

Issue 490

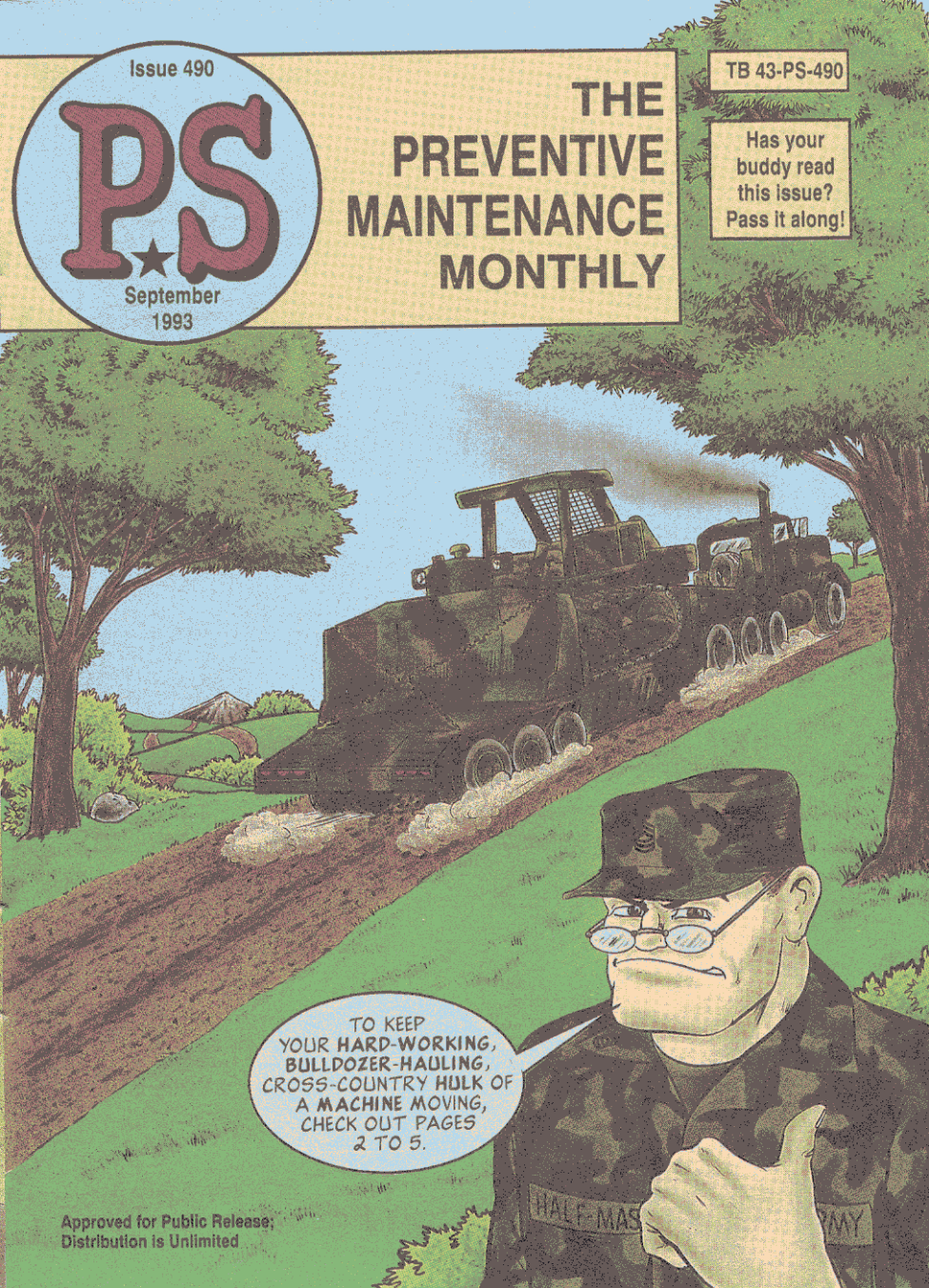
PS

September
1993

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-490

Has your
buddy read
this issue?
Pass it along!



TO KEEP
YOUR HARD-WORKING,
BULLDOZER-HAULING,
CROSS-COUNTRY HULK OF
A MACHINE MOVING,
CHECK OUT PAGES
2 TO 5.

Approved for Public Release;
Distribution is Unlimited

Frontier Justice

In the Old West, it was easy to spot the bad guys—they all wore black hats. When they became a problem, the sheriff formed a posse, rounded 'em up and had a necktie party. Problem solved.

DON'T LET
EQUIPMENT PROBLEMS
TIE YOU IN KNOTS! YOUR
LOCAL MAIT TEAM IS
THERE TO HELP!



THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-490, 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 490 SEPTEMBER 1993

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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
Bldg. 3325
Redstone Arsenal, AL 35898-7466

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army Chief of Staff

Offical:

Milton H. Hamilton
MILTON H. HAMILTON

Administrative Assistant to the Secretary of the Army
04953

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When real world equipment problems, which aren't so easy to spot or corral, get you down or hold you up, you've got someone to help out.

Maintenance Assistance and Instruction Teams (MAIT) were formed to help lasso problems with . . .

- 🔧 Preventive maintenance and equipment repair
 - 📁 Administrative storage
 - 📁 TAMMS records
 - 🔧 Calibration management
 - 📁 Publications
 - 🔧 Prescribed load lists
 - 🔧 Property books
 - 🔧 Army Warranty Program
 - 🔧 Shop operations (including SOPs)
- . . . and much, much more.

Team members also offer one-on-one help as well as group classes on subjects like PMCS and the Army Oil Analysis Program.

So head off maintenance and supply problems at the pass. Give your local MAIT a call. Just be sure you're as specific with your needs as possible so they can bring all guns to bear on the problem.

PM Tames the Brute

THE M916 OR M920 TRACTOR AND THE M870 OR M172 SEMITRAILER MAKE A HEAVY-HAULING COMBINATION. YOU OPERATORS CAN KEEP THAT COMBINATION STRONG WITH HEAVY DOSES OF P.M.

READ AND HEED THE -10 TM TO PULL FIRST-RATE PMCS. THESE TMs WILL SHOW YOU THE WAY...

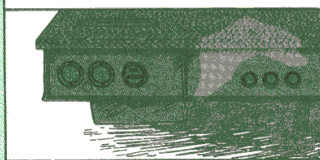
TM 9-2320-273-10
TM 9-2330-211-14&P
TM 5-2330-360-14&P

Learn to spot small problems before they become big headaches. Eyeball the rig as you walk up to it. Check the top, sides, and underneath. Look for dangling wires, wet spots, corrosion, worn or missing parts—anything that could spell trouble.

Look real close at these:

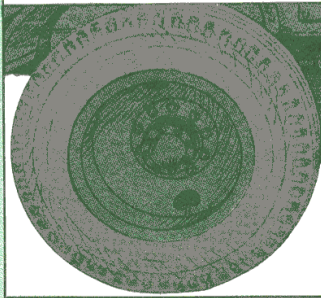
LIGHTS

Broken? Burned out? Lens missing, broken, dirty?



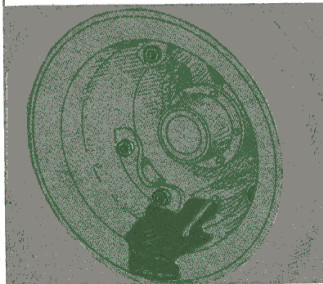
TIRES

Any missing? Low or flat? Cuts or cracks in sidewalls? Uneven wear? Bald? Valve caps missing? Correct air pressure?



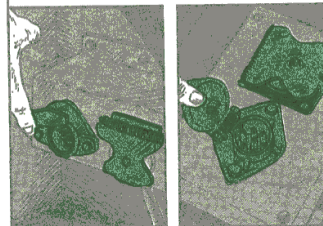
WHEELS

Lug nuts missing or loose? Wheel bearing oil level up to the mark? Oil leaking?



ELECTRICAL SYSTEM

Loose wires? Cable insulation cracked or broken? Receptacle dust covers missing? Connections corroded? Missing or bent pins? Connectors or receptacles loose or dirty? Lights not working?



SUSPENSION

Broken leaf springs? Cracked mounting brackets? Loose bolts or hardware? Torn or leaking airbags on M920 pusher axle?



EXHAUST

Leaking? (Black soot is a telltale sign.)



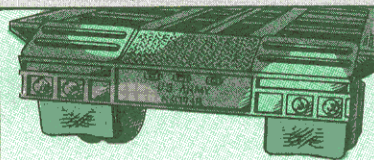
LET'S HAUL TO THE NEXT PAGE... THERE'S A LOAD OF INFO THERE!



GROUND MOBILITY

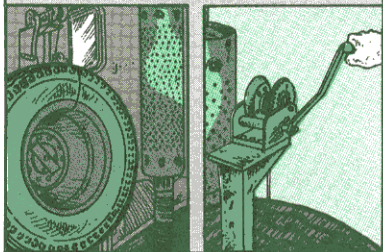
MUD FLAPS

Torn? Missing? Bolts gone?



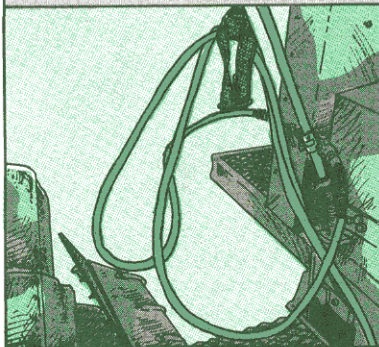
SPARE TIRE

Worn, gouged, cut? Low on air? Tire hoist won't crank?



AIRBRAKE SYSTEM

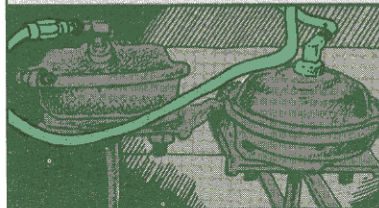
Service and emergency air hoses cut or frayed?



Gladhand grommet cracked or dry rotted?

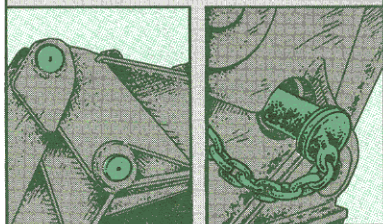


Air leaks around fittings? Airbrake chambers loose? Air lines disconnected?



GOOSENECK

Cracks or wear at hinge points? Locking pins and hardware missing or damaged?

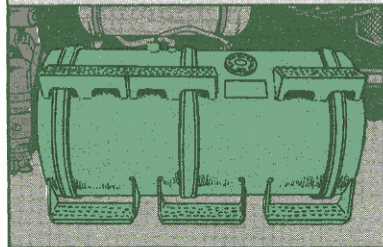


Lifting eye broken?



FUEL TANK

Loose straps? Leaks? Steps broken, loose, or missing?



BATTERIES

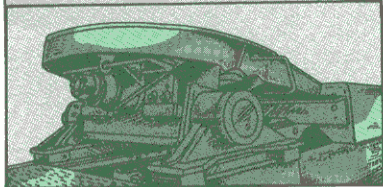
Corrosion? Terminal clamps loose?
Holddowns not snug? Low electrolyte
level?

**TIEDOWN RINGS**

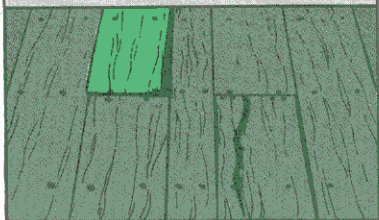
Rings bent? Cracks in welds?

**FIFTH WHEEL**

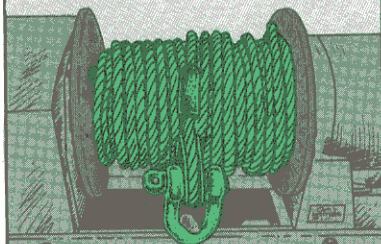
Cracks in mounting brackets or ramps?
Loose bolts? Primary and secondary
release handles won't lock? Grease
fittings broken?

**FLATBED**

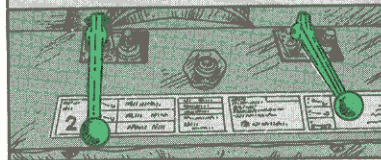
Wooden planks loose or missing?

**WINCH**

Mounting bolts loose? Cracks in
brackets? Cable frayed? Kinks?



Controls sticking?



REPORT
ANYTHING
YOU CAN'T
FIX!



PS END

SOME LIKE IT HOT

COUGH COUGH...
DON'T THESE GUYS
KNOW THAT LOW
IDLING FOR LONG
PERIODS CAUSES
ENGINES BIG
PROBLEMS?

YEAH, BUT
EVEN WORSE FOR
ENGINES ARE LOTS OF
STARTS AND STOPS BEFORE
THEY HAVE A CHANCE
TO HEAT UP!

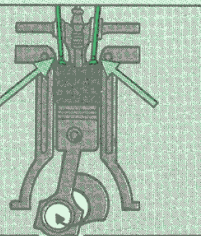
TELL
ME ABOUT
IT!

DIESEL ENGINES RUN BEST
AT NORMAL OPERATING
TEMPERATURE.

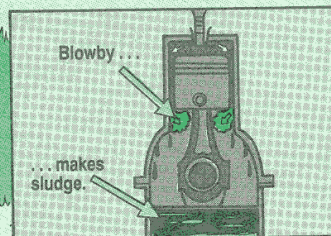
Here're some problems caused by
low engine RPMs:

- Fuel and oil are not completely burned in the combustion chambers, leaving carbon deposits on the valve stems. The carbon fouls up valve operation. The result is burned valves and bent push rods.

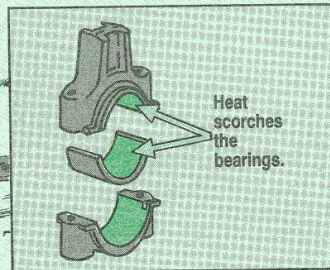
Carbon
deposits
form on
the
valve
stems.



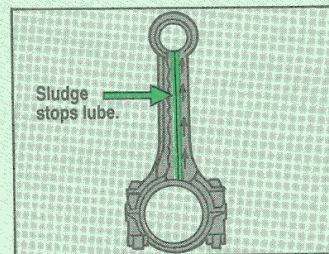
- Condensation and unburned fuel slip around the pistons—blowby—and into the crankcase. There it becomes acid and sludge in the engine oil.



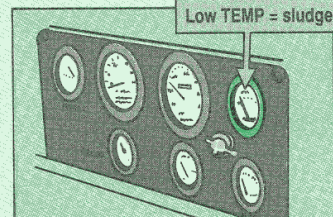
- Condensation from normal engine breathing never gets boiled off. Instead, it builds up as more acid and more sludge in the crankcase.
- Engine oil breaks down. Poor lubrication burns up bearings.



- Sludge blocks lube passages. Oil can't get through to lube and cool. Heat and friction tear up your engine. High speed idling prevents this kind of trouble.



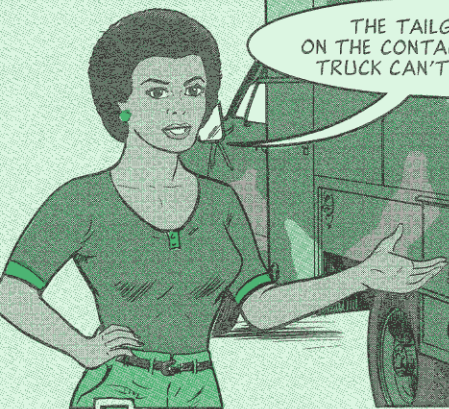
Watch the TEMP gauge. Keep engine speed high enough to keep the needle in the normal operating range.



Keep engine idle high and avoid stop-and-start driving. That way your engine will perform at its best.

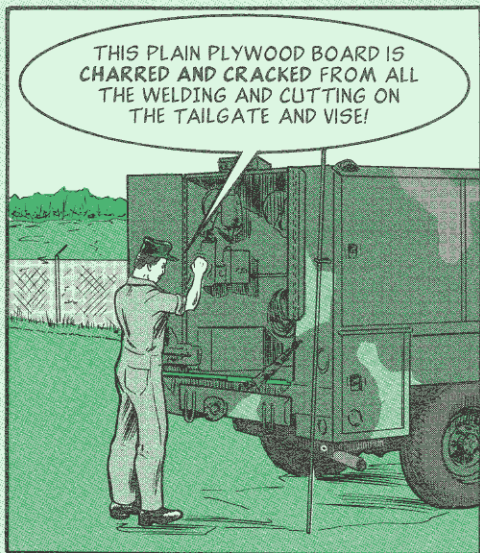
Contact Maintenance Shop Equipment . . .

Replace Tailgate Board



THE TAILGATE BOARD ON THE CONTACT MAINTENANCE TRUCK CAN'T STAND ABUSE!

For instructions on replacing the $\frac{3}{4}$ -in plywood board with a $\frac{1}{2}$ -in plywood core and a $\frac{1}{4}$ -in aluminum cover write to: **AMCCOM, ATTN: AMSMC-MAA**
Rock Island, IL 61299-6000



THIS PLAIN PLYWOOD BOARD IS CHARRED AND CRACKED FROM ALL THE WELDING AND CUTTING ON THE TAILGATE AND VISE!

THE IMPROVED BOARD CAN HANDLE THE STRESS AND DAMAGE THAT CAUSES THE OLD BOARD TO SNAP, CRACKLE AND POP APART!



Lubrication . . .

GAA Needs No Substitutes

GROUND MOBILITY

Dear Half-Mast,

What's the latest on substituting WTR (Grease, Aircraft, General Purpose, Wide Temperature Range) for GAA (Grease, Automotive and Artillery)?

Some maintenance shops substitute WTR because it is supposed to stand up to heat better.

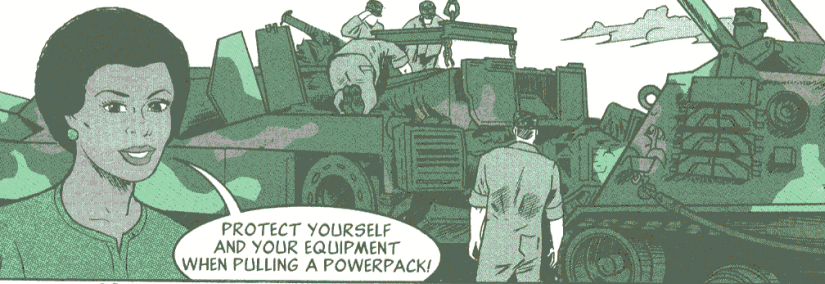
CW2 R.G.H.

THERE'S NO NEED FOR A SUBSTITUTE, SIR. THE NEW GAA, MIL-G-10924 E OR F HOLDS UP AS WELL AS WTR IN HEAT, AND PREVENTS CORROSION BETTER. USE THESE NSNs FOR THE NEW GREASE...

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

HALF-MAST

POWERFUL POWERPACK PROTECTION



PROTECT YOURSELF AND YOUR EQUIPMENT WHEN PULLING A POWERPACK!

Mechanics, the more experience you have doing a job, the easier it seems each time. Unfortunately, more experience can also lead to carelessness.

Take pulling the powerpack from an M1-series tank, for example. You may have done it dozens of times, but you can still end up with smashed fingers and hands, broken connections and bent parts unless you follow the -20 TM guidelines.

Follow these tips along with the guidelines in the -20-1-3 TMs to keep you and your tank safe and sound:

1 Park the tank on level ground.

That lessens the chance of damage to the hull or powerpack when the powerpack is lifted out of the vehicle.

2 Block the tracks. Once the final drives are disconnected, the tank can move if the tracks aren't blocked.

3 Use at least five people to tackle the job. Any fewer can

lead to injuries and damage. Many more will cause confusion.

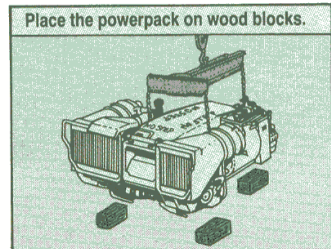
4 Use lifting equipment that's made for the job. No improvising or substituting. Make sure that all hoist connections are secure. Check the sling for cracks or other signs of wear.

5 Unhook all assemblies, linkages, hoses, cables and tubes. Tie up connections that stay with the pack and secure those that stay in the hull. Tape, cap, or plug lines and connectors that need protection.

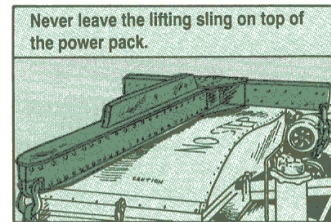
NSN 5340-00-450-5718 gets you 156 caps and plugs in an assortment of sizes. For specific sizes, ask your supply support folks to check out the FED LOG under Cap, Protective, Dust and Moisture.

6 Make sure everyone's arms and legs are out of the way before slowly pulling the pack straight out of the hull. As the pack is lifted, keep it away from fuel tanks and other hull parts that can't take much abuse.

7 Never lay the powerpack on the ground. The weight will damage the air intake and other engine components. Instead, place the powerpack on three wooden blocks as shown on Page 4-19 of the TM.

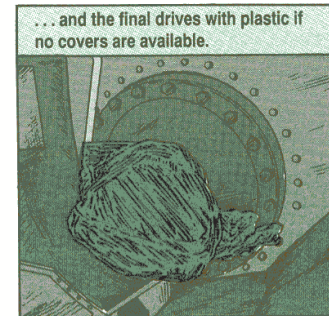
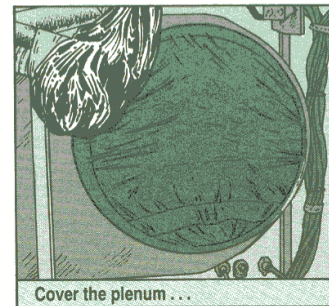


8 Detach the powerpack from the lifting sling, then place the sling on the ground. The powerpack's exhaust duct has NO STEP stenciled on it. That means you should keep the heavy sling off it, too.



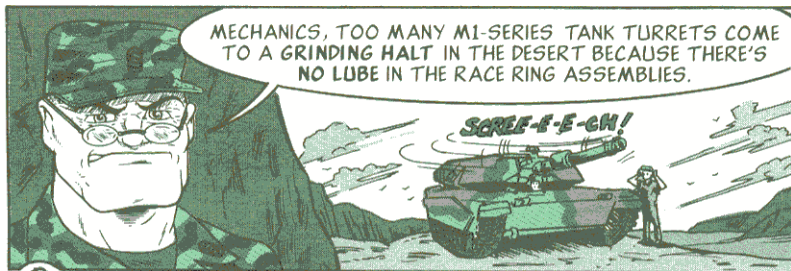
9 Cover the powerpack's air intake with protective cap, NSN 5340-01-132-0877. That keeps dirt, sand, and dust out of the engine. If the engine is going to be left unattended, cover it with a tarp for extra protection.

The plenum and final drive on the hull need protection, too. NSN 4330-01-128-5713 gets a cover for the plenum and NSN 5340-01-128-2767 gets one for the final drive. Use plastic and tape as a temporary measure until the covers arrive.



10 Clean grime, grease and oil off the hull floor before putting the powerpack back in the vehicle. Old oil, fuel, and trash that accumulate in the hull are a fire hazard.

Lube the Turret Race



Race ring lubing is at least a semi-annual requirement. If you haven't lubed one in who knows when, make sure it gets done pronto. That applies to all M1-series tanks, but especially to those in desert environments.

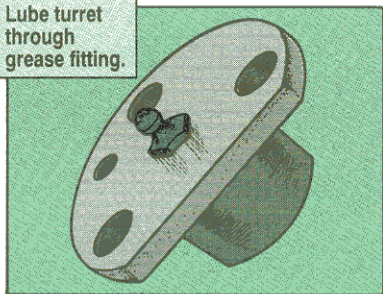
In the past, you had to have a special lubing tool made by your support shop. That meant removing the ball insert plug in the inner race bearing ring and installing the tool before lubing.

All that's changed. Paragraph 8-7.b of TB 43-0001-36-2 (July 91) authorized DS to modify the ball insert plug to make it a permanent lubrication fitting.

You can tell if your tank has the modification by looking at the plug on the inner race bearing ring. If it has a

grease fitting for lubing, you're good to go. If not, report it to DS. They'll modify the ball insert plug based on the instructions found in the TB.

Lube turret through grease fitting.

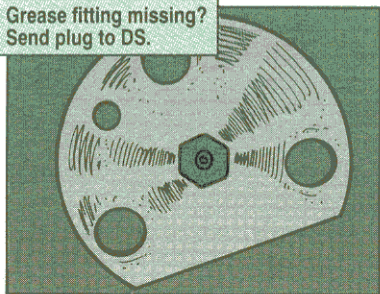


Before you send the plug off to DS, tag it with your tank's serial number. That way you'll get the original plug returned to you. Each plug is machined to match its race ring. Running your M1 with a plug from another tank will damage ball bearings, springs and race assembly.

When you're ready to lube, follow the semiannual PMCS on Page 2-29, Item 15, TM 9-2350-255-20-2-1 and Page 2-35, Item 15, TM 9-2350-264-20-2-1.

Make sure the turret moves freely after lubing.

Grease fitting missing? Send plug to DS.



DISPOSE OF DANGEROUS DRIPS

Mechanics, few things are more serious than the steady drip of leaking fuel in an M1-series tank. That's why it's important to keep an eye out for potential trouble spots.

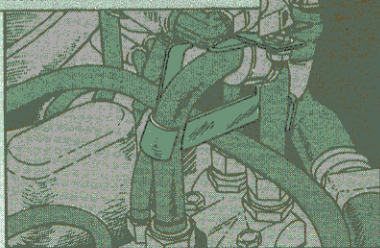
One such spot is the fuel nozzle flow valve bracket, NSN 5340-01-214-2639, on the engine's forward module.

Some versions of the bracket have a stiffener bar along the bottom. That's the problem. The bar rubs against the fuel line until a leak eventually occurs.

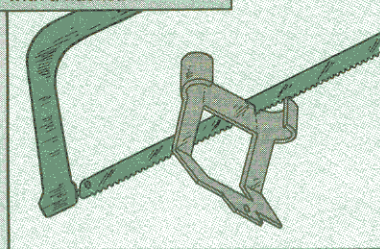
Here's what to do if your tank has the problem bracket:

1. Remove and inspect the fuel line for any signs of damage. Replace a bad line with NSN 4710-01-266-3986.
2. Remove the fuel nozzle flow valve bracket.
3. Cut off the stiffener bar using a hacksaw. Remove any sharp edges or burrs with a file.
4. Install the modified bracket and reinstall the fuel line. Make sure you have someone standing by with a portable fire extinguisher, for safety's sake.
5. Start the engine and inspect for fuel leaks.

Brackets with a stiffener bar need modification.

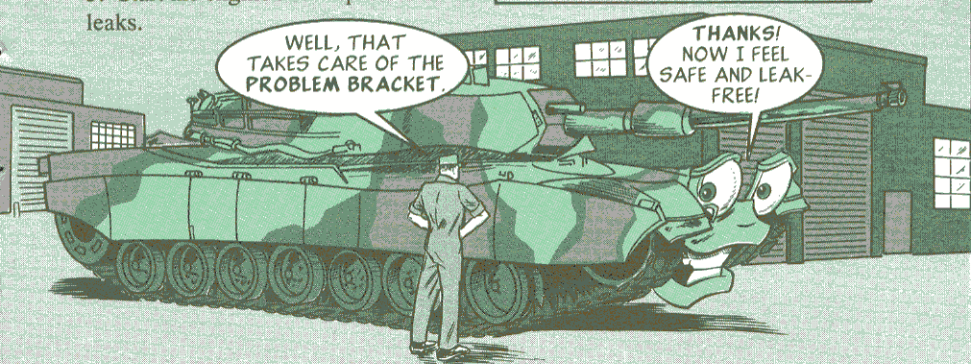


Remove the stiffener bar with a hacksaw.



WELL, THAT TAKES CARE OF THE PROBLEM BRACKET.

THANKS! NOW I FEEL SAFE AND LEAK-FREE!



Install Bearings as Complete Sets

Tunnel of Love

TOGETHER FOREVER!

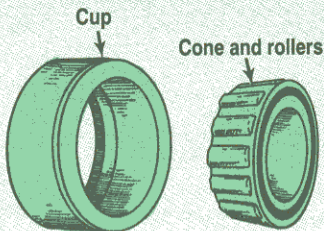
WE'RE INSEPARABLE!

Some of your parts TMs for M60-series and M1-series tanks and M88A1 recovery vehicles lead you astray when it comes to tapered roller bearings.

They list the individual pieces of the tapered roller bearings instead of the complete set for the road wheel and support roller bearings.

You should always install tapered roller bearings as sets. That's because of the close tolerance between the cone and rollers and the cups or race. Too tight and the rollers are ground to bits. Too loose and the bearings wear out before their time.

Install tapered roller bearings as sets.



Here are the NSNs you need to get complete sets:

CONE & ROLLER SET	NSN 3110-00-	VEHICLE
Outer roadwheel	100-5377	M60-series tank & M88A1 recovery vehicle
Inner roadwheel	101-4194	M1-/M60-series tanks & M88A1 recovery vehicle
Support rollers	100-5949	M60-series tank & M88A1 recovery vehicle
Outer roadwheel	101-6493	M1-series tank
Support rollers	100-5377	M1-series tank

Muddy Reminders

Drivers, you'd be surprised just how much of a wallop mud can pack when it flies off your M88A1 recovery vehicle's track and hits the splash guard fenders.

It's enough to damage or break the hinges that connect the fenders to the hull. When that happens, your unit pays to replace the fenders.

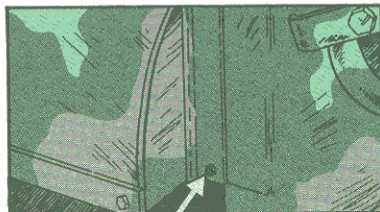
Mud can break or damage hinges.



When the terrain is muddy, remove the two screws that hold each of the fenders in place. The fenders can then

swing freely on their hinges, lessening the impact of the mud and saving your unit a few bucks.

Remove screws from here ...



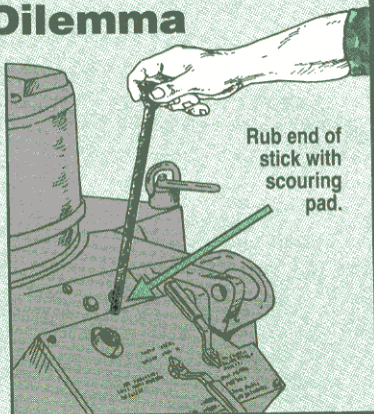
... and here to let fender swing freely.

M198 Howitzer ...

Dipstick Dilemma

The hydraulic manifold dipstick on your M198-howitzer is covered with a flat, black coating. That makes it hard to read the oil level.

Fix that by rubbing from the FULL line to the end of the dipstick with scouring pad, NSN 7920-00-753-5242. Rub the dipstick only enough to make it easy to see the oil level.



Rub end of stick with scouring pad.

Keep Turret Spic 'n Span

The old saying, "There's a place for everything and everything in its place," takes on new meaning when you're talking about your combat vehicle's turret.

Loose items, such as tools, parts, trash, and TMs, can put you out of operation fast. If these or other items get under the floor or between the hull and turret, they can break parts, cut cables, damage ammo, and on and on.

A daily housecleaning inside the turret and under the floorboard will get rid of loose items before they become a repair problem.

THAT TAKES CARE OF POTENTIAL REPAIR PROBLEMS.



M2/M3-Series Bradley...

Swim Switch Did It

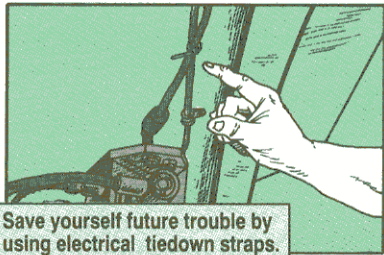
Dear Editor,

If Bradley crews get an **OPEN HATCH** or **NO FIRE** light when they shouldn't, the first thing they should check is the swim switch.


We've found that soldiers accidentally hit the wire to the switch going in and out of the crew compartment, unplugging the switch cable. You get bad warning lights from an unplugged cable.

Just plug the wire back in and you're back in business.

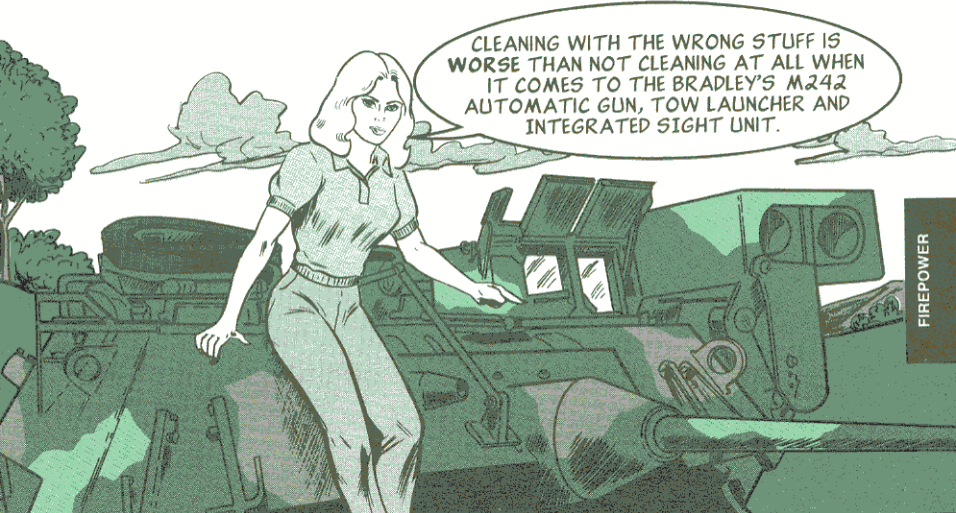
Gary Williams
Arthur Holt
Ft Benning, GA



Save yourself future trouble by using electrical tiedown straps.

FROM THE DESK OF THE Editor 
Now that's an idea I can swim with. Good going.

CLEAN WITH THE RIGHT STUFF



CLEANING WITH THE WRONG STUFF IS WORSE THAN NOT CLEANING AT ALL WHEN IT COMES TO THE BRADLEY'S M242 AUTOMATIC GUN, TOW LAUNCHER AND INTEGRATED SIGHT UNIT.

FIREPOWER

Oil-based lubricants gum up electrical connections on the M242 and the launcher. Dry cleaning solvents eat up electrical parts. Keep lubricants and solvents away from the launcher connectors and the M242's sear solenoid, sear solenoid cable, electrical connectors and drive motor.

But you do need to clean dirt out of electrical connectors or you get poor connections and no firing. Clean con-



Clean the connectors with a soft brush and alcohol.

nectors with a soft brush dipped in isopropyl alcohol.

General purpose detergent will strip the coating right off the ISU windows. Rags or paper towels will scratch the windows. No coating means light gets in the window and the night sight won't work.

Clean the windows with isopropyl alcohol and lens paper, NSN 6640-00-285-4694. Flush off the alcohol with clean water. Dry the windows by wiping in one direction with lens paper.



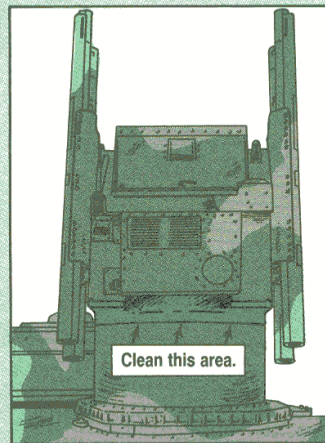
Clean windows with alcohol and lens paper.

Clean Up Problems



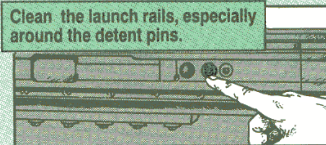
After you clean the recesses, try to latch the cover again. Still no luck? Tell your repairman. He needs to adjust the latch. Never kick the cover shut. That breaks the latch—a very difficult item to replace.

Eyeball the area where the mount turns on the pedestal for dirt buildup. Dirt will make it difficult for the mount to turn. Clean off dirt with a rag.



Also check that the chain guard is secured by all its screws and the screws are tight. There will be shiny spots around loose screws. If the chain guard is missing or loose, dirt can get at the gears and cause more movement problems.

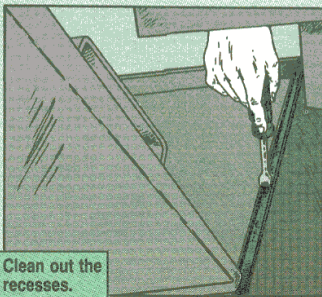
Eyeball the launch rails—especially around the detent pins—for dirt and corrosion, which cause firing problems. Clean off dirt with a rag. Rub out corrosion with copper, brass, aluminum wool or a plastic scouring pad. Brush away loose particles with a soft brush.



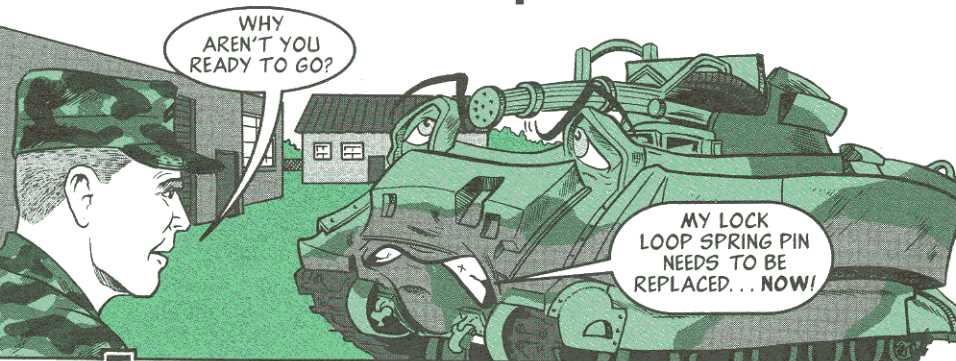
Make sure the deck is clean of stuff like camouflage netting before you lower the mount. There is only a 2-in. clearance between the bustle and deck. If something blocks the mount, the master distribution box will burn out trying to completely lower the mount.

Most of your Chaparral's basic maintenance problems can be cured with basic cleaning. For instance:

If the engine or crew equipment compartment doors won't latch, the structure interlock warning light will come on and then you can't fire. The problem is usually dirt packed down in compartment recesses. The easiest way to clean out dirt is with a metal scraper or a screwdriver. Clean away loose dirt with a paint brush.



Fix Lock Loop Yourself



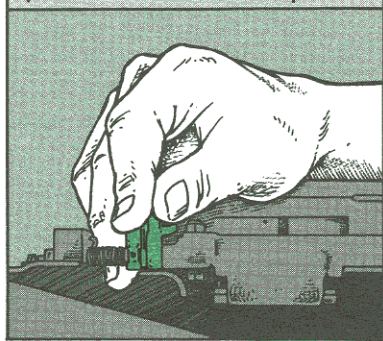
The only thing that usually goes wrong with the Vulcan's lock loop assembly on the ammunition storage can is the spring pin.

But because unit repairmen are not authorized to replace the spring pin, NSN 5315-00-844-1189, which costs \$1.95, they have to replace the whole lock loop assembly — a cost of \$475.

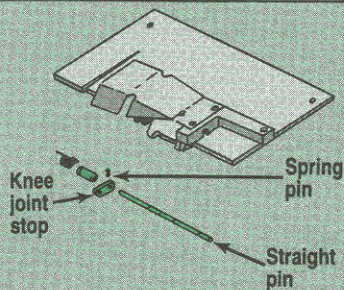
No more. Repairmen can now replace the pin using the 1/16-in punch in the Anti-aircraft Artillery Tool Box.

To remove the pin, open the bellmouth assembly. Hold the knee joint stop so it's vertical. Remove the spring pin from the stop and the canister headless straight pin.

Hold the knee joint stop in a vertical position to remove and install pins.



Replace the spring pins, not the entire lock loop assembly.



To install the pin, hold the knee joint stop so it's vertical. Align the stop's and canister headless straight pin's holes. Insert the spring pin into the knee joint stop and the straight pin so it's perfectly flush. Close the bellmouth assembly.

M901 Improved Tow Vehicle. M981 FISTV...

IT'S THE O-RING

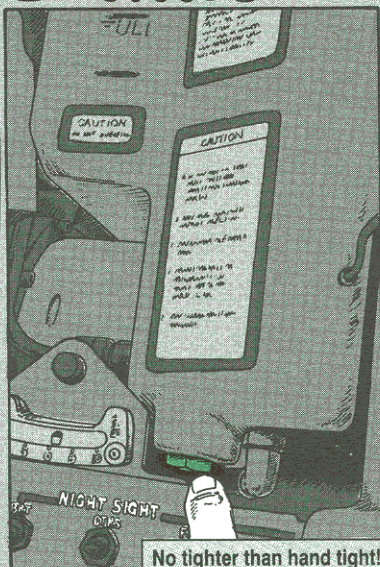
Dear Editor,

Heat, hydraulic fluid, and too much muscle cause the O-ring for the drain plug on the M901 and M981's hydraulic reservoir to crumble. Then the drain plug leaks.

Problem is, crewmen think tightening the drain plug tighter than hand-tight will fix the leak. It doesn't. More muscle only ruins the O-ring and the reservoir's threads for the drain plug. Then you need a new reservoir.

If the drain plug is hard to tighten or if it leaks, get your repairman to replace its O-ring, NSN 5310-01-189-8481. You'll stop the leak and save a reservoir.

SPC Jimmy Carlton
Ft Benning, GA



FROM THE DESK OF THE *Editor*
Your suggestion has that ring of truth. Thanks.

PS Has Moved

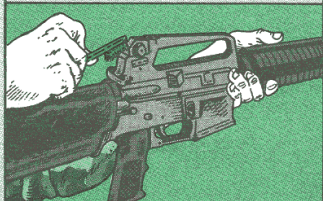
LET US HEAR FROM YOU WHEN YOU NEED HELP WITH A MAINTENANCE OR SUPPLY PROBLEM. OUR NEW ADDRESS IS...

PS - THE PREVENTIVE MAINTENANCE MONTHLY
BLDG 3325
REDSTONE ARSENAL, AL 35898-7466

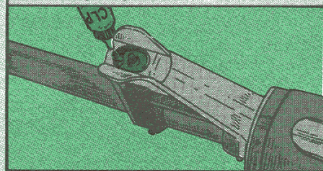


If your M16's sights bind and can't be adjusted, you will be in a bind when it comes time to sight the target. Keep this PM in sight to keep sights moving smoothly.

When you clean your rifle, clean the sights. Brush away dirt from both the front and rear sights with a toothbrush. Get the toothbrush into all the little crevices.

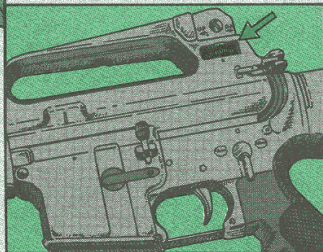


Depress the front sight detent and give it a drop or two of lube. Work the detent and sight up and down until they move smoothly. Return the sight to its original position.

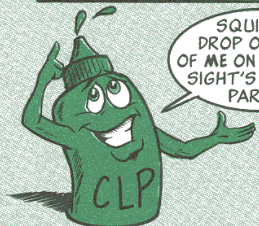


I SEE HOW THAT COULD BE A PROBLEM.

Completely rotate the windage and elevation knobs to work all the lube in. Return the windage knob to its original position.



I COULD GO BLIND WITH THE SIGHT PM YOU GIVE ME!

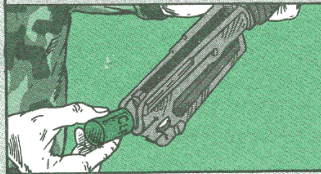


SQUIRT A DROP OR TWO OF ME ON THE REAR SIGHT'S MOVING PARTS!

KEEP PM IN SIGHT

Turn the upper receiver upside-down and remove the charging handle.

Put a few drops of lube on the bottom of the elevation screw shaft and the detent spring hole.



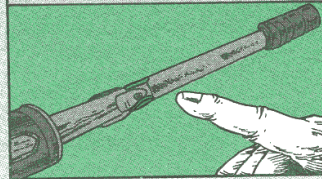
With the receiver still upside-down, move the elevation knob back and forth several times. Return the elevation knob to its original position.

With a clean cloth, wipe off both sights. That gets rid of any excess lube that will attract more dirt.

If the sights are still difficult to adjust, tell your armorer. Too much dirt and sand have gotten in the sights. Support needs to take them apart and clean them. If you force a sight, you will wear out its parts and the whole sight will need to be replaced.

Also tell your armorer if the front sight guards are bent. Support — not your armorer — should straighten the guards.

Front sight guards bent? Tell your armorer.



M16-Series Rifles . . .

Brass Deflector Re-visited



Get left-hand brass deflector from TASC.

M16A2s and many M16A1s have built-in left-hand brass deflectors — you can tell by looking for a bump behind the ejection port. But if your M16A1s don't have deflectors, you can get some from your local Training and Audio-Visual Support Center.

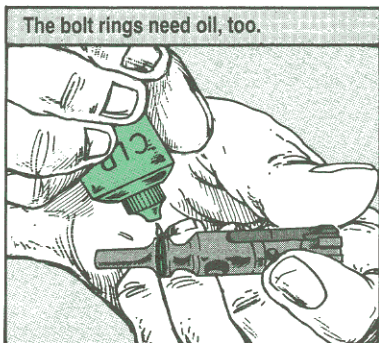
If the support center is out of deflectors, they can get more by sending a request to:
 US Army Training Support Center
 ATTN: ATIC-DMF
 Ft Eustis, VA 23604-5166

BOLT BITS



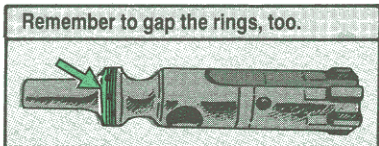
THERE ARE TWO SMALL PARTS OF YOUR M16'S BOLT THAT MAKE A BIG DIFFERENCE IN HOW YOUR RIFLE FIRES — RINGS AND THE EXTRACTOR SPRING.

RINGS: You know how important the rings in your car engine are. If they don't have enough lube, they get too hot and wear out quickly. Your engine loses compression, runs poorly, and needs major work.



The bolt rings need oil, too.

Just a drop or two of CLP on the rings when you clean your rifle is enough.

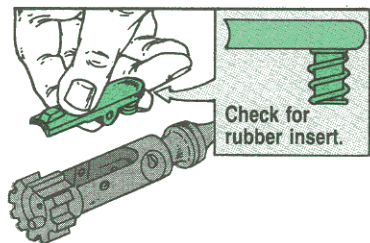


Remember to gap the rings, too.

If the gaps aren't staggered, the rings lose too much gas to do their job.

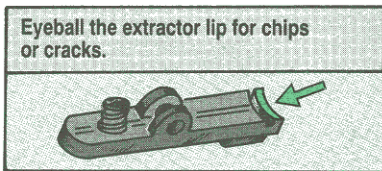
EXTRACTOR: If the extractor spring is weak, the extractor has a tough time extracting and your rifle jams.

Make sure the spring has the little rubber insert. Without the insert, the spring is weak. Report a missing insert.



Check for rubber insert.

If the spring is loose, put its large end in the extractor and push it down until it seats.



Eyeball the extractor lip for chips or cracks.

If it's chipped, it will have trouble clamping onto cartridges. Tell your armorer.

RACKING RULES

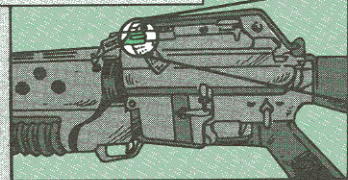


FIREPOWER

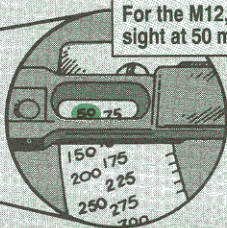
You don't need to remove the M203's quadrant sight to store the grenade launcher in an M11 or M12 rack, armorers. You just need to know what setting to put the sight on to get the M203 to fit.

If you're using M11 racks, your best bet is to order M12 racks, NSN 1095-00-407-0674. They are made for the M16 rifle and the M203 and make storing them easier.

For M11 rack, set between 175 and 200 meters.



For the M12, set the sight at 50 meters.



For the M11, you will need to experiment with the setting. Set the M203 setting between the 175- and 200-meter range. Gently push the locking bar closed to see if the sight clears the bar. Try other settings if the sight doesn't clear.

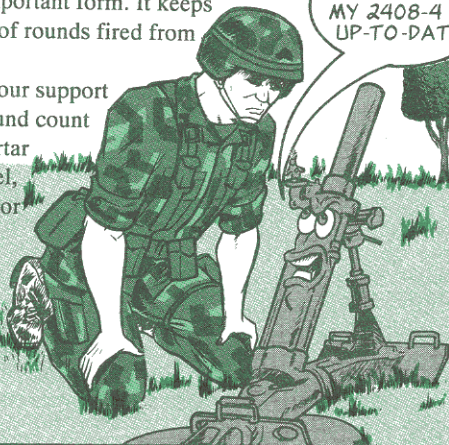
Occasionally, a sight won't clear the locking bar no matter what its setting. Store that sight separately after tagging it with the M203's serial number.

Whys and Wherefores of 2408-4s

DA Form 2408-4 is a very important form. It keeps track of the number and type of rounds fired from your mortars and cannons.

Without that information, your support must figure a much higher round count and inspect the cannon or mortar tube more often. At depot level, they must assume the cannon or mortar tube has fired all the rounds allowed and must be replaced . . . even though the tube may have a lot of life left.

I'M NOT FIRING UNTIL MY 2408-4 IS UP-TO-DATE.



WEAPON RECORD DATA							PLANT CONTROL SYMBOL		
For use of this form, see DA Pam 738-750 and 738-751. The reporting agency is DCSLOG							CSCLD-1081		
1. TUBE SERIAL NO.	2. CANNON TYPE, MODEL OR SERIES	3. ORGANIZATION			4. SPECIAL LIFE DATA				
9799	105MM M68	CO A, 1ST BN 25TH ARMOR			DUAL CONDENSATION CRITERION 1000 EFC RDS OR PD 6AG6 READING .056				
5. END ITEM IDENTIFICATION				6. RDS/EFC COMPUTATION					
TANK COMBAT M60A3 SNT666				FSDS-T EFC = 1.0 AMBIENT TEMP APDS-T EFC = 1.0 ABOVE 100°F HEAT-T EFC = 1.0 EFC FACTOR MSD-T EFC = .5 DOUBLES WP-T EFC = .5					
7. CANNON SERIAL NO.	8. RETUBINGS		9. RESUBINGS		10. SPECIAL LIFE DATA				
1751 (BREECHING)	1		1400		SOFSLOPE PULLOVER 6AG6 BUREY 200 EFC RDS BREECHING LIFE 5000 EFC RDS				
11A. Date	Processing Type	Zone or Change	Rounds Fired	EFC RDS Fired	Computers RDS Fired	Computers EFC RDS	Remaining Life (EFC RDS)	Remarks: Round Count (RE), Gaps or Velocity Readings, Safety Impairment (SI)	Signature
10 APR 88	(Previous DA Form 2408-4 (incl) entries)			500	400		600	SOFSLOPE AND PD 6AG6 (0.018)	CPT [Signature]
15 APR 88								EFC RDS 425 INAR88 RE - 25 FEB 89 SA - 2 DEC 87	
21 APR 88	HEAT-T M 856		12	12	512		588		2nd Lt [Signature]
28 MAY 88	HEP-T M393A2		8	4	520		584		2nd Lt [Signature]
10 OCT 88								10 OCT REPORT NEW FORM INITIALIZED	[Signature]


DA FORM 2408-4

CONTINUE ON REVERSE
EDITION OF 1 DEC 77 WILL BE USED.

Keep your 2408-4s up-to-date. And remember, when you send in the 2408-4s to Watervliet Arsenal like it says in DA Pam 738-750, first transfer the info to new 2408-4s. Otherwise, all that information is lost and your tubes are headed down the tube.


Commo ...

Prescriptions for Sick Equipment



THANKS, DR. RODD. I REALLY APPRECIATE YOU TAKING THE TIME TO GIVE ME A TOUR OF COMMO GENERAL HOSPITAL.

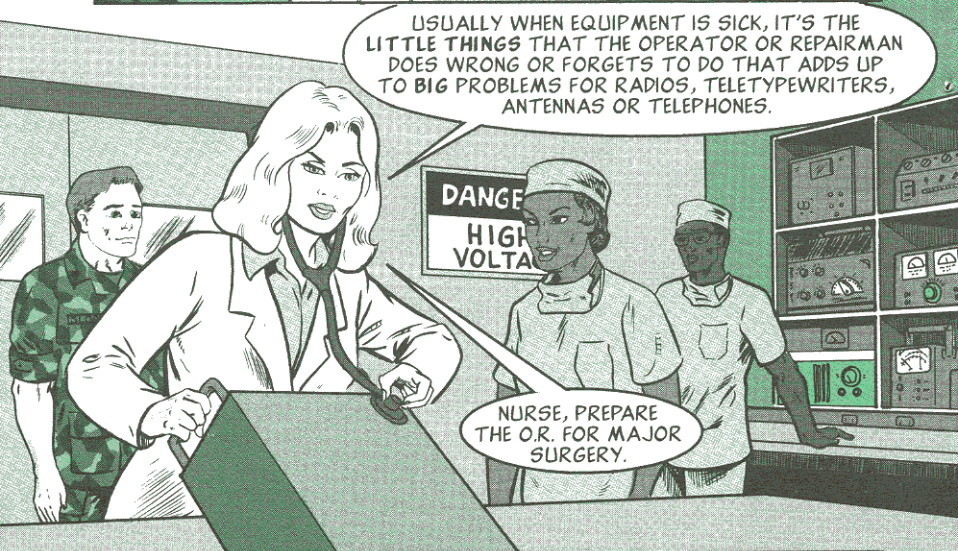
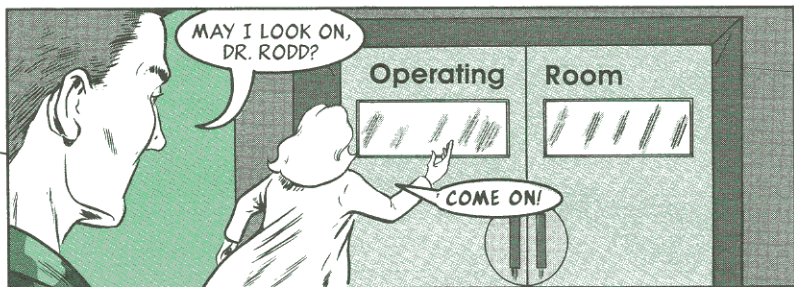
YOU'RE WELCOME. LIKE I TELL EVERYONE, AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE. THAT IS NOT ONLY SOUND ADVICE FOR YOU, BUT FOR COMMO EQUIPMENT TOO!



DR. RODD, YOU'RE NEEDED IN O.R., STAT!



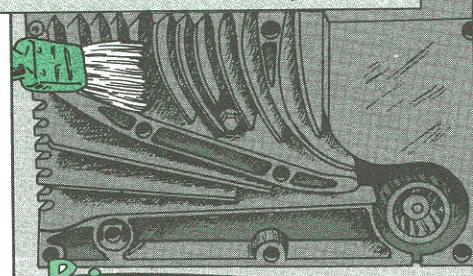
OK, I'M ON MY WAY!





Neglect

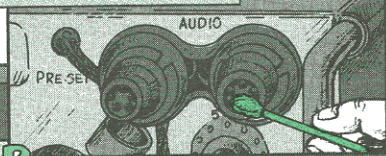
DIAGNOSIS: RTs overheat because cooling vents and blowers are blocked by sand or dirt.



Rx:

Brush out dirt and sand.

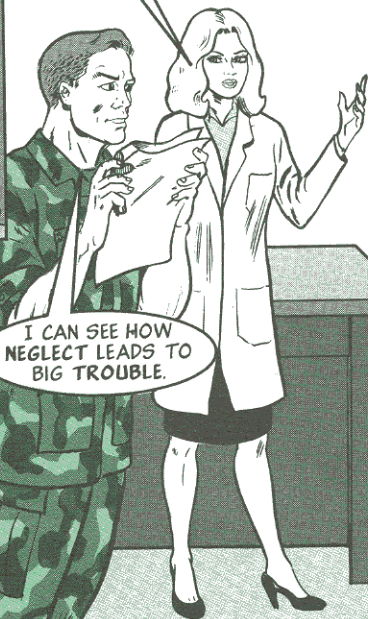
DIAGNOSIS: Bad or nonexistent connections.



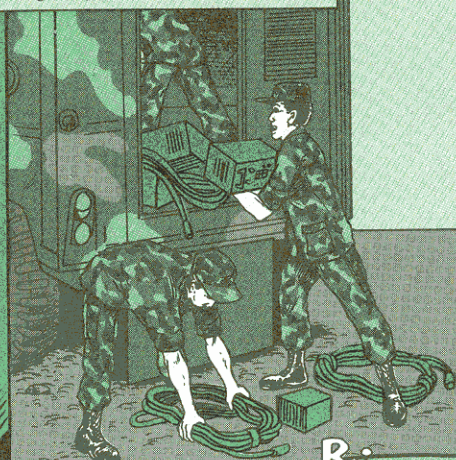
Rx:

Clean dirt and corrosion buildup off audio connectors.

LOTS OF TLC KEEPS COMMO GEAR HEALTHY!



DIAGNOSIS: Shelter components get banged-up and damaged.



BUT ALL OF THIS COULD'VE BEEN PREVENTED.



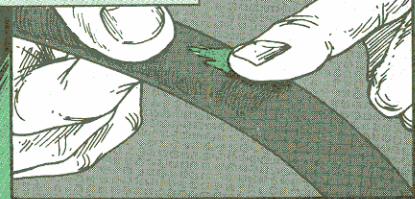
EXACTLY.

Rx:

Secure gear inside commo shelter before moving.

JUST LIKE THE DAMAGE TO THIS CABLE COULD'VE BEEN PREVENTED.

DIAGNOSIS: Broken insulation on cables.

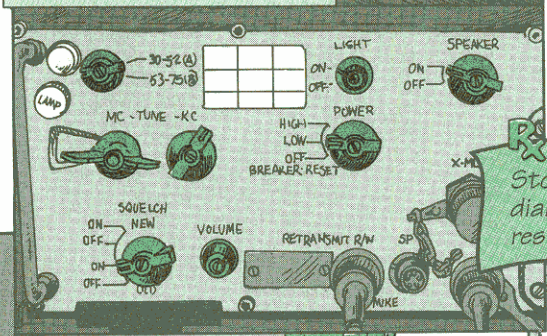


Rx:

Lightly lube cable insulation with silicon.

Rough Handling

DIAGNOSIS: Knobs or dials broken.



Rx:

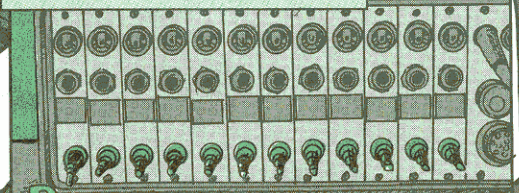
Stop turning knobs or dials when you feel resistance.

THIS IS INCREDIBLE.



KEEP GOING, THERE'S MORE.

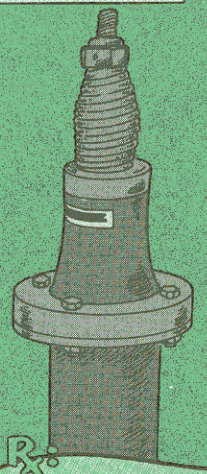
DIAGNOSIS: Switchboard plugs bent or broken.



Rx:

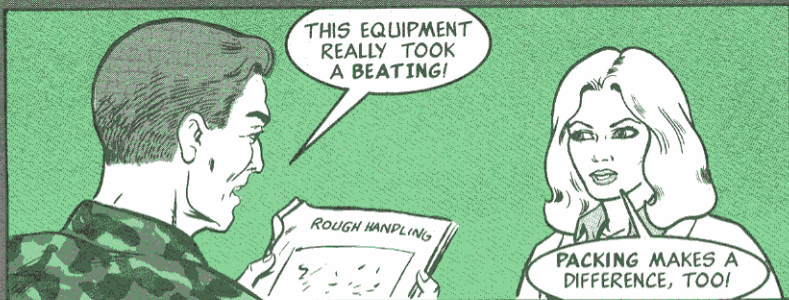
Nudge the plug back into place with your fingers... not with the heel of your hand.

DIAGNOSIS: MX-6707 matching unit broken or cracked.



Rx:

Torque screws to 100 lb-in when installing the matching unit.



THE CONDITION IN WHICH YOUR EQUIPMENT ARRIVES DEPENDS ON YOU!

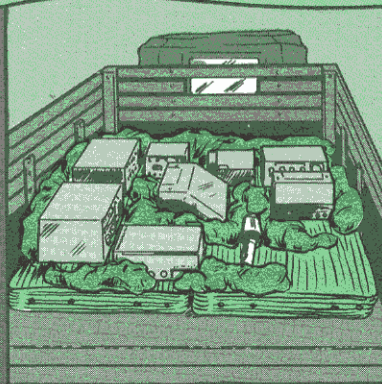


DIAGNOSIS: Commo gear is damaged beyond minor repair when transported to support.



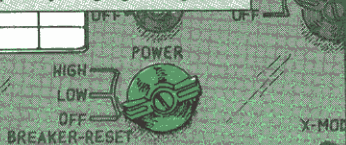
Rx:

Use old batting, foam rubber or an old mattress to protect equipment when you move it.



Carelessness

DIAGNOSIS: Radio circuits are zapped by surging voltage.



Rx:

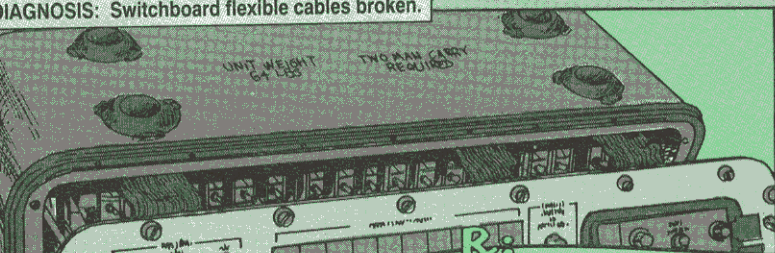
Turn off comms before starting vehicle.

OUCH!
THAT REALLY
COST HIM.



IT ALSO COST
HIS UNIT TIME
AND MONEY.

DIAGNOSIS: Switchboard flexible cables broken.



Rx:

Keep cables out of the way when closing the front panel.

DIAGNOSIS: Equipment dropped and broken.



Rx:

Get a buddy to help carry heavy gear

DIAGNOSIS: Corrosion in battery compartment.

MOST OPERATORS AND REPAIRMEN TAKE GOOD CARE OF THEIR EQUIPMENT. YOU CAN SEE WHAT HAPPENS WHEN A FEW DON'T.

I SURE CAN.

Rx:
Remove dry-cell batteries from radios, switchboards or telephones when your gear's not being used, or when it's being stored.

ALL OF THIS JUST PROVES ONE THING...

...AN OUNCE OF PREVENTION REALLY IS WORTH A POUND OF CURE!

DIAGNOSIS: Circuit cards damaged.

Rx:
Insert and remove circuit card with extractor.

THE BEST PRESCRIPTION TO KEEP YOUR COMMO GEAR WELL IS TO GIVE IT REGULAR DOSES OF P.M.

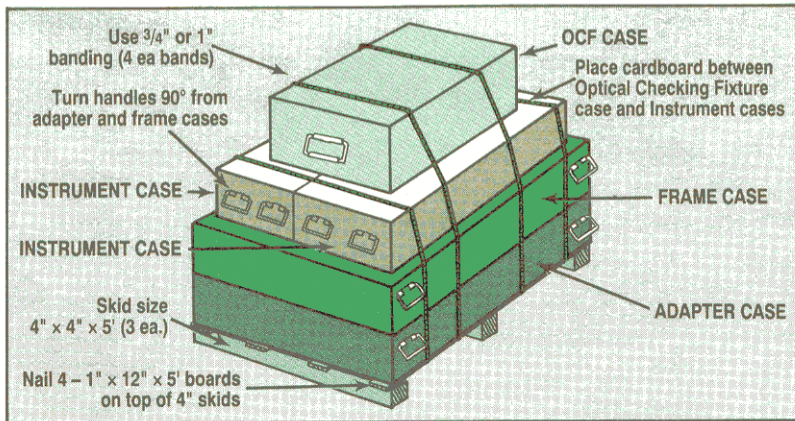
Case Care and Smooth Moves

FAR TOO MANY APACHE CAPTIVE BORE SIGHT HARMONIZATION KITS AND THEIR FIVE PORTABLE CASES ARE BEING DAMAGED.



1 These cases are expensive and so is the equipment they protect. Unlatch all case latches before you remove the cover. If you don't, the expensive latches break.

If you have to move the cases, move them carefully. Stack the cases with the adapter case on the bottom. Then add the frame case. The two instrument cases come next side by side with container handles 90° from adapter and frame case handles. Finish with the optical checking fixture case on top. Make sure steel binding is issued to keep the stack stable when being transported.



Put cardboard between the cases for a smoother ride.

Damaged cases are not repairable . . . only preventable.

IT AIN'T OVER 'TIL IT'S OVER



YOGI BERRA, THE GREAT EX-NEW YORK YANKEE CATCHER, SAID ABOUT A BASEBALL GAME "IT AIN'T OVER 'TIL IT'S OVER."

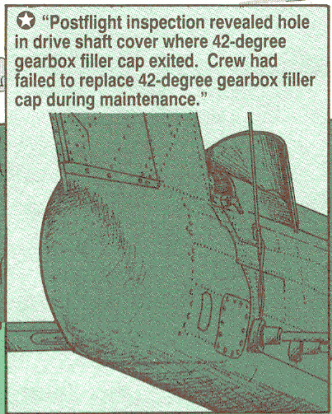
WELL, IF PREVENTIVE MAINTENANCE WERE A BASEBALL GAME, SOME OF YOU ARE QUITTING DURING THE SEVENTH INNING STRETCH.

LIKE HOW, YOU SAY?

LIKE THESE RECENT ACCIDENT REPORTS...



★ "... during aerial gunnery mission, loose vent cap flew out of aircraft and hit tail rotor blades, damaging one blade."



★ "Postflight inspection revealed hole in drive shaft cover where 42-degree gearbox filler cap exited. Crew had failed to replace 42-degree gearbox filler cap during maintenance."



★ [after landing and shutdown] "... personnel removed engine oil tank shroud and found three brushes and torn pieces of paper shop towel."

Isolated incidents? No. Cowlings are all too often left unsecured. Drive shaft covers aren't locked down tight. Tools and equipment aren't removed or correctly stowed.

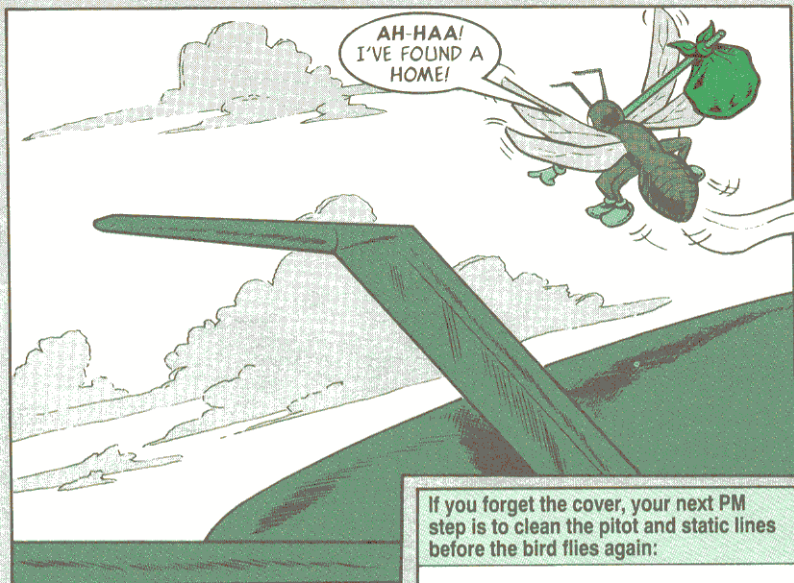
A maintenance job has a beginning, a middle and an end. The end starts... when you think you're finished. After you say, "That job's done," it's time to start the end of the job. Go over every single detail. Take nothing for granted. Leave nothing behind, leave nothing undone.

THE BIG GAME RUNS

WIN	0	0	0	0	0	0	0	0	0	LOSE	0
	1	2	3	4	5	6	7	8	9		

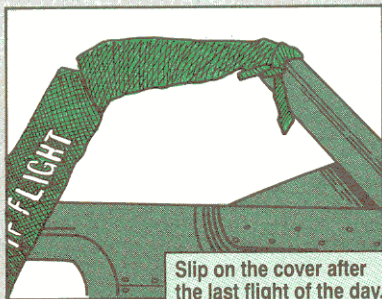
ALL IT TAKES IS A FEW EXTRA MINUTES TO FINISH THE MAINTENANCE GAME. IF YOU USE THOSE MINUTES, YOU'LL WIN EVERY TIME. IF YOU DON'T, YOU, THE AIRCRAFT AND CREW WILL BE THE LOSERS.

PM on the Pitot



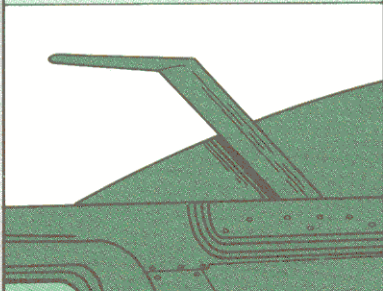
Preventive maintenance on your aircraft's pitot tube starts by keeping the tube covered.

That will keep Mr. and Mrs. Insect and their little bug babies from setting up housekeeping, which can take only a few hours.



Slip on the cover after the last flight of the day.

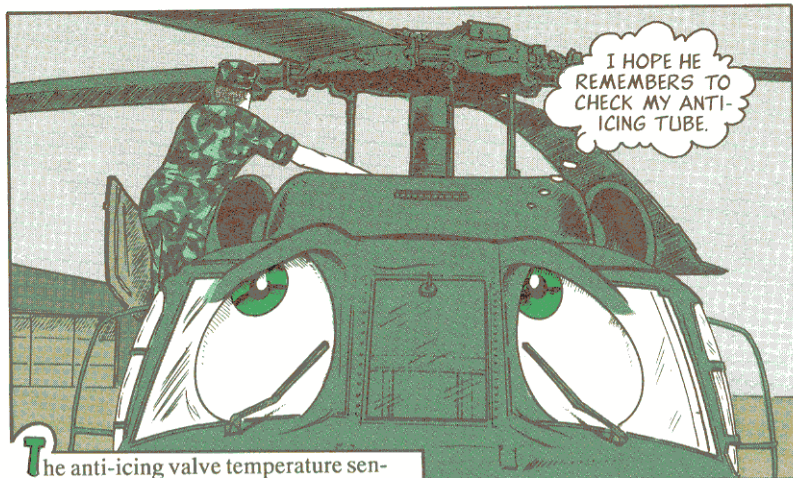
If you forget the cover, your next PM step is to clean the pitot and static lines before the bird flies again:



1. Disconnect all pitot-static instruments.
2. Disconnect lines from pitot tube and static openings.
3. Apply pressure of clean filtered air at instrument panel ends of lines until obstructions are removed.
4. Reconnect all pitot and static lines.

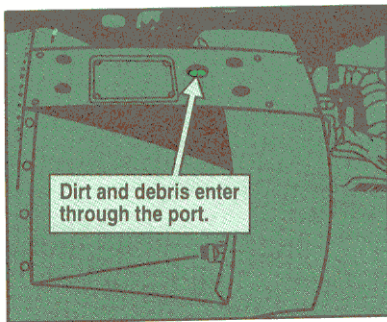
Keep the tubes and lines covered and cleaned and check them daily.

Clean the Anti-Icing Tube



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

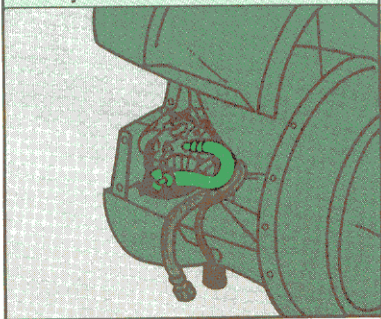
To clear the tube, remove the ice detector cover and temperature sensor tube like it says in Task 9 of TM 55-1520-237-23-6.



If there is 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 tube often, especially just before and during cold weather.

Blow the tube out with compressed air. Be sure to point the air hose away from you and others.



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

UH-60A...


SAVE HYDRAULIC FLUID

Dear Windy,

Everytime we open a quart of hydraulic fluid, we're supposed to toss what we don't use. This keeps contaminated fluid from being poured into our bird's innards.

But we've found a use for some of that waste oil. Instead of tossing the excess, we pour it in a clean, empty plastic spray bottle. Then we have oil to spray on hydraulic and pneumatic cylinder rods and other external surfaces that TMs tell us to lube. Of course, we mark the bottle as hydraulic fluid so it won't be used as a cleaner.

SGT Delbert Smith
Ft Rucker, AL



FOR THOSE QUICK AND EASY EXTERNAL JOBS, I KEEP HYDRAULIC FLUID HANDY IN A CLEAN, EMPTY, PLASTIC BOTTLE.

WASTE NOT, WANT NOT.

THAT'S A SLICK IDEA, SMITH, BUT BE SURE TO FOLLOW THE WORD OF YOUR ENVIRONMENTAL FOLKS WHEN HANDLING SERVICE SUPPLIES AND WASTE.

Extend Your Reach

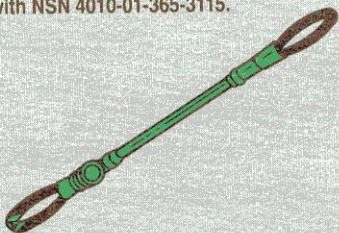
Hooking up a load at night or when sand or dust reduces visibility can be a problem.

There are two reach pendants available that can lift some of that burden.

THAT'S NOT
THE WAY TO
EXTEND YOUR
REACH!

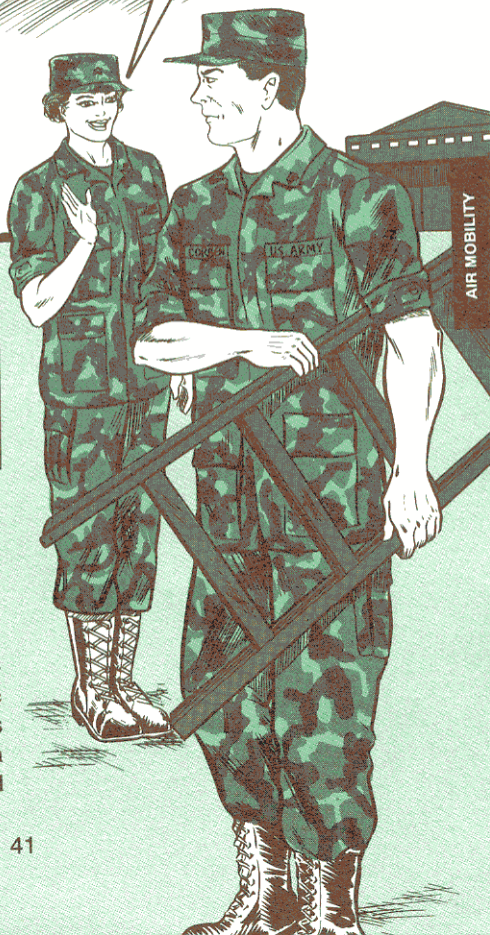
NSN 4020-01-337-3185 brings a 5-ft long, 25,000-lb capacity reach pendant. This pendant will work with either the CH-47 or the UH-60.

There's also a lighter, easier-to-use pendant for the Black Hawk only. Order this 5-ft long, 10,000-lb capacity pendant with NSN 4010-01-365-3115.



Before using these pendants, bone up on your air transport knowledge by reading the info on reach pendants in Chapter 8 of FM 55-450-3, Multiservice Helicopter External Air Transport: Basic Operations and Equipment.

Remember: increased separation between load and aircraft may change flight characteristics. Using pendants give the load a greater chance to spin which could destroy the pendant and cause a dropped load.



A Case of Mistaken Identity

CONNIE, I'M GETTING A FAULT LIGHT ON MY POWER AMPLIFIER.

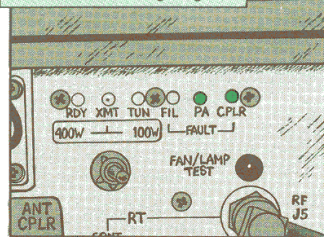
MAYBE THE RF CABLES ARE HOOKED UP TO THE WRONG JACKS.

It's a simple case of mistaken identity when you try to connect the two RF cables on your vehicular-mounted AN/GRC-193A radio set. That's because the cables look identical but each one must be connected to the right jack.

The problem comes when you route the cables under the power amplifier and through the rack to the jacks in the rear. When the cables appear at the rear of the rack, it's impossible to tell which cable goes to what jack.

If you make the wrong hookup, the power amplifier and the antenna coupler won't tune to the preset frequency.

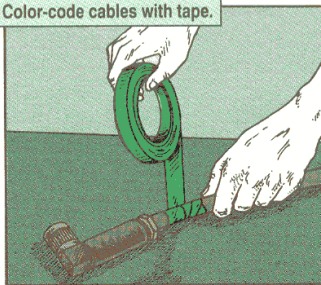
Wrong cable hookup?
PA and CPLR fault lights go on.



The radio will have no RF power and it won't transmit. The PA and CPLR fault lights will go on. You could wind up sending a perfectly good power amplifier to support for repair.

You need to clear up cable confusion. Make the cables easy to identify by color-coding them with tape. For in-

Color-code cables with tape.



stance, wrap red tape below each connector on one cable. Wrap the other cable the same way with blue tape.

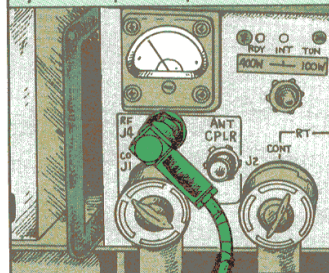
Here are some rolls of colored tape you can use:

COLOR	NSN 7510-00-550-
Blue	7124
Green	7129
Red	7126
White	7127
Yellow	7125

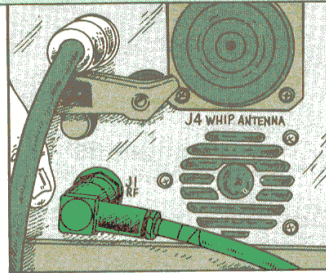
Appendix A of CTA 50-970 is your authority for ordering.

ONCE YOU HAVE THE CABLES COLOR-CODED, HOOK THEM UP LIKE SO...

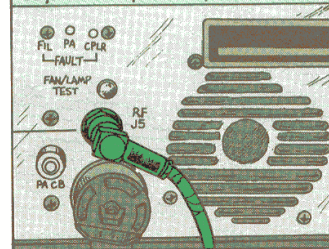
Connect one RF cable between the J4 jack on the power amplifier ...



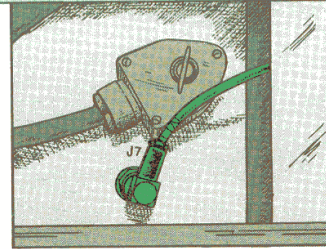
... and the J1 jack at the rear of the antenna coupler.



Connect the other RF cable between the J5 jack on the power amplifier ...



... and the J7 jack at the rear of the amplifier-converter.



Chained for Life

One of the most important items of the AN/PDR-27 radiac set is the MX-7338 radioactive test sample. Without it, you can't tell if your radiac set is working.

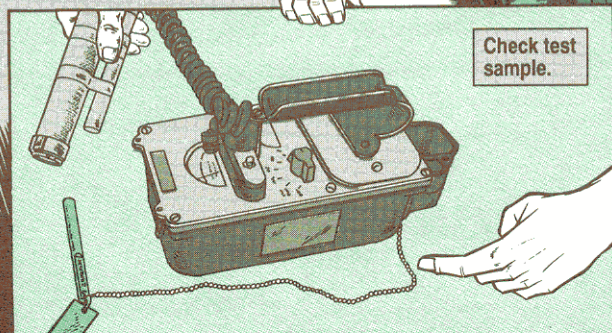
So, take a minute or two, right now, to make sure the MX-7338 radioactive test sample is chained to the radiac set's case and that it doesn't leak.

Take the sample off the case only when you send the radiac set to be calibrated or repaired. Remember to put the sample back on the case when you get the radiac set back from support.

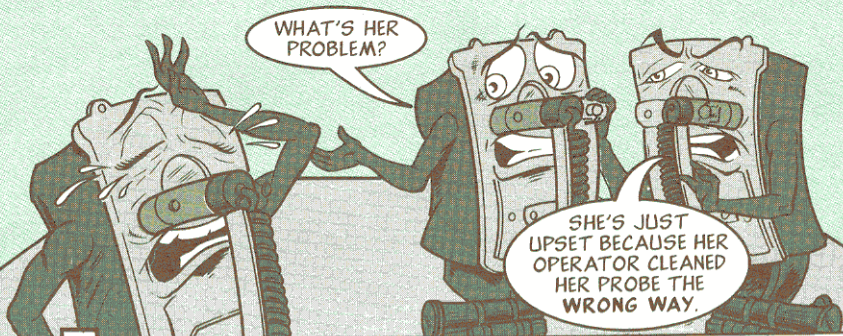
Testing the sample for leaks is easy. Turn your AN/PDR-27's function switch to 50. Place the purple — active — end of the sample flat against the small cylinder of the set's probe.

If the pointer hits 10 or more on the scale, the test sample is OK. If it registers less than 10, turn the test sample in to support. Keep it in an area that's well ventilated until it's moved.

WHEN THE NEW
TEST SAMPLE COMES IN,
CHAIN IT TO THE CASE
LIKE IT SHOWS IN TM
11-6665-230-12.



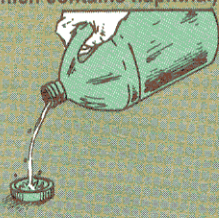
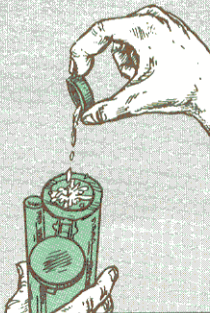
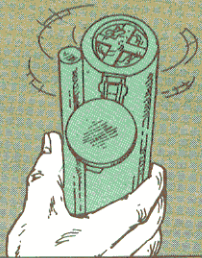
KEEP RADIAC SET SENSITIVE



You need to keep your AN/PDR-27's probe clean or the radiac set loses a lot of its sensitivity. If the probe's window gets caked with dirt, the probe can't detect radiation the way it should.

However, if you clean the probe wrong, you'll break the window. That means turning the radiac set in to support for repair.

The TMs leave you hanging when it comes to cleaning the probe's window. Here's how:

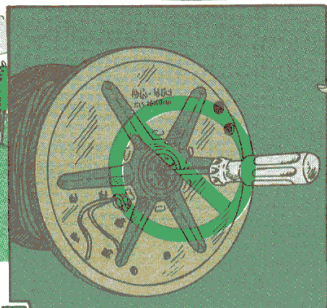
<ul style="list-style-type: none">✓ Put some naphtha, NSN 6810-00-201-1316, into a small container. (You may also use lighter fluid which contains naphtha.) 	<ul style="list-style-type: none">✓ Pour just enough naphtha in the probe well to cover the window. 	<ul style="list-style-type: none">✓ Gently swish the naphtha around for about 15 seconds.✓ Pour the naphtha off. 
---	--	--

Remember never to clean the window with water, alcohol, rags or brushes. You'll damage it.

Keep the cover shield on the probe any time you're not using the AN/PDR-27. That protects the window.

RL-39 Reel Wrap-Up

USING A ROD OR SCREWDRI-
VER THROUGH THE DR-8 SPOOL SHAFT WHEN
YOU LAY OR RECOVER FIELD WIRE
CAN LEAVE YOU IN TANGLES.

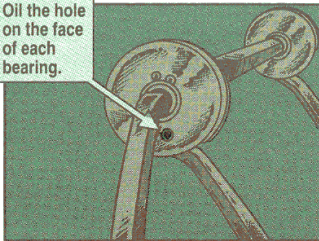


These makeshift handles jam the spool when the wire is pulled off. Then you've got tangled or broken wire. You may even damage the spool's end plates.

Always use the RL-39 reel with the spool when you lay or recover field wire. The reel lets you smoothly feed out or wind in wire, putting less stress on the spool.

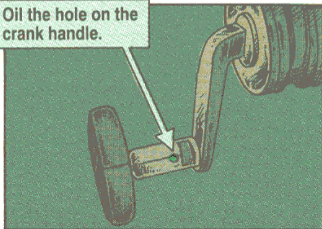
To keep the reel rolling smoothly, lube it quarterly like it says in TM 11-3895-203-15. Use lubricating oil, NSN

Oil the hole on the face of each bearing.



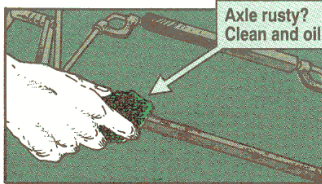
9150-00-273-2389. The reel has three lube points—one on the face of each bearing and one on the crank handle.

Oil the hole on the crank handle.



Rust on the axle makes for hard rolling. Remove rust with steel wool, NSN 5350-00-242-4404, or with fine sandpaper, NSN 5350-00-193-7211.

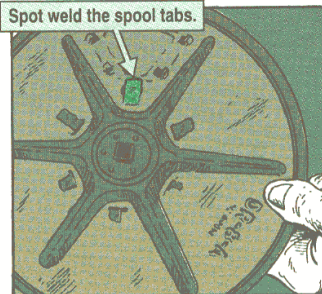
Axle rusty? Clean and oil.



After you've sanded off the rust, apply a light coat of oil to the axle.

Look at your spool's end plates. If the tabs are only bent over, get support to spot weld them. Bent tabs are too

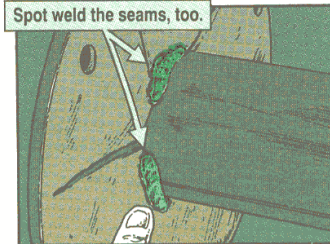
Spot weld the spool tabs.



weak to hold on the end plate if you drop a loaded spool.

For added strength, spot weld the seams where the spool shaft joins the end plates. Three welds at each end will do the trick. Clean up the welds with a wire brush, then touch up with paint.

Spot weld the seams, too.



Reel Repair Parts

HERE ARE THE
AVAILABLE PARTS TO
REPAIR YOUR
RL-39 REEL . . .

Item	NSN
Crank	5340-00-127-0999
Handle w/o crank	3895-01-135-2538
Cotter pin	5315-00-842-3044
Strap, ST34	8465-00-498-7991
Strap, ST35	8465-00-498-7992

MAKE TERMINAL SAFETY CLIPS

YOU WON'T FIND READY-MADE SAFETY CLIPS FOR THE LOAD AND GROUND TERMINAL NUTS ON 10-KW AND SMALLER GENERATORS IN THE TM!

THEN WHAT DO I DO?

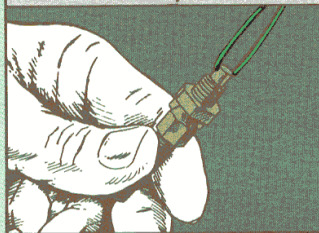
YOU CAN MAKE YOUR OWN!

First, pick the wire you need from this chart:

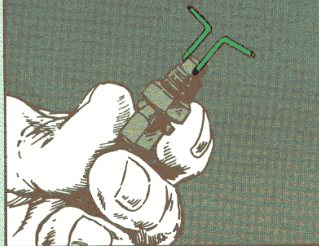
NSN 9505-	002A	003A	015A	016A	017A	018A	021A	022A	023A	025A	026A	112A
00-804-3814 .042 inch	G	G	L-G	L-G			L-G			G	G	G
01-049-0144 .050 inch	L	L				L			L	L	L	L
00-596-1668 .051 inch					L-G	G		L-G	G			
L = Load Terminal G = Ground Terminal												

Now, cut off about three inches of the wire. Be sure the wire is short enough to keep the clips from touching another terminal or the generator frame in the open or closed position. Put the wire through the hole in the terminal.

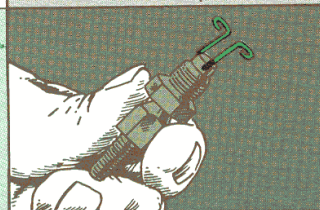
Hold the terminal so you can bend both ends of the wire straight up. Try to keep the wire in as straight a line as you can with the terminal body.



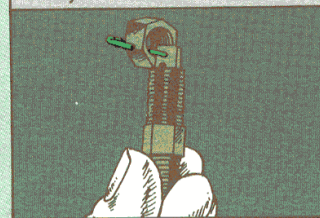
Next, bend the wire into back-to-back 90° angles. The legs of both angles should be about 1/2 inch long.



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.



To make safety clips on larger generators, use wire, NSN 9505-00-596-1662.

NO WIRE AVAILABLE?
AS A TEMPORARY FIX, YOU CAN STRAIGHTEN AN ORDINARY PAPER CLIP TO MAKE THE SAFETY CLIP.



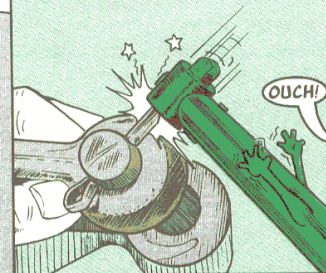
TORQUE WRENCH TALK

YOU POOR WRENCH!
ARE YOU GOING TO BE OK?
TORQUE TO ME, PAL!

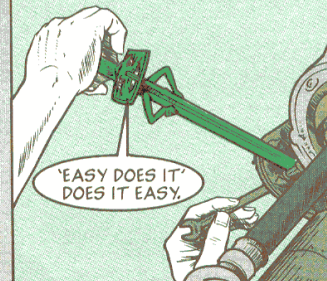
COUGH... IT'S TOO LATE
FOR ME, BUT HERE ARE SOME
TIPS... COUGH... TO SAVE
OTHER WRENCHES.

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

NEVER TAP OR HAMMER with a torque wrench. A torque wrench is like fine china—it's delicate! Bang it, and the calibration is shot.

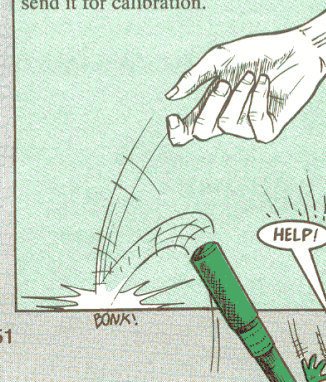


SLOW AND STEADY when you turn the wrench to get an accurate torque. A herky-jerky motion ruins a reading. You'll get a bad reading.



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

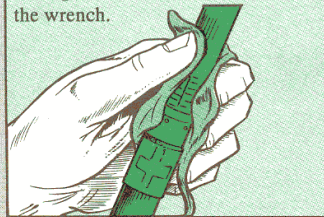
DROPPING OR TOSSING a torque wrench knocks it out of whack. It's a finely tuned tool. If you drop it, send it for calibration.



Most Army TMs are short on info for taking care of torque wrenches. TM 9-243, Use and Care of Hand Tools, gives you good info on torque wrenches, but here are a few more pointers to keep in mind:

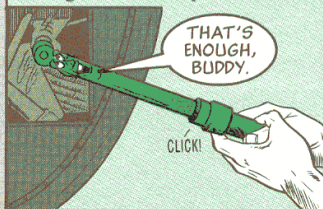
Use a wrench where the torque of the bolt you're tightening falls in the middle 2/3 of the scale. The ends of a torque wrench scale are not as accurate.

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



Never grease or oil a bolt unless your vehicle TM says to do so. Lubed threads reduce run-up friction and could cause overtorque.

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



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

The Little Engine That Can

Dear Editor,

When our ENG-3 lubricating and servicing unit sits around unused for a while, the batteries discharge and won't start the engine.

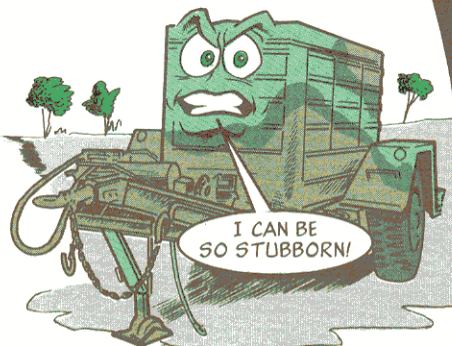
When we rope start it, the little engine coughs . . . groans . . . sputters . . . whines . . . and is hard to start.

So, we came up with this homemade solution that makes starting the engine a snap:

→ First, go to the can point and get a slave receptacle from a 2¹/₂-ton truck.

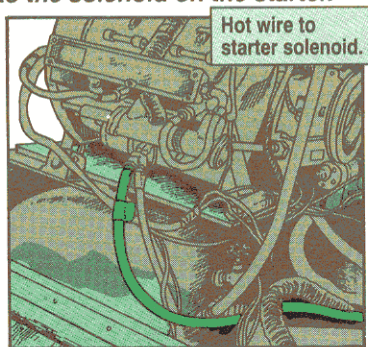


→ Install the receptacle between the gear lube and the GAA lube reels, using holes and hardware already there.




→ Connect the ground wire to one of the GAA reel mounting bolts.

→ Connect the positive wire to the solenoid on the starter.



Then when the battery is dead, slave start to a power lube.

CW3 Michael Zantow
Ft Ord, CA

FROM THE DESK OF THE Editor 
Thanks for sharing an idea to
give that little engine a boost!

Keep O-Rings Handy

Keep an assortment of O-rings on hand. A kit of 382 O-rings comes your way with NSN 5330-00-966-8657. Sizes range from 1/8 inch to 1 3/4 inches inside diameter. A sizing gauge comes with the kit to help find which O-ring to use.

Even though you get a selection of 30 different size O-rings in the kit, not a single one fits an audio connector U-229/U. When you need an O-ring for your H-250 handset, H-189 handset or M-80 microphone audio connector, get it with NSN 5330-00-905-6032.



SCIT Tool Catalog



The Standardization and Control of Industrial Quality Tools (SCIT) offers name-brand tools through GSA.

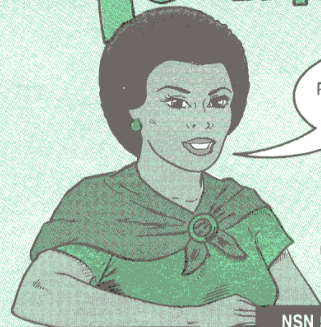
You can now get the special GSA catalog for SCIT industrial quality tools by writing to this address:

Centralized Mailing List
Service
PO Box 6477
Ft Worth, TX 76155

Or call DSN 739-7369 or commercial 817-334-5215. Their fax number is 817-334-5227.

Terminal Kit

Components



IT'S EASY TO GET REPLACEMENT TERMINALS, PINS, RECEPTACLES, CONNECTORS OR TABS FOR YOUR TERMINAL KIT, NSN 5940-00-450-5802.

WHEN IT'S TIME TO RESTOCK, USE THESE NSNs...



CAN I GET REPLACEMENT PARTS FOR MY TERMINAL KIT?



SURE, AS LONG AS YOU'VE GOT THE RIGHT NSN.



NSN 5940-

NSN 5940-

Ring Terminal,
AWG 12-10,
Stud 1/4-in



00-143-4777

Ring Terminal,
16-14,
Stud 3/8-in



00-143-4793

Hook Terminal,
16-14,
Stud 10



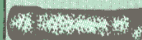
00-057-8216

Ring Terminal,
22-16,
Stud 10



00-143-4771

Butt Connector,
12-10



01-079-1936

Butt Connector,
16-14



01-079-1375

Closed End
Connector,
22-14



00-636-5535

Butt Connector,
22-16



00-665-7317

Ring Terminal,
12-10,
Stud 3/8-in



00-113-9826

Spade Terminal,
16-14,
Stud 10



00-552-2019

Bullet Terminal,
16-14



00-177-4356

Terminal Pin,
22-16



00-843-1473

Disconnect Tab



00-481-9090

Flag Terminal



00-481-9089

Plug Terminal
Straight, 7MM



00-845-4106

Distributor Cap
Terminal



00-360-7689

Ring Terminal,
12-10,
Stud 10



00-143-4794

Ring Terminal,
15-14,
Stud 10



00-143-4780

Tab Receptacle,
16-14



00-926-0085

Tab Receptacle,
22-16



00-948-9686

Bullet
Receptacle



01-035-5085

Quick
Disconnect
Tab



00-843-1550

Blade
Receptacle



00-998-6126

Quick Disconnect
Receptacle



00-827-4284

Breathe Easy with PM

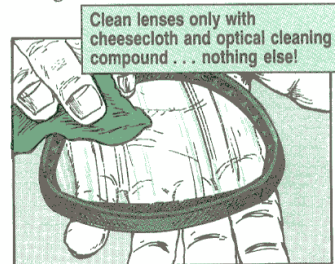
Valve Aid

When you take off the mask, remember to unzip the hood first. Lots of hoods get zapped because they're still zipped.



Clean Clearly

It's better to let the lenses stay dirty than to clean them with rags or abrasive detergent. They just scratch the lenses and make them permanently hard to see through.

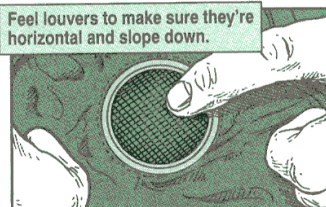


Always clean your M17 when you come back from the field, even if it never left the carrier. Dirt and moisture can get in the carrier. They cause abrasion, mildew, and dry rot.

Before you install any valves, rotate their disks with your finger. If any stick, replace 'em. Inlet disks that stick make it hard to inhale. Sticking inlet or nose cover valves cause the lenses to fog.



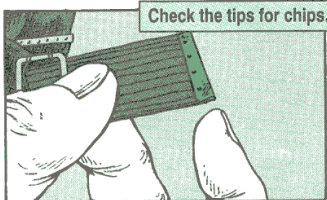
Also make sure the inlet valve louvers are horizontal and slope downward. If louvers point the wrong way, they let rain in the valves and make breathing hard.



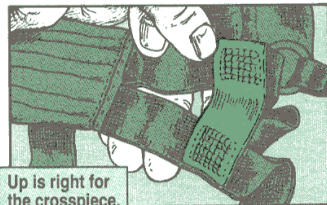
Don't depend on TOP or a white dot on the valves to tell you how to put them on. The TOP or dot is often wrong.

Hood Help

Eyeball the hood for cuts, holes, tears, sticky or gummy areas, or peeling. Look closely. Just two pinholes in the same hood panel make the hood unserviceable — and dangerous.



If your mask doesn't fit right after you put it back together, the harness may be upside-down. The harness crosspiece should be at the top of the mask.



Tighten the harness snug . . . and stop. If you jerk on the straps to make the fit even tighter, you can tear the straps from the faceblank. The mask is ruined.

When you're ready to pull off the mask, first loosen the straps. If you pull



off the mask again and again without loosening first, the straps lose their snap. The harness has to be replaced.

HERE ARE A FEW TIPS TO HELP YOU AND ME BREATHE EASIER.

All your mask care won't be worth spit if you use your mask as a pillow, let it bounce around in a truck, or otherwise treat it roughly. That can ruin the mask's set or bend the drink tube control lever shaft. The mask is unserviceable.

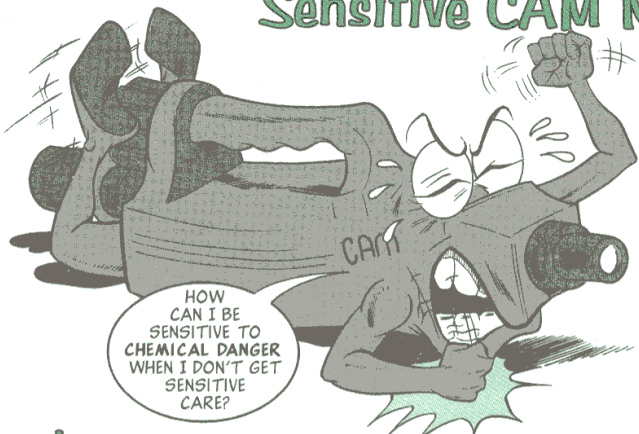
Keep it in the bag!
Don't use it as a pillow!



Harness Help

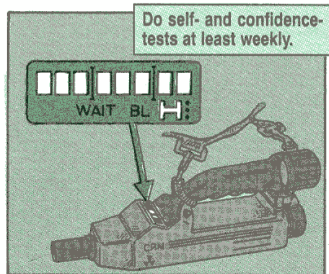
Look for chipping on the metal tips of the harness straps. Chipped tips rub the rubber raw. Your NBC NCO can touch up chipped tips with black lacquer, NSN 8010-00-085-0559, or he can cannibalize tips from old, unserviceable straps.

Sensitive CAM Needs Sensitive Care



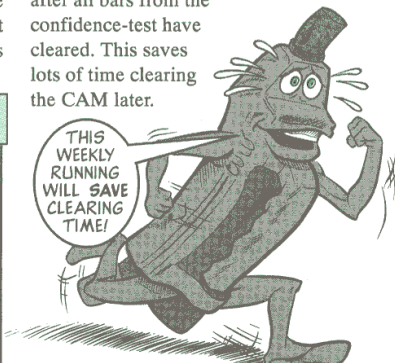
If the chemical agent monitor (CAM) is to be sensitive to chemical threats, it needs sensitive treatment from both NBC NCOs and operators. Just a little inattention hurts the CAM's sensing powers.

NBC NCOs, you can't let the CAMs just sit in storage. To prevent moisture or acetone buildup, perform the self-test and confidence-test every week a CAM's in storage.

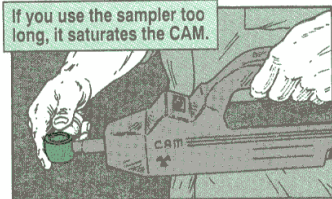


If a CAM has built up moisture, it may need to warm up before passing the confidence-test—usually 30 minutes. If the CAM's never been used before, it can take up to eight hours.

Run a CAM at least 30 minutes per week and at least five minutes after all bars from the confidence-test have cleared. This saves lots of time clearing the CAM later.



Stress to operators that they must be very conscious of time when they do the confidence-test: No more than one second on the first try, no more than five on the second. The CAM quickly becomes saturated if the sampler is left on longer.



If it's cold out, warn them that it will take longer than two minutes for the CAM to warm up—sometimes as long as 1 1/2 hours.

Emphasize, too, that an area must be as clear as possible of smoke, exhaust, and disinfectants if the CAM's to do its job.

The nozzle standoff must be kept clean and dry if it's to sense. If the standoff gets wet or dirty, replace it.

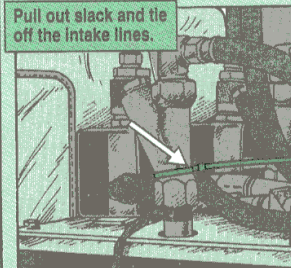


Tie Off Hoses

Dear Editor,

If the fog oil supply hoses are left dangling when the M157's mounted on a HMMWV, vibration from travel and operation weakens them and tree limbs catch them.

Solution: Pull out all slack in the hoses and use tie-downs to tie them to the intake lines. Make sure the hoses do not stick up above



the cab where branches can get at them.

**SGT Christopher Britt
Ft Bragg, NC**

FROM THE DESK OF THE Editor
Your suggestion ties up loose ends. Thanks.

Flashlights...

WANTED: Filters

LOOKING FOR THE
REPLACEMENT FILTERS
FOR YOUR MX-991 AND MX-992
FLASHLIGHTS?

FIRST, TRY TO
GET THE FILTERS FROM
A BUM LIGHT.

IF YOU CAN'T
GET THEM THAT
WAY, THEN ORDER THEM
WITH THESE NSNs...

Red filter
NSN 6230-00-111-0190

Opaque (blackout) filter
NSN 6230-00-128-2464

Diffusion filter
NSN 6230-00-356-4825

Green filter
NSN 6230-00-504-8341

Amber filter
NSN 6230-00-504-8342

Blue filters
are no longer
available.





NOW'S NOT THE TIME TO LET
YOUR PM FALL-TER.

AOAP Has Moved

The Army oil analysis folks have moved to Alabama. Now if you need to know what equipment is to be sampled, how often to sample or such, write to:

**USAMC Logistics Support Activity
ATTN: AMXLS-LA
Redstone Arsenal, AL 35898-7466**

Any questions, just dial DSN 645-0869 or Commercial 205-955-0869. You'll get a recording, so give your name, rank, DSN or commercial phone number, then ask your question.

NATO Slave Receptacle Cost Cutter

You can make a cable for the dust cap on the NATO slave receptacle for about 50 cents. Use a 9-in piece of nylon cord, NSN 4020-00-246-0688. Make sure to clamp a terminal ring, NSN 5940-00-143-4794, to each end of the cord.

Battery Misery

The BA-6598/U used in your communications equipment is no longer available. Use the BA-5598 lithium-sulfur dioxide battery, NSN 6135-01-034-2239, instead.

M548A1 Wiper Blade NSN

Use NSN 2540-01-098-1865 to get the cargo carrier's windshield wiper. The NSN in the -20P TM is wrong.

M939-Series Heater Seal NSN

NSN 5330-01-108-9119 gets the rubber seal that fits between the fresh air heater elbow and the vehicle heater canister assembly on your 5-tonner's hot water heater. Keep the seal and elbow together with adhesive, NSN 8040-00-262-9005.

5-Ton Truck Air Cleaner Clips

Replacement clips for your M939-series and M809-series air cleaner cups are available using NSN 5340-00-833-1236. The clips fit cup, NSN 4730-01-090-7621, used on all M939s, and cup, PN 11604539, used on M809-series trucks.

NBC Hotline

Got an NBC question no one can answer? The Chemical-Biological Defense Agency has a toll-free 24-hour hotline to call for an answer—no matter where you are. In the United States, call (800) 831-4408. In Germany, call 0130810280. In Korea, call 0078-14-800-0335.

Bradley Breakout Box

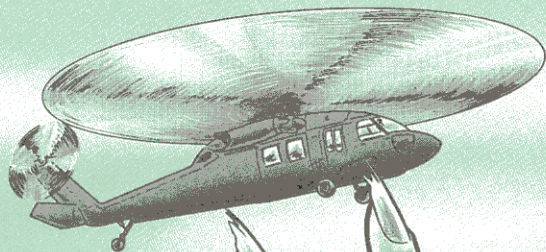
To get a replacement breakout box and cable for your M2A2/M3A2 Bradley, see Page C-3 of TM 9-2350-284-10-1. The breakout box is NSN 4910-01-163-1339 and the cable is NSN 6150-01-128-5590. Use Appendix A of CTA 50-970 as your ordering authority.

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

**Would You Stake Your Life *right now* on
the Condition of Your Equipment?**

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Washington, D.C.



**PM is the only
thing that keeps
you in the air!**