CH-47-87-13, SOF, Maint Mandatory,

CH-47D, Inspection of transmission bearings, 052030Z Nov 87.
OV-1-87-03, SOF, Technical, Inspection of MK-JSD ejection seat firing cable, 062300Z Nov 87.
UH-1-87-11, SOF, Operational, High performance hoist, 110100Z Nov 87.
UH-1-87-12, SOF, Maintenance Mandatory, Inspection for and purge of

certain fuel controls, 232100Z Nov 87.
MIM-UH-1-XSOF-08, Intermix of seat belt components, 061830Z Nov 87.
MIM-UH-1-XSOF-09, Servo cylinder assembly, 062130Z Nov 87.
MIM-UH-1-XSOF-10, Opening or closing cargo doors while in flight and premature cracking of the cargo door retainer, 171800Z Nov 87.

Reduce Windshield

PROPER CLEANING HELPS
TO REDUCE GLARE!

Wash the windshield with a mild detergent and water solution. NSN 7930-00-880-4454 gets a gallon of detergent, while NSN 7930-00-281-4731 gets a 50-lb box. You need only 1 to 2 ounces of detergent for each gallon of water.

You can use a soft cloth, sponge or chamois to carry the washing solution to the windshield, but use only your bare hand against the plastic. That way, you

It's hard enough to drive into a sunset or sunrise with a clean, clear windshield.

But when the windshield is dirty or scratched or both, it's hard to see anything.

So keep those windshields as clean and scratch free as possible, Kiowa mechs. Here's how:

Remove rings and watches from your hands and arms before you start. Then flush the windshield with running water as you loosen dirt, sand and mud with your bare hand.

Flush windshield
and loosen dirt



Use a sponge to
carry washing solution

can easily feel and remove any abrasive material, such as sand or dirt, before it scratches the plastic surface.

Dry the windshield with a clean, damp chamois, NSN 8330-00-965-1725, or a soft, clean cloth, NSN 8305-00-656-1259, to keep it from streaking.

Dry with a clean
cloth or chamois



GLARE

Never use hard, dirty or gritty cloths for cleaning or polishing plastic windshields. Never keep rubbing the plastic surface of a windshield after it's dry. It builds up an electrostatic charge which attracts dust particles to the surface.

If you suspect that the surface is charged, gently pat or blot it with a damp, clean chamois. It removes the charge as well as the dust.

Just for Openers

Dear Editor,

Since our Kiowas have been modified by MWO 55-1520-228-50-25, the turnlock fasteners for the new tall rotor driveshaft covers are a real pain.

You have to use a flat-tip screwdriver and a lot of force to turn the fasteners.

If the screwdriver slips when you apply pressure, you could easily damage the cover—maybe even put a hole in it—and injure your hand. It's happened more than once in our unit.



When the screwdriver slips,
you damage the cover



Replace flathead fasteners
with turnlock fasteners

So we replaced the original flathead fasteners with stud assembly, turnlock fastener, NSN 5325-00-839-2517. It has a wing tip that's much easier to push and turn. It's a lot safer, too.

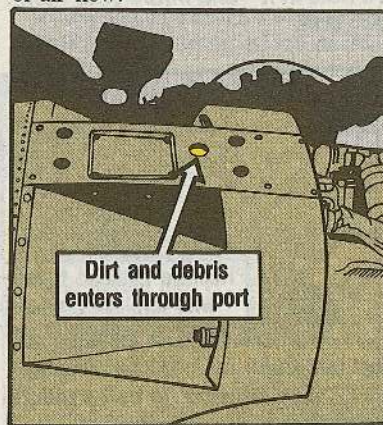
CW2 Steve Gray
Ft Campbell, KY

(Editor's note: Sounds like you've got a handle on the situation!)

Anti-Ice Insurance



The anti-icing valve temperature sensor hose or tube on your bird's engines can get clogged with insects and other foreign objects. This cuts down on the amount of air flow.

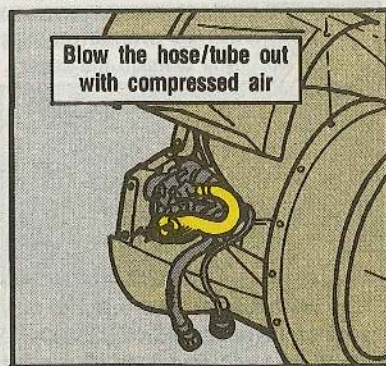


If there's not enough hot air flowing to the engine inlet, ice gets sucked into the engine and could cause a lot of damage.

To keep hot air flowing, you need to clear that hose/tube (Item 27 of Fig

622 in TM 55-1520-237-23P2) often, especially just before and during cold weather.

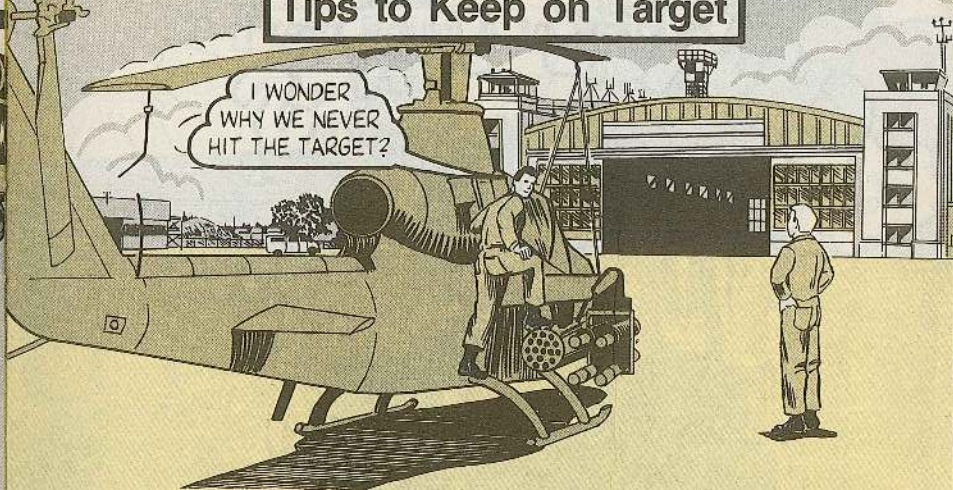
To do that, remove the ice detector cover and temperature sensor hose/tube like it says in Task 9 of TM 55-1520-237-23-6.



Be sure to point the air hose away from you and others.

If compressed air won't clear it, replace the hose/tube with tube assembly, NSN 4710-01-157-8026.

Tips to Keep on Target

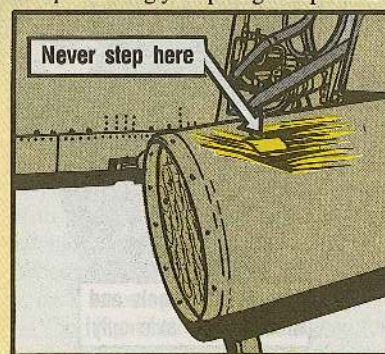


There's a lot more to shootin' straight than sighting your target and pullin' the trigger, Cobra crews.

Keepin' your weapons clean and well-lubed plays a major role in straight shootin', shore-nuff!

But some things you DON'T do play a mighty big part in hittin' the target, too.

Like not stepping on the rocket launchers when you're gettin' in and out of the cockpit or doing your preflight inspections.

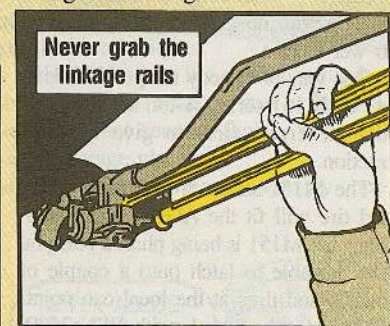


Every time you step on the launcher, you sacrifice accuracy for convenience.

Too much weight on the launcher will knock it out of kilter. Then it has to be boresighted again.

That's why all straight shooters step up from the skids directly to the bird's wings when they need to get up top. Likewise, when they climb down.

Another thing straight shooters don't do is grab the linkage rails of their Helmet



Sight System (HSS) for support when they're getting in and out of the cockpit.

That'll bend the rails and when the rails are bent, you probably couldn't hit the ocean with your 20-MM cannon.

CHANGE TIRES,

WHAT A RELIEF—
NO MORE SLIPPIN'
AND SLIDIN'

FOR BETTER TRACTION

The new aviation ground power unit (AGPU) is so powerful it can sometimes end up with no ground power at all. That high power causes it to lose traction in wet terrain.

One way to remedy the problem is to put on M151-series ¼-ton truck wheels and all-terrain tires to give it better traction.

The M151-series ¼-ton truck wheel and tire will fit the AGPU's axle hub. Since the M151 is being phased out, you may be able to latch onto a couple of wheels and tires at the local can point.

Or order the wheels with NSN 2530-00-150-7832, tires with NSN 2610-00-678-1363 and tubes with NSN 2610-00-269-7332.

Never install ¼-ton truck tires on the AGPU's steerable front wheels. There's not enough clearance between the tire and the frame for making sharp turns.

Use M151 wheels and
tires on rear axle only!

From Point A to Point B

I'M COMING
UNGLUED!

A lot of flight helmets are getting zapped between flights.

Some crewmen leave their helmets in their POV when it's parked in the hot sun all day. Heat really does a number on the adhesive that binds the liner to the shell.

Protect your helmet by storing it in a cool, dry place between flights. Your wall locker in the maintenance hangar is an ideal storage place.

Other helmets get zapped by rough handling when crewmen have to fly commercial from Point A to Point B.

They stuff it in their kit bag and check it to their final destination, instead of taking it on board as carry-on luggage. When they do that, they're lucky to get it back in one piece.

Your flight helmet's not designed for extremely rough handling. And it can come unglued when it's exposed to high temperatures.

NEVER ABUSE
YOUR HELMET,
CREWMEN!

Be Timely and Be Accurate

Some aircraft components are being used longer than they should be because historical records are posted late—or they're posted wrong.

That could cause an in-flight failure, bird mechs!

How'd you like to trust your life to a main rotor trunnion, for example, that's still operating 300 hours past its established service life.

YOU MUST COMPLETE A DA FORM 2410 ON ALL AIRCRAFT COMPONENTS LISTED IN COLUMN I (COLUMN G FOR THE T-700 ENGINE) OF THE TABLES IN APPENDIX I OF DA PAM 738-751...

...WHENEVER THOSE COMPONENTS ARE REMOVED OR INSTALLED!

COMPONENT REMOVAL AND REPAIR/OVERHAUL RECORD									
For use of this form, see TM 38-750; the proponent agency is DCS LOG.									
SECTION I - IDENTIFICATION					REQUIREMENT CONTROL SYMBOL CSGLD-1063(R3)				
1. NOUN NOMENCLATURE (Comp)		2. MODEL		3. NATIONAL STOCK NO.			8. FAILURE CODE		
Engine Assy		T53L13B		2840-00-134-4803			301		
5. MANUFACTURER'S CODE		6. PART NO.		7. USAGE SINCE LAST INST (hrs)			10. WUC		
97499		1-000-060-10		420			720		
a. PRIOR OVERHAULS		b. USAGE SINCE NEW (hrs)		c. USAGE SINCE OVERHAUL (hrs)			15. SIGNATURE		
1		1920		720			Daniel Ondree		
11. REMOVED FROM (Noun Nomenclature)		12. MODEL		13. NATIONAL STOCK NO.			14. SERIAL NO.		
UH-1H		UH-1H		1520-00-087-7637			70-15874		
24. ORGANIZATION		25. UIC		26. MANHOURS TO REPAIR/OVERHAUL			29. SIGNATURE		
plus Christy Army Depot		TX		WOMIAA			John Wardlow		
27. a. SERVICEABLE		d. REBUILT		b. REASON FOR			c. MAIN CODE		
b. REPAIRED		e. UNSERVICEABLE		f.					
c. OVERHAULED									
REMARKS									

The only exception is when a reportable component is removed but reinstalled on the same bird as part of the same maintenance action. Then there's no need to complete a 2410.

When you fill out the 2410, do it by the book, DA Pam 738-751. Fig's 2-12 through 2-26 show exactly how to fill in each block of each section, including removal, repair/overhaul and installation.

Take extra care listing the time since new and time since overhaul in Block 9. If you're not sure of the time-since-new and time-since-overhaul, wait until you get the info before installing the component.

You can get the component historical reconstruction info by calling AVSCOM on AUTOVON 693-1879 or Commercial 314-263-1879.

If you need help on several components and time's not critical, write to:

Commander
AVSCOM
ATTN: AMSAV-MMD
4300 Goodfellow Blvd
St Louis, MO 63120-1798

WHEN YOU REMOVE A RETIREMENT LIFE ITEM (RC), MUTILATE IT BEFORE YOU TURN IT IN!



AN/GRC-122, -142...

Power Switch Takes Time

"Presto, change-o" may do wonders for magicians—but it can only damage your RATT rig when you're changing from one power source to another. You don't want any sudden changes.

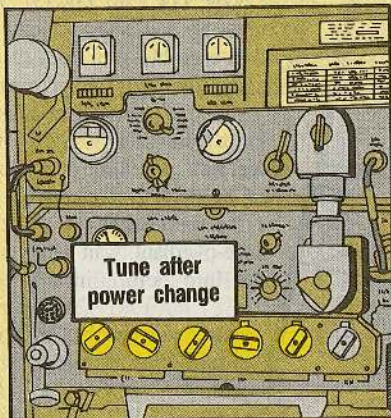
Your AN/GRC-122 or -142 radio teletypewriter set will run on AC or DC, but it must have a short cool-down in between.

When you try to change from AC to DC or vice versa without shutting down, a built-up current surge will cause arcing or spikes. This'll damage your commo gear.

You need to shut your set down, then change power sources.

Power up again like it says in Para 2-10 of TM 11-5815-334-10.

Remember to tune your AN/GRC-106 radio set each time the power has been turned off and back on.



YOU DON'T HAVE TO BE A MAGICIAN TO SWITCH POWER ON YOUR RATT RIG. A LITTLE COMMON SENSE WILL DO THE TRICK!



Drive Belt NSN

If the magnetic tape cartridge in your AN/TSC-99 communications central is useless 'cause the drive belt's broken, get another. Use NSN 3030-01-087-2233 to get the pre-conditioned belt.

Tone-Signaling Adapter NSN

The tone-signaling adapter for your SB-22 switchboard is NSN 5805-01-040-9653. The number in Page D-2 of TM 11-5805-262-12 is wrong.

TA-312 Telephone Set...

Decals for Handsets

Dear Half-Mast,

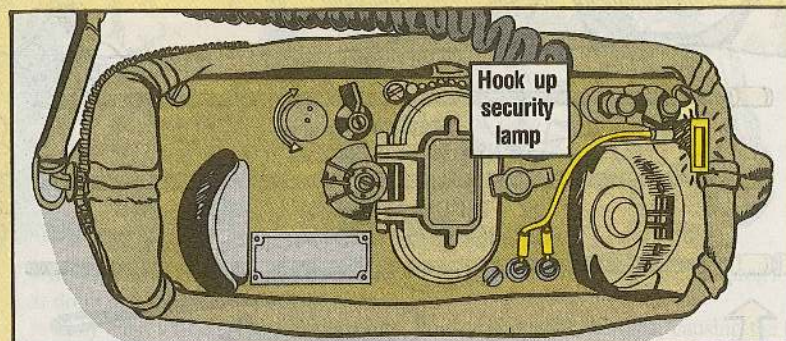
I have been trying to find the **SECURITY WARNING** label that is supposed to be on the H-60 handset which is part of the TA-312 telephone set. Can you help?

WO S.V.

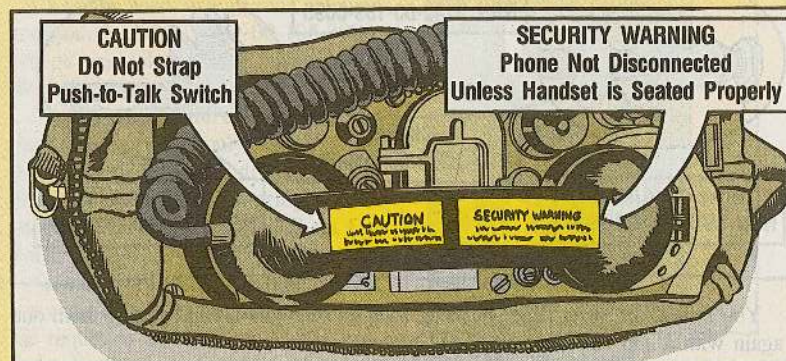
Dear Mr. S.V.,

Sure can. NSN 7690-00-877-6864 is for the label.

As a reminder to let you know your phone is secure, add the security lamp, NSN 5805-00-782-9210, like it says in Para 2-3.1 of TM 11-5805-201-12.



While you're at it you might want to get the **CAUTION** decal, NSN 7690-00-877-6865, which tells you not to strap the push-to-talk switch.



MAR 88

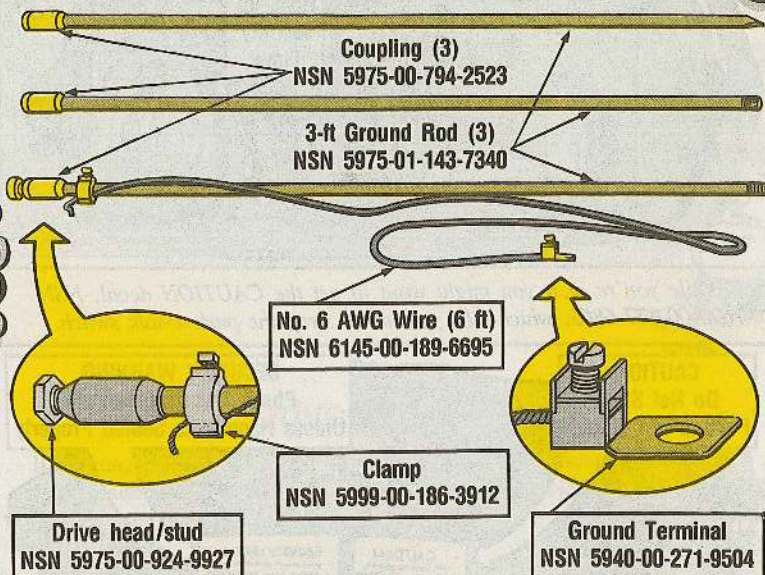
45

Half-Mast

For a Sound Ground

If you're looking for parts for ground rod assembly, NSN 5975-00-878-3791, look here. The ground rod consists of three rods, each 3 feet long, 6 feet of No. 6 AWG stranded copper wire, 1 terminal lug, 1 driving stud, 1 clamp and 3 couplings.

IF YOU NEED A PART,
ORDER ONE OF THE
FOLLOWING NSN'S.



You'll have an easier time pounding rods into the ground and getting them out again with a slip hammer, NSN 5120-01-013-1676.

Never use the coupling as a drive head/stud.

TC 11-6 has a world of good info on grounding techniques.

Clean TRI-TAC "Switches"



Dirt on the Magnetic Tape Transport (MTT) and its head will send you a message you don't want to hear—silence.

A dirty head will either jam or snag the tape or it'll mark the tape, causing the wrong data to show up.

To keep the data right and moving, do this:

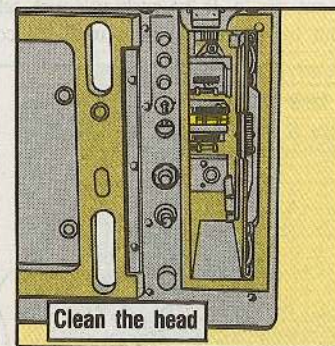
Clean the head, using Freon cleaning compound, NSN 6850-00-105-3084, (16-oz aerosol can) and swab, NSN 6515-00-890-1475.

Clean the MTT with a water-absorbent cleaning compound only. Get a gallon with NSN 6850-00-512-1097. You can get a 16-oz can by ordering CAGE 18598, PN MS175FREONTE on DD Form 1348-6. The RIC is B16.

To make sure you get the right cleaner, use code 2B—"Do not substitute. Only the requested item will do."

Apply the cleaner with a cobra brush, NSN 7920-00-134-1998.

Never spray Freon directly on a motor or bearing. Spray the cleaner on a swab.



Night Vision Goggle Nuggets

IF YOU EXPECT TO
SEE THE LIGHT, YOU
HAVE TO TAKE CARE
OF YOUR NIGHT
VISION GOGGLES

Scratched objective lenses, ruined face cushions, and exploding batteries make electrical parts on your AN/PVS-5 goggles about as useful as sunglasses in the dark. Keep your goggles' vision clear with these tips:

Take the objective lens caps off only when absolutely necessary...and put the caps back on as soon as possible. It doesn't take much to scratch a lens. Too many scratches and the lens has to be replaced. Remember, too, that you only remove the caps in darkness.

Never stow your AN/PVS-5's face cushion if it's wet at all. Left closed up in the storage case, the cushion may become moldy after only 24 hours. Then dry rot sets in. If the cushion's wet, take it off the goggles, wipe it dry, and leave it out for at least an hour until it's completely dry.

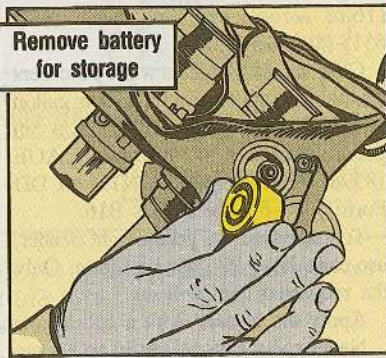


Protect lens
with caps

If the face cushion's wet,
remove it and let it dry



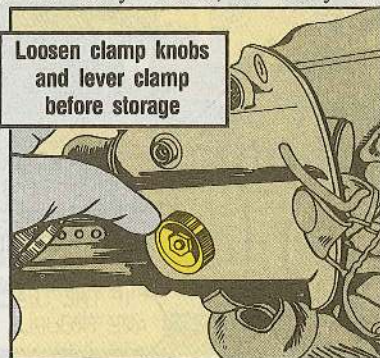
Remove battery
for storage



Before you stow your goggles, remove the battery. Left in, the battery can swell and explode.

Remember—you must loosen the lever clamp and clamp knobs before you stow the goggles. If they're tight when you close the lid, you damage the goggles' plastic face mask. If the objective lenses aren't drawn in as much as possible, the same thing happens. Also make sure the goggles fit snugly in the case before you close the lid. Out of position will mean out of action when you force down the lid.

Loosen clamp knobs
and lever clamp
before storage



Cover Blocks Knocks

Your CV-1548/G telephone signal converter will wind up damaged if you move out with the converter uncovered.

Stowed gear in your commo shelter, such as an AN/TRC-145 telephone terminal set, will break front panel switches and fuses on the converter if the cover is not in place. The next time you're ready to use the CV-1548, it won't be.

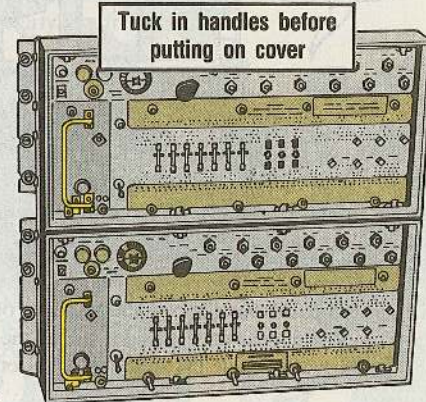
Give your converter an edge against damage. Always put the cover, NSN 5805-00-859-8436, over the front panel and controls.



Converter not being used?
Put on cover

Be sure to push the handles flush with
the panel before installing the cover.

Tuck in handles before
putting on cover



Keepin' Your Tractor on Track



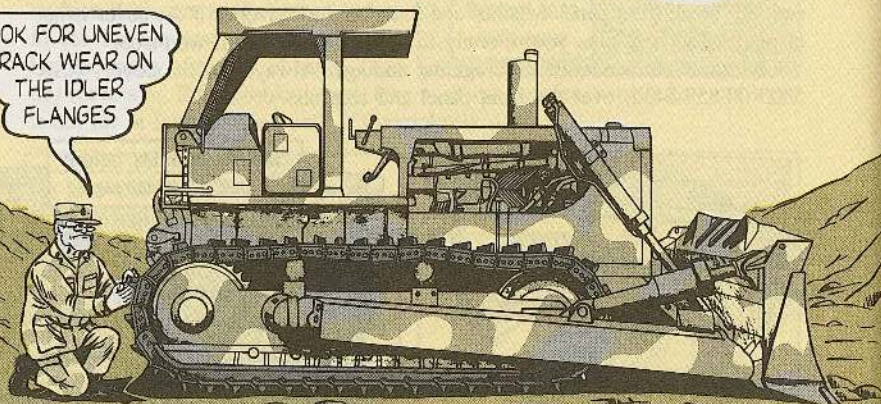
PUSHIN', DIGGIN', RIPPIN'—
THAT'S WHAT BIG CAT TRACTORS
DO BEST

AND THEY'LL PUSH THEIR
BEST TRACK FORWARD
IF THE TRACK AND UNDERCARRIAGE
ARE TROUBLE FREE. THAT'S YOUR JOB

Keeping the tractor's track turning calls for daily eyeballing of track shoes and other track hardware.

Before you move out in the morning, look for loose bolts, leaking seals, oil on the roller and uneven track wear. Report bum parts or anything that needs adjusting.

LOOK FOR UNEVEN
TRACK WEAR ON
THE IDLER
FLANGES



Lopsided wear means you've got an off-center idler. It needs adjusting with shims. Rapid wear on both sides means the wear strips of the shims guiding the idler are worn out or the roller frame is out of line. Report it now!

Dried mud on carrier rollers keeps them from turning. You'll get flat spots on the rollers and extra link wear. Remove mud before it gets as hard as cement!



Snake tracks
speed up
wear on all
track parts

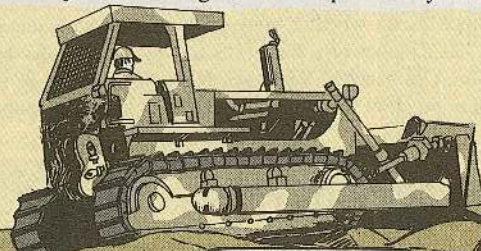
Look at the tracks behind your tractor. Crooked tracks—snake tracks—are caused by too much wear on internal pins and bushings. Snakiness speeds up wear on all track parts—rollers and idlers must work harder to keep the tracks in line—and link wear's quicker and uneven.

Got a tractor back from support with new parts? Check the roller frame alignment. The frames must be parallel. Find out by measuring between the tracks at the front and rear. The distance should be the same.

Sprockets, rollers and idlers must lead your tractor along a straight line. If they're out of line, the new parts won't last long.

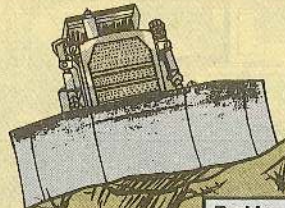
Besides daily PM, your tractor's track life depends on how you work the equipment.

Slam-bang driving over rocky ground, obstacles or rough 'n' tumble terrain smashes the tractor's weight back and forth from one roller to another. This is a fast way of shortening roller life—particularly the front rollers.



DRIVING SLOW AND
CAREFUL IS THE BEST
WAY TO KEEP A GOOD
TRACK RECORD.





Parking overnight on a hill causes seals to lose their shape

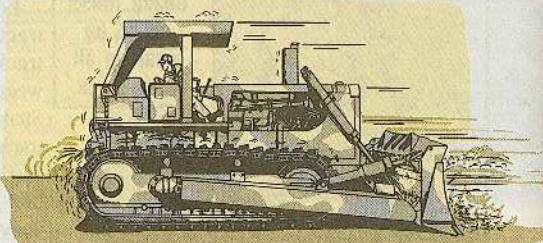
Next day, it'll take a while before the seals get back to the right shape. Meanwhile, you'll lose more oil. Rollers only hold about a pint. Without oil, the roller grinds itself up in a few hours.

Stop your tractor in its tracks, before you shift in or out of reverse. Shifting into reverse on-the-move puts extra stress on the transmission gear.

Back up slowly. Working in reverse puts pins and bushings under their greatest strain. High speed reverse just means faster wear 'n' tear.

Never take such a deep cut that the track starts slipping. Too much down pressure on the blade raises the front of the track off the ground. All the force is on the rear and the track starts spinning. Slipping track wears shoes fast!

Got a big job that calls for constant right- or left-hand turns? This wears one track faster than the other. Change your pattern now and then for balanced track wear.



Keep speed down. High speed over rough ground damages the front track and idlers. It knocks them out of line, too.

Never park your dozer on the side of a hill overnight. That puts a strain on the roller seals. . . and oil leaks out. It's also unsafe!

D7F...

Cat Fan Belts

The V-belt set you need depends on whether your tractor has a generator or an alternator—not whether it has a ripper or a winch, as the “Usable On Code” in TM 5-2410-233-20P tells you. Use matched V-belt set, NSN 3030-00-484-3219, for a tractor with an alternator or NSN 3030-00-417-1452 for a tractor with a generator.

Replacement Hose

NSN 4720-01-229-6402 gets a rubber hose that connects the transmission pump and oil cooler filter on the D7F tractor. This hose replaces the metal tube and rubber hose shown as Items 5 and 18 in Fig 54 of TM 5-2410-233-20P.

Ingersoll-Rand 250-CFM Compressors...



...that's just what you can get when you blow down the receiver-separator on your I-R 250-CFM compressor.

The blowdown valve's opening is pointed out—toward you—on the receiver-separator. When you open it to release pressure, the released air blows dust, dirt, and crud all over, even in your face.

But your mechanic can change all that by changing the direction of the opening on the blowdown valve.

Here's how:

Let the automatic blowdown valve relieve pressure from the system.

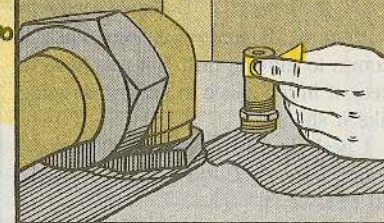
Carefully open the manual valve to release any trapped pressure. Keep your face and bare skin away from the opening!



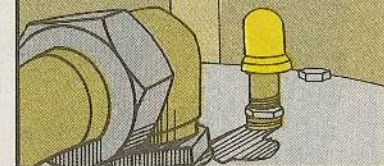
Remove the valve from the elbow using a pipe wrench, NSN 5120-00-227-1461, from the No. 1 Common shop set.

Unscrew the elbow from the pipe.

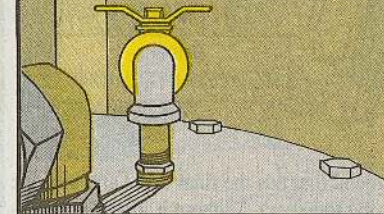
Wrap a couple of layers of anti-sieze tape, NSN 8030-00-889-3534, on the threads on the straight pipe and on the exposed threads on the elbow



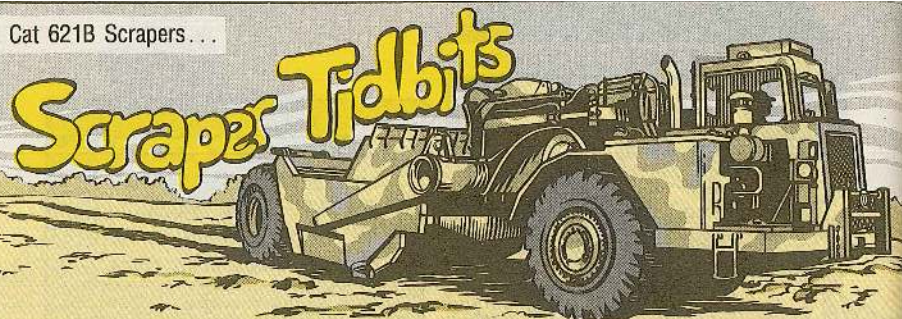
Screw the elbow onto the pipe hand tight. Use the wrench to tighten the elbow until it points away from the door



Screw the valve onto the elbow and tighten it. Make sure the control handle's on top



Now when you blow down the system, the air won't blow on you.

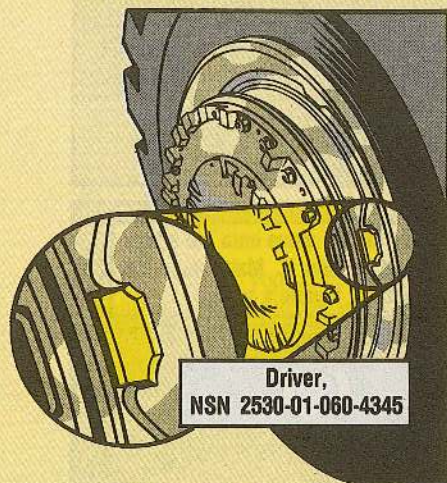


Your 621B scraper is tops when it comes to moving dirt. But you have to keep it in top shape to keep it scraping like it should.

Check tire pressure before operations. Front tires get 60 PSI and rear tires get 40 PSI.

Low front tires may slip on the rim, causing 'em to overheat and blow out. Or the tire-to-rim seal breaks and the tire goes flat.

When you have a flat front tire, you may lose the driver (that little piece of



metal that ties the final drive and the side ring together). Without it, there's no way to deliver power to the tire. Get a new driver with NSN 2530-01-060-4345.

Grease the brake camshafts during the 500-hour/3-month service. If you



neglect them, the shafts will bind—usually with the brakes on.

Then the brakes drag, the linings glaze, and you may have a tire fire!

Check the batteries during the weekly PMCS and look for dust.

Dust can settle around the batteries in the battery box. When the dust gets wet and packed in, the batteries are tough to



get out. Blow it out using compressed air before it gets packed in.

Clip for Safety

The load and ground terminal nuts on your generator need safety clips. They're not stocked, so you have to make your own. Use another safety clip from the generator as a pattern.

Here're the NSN's for the wire:

NSN 9505-	002A	003A	016A	017A	018A	021A	022A	023A	026A	112A	015A
00-804-3814 .042 inch			L-G			L-G			G	L-G	L-G
*01-049-0144 .050 inch	L-G	L-G			L			L	L		
00-596-1668 .051 inch				L-G	G		L-G	G	L = Load Terminal G = Ground Terminal		

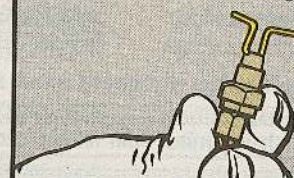
* Unit of issue is ea which equals lb.

You'll need about 3 inches of the wire. Be sure the wire is short enough so the clips won't touch another terminal or the generator frame in the open or closed position. Put the wire through the hole in the terminal.

Hold the terminal and bend both ends of the wire straight up. Keep the wire in as straight a line as you can with the terminal body.



Bend the wire into back-to-back 90° angles. The legs of both angles should be about 1/2-in long.



Bend the ends of each 90° angle down and around into a U-shape.



The homemade clip should hold the nut when you unscrew it to install the cable.



Use wire, NSN 9505-00-596-1662, for safety clips on larger generators.

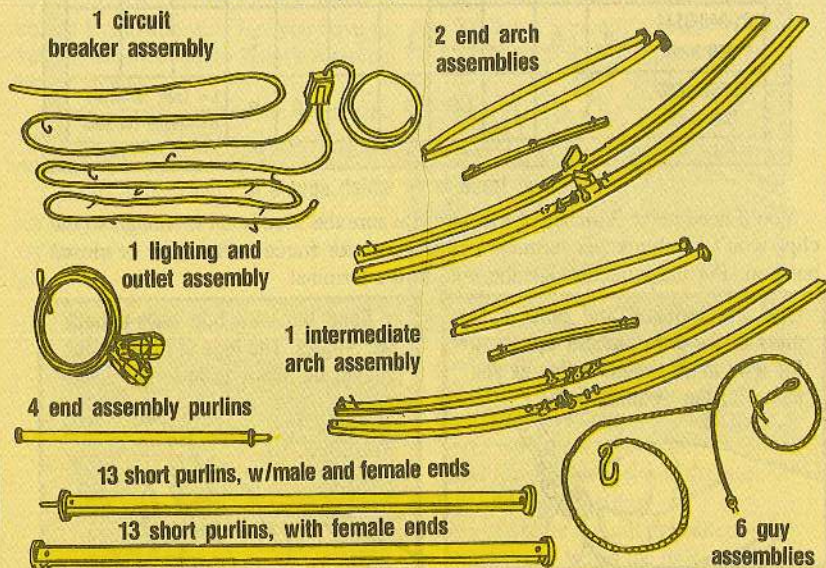
No wire? As a temporary fix, use an ordinary paper clip to make the safety clip.

Order Piece by Piece

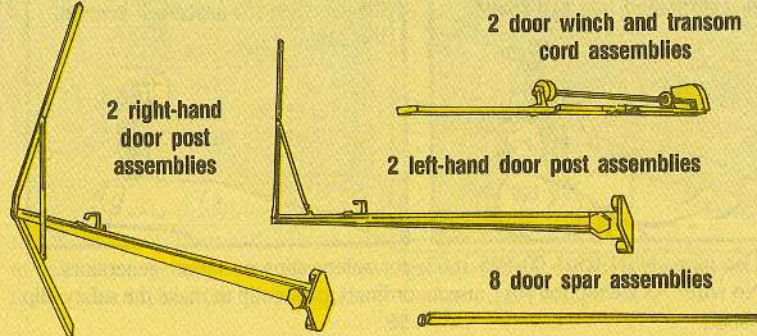
Replacing a maintenance tent takes more than one NSN, because it comes in sections.

NSN 8340-00-951-6419 is only the reference number for the tent. If you want a complete tent, you'll need to order these sections:

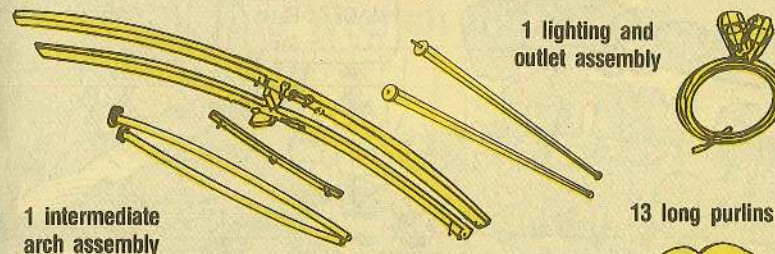
Frame Section, end, NSN 8340-00-951-6420



Frame Section, door, NSN 8340-00-951-6421



Frame Section, Intermediate, NSN 8340-00-951-6422



If you want a standard 32-ft maintenance tent, you'll need one end section (which includes both ends), one door section (enough for 2 doors), and 3 intermediate frame sections.

For longer tents, order extra 8-ft intermediate sections. Generally, tents should not be longer than 64 feet.

YOU'LL NEED THESE TOO!

NAME	NSN	QUANTITY
Tent section, end	8340-00-951-6424	2
Tent section, intermediate	8340-00-951-6425	1 for each intermediate section
Pin, steel 12-in long	8340-00-823-7451	24
Tent liner, end "A"	8340-00-986-0024	1
Tent liner, end "B"	8340-00-978-9627	1
Tent liner, intermediate	8340-00-951-6426	1 for each intermediate section
Pipe, aluminum, liner support, 43-in long	4710-00-542-2903*	18 (9 for each end)
Pipe, aluminum, liner support, 91-in long	4710-00-542-2903*	9 for each intermediate section
* Supplied by the foot		

You may also need the ground anchor kit, NSN 8340-00-951-6423. This kit has 50 ground anchors, 2 driving heads and 2 handles. You must provide the maul or sledgehammer.

TM 10-8340-207-14 tells you how much rope's required. Read thru the TM and jot down the lengths you'll need. Add about a third more.

When you order the rope, NSN 4020-00-536-3476, be sure to specify the length. Otherwise you may get a 2,250-ft roll.

Never order an entire tent section to replace one part. Check out the TM, it breaks the sections down, piece-by-piece.

ALICE...

Keeping up with the Pack

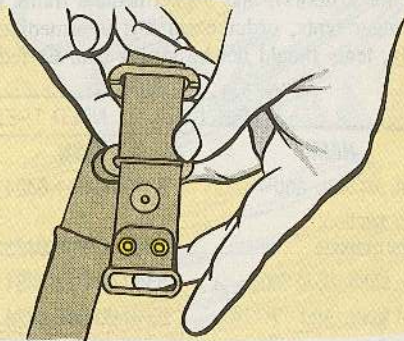
BAD STRAPS
MADE A BUM
OUT OF ME!



Dear Half-Mast,

If I load my ALICE pack with 30 pounds or more when it's attached

Rivets pull out of
quick release strap



to a frame, the rivets on the quick release straps pull out. That leaves me with a bum pack. Can I repair the strap?

SGT G.R.S.

Dear Sergeant G.R.S.,

No. That's a job for DS.

But it turns out you got one of the bum straps that hit the field. Get your unit to send in an SF 368, Quality Deficiency Report.

When one breaks, get your direct support to repair the shoulder strap and quick release assembly using the instructions starting on Page 26-41 of TM 10-8400-201-23 (Jun 86).

Or replace it. The right shoulder strap comes with NSN 8465-01-078-9282 and the left side quick release strap is NSN 8465-00-269-0482.

Half-Mast

Torque Wrench Bit NSN's

WHY CAN'T I FIND THOSE BITS?



TEE HEE, 'CAUSE WE'RE
NOT IN THERE!



You won't find tips for torque wrench, NSN 5120-00-568-4742, part of the TK-90/G battery servicing tool kit, in SC 5180-91-CL-R03.

GET THEM WITH THESE NSN'S:

ITEM	NSN 5120-
Flat screwdriver tip	00-877-8808*
#2 Phillips tip	00-595-8197
1/4-in adapter	PN 232*

*ORDER ON A DD FORM 1348-6
USING CAGE 03683.



Puller Kits...

Keep Legs, Jaws Matched

If you have to replace one leg or jaw on a puller set, replace all of 'em.

That's because the remaining leg or jaws were probably overstressed by whatever broke the other one. Even if the leg or jaw looks OK, it could fail the next time you use it.

Replacement legs and jaws are usually stocked as a set of two legs or three jaws. When you get a replacement set, throw away what's left from the original set.



No More Fiche'ing for Tools

Microfiche supply catalogs for tool kits, sets and outfits are being replaced by a printed pub that combines the Components List (the -CL) and the Hand Receipt (-HR).

THE NEW SC'S HAVE A PICTURE AND A DESCRIPTION OF EACH TOOL, NSN'S, SUPPLY INFO AND SPACES TO USE DURING INVENTORY OF THE SET.

SECTION II. ILLUSTRATED COMPONENT LIST/HAND RECEIPT		FROM:	TO:	HAND RECEIPT NUMBER											
END ITEM STOCK NUMBER 5180-00-177-7033		END ITEM DESCRIPTION TOOL KIT, GENERAL MECHANICS		PUBLICATION NUMBER SC 5180-90-N26											
				PUBLICATION DATE 30 OCTOBER 1986											
				LINE ITEM NUMBER W33004											
A C T	ILLUSTRATION NATIONAL STOCK NUMBER	ITEM DESCRIPTION	N K S	A U S C C	E U S C C	I U S C C	QTY AUTH	QUANTITY ON HAND				QUANTITY ON HAND			
	5180-00-177-7033	TOOL KIT, GENERAL MECHANICS: AUTOMOTIVE; CONSISTS OF THE FOLLOWING COMPONENTS:	N	EA											
	5120-00-224-1389	BAR, PRY: 17/32 IN. DIA. 15 TO 16 IN.	D	EA	I										
D	8020-00-297-6657	BRUSH, PAINT:													
N	7920-00-062-5468	BRUSH, CLEANING, TOOL AND PARTS: NO SHAPE; LACQUERED HARDWOOD HANDLE: 5/8 IN DIA LG.	D	EA	I										
	5180-00-000-0157	CHART, METRIC CONVERSION: 7 IN. (178MM) LG: 4 IN. (102MM) W.	X	EA	I										
	5110-00-236-3272	CHISEL, Cold, HAND: 3/4 IN. W. CUT: 6-1/2 IN. W/TH DIA LG.	X	EA	I										
	5110-00-249-2850	FILE, HAND: FLAT TYPE: 10 IN. LG: DOUBLE CUT, SMOOTH CUT FACES: SINGLE CUT: SMOOTH CUT EDGES: AMERICAN PATTERN	X	EA	I										
	5110-00-234-6551	FILE, HAND: NO TYPE: 8 IN. LG: NO. 4 FACE CUT: 5/16 IN. DIA. AMERICAN PATTERN: DOUBLE CUT RASTARD FACES	X	EA	I										
	5110-00-884-0140	FILE, HAND: TUNE: NO TYPE: 6 IN. LG: NO. 4 FACE CUT: NO. 4 SINGLE CUT, EDGE CUT: SWISS PATTERN	X	EA	I										

Since you use the SC for hand receipt checks, be sure to have your pubs clerk order a replacement copy when you've used most of the inventory spaces.

6-Ton Van Padlock NSN

The NSN listed for the padlock set on Page C-6 in Change 2 of TM 9-2330-238-14&P is wrong. Use NSN 5340-00-912-4089 to get the set of six padlocks and three keys.

Connie's
★ POST ★
SCRIPTS

I'M SURE GLAD CONNIE FILLED US IN ON THOSE DESERT TIPS!

Seat Belt Caution

Burn seat belts may have been installed in some fixed wing aircraft. You can recognize the faulty belt by the color of the belt retractor shafts. If the shaft is gold, it's OK. If it's gray, replace the whole belt assembly. FAA Air worthiness Directive AD-20-05 has more info.

M809-Series

Get a key for the tachograph on 5-ton trucks with NSN 6680-01-188-5073. The key is Item 12 in Fig 47-5 of TM 9-2320-260-20P, but there's no NSN listed.

M60 MG TM Correction

Step 5b on Page 2-10 in TM 9-1005-224-24 (Jul 87) is a bit confusing about the length standard for the helical compression spring on the M60 machine gun. The long and short of it is that the spring can be longer than 23 1/4 inches, but can't be shorter.

Use the Right Stuff

Strong stuff like oven cleaners or carburetor cleaners strips the finish off your weapon and leaves it defenseless against corrosion. Use only what your -10 TM says to use to clean your weapon.

Keep M9 Bayonet Lubed

Always keep a thin coat of CLP on your bayonet to head off rust.

Weekly PMCS Addition

Item 59 on Page 2-73 of TM 9-2350-311-10, the weekly check for road wheels and idler wheels, is short some NMC info. If any road wheel arm or road wheel hub is missing, your M109-series howitzer is NMC.

4-in-1 Lug Wrench

Get a cross-type 4-in-1 lug wrench with NSN 5120-00-293-1404. It'll fit 5/8-, 3/4-, 13/16- and 7/8-in lug nuts. It's handy when you pull a 1/4-ton trailer behind an M1009 CUCV. Use Appendix A of CTA 50-970 as your authority to order it.

Cargo Tiedown Assembly

Cargo tiedown assembly, NSN 1670-00-545-9062, is no longer available. Now you make it up by ordering adjuster assembly, NSN 1670-00-212-1149, and chain assembly, NSN 1670-00-516-8405.

Distribution: To be distributed in accordance with DA Form 12-5-R, for TB-43-series.
★ U.S. GOVERNMENT PRINTING OFFICE: 1986 — 548-004/80003

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

YOU



COMMAND



personnel

AND

materiel



BOTH

MUST

BE READY!

Maintenance is part of the mission