

Issue 520

PS

March
1996

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-520

Has your
buddy read
this issue?
Pass it along!

FOXTROT 6,
THIS IS ECHO 5
CHARLIE. COME IN
FOXTROT 6.

I LIKE
YOUR CAN-DO
ATTITUDE, BUT
IT'S NOT ENOUGH
WITHOUT
PMCS!

Approved for
Public Release;
Distribution Is
Unlimited

A Desperate Call
... See Page 27

Experience as a Teacher

Nothing tops experience as a teacher. For soldiers, however, trial and error can be very expensive—and not just in money.

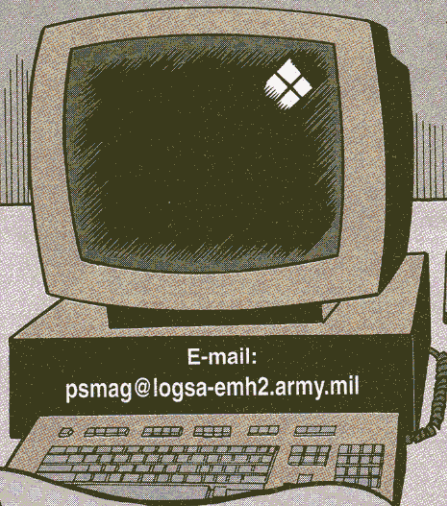
If you've "been there and done that", and you've come up with a solution to a problem that faces many soldiers, consider sharing your experience with them.

SSG Geoffrey Puppel of Ft Campbell does on Page 41 of this issue. He tells how to keep Black Hawk engine covers in place in strong winds.

Gary Williams and Arthur Holt solved a lacing wire problem on the M242 gun. It's on Page 16.

You can share your experiences, too. Send 'em to us by whatever method is available to you.

If letter writing is a chore and seems too backward for these times, you can e-mail or fax your idea to us. And there's always the phone.

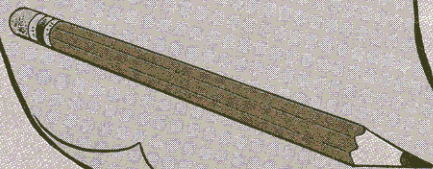


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The Preventive Maintenance Monthly
Bldg 3325
Redstone Arsenal, AL 35898-7466



Fax:

DSN 645-0961

comm: 205-955-0961

Phone:

DSN 645-0892

comm: 205-955-0892

We can't compete with the Army's suggestion program or with SMART. To qualify for a cash award, they're your best bet. On the other hand, if you just want to let other maintenance and supply types in on what works for you, then let PS help you share it.



**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

TB 43-PS-520, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user.

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You are invited to send PS your ideas for improving maintenance procedures, questions on maintenance and supply problems, and 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

Or E-mail to:

psmag@logsa-emh2.army.mil

By Order of the Secretary of the Army:

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General, United States Army Chief of Staff

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01201

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5-Ton Trail Tips

THE BRAKES
LOCKED UP OUT ON
THE ROAD.

HERE ARE
SOME THINGS TO DO
TO PREVENT BRAKE
PROBLEMS.



Glad Hand Relief

The relief valve on the service brake's dummy coupling (behind the front bumper) gets clogged with dirt and sand. A clogged valve can lock up the truck's brakes.

Burned out or locked up brakes are bad news for you and your truck's mechanic.

Use a paper clip or pocket knife to open the clogged hole.

Open clogged hole with paper clip



Lightly tapping the coupling against the truck's frame also works.

Rubber Seal Deal

The rubber seals that fit inside the brake glad hands get chewed up from constant use.

Remind your mechanic he doesn't have to order the glad hand assembly. He can save your unit some money and get just the seal, NSN 5330-00-090-2128.

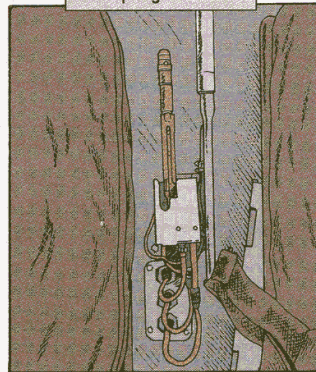
Order glad hand's rubber seal with NSN 5330-00-090-2128



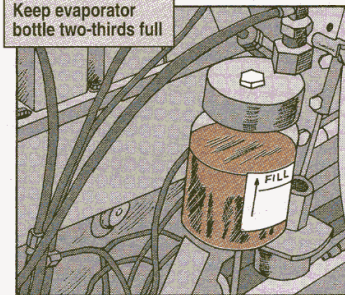
Don't Forsake Spring Brake

Any gear that's stowed next to the driver's seat ends up on the spring brake. Not only does the gear trip the brake's hand lever, it also crimps the spring brake's air lines. Air is not released into the truck's brake system. The brakes lock up or the spring brake lever won't release.

Keep everything away from spring brake lever



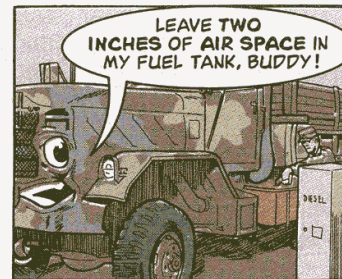
Keep evaporator bottle two-thirds full



Easy on the Fill-up

You can do your 5-tonners a big favor by not topping off the fuel tank. Instead of filling it to the brim, leave about two inches of air space below the filler neck. That leaves room for the fuel to expand.

LEAVE TWO INCHES OF AIR SPACE IN MY FUEL TANK, BUDDY!



Keep Bottle Full

Keep the alcohol evaporator bottle at least two-thirds full of alcohol.

The bottle is part of the truck's winterization kit—it keeps moisture out of the air lines. That moisture can freeze and plug the lines.

Keep alcohol in the bottle the rest of the year, too. Big diesel engines get hot enough to soften, crack or even melt an empty bottle.

Eyeball the bottle every time you open the hood to make sure it's at least two-thirds full of alcohol.

PS 520

Fuel from a too-full tank gets sucked into the fuel vent line that goes into the engine's air intake system. Fuel clogs the air filter.

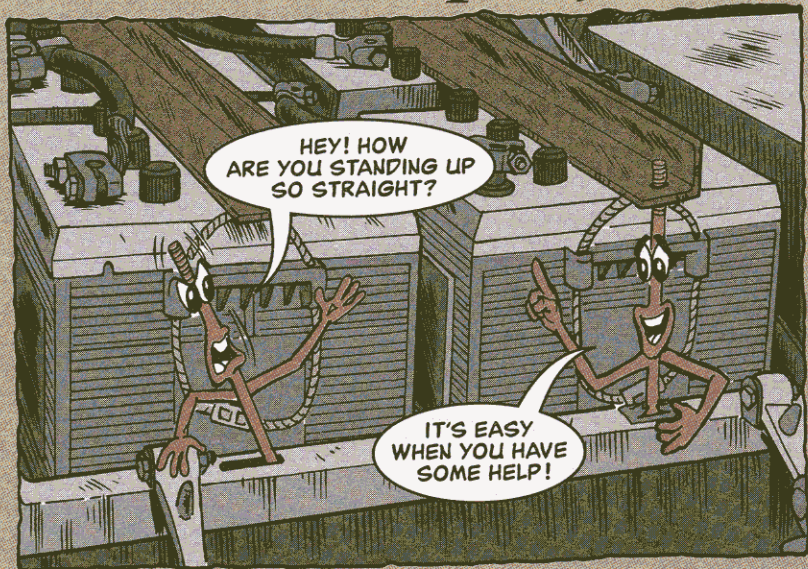
Worse yet, diesel fuel sucked through the air cleaner can cause engine run-away.

Finally, fuel can leak past the piston rings into the crankcase. Oil can't do its job of protecting moving parts. Parts wear out by grinding themselves to bits.

3

MAR 96

How to Trap a J-bolt



Hunt no more for a way to get J-bolts to stand tall while you install the battery retainer in 2 1/2- and 5-ton trucks.

All you need are push-on nuts, NSN 5310-01-186-3331. Hook the J-bolt on the bottom of the battery box and then shove a push-on nut all the way down the bolt to the box floor. The nut will hold that bolt straight while you trap the others. Then the retainer goes on easy-like.

5-Ton Van Sash Assembly

Use NSN 2510-00-235-1888 to get the sash assembly for the rear doors on the M820, M820A1, and M820A2 expandable van truck. The NSN shown for Item 1, Fig 307, in TM 9-2320-260-20P is wrong.

Wheel Wrench for 5-Tonner

NSN 5120-00-316-9217 gets a wheel stud nut wrench for the M939-, A1- and A2-series trucks. Make a note until the number is updated on Page B-6 of TM 9-2320-272-10.

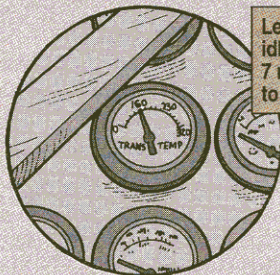
Transmission Needs Idle Time

When you pull PMCS on your HEMTT, let the engine idle for several minutes before you check the transmission oil temperature gauge. Otherwise, you won't get any reading at all.

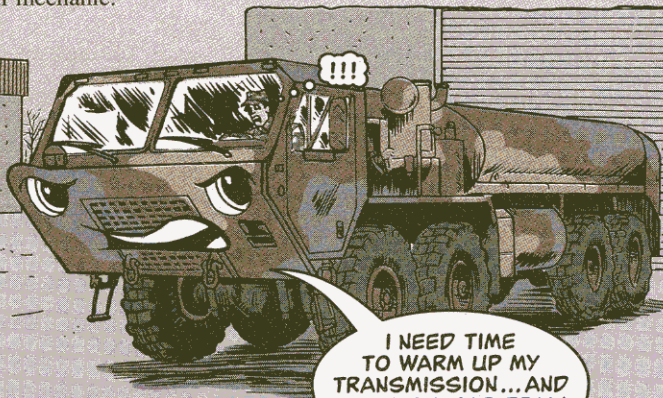
PMCS Item 14 in TM 9-2320-279-10-1 says the transmission temperature gauge is good if it reads between 160° and 220° F during BEFORE OPERATION checks.

An automatic transmission may not reach 160° F for several minutes after the engine is cranked up.

So let the engine idle for five to seven minutes. Then if you still don't see any rise in the transmission oil temperature, tell your mechanic.



Let engine idle for 5 to 7 minutes to reach 160°



HEMTT Needs Drain Plug

Some early model HEMTTs do not have a cab floor drain plug to let water out. Get your support to drill a 3/4-in hole in the rear area of the cab floor. The how-to in TB 43-0001-39-6 (Sep 93) is for unit maintenance, but DS must do it. They'll use NSN 5340-01-360-5354 for a drain plug. If you get to do the touchup painting, use CARC paint, NSN 8010-01-229-7546.

Engines ...

COMMON SENSE SAVES 'EM

Look at, touch and smell the oil on a crankcase dipstick to help catch problems before they damage an engine.

Oil can go to pot much quicker in the cold and may need changing more often than the LO says. Sludge from condensation and dilution from fuel are the culprits.

So, during each oil-level check, sniff the dipstick for fuel. Look and feel to detect sludge. It'll look like clumps on the dipstick.

Water contamination is hard to find until it's really bad. If you suspect it, draw a sample and let it stand in a glass jar. Water will separate from the oil.

If you find water, change the oil and oil filters.

If you're using OEA (arctic engine oil), check your oil level often. OEA is thin and your engine will use more of it than regular oil.

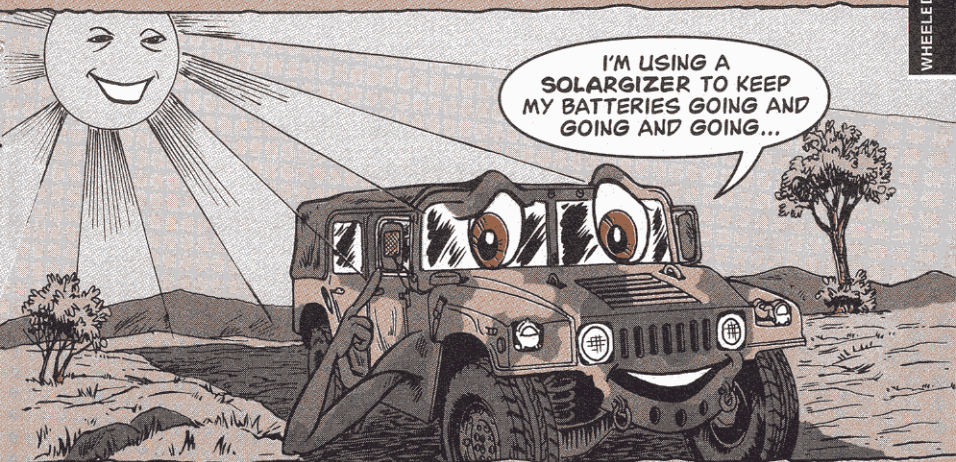
Keep an eye on the oil pressure gauge. Low pressure indicates low oil. If you go on a long run, check oil level several times a day. Never overfill just to skip an oil check. Overfilling causes other troubles.



WHAT DO YOU GUYS WANT??

WE'RE HERE TO CHECK YOU OUT FOR CONTAMINATION.

Give 'em a Longer Life



In the past, mechanics, all you could do with “dead” batteries was turn them in and get new ones. Turns out that was a waste of time and money. The Army has found a better way—by using the oldest power source of all, the sun.

NSN 6130-01-392-8347 brings you a solar maintainer/conditioner for 24 volt batteries, and its installation kit.

The maintainer/conditioner—called a Solargizer—works by keeping the battery’s lead plates free of electron-slowng sulfates. (Sulfates keep the battery from charging or supplying the charge it has. The battery seems dead.) The Solargizer’s manufacturer claims if you use his system, a new battery could last five years.

The solar maintainers are less than \$150 each. Tank-automotive and Armaments Command (TACOM) says unit maintenance can install them.

Installation procedures are available from the AMC-FAST office at Ft Hood. Call them at DSN 737-7145 or commercial (817) 287-7245, or TACOM, DSN 786-7362, commercial (810) 574-7362.

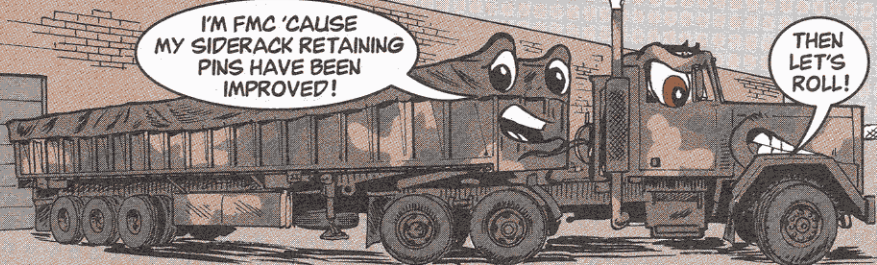
Storage Battery Video

Think your troops would benefit from a video on operator and unit maintenance of lead-acid batteries? Go to your local TASC and ask for “The Automotive Storage Battery”, PIN 710712, ICN TVT 9-310. The video also shows about charging procedures used at support.

Save Pins and Side Racks

I'M FMC 'CAUSE MY SIDERACK RETAINING PINS HAVE BEEN IMPROVED!

THEN LET'S ROLL!



Side rack retaining pins aren't doing the job. They don't stay in place long enough. So, you'll probably scream foul over this:

The PMCS in TM 9-2330-359-14&P for the trailers is being changed to make your trailer NMC if any of the pins are missing when your mission requires side racks, stakes and retaining pins.

What do you do? You make a bunch of better retaining pins.

You need nine links of chain and two or three inches of safety wire for each pin. You also must drill a $\frac{3}{64}$ -inch hole in the head of the bolt for the safety wire. Drill a hole in the threaded end for the lock pin.

Attach these pins so they will not easily "disappear." Either safety wire 'em or spot weld them to the trailer.

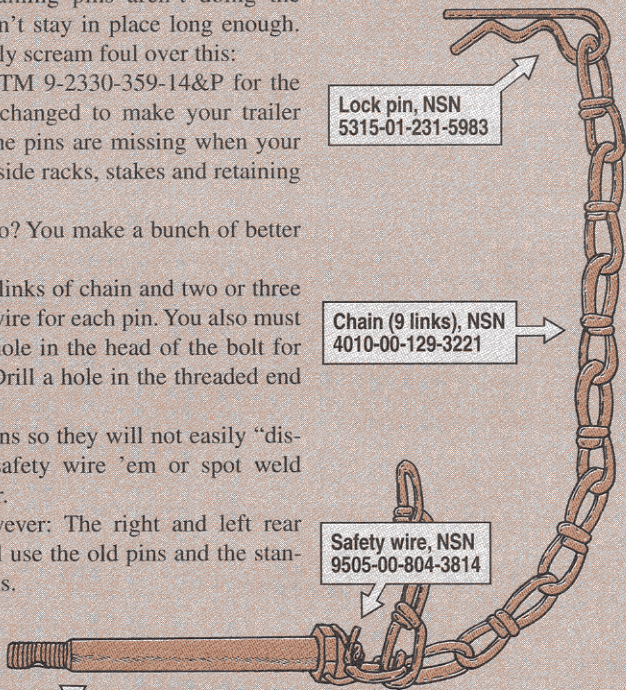
Note this, however: The right and left rear corner stakes still use the old pins and the standard corner chains.

Lock pin, NSN
5315-01-231-5983

Chain (9 links), NSN
4010-00-129-3221

Safety wire, NSN
9505-00-804-3814

Machine bolt, NSN
5306-00-639-1845



New Wheel, New PMCS

Mechanics and drivers, here are two new bits of wheel info on M747 trailers:

⊙ A new wheel, NSN 2530-01-412-6361, is now available. It's wider and stronger than the current wheel, and is designed for radial tires.

You can use it on all "B" type trailers (serial number 201 and higher), and trailers with serial numbers 200 and lower that have had all axles converted to "B" type hubs.

⊙ Add a PMCS check for wheel cracks and damage to TM 9-2330-294-14's BEFORE, AFTER and SEMI-ANNUAL services. Look for cracks in welds and around bolt holes. Check for dents, particularly in the bead area.

Replace wheels that are cracked or dented enough to cause distortion, air loss or tire damage.

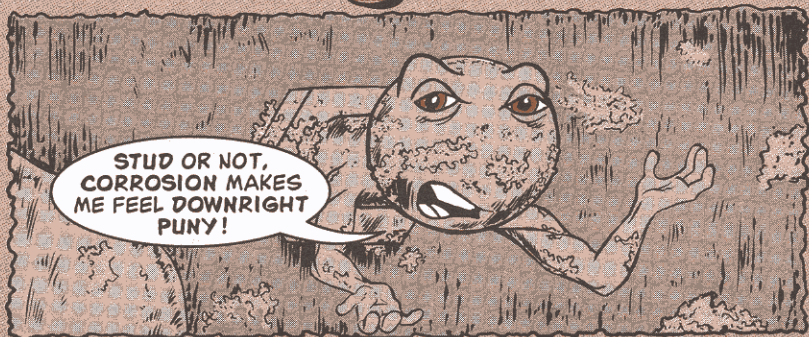


HMMWV Fan Shroud Repair

Repair minor fan shroud damage on your HMMWV with fiberglass repair kit, NSN 2090-00-372-6064. Cracks and breaks that you can fix without removing the shroud are minor. Major damage means replacing the shroud.

Prevent damage by going slow when entering the water during fording operations. Make sure there's at least 1/4 inch clearance between the fan and shroud. If the fan is cracked or broken, replace it ASAP.

Averting Disaster



Static electricity when loading or dispensing fuel from a fuel tanker can be an operator's worst nightmare.

Just one spark at the wrong time can turn an ordinary day into a fiery disaster.

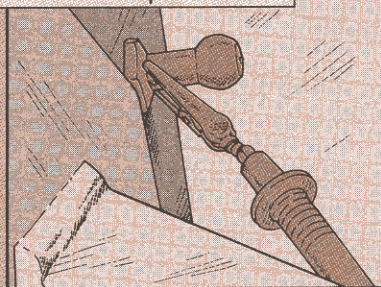
Proper grounding techniques are important, but they won't make you completely safe. Paint, rust and corrosion can build up between ground studs and the tanker body to prevent a good ground.

During annual services, have your mechanic use a multimeter to check each ground stud for continuity. Here's how:

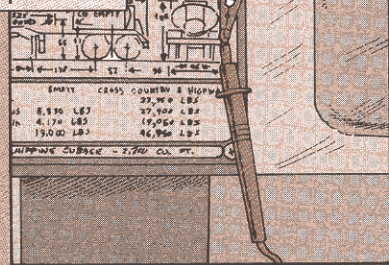
1. Set the multimeter to read ohms.
2. Hold the red (+) probe to the ground stud being tested.
3. Press the black (-) probe to bare metal somewhere on the tanker. Data plate screws work well since they are screwed into the tanker body.
4. If the stud is grounded properly, you should get a reading of zero ohms.

Any other reading means the stud is not completely grounded. Remove the stud and clean away any paint or corrosion. Then check continuity again.

Hold multimeter probe to stud ...



... and data plate screws



Driving on Down the Road

COMMANDERS, IF YOU WANT WELL-TRAINED TRUCK DRIVERS, YOU BETTER HAVE A WELL-STOCKED TRAINING LIBRARY. ORDER THESE TRAINING CIRCULARS THROUGH YOUR PUBLICATIONS PERSON.



TC	Training Program for:
21-305-1	Hvy Expanded Mobility Tactical Truck (HEMTT) <small>Revised</small>
21-305-2	Night Vision Goggle Driving Operations
21-305-3	M939-Series 5-Ton Cargo Truck
21-305-4	High Mobility Multipurpose Wheeled Vehicle (HMMWV)
21-305-5	Equipment Transporters (Heavy, Medium, and Light)
21-305-6	Tractor and Semitrailer (M915, M931, and M932)
21-305-7	Light Vehicles
21-305-8	Medium Vehicles
21-305-10	Palletized Load System (PLS)

To help with your driver training program, get these videos from your local TASC.

TVT	PIN	Title
55-15	709184DA	Operation of the HMMWV
55-16	709233DA	Driving the M939A2-series Cargo Truck
55-17	709234DA	M931 PMCS (Part 1) and M931 Driving (Part 2)
55-18	709235DA	M915 PMCS (Part 1) and M915 Driving (Part 2)
55-19	709236DA	C-HET PMCS
55-20	709237DA	C-HET Coupling and Uncoupling
55-21	709238DA	C-HET Loading and Unloading the M1A1 Tank
55-22	709239DA	C-HET Driving
55-23	709710DA	HEMTT PMCS
55-24	709711DA	HEMTT Winch Operations
55-25	709712DA	HEMTT Crane Operations
55-26	709713DA	HEMTT Driving Techniques
55-27	709528DA	Driving a HMMWV Equipped with CTIS
55-36	710046DA	PLS Truck PMCS (Part 1), PLS Driving Techniques (Part 2), and PLS Crane Operations (Part 3)
55-37	710336DA	PLS Load Handling System (Part 4) and PLS Winch Ops (Part 5)
20-928	708983DA	Preparation and Use of the AN/PVS-5 Series Night Vision Goggle
20-929	708929DA	Preparation and Use of the AN/PVS-7B Night Vision Goggle

IF YOU HAVE QUESTIONS ON DRIVER TRAINING, DROP A LETTER TO...



Commandant USATSCH
ATTN: ATSP-TDX (Drv Std Office)
Ft Eustis, VA 23604-5389



DIRTY AIR = DEATH SENTENCE



Mechanics, letting an M1-series tank operate with a loose or torn air induction system plenum seal is a sure death sentence for the engine.

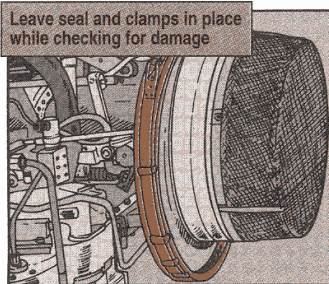
The turbine's going to get air somewhere, regardless of whether it's clean or dirty. And if the plenum seal is damaged or not installed correctly, you can bet a lot of the air's going to be dirty. That engine is as good as dead after just a few miles. Ensure clean air like this:

Inspection

Remove the air intake cover and look at the seal for tears or other damage. Feel under the seal's lip, too. The surface should be flexible and springy, not soft or brittle.

Next, examine the inner and outer hose band clamps. Look for looseness or stripped threads.

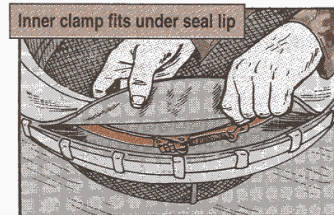
Any damage to the seal or clamps means you replace 'em. A new seal and outer clamp comes with NSN 5330-01-079-9954. NSN 4730-01-083-6059 gets a new inner clamp.



Installation

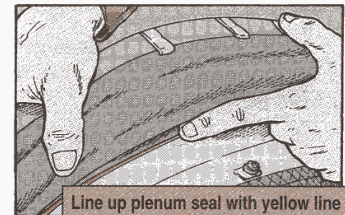
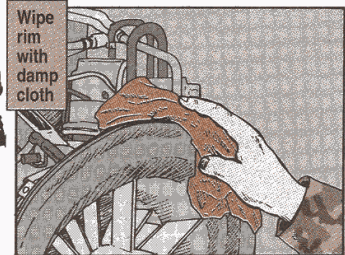
Here's what to do with them:

1. Wipe off the LP rotor and housing assembly. Remove any dust, dirt and debris from the area.



2. Pull back the lip of the seal and install the inner clamp. Then put the outer clamp on the seal with the clamp screw positioned at the top.

3. Wipe off the air intake rim, then slide on the seal, top side up. Wipe the plenum seal, too. Make sure the outer edge of the seal lines up with the yellow line all the way around the rim.



4. Pull back the lip and slide the inner clamp around so that the clamp screw is at 5 o'clock.
5. Torque both the inner and outer clamp nuts to 60-85 lb-in.

Start-up and Shut-down-Simplified



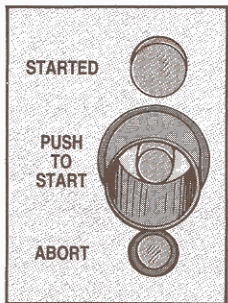
Drivers, starting up and shutting down your M1-series tank is as easy as pushing a button, right?

Wrong!

If you want your tank to start tomorrow, follow these critical start-up and shut-down tips today:

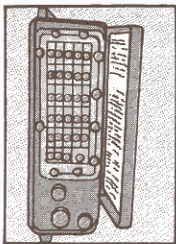
1. Never use the combat start info in TM 9-2350-200-BD-1, Battlefield Damage Assessment and Repair—**unless** you are in combat.

2. Never press the START button longer than one to three seconds. If you do, the start cycle begins again—even though the engine may already be started.



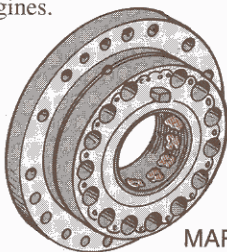
3. Never turn OFF any circuit breaker once the start cycle has begun.

Violating tips 2. or 3. puts too much fuel into the engine. The extra fuel explodes, causing internal damage to the engine.



4. Always idle the engine at least two minutes to cool off before shut-down. That prevents heat soak, which cracks turbine rotors and clogs oil passages. Cracks ruin the rear module. Ignoring the cool-down period boils the engine oil. That cokes bearings and clogs oil ports. Dry bearings ruin engines.

Ignoring cool-down ruins bearings



Cover Up Against Corrosion

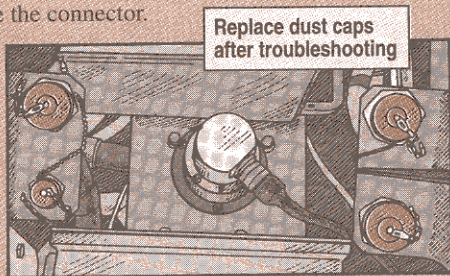


Corrosion has a nasty habit of showing up where you least expect it, mechanics. Like the J1, J2, J3, and J4 connectors under the Bradley's center floor plate.

When you forget to put the dust caps back on after troubleshooting, those connectors are at risk. The next time you troubleshoot, you may find them covered with corrosion.

Corrosion keeps pins from seating correctly and causes false readouts when using the STE-M1/FVS. If the pins don't seat correctly, they can also bend or break. Then you'll have to replace the connector.

Take a few seconds to cover the connectors when you're finished. If the caps are missing, replace 'em. A new J1 cap comes with NSN 5340-01-147-0720. Get a new cap for the J2, J3, or J4 connector with NSN 5935-01-108-9518.



STOP THOSE TEARS



HERE'S HOW
TO KEEP MY SEAR
SOLENOID CONNECTOR
SAFELY WIRED.

Dear Editor,

The M242 automatic gun has a new sear solenoid connector that is covered with rubber. After the armorer plugs in the solenoid connector, he's supposed to use lockwire to keep it from working loose.

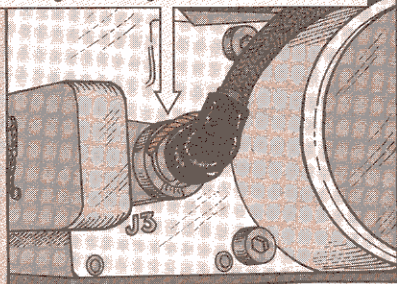
The problem is that the .032-in diameter lockwire is so strong that it rips right through the rubber when you pull it tight with the lacing pliers.

We solved the problem by substituting the lighter .020-in diameter lacing wire that's used on the rest of the gun.

Run the wire from the sear solenoid connector to the connector lock ring.

Gary Williams
Arthur Holt
Ft Benning, GA

Use lighter lacing wire on new connector



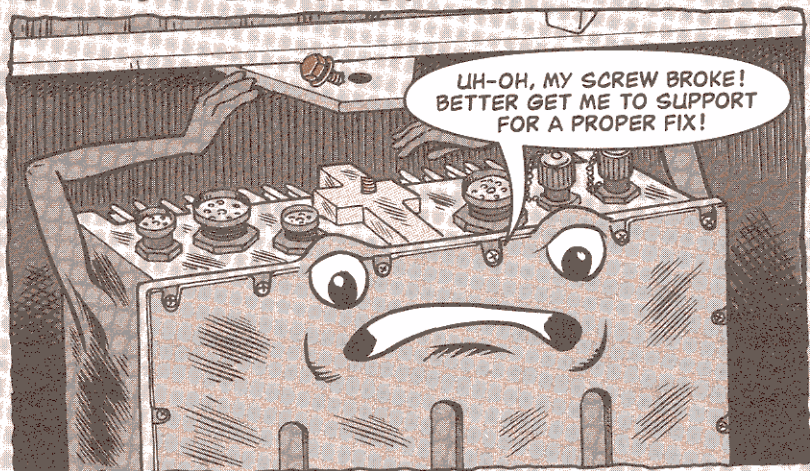
FROM THE DESK OF THE Editor 

Light wire may be the answer. Good job.

Bradley Lockout Plug

Without the TOW START lockout plug, it's easy to accidentally shift into TOW START or TOW while your M2/M3 or M2A1/M3A1 Bradley is moving. That's a sure way to rip up a transmission. Mechanics, replace a missing plug with NSN 5340-01-198-0507. You'll find it listed as Item 49 of Fig 164 in TM 9-2350-252-24P-1.

Leave Broken Screw Alone



Mechanics, the screw and washer holding the Bradley's electronic control assembly (ECA) in the top turret support bracket can break when you remove the ECA. If that happens, report it to support.

You're authorized to remove the ECA, but that's all. Only direct support can remove the cover and make repairs.

Some mechanics have tried to fix it themselves by drilling out the broken screw.

Trouble is, they drill through the bolt and into the ECA's mother board located just beneath the cover. If you damage the mother board, it's not repairable.

Since you aren't authorized to remove the ECA cover, you won't know you've drilled into the board until it's too late.

Save yourself some time and money. Leave the broken bolt for support to remove.

Bradley Turn Signal

You don't have to replace the entire directional control unit when your M2/M3-series Bradley's turn signal breaks. Fix it instead. Turn Signal repair kit, NSN 2540-01-350-7077, is now available. Make a note until your TMs are updated.

Unstick Stuck Driveshafts



HERE'S MY
IDEA FOR A TOOL
TO REMOVE THE
BLOWER DRIVESHAFT
ON YOUR M113.

Dear Editor,

Removing a broken driveshaft from the blower housing in your M113-series carrier's 6V53 or 6V53T diesel engine is a frustrating job to say the least.

The drive shaft is hard to see and hard to get hold of. If it's stuck, so are you. Usually not even a magnetic retrieving tool works.

I came up with a "tool" that gets out those broken driveshafts quick and easy. Here's how:

1. Cut off the small end from a used chem light, NSN 6260-01-074-4229. Pour out the contents.

2. Push the open end of the chemlight into the blower housing until it comes in contact with the broken end of the driveshaft.

3. Wiggle the chem light and continue pushing inward. The chem light will fit tightly around the driveshaft.

4. Pull out the broken driveshaft.

SGT Michael Reever
D Co, 2/34 AR
Ft Riley, KS



Cut off small end
of chem light

FROM THE DESK OF THE Editor 

You really shed some light on that problem! Thanks!

Switching Switches

Dear Half-Mast,

We just received a new neutral safety switch, NSN 5930-01-286-7767, for our M109A3 howitzer.

The new switch is different from the old one. It has two extra electrical leads and won't work. What gives?

SSG R.E.G.

WHO ARE YOU?

I'M YOUR REPLACEMENT!

Dear SSG R.E.G.,

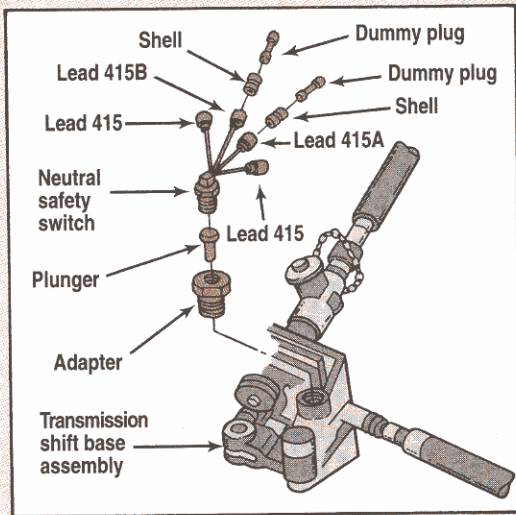
Before TM 9-2350-311-24P-1 was revised, it listed two neutral safety switches—NSN 5930-00-185-7202 for the M109A2/A3 howitzer and NSN 5930-01-286-7767 for the M109A4/A5.

Now there's just one. The A2/A3 switch has been discontinued. But with a little modification, you can use the A4/A5 switch on the M109A2/A3. Here's how:

1. Plug the lead wire connectors marked 415A and 415B with shell, NSN 5935-00-833-8561, and dummy plug, NSN 5935-00-214-0904.

2. Put adapter, NSN 4730-01-373-1175, and plunger, NSN 2590-00-724-1512, into the transmission shift base assembly.

3. Screw the modified neutral safety switch into the adapter and connect the two 415 leads as you would with the old neutral safety switch.



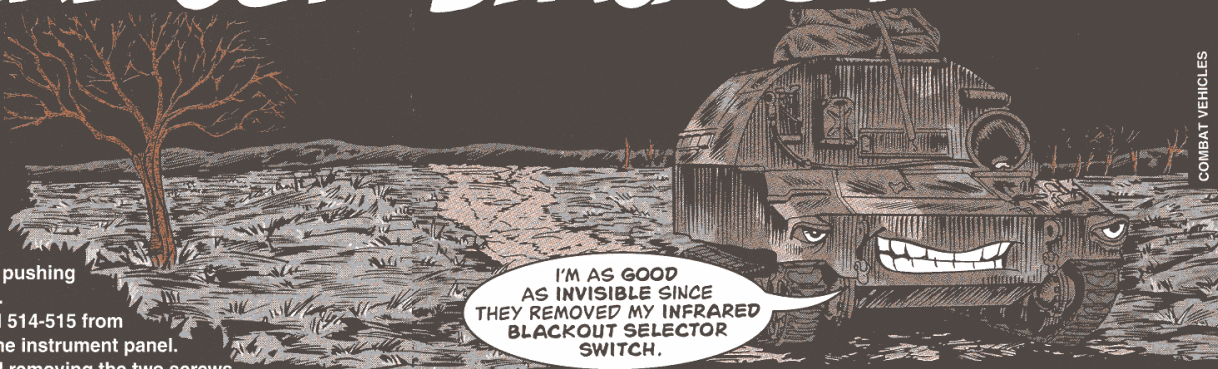
This info also applies when installing a new neutral safety switch in the M992 ammo carrier.

TAKE OUT BLACKOUT

During battlefield blackout conditions, too much light—even infrared light—can give the enemy a big advantage. TACOM recommends reducing the IR signature on the M992-series ammo carriers and M109A2-A5 SP Howitzers to safe limits by getting rid of the infrared blackout selector switch.

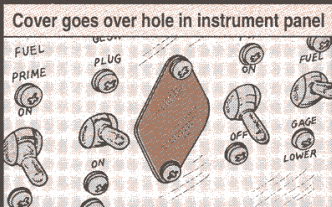
Here's how:

1. Disconnect the driver's instrument panel from the mounting support by pushing in and turning the six stud fasteners.
2. Remove circuit numbers 19, 520, and 514-515 from the blackout switch on the back of the instrument panel.
3. Remove the switch by loosening and removing the two screws, lock washers, and flat washers holding it in place.



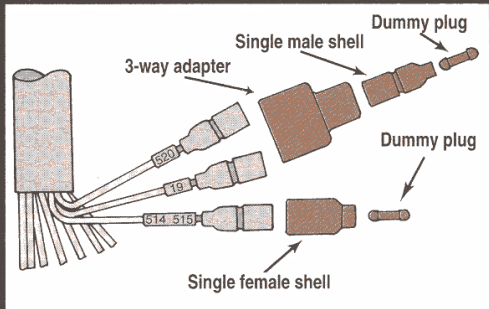
COMBAT VEHICLES

4. Install a cover, NSN 5340-01-338-8294, over the instrument panel hole using two screws, NSN 5305-00-984-6193, two lock washers, NSN 5310-00-045-3299, and two nuts, NSN 5310-01-204-4212.



5. Insert circuit numbers 19 and 520 into a 3-way connector, NSN 5935-00-900-6281.

6. Insert a single male shell, NSN 5935-00-833-8561, into the opposite end of the 3-way connector. Then close the circuit by inserting a dummy plug, NSN 5935-00-214-0904, into the other end of the single male shell.



7. Plug circuit number 514-515 into a single female shell, NSN 5935-00-572-9180. Then close off the circuit with a dummy plug.
8. Reinstall the instrument panel by sliding it onto the mounting support. Lock it in place by pushing in and turning the six stud fasteners.

M109A6 Paladin . . .

Light Touch for Light Covers

Operators, you need a feather-light touch when handling a BIT light cover in your Paladin's automatic fire control system.

That's because the covers are plastic. Drop one and it cracks. Screw one in too tight and it snaps.

The covers aren't available in the supply system, either. That means if one breaks, your support will have to replace it with a new light assembly, NSN 6210-01-166-7635.

At about \$21 each, it may not seem like a big deal at first. But if you're not careful, those broken covers—and the bill to replace 'em—will add up fast.

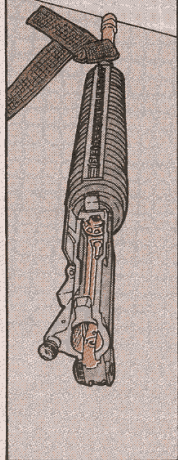


GIMME SOME GOOD LUBING!



There is good lubing and there is bad lubing. Good lubing for your M16 rifle is just the right amount in just the right places.

Lightly lube:



Bad lubing is too little or too much in the wrong places. Too little lubrication makes it hard for moving parts to move. Friction causes parts to wear out faster.

Too much lube acts like a magnet to dirt and carbon. Moving parts once again have trouble moving and your rifle is much harder to clean.

But it's not that hard to become a good luber.

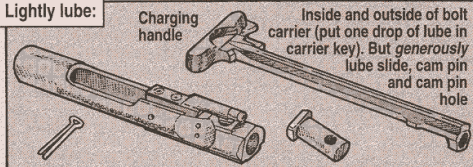
The first step to good lubing is knowing the difference between a light lube and a generous one:

Light: A film barely visible to the eye

Generous: Just heavy enough so it can be spread with the finger

The second step is knowing where to lube and how much.

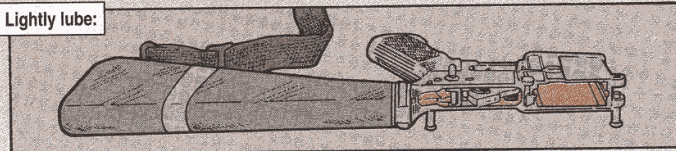
Lightly lube:



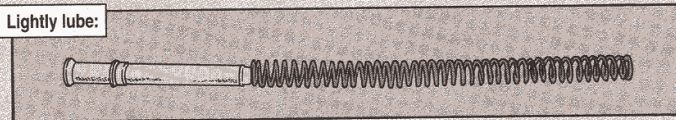
Charging handle

Inside and outside of bolt carrier (put one drop of lube in carrier key). But generously lube slide, cam pin and cam pin hole

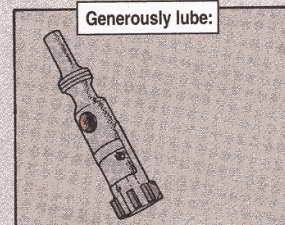
Lightly lube:



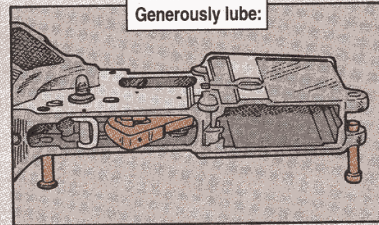
Lightly lube:



Generously lube:



Generously lube:



All bets are off, though, in the desert. Corrosion is not the problem there—sand is. It mixes with lube and forms a scouring powder that grinds up parts.

So wipe off lube from the outside of your rifle. Lube your rifle's moving parts as normal, but clean them extra good after firing to get rid of the sand.

ARMORERS AND FIRST SERGEANTS, MAKE COPIES OF THIS ARTICLE AND USE IT FOR TRAINING YOUR TROOPS.



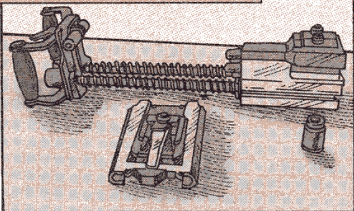
Don't Do... and Do!

Sometimes what you don't do to your MK 19 machine gun can be just as important as what you do.

The MK 19 has three enclosed assemblies: bolt, ogive plunger, and sear. They're enclosed so that lube will keep their internal parts well lubricated. But if the assemblies take a dunking, particularly in dry cleaning solvent, that lube is diluted and they're ruined next time you fire.

So never give them a bath. If you need the power of dry cleaning solvent for these parts, use a brush or rag dipped in solvent.

Keep bolt, ogive plunger and sear assembly out of solvent tanks



JUST HOLD STILL A MINUTE!

THAT'S NO WAY TO TREAT YOUR MK 19!

OH, MAN. MY INTERNAL PARTS ARE RUINED.

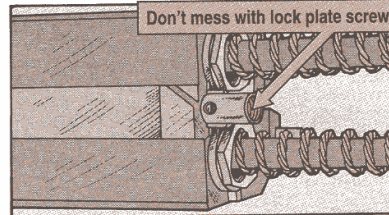
If your MK 19 ever takes an accidental dunking in the field, do not fire until the bolt, ogive plunger, and sear are checked out by your armorer. They can be re-lubed if necessary... and saved.

Do not tighten the screw for the lock plate on the bolt... even if you think it's loose. Fooling with that screw screws up the MK 19's timing and causes misfires. If you think the screw needs attention, tell your armorer.

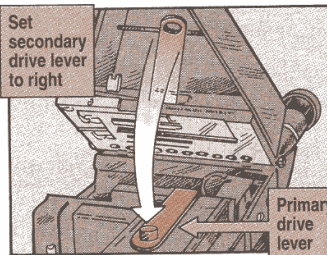
Never slam the feed cover shut. That can bust the latch springs, drive levers, and pivot post.

Be careful closing the MK 19 cover. It's easy to damage. Push the secondary drive lever all the way to the right. Lower the cover so the secondary drive lever mates with the primary drive lever. If they won't mate, you probably have a problem with the feed slide guide rod spring. Ask your armorer to check it out.

Don't mess with lock plate screw



Set secondary drive lever to right



Primary drive lever

Don't Suffer Buffer Leaks

If you see any liquid—oil, water, solvent—seeping out of the M2 machine gun's backplate buffer tube, you and your M2 have serious problems.

Buffer leaks mean the disks inside the buffer have been contaminated. The disks swell and swollen disks can't cushion the bolt when it slams back in recoil.

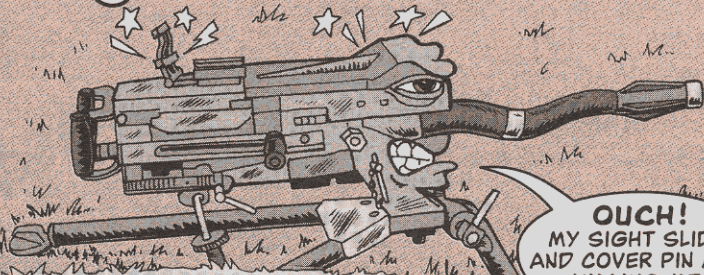
Buffer tube leaking? Report it!



The force of the bolt can actually crack the receiver. Time for a new, expensive machine gun.

Eyeball the buffer tube as part of your before operation PMCS. If you see any leaks, your M2 is deadlined until the buffer disks are replaced.

Sights and Pins



Two parts of the MK 19 machine gun get broken because gunners forget to do two simple things:

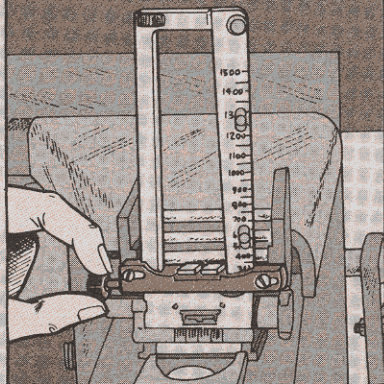
1. Lock down the rear sight slide. Gunners put the slide up for firing. But when they're done, they leave it up. Then, when they snap the sight down, either the sight is bent or the slide knob is snapped off. Either way, they can't use the sight.

To save your sight after firing, loosen the slide and push it all the way to the base, and lock it there.

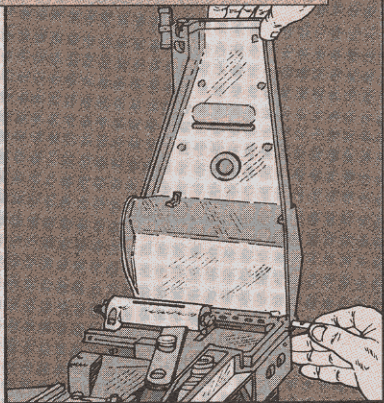
2. Put the feed cover straight up to remove the cover pin. The pin is held in place by a tang. If the cover is not straight up, it takes some force to get the pin out. That can break the tang. Without the tang, the pin will work out during firing and the cover can fly off.

So, before you remove the cover pin, make sure to put the feed cover straight up. If the cover's in the right position, the pin slides in or out easily.

Lock slide down when you're done firing



Hold cover straight up to remove pin



A Desperate Call



THE CALL'S STILL NOT GOING THROUGH.



IT'S ALMOST MIDNIGHT—ANOTHER 15 MINUTES AND IT'LL BE TOO LATE!



STAY CALM.

MAYBE THERE'S SOMETHING WRONG WITH THE PHONE. THE TA-1035 DIGITAL NONSECURE VOICE TELEPHONE NEEDS CARE JUST LIKE THE REST OF OUR GEAR.



WHEN WAS THE LAST TIME YOU GAVE IT A GOOD DOSE OF PREVENTIVE MAINTENANCE?



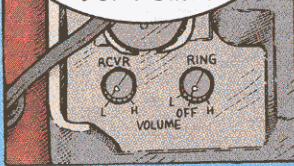
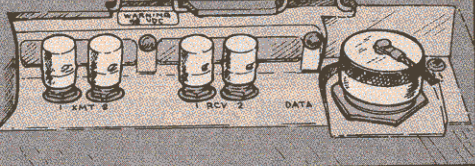
I DUNNO, A FEW MONTHS AGO, I THINK.

YOU THINK! TRY TO REMEMBER. DID YOU MAKE SURE EVERYTHING WAS IN GOOD SHAPE?

WHAT KIND OF THINGS?

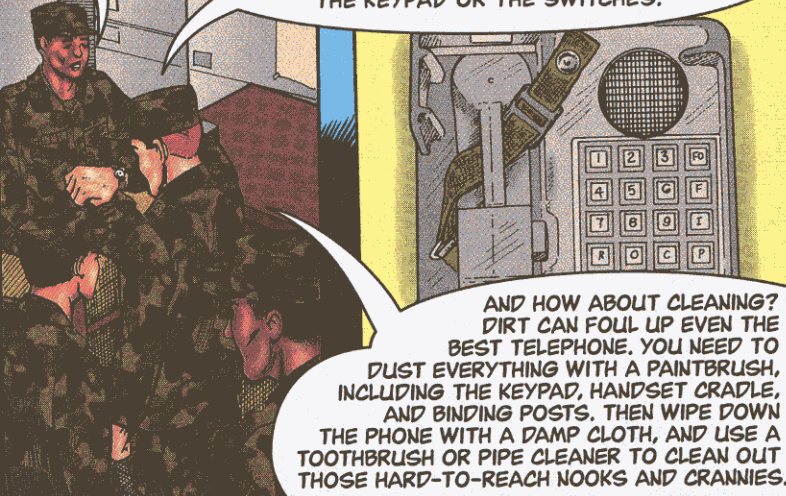
THINGS LIKE THE RUBBER BOOTS ON THE BINDING POSTS AND THE METAL DUST COVER ON THE DATA CONNECTOR. THEY PROTECT YOUR DNVT AGAINST DIRT AND MOISTURE.

AND THAT'S JUST FOR STARTERS. DID YOU WORK THE RCVR AND RING CONTROLS TO MAKE SURE THEY DON'T BIND?



I DIDN'T THINK OF THAT!

WELL, YOU BETTER START THINKING OF IT. WE'RE RUNNING OUT OF TIME. WHEN YOU WEREN'T USING THE PHONE, DID YOU KEEP THE STRAP SNAPPED DOWN AND SNUG OVER THE HANDSET? THAT KEEPS THE HANDSET FROM BOUNCING AROUND AND DAMAGING ITSELF, THE KEYPAD OR THE SWITCHES.



AND HOW ABOUT CLEANING? DIRT CAN FOUL UP EVEN THE BEST TELEPHONE. YOU NEED TO DUST EVERYTHING WITH A PAINTBRUSH, INCLUDING THE KEYPAD, HANDSET CRADLE, AND BINDING POSTS. THEN WIPE DOWN THE PHONE WITH A DAMP CLOTH, AND USE A TOOTHBRUSH OR PIPE CLEANER TO CLEAN OUT THOSE HARD-TO-REACH NOOKS AND CRANNIES.

GEE, THERE SURE ARE A LOTTA THINGS I SHOULD'VE DONE.

SHOULD'A, WOULD'A, COULD'A! WELL, THERE'S MORE!

HOW WELL DID YOU TREAT THE KEYPAD? WHEN YOU PUNCH IN A NUMBER, YOU MAKE CONTACT WITH A COAT OF METALLIC PAINT UNDER THE KEYPAD AND COMPLETE THE CIRCUIT. THE PROBLEM IS, THE PAINT BREAKS UP OR WEARS AWAY AFTER TIME IF YOU PUNCH TOO HARD OR USE A SHARP OBJECT—LIKE A PEN OR PENCIL—ON THE KEYPAD.

WHEN THE PAINT'S GONE, YOUR KEYPAD'S FINISHED. YOU'LL HAVE TO ASK DS TO REPLACE IT. THEY CAN ORDER A NEW ONE WITH NSN 5805-01-408-5167.

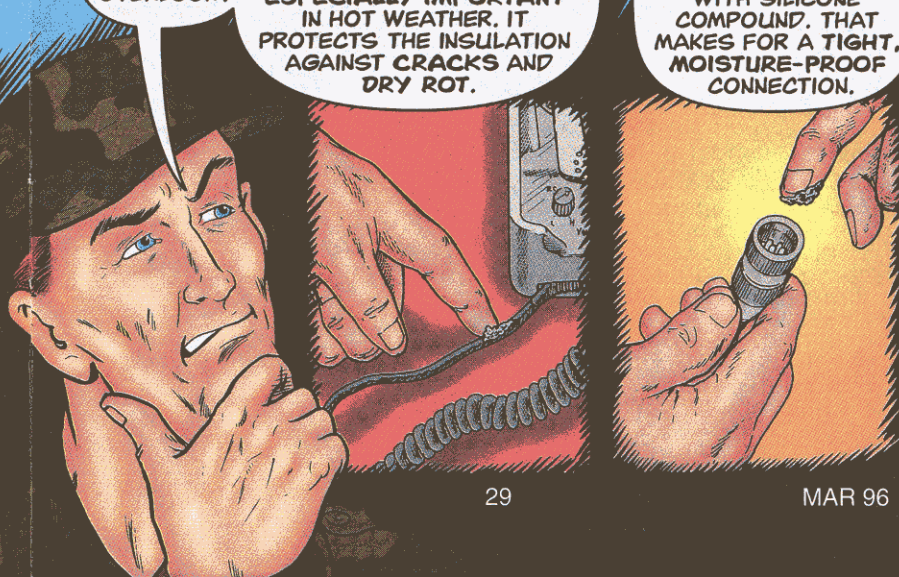
WE GOTTA MAKE THAT CALL. IT'S A MATTER OF SURVIVAL.

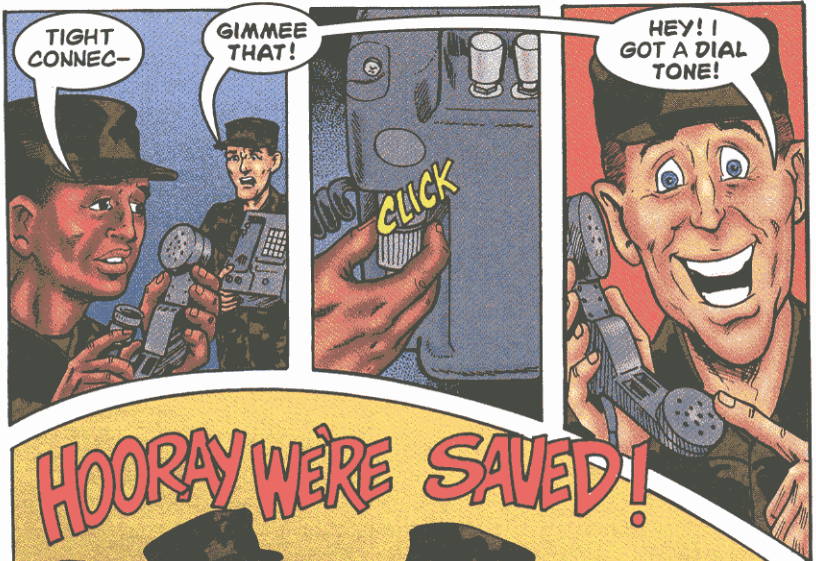


LET'S SEE—WHAT OTHER PM DID YOU OVERLOOK?

DID YOU COAT THE HANDSET CABLE WITH SILICONE COMPOUND? THAT'S ESPECIALLY IMPORTANT IN HOT WEATHER. IT PROTECTS THE INSULATION AGAINST CRACKS AND DRY ROT.

YOU ALSO NEED TO LUBE THE HANDSET CONNECTOR O-RING WITH SILICONE COMPOUND. THAT MAKES FOR A TIGHT, MOISTURE-PROOF CONNECTION.

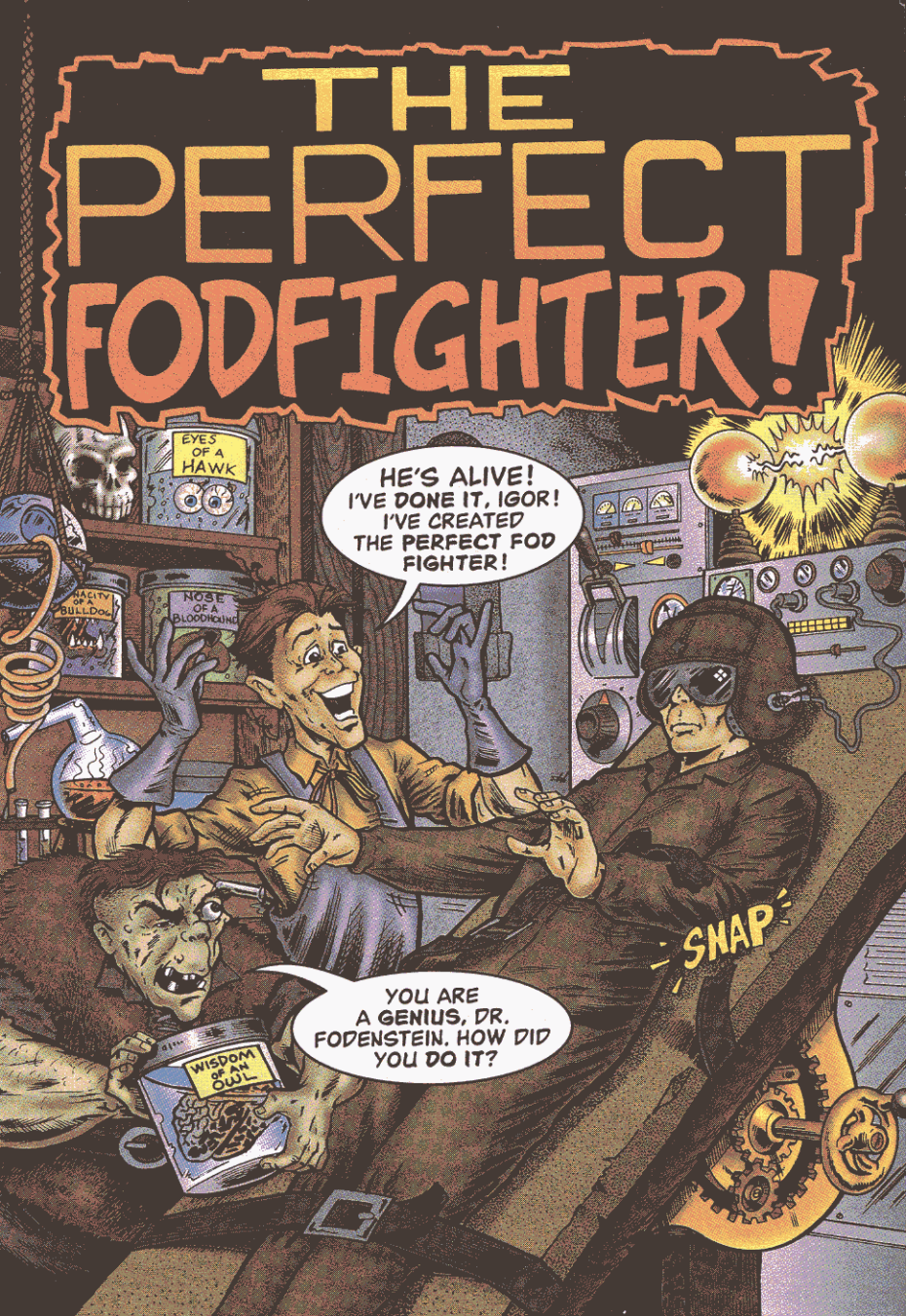




HOORAY WE'RE SAVED!

HELLO,
CHOWHOUND CHEESE
PIZZA PALACE? I WANT
EIGHT DEEP-DISH, EXTRA LARGE,
MIGHTY GLUTTON PAN PIZZAS.
THREE WITH ITALIAN SAUSAGE
AND CHOCOLATE MORSELS, THREE
WITH PEPPERONI AND PEANUT
BUTTER, ONE KITCHEN SINK
SUPREME, AND... OH, YEAH-
ONE WITH SAUERKRAUT
AND SARDINES!

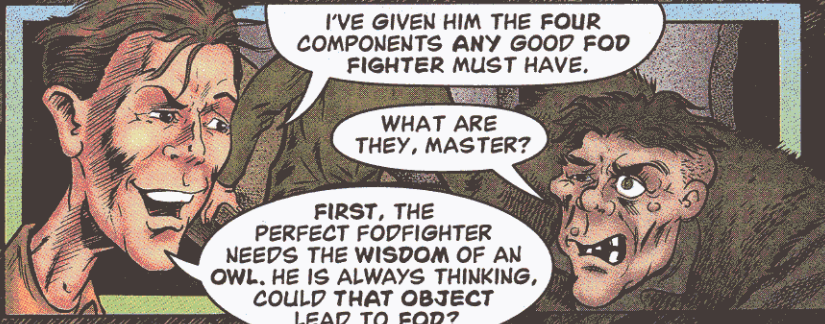
THE PERFECT FODFIGHTER!



HE'S ALIVE!
I'VE DONE IT, IGOR!
I'VE CREATED
THE PERFECT FOD
FIGHTER!

YOU ARE
A GENIUS, DR.
FODENSTEIN. HOW DID
YOU DO IT?

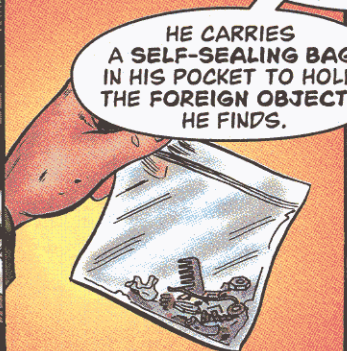
SNAP



I'VE GIVEN HIM THE FOUR COMPONENTS ANY GOOD FOD FIGHTER MUST HAVE.

WHAT ARE THEY, MASTER?

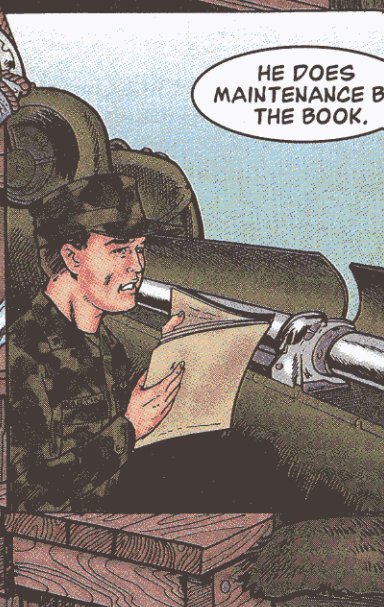
FIRST, THE PERFECT FODFIGHTER NEEDS THE WISDOM OF AN OWL. HE IS ALWAYS THINKING, COULD THAT OBJECT LEAD TO FOD?




HE CARRIES A SELF-SEALING BAG IN HIS POCKET TO HOLD THE FOREIGN OBJECTS HE FINDS.



HE INSTALLS PROTECTIVE COVERS AND MAKES SURE TIEDOWNS AND HELMET BAGS ARE PROPERLY STOWED.

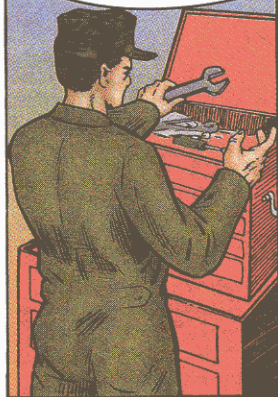


HE DOES MAINTENANCE BY THE BOOK.

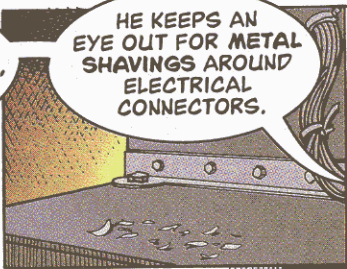


SECOND, HE NEEDS THE EYES OF A HAWK. HE IS ALWAYS ALERT TO SPOT THE SMALLEST OBJECT.

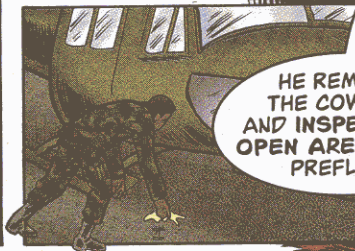
HE ALWAYS INVENTORIES HIS TOOLS AT THE END OF EACH DAY, TO MAKE SURE NONE ARE MISSING.



HE KEEPS AN EYE OUT FOR METAL SHAVINGS AROUND ELECTRICAL CONNECTORS.



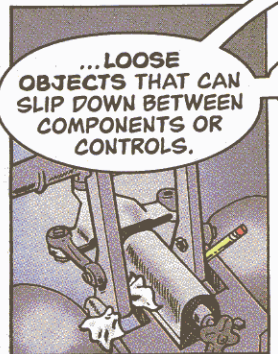
HE REMOVES THE COWLINGS AND INSPECTS THE OPEN AREA DURING PREFLIGHT.



WHAT ELSE DOES HE NEED, MASTER?



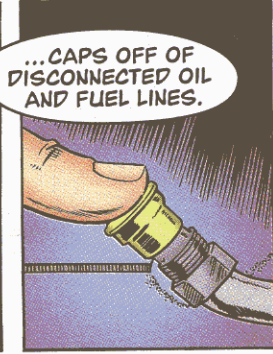
THE NOSE OF A BLOODHOUND, IGOR. A FOD FIGHTER ALWAYS HAS HIS NOSE POINTED TO THE GROUND TO SNIFF OUT ANY OBJECTS THAT CAN DAMAGE AIRCRAFT. SUCH AS...



...LOOSE OBJECTS THAT CAN SLIP DOWN BETWEEN COMPONENTS OR CONTROLS.



...SPECIAL TOOLS NOT TURNED IN.




...CAPS OFF OF DISCONNECTED OIL AND FUEL LINES.



FINALLY, THE PERFECT FOD FIGHTER MUST HAVE THE TENACITY OF A BULLDOG...ALWAYS WILLING TO PUT THE BITE ON FOREIGN OBJECTS AND NOT LET GO!

HE USES A FLASHLIGHT TO CHECK DARK SPOTS.

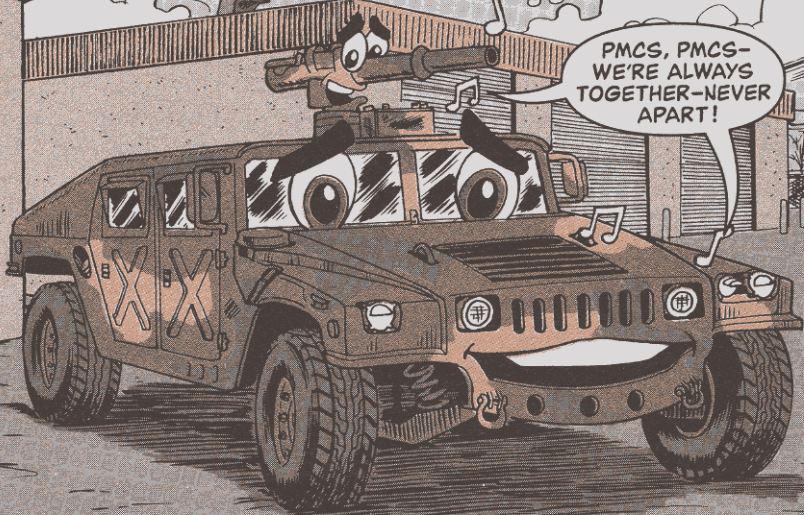
CLEANS UP HIS WORK AREA EVERY DAY, PICKS UP ALL SAFETY WIRE, PAPER, ETC.



BUT MASTER, YOU'LL HAVE TO CREATE THOUSANDS OF FOD FIGHTERS TO DO THE JOB AT EVERY AIRFIELD AND HANGAR.

PERHAPS, IGOR, I JUST HAVE!

All Together...or Nothing



When it comes to doing PMCS on your HMMWV-mounted TOW missile, you first have to mount the TOW on the HMMWV. Otherwise, you can't be sure the traversing unit fits on the pedestal or that the battery power conditioner and vehicle power conditioner work.

If you wait until you get to the field to check, it's too late to replace a bad traversing unit or power conditioner.

The easiest way to do the checks is to drive all HMMWVs to the TOW unit and do all PMCS at the same time.

ONE OTHER TOW-HMMWV TIP... ONCE YOU GUNNERS STORE THE TOW ON THE HMMWV HATCH, LOCK THE HATCH FROM THE INSIDE.

IF YOU FORGET AND SOMEONE OPENS THE TAILGATE, THE HATCH STRUTS COME APART. THEN YOU CAN'T LATCH THE HATCH.

See Clearly with PM



YOU REALLY CAN'T HIT THE BROAD SIDE OF A BARN!!

WHAT?! BUT I HAD IT RIGHT IN MY SIGHTS!

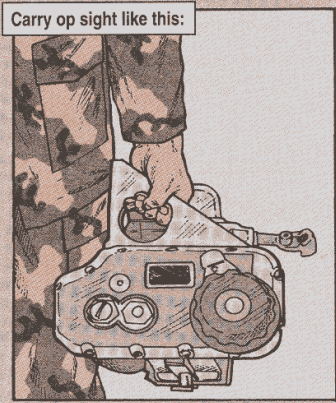


Your repairman can replace and tighten screws.

In the Field

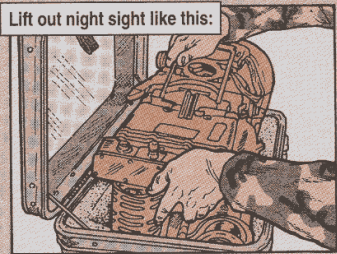
The op sight locking handle looks like a wonderful way to carry the sight . . . but it's not. The handle is too weak and it breaks. The sight takes a tumble. Plus a broken handle means the sight can't be locked on.

Either cradle the sight or carry it by the hole in the latch assembly.



PS 520

Same goes for the night sight. The locking bracket is not sturdy enough for a handle. When you lift the sight out of the case, it's OK to use the bracket as a handle IF you put your other hand between the eyepiece and cooler. Once you get the sight out, cradle it with both hands.



37

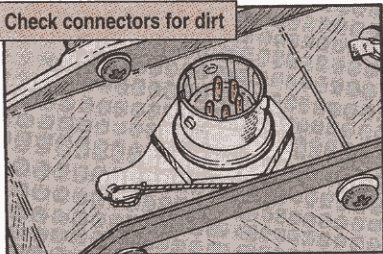
If the TOW's sights can't do their job, you're not going to hit much. A line-of-sight system like the TOW is out of business if the sights are blind. Keep your TOW seeing clearly with these points:

Before PMCS

Make sure all screws for the post amplifier on the night sight are in place and tight. Missing or loose screws let moisture in the amplifier, which can short it out. But a more likely result is a bad connection between the amplifier and sight. That causes a poor sight picture.

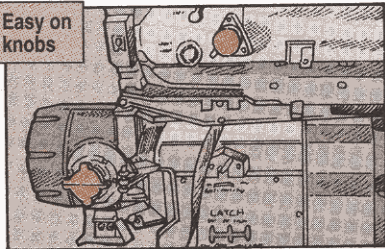
If you have trouble mating the sight connectors, check them for dirt. Forcing connectors bends pins. An air hose with 30 PSI is a good way to clean out connectors. Keep connectors off the ground and you won't have this problem.

Check connectors for dirt



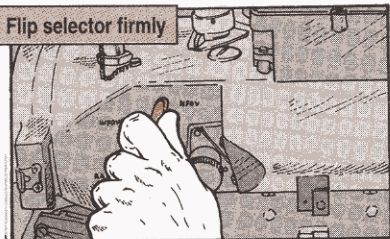
Never muscle the elevation and azimuth knobs on either sight. Too much force breaks the day sight knob stops and makes it difficult to center the knobs. On the night sight, the knobs lock up. The only way to free them is with pliers.

Easy on knobs

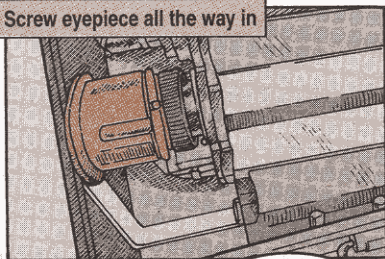


If you flip the selector from narrow to wide field of view and suddenly get inaccurate target readings, you didn't move the selector firmly enough. Just nudging it won't fully make the switch. Try again. You will hear a loud click if you did it right.

Flip selector firmly



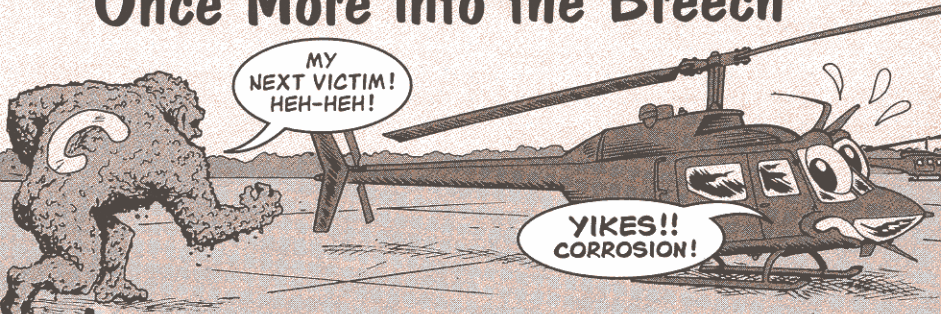
Screw eyepiece all the way in



NOW THAT I'VE PULLED THE PROPER PM—WANT TO TRY AGAIN?

GIVE ME A SHOT AT THAT BARN NOW!

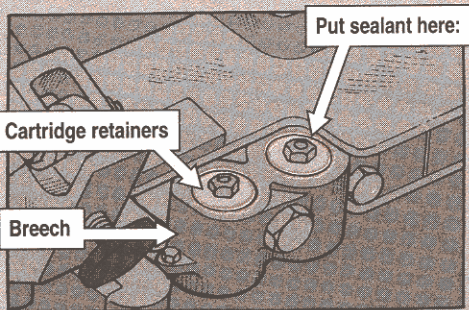
Once More into the Breach



Anytime you remove the impulse cartridges from the Kiowa's store ejector rack, check for corrosion in the rack breach.

Corrosion loves to hide in the breach and on the contact areas of the impulse cartridges. This corrosion buildup could stop the cartridges from firing.

Trapped water starts the corrosion. Keep water out by sealing the area between the cartridge retainers and the breach with sealant, NSN 8040-01-252-8567.



All Aircraft...

Safety Net

You can now access Safety-of-Flight and Aviation Safety Action Messages, past and present, with just a few computer keystrokes. You can also transfer data and "talk" with the Aviation-Troop Command (ATCOM).

ATCOM's Directorate for Maintenance has set up an electronic link you can use either through the file transfer protocol (FTP) across the Internet or by dial-up modem into the Maintenance Support Bulletin Board System (BBS).

To access the BBS, set your modem hardware for eight bits, no parity, one stop bit and 9600, 2400 or 1200 baud.

Then call DSN 693-9057 or commercial (314) 263-9057.

Or FTP to 134.78.110.215

Login as 'guest'. The BBS is up 24 hours every day. For more info, call the system operators at DSN 693-3493 or commercial (314) 263-3493.

RUBBED WRONG AGAIN

Dear Windy,

A rubber strip will keep the Black Hawk's fairing/antenna from rubbing the locking ears on the tail rotor pylon like you said on Page 35 of PS 509.

But here's another solution we think works better:

Use blade repair kit, NSN 1615-01-205-6138. The kit costs around \$20 and each kit will do two tailbooms.

Just apply the mix with a small acid brush, NSN 8020-01-126-1437. It sets up in an hour, so you'll have to move quickly to do two tailbooms.

Our unit has lost countless manhours replacing the wear strip on the tailboom, but using the blade repair kit stops wear in this area for 500 hours easy.

CW3 William E. Henry
APO AE

An excellent solution to a long-standing problem.
Crew chiefs, if you adopt Chief Henry's idea, make sure you follow all safety and application instructions that come with the blade repair kit.

Windy

THIS FIX SHOULD PROVIDE PROTECTION FOR A GOOD LONG TIME.

Cross Your Hawk

THERE'S A BIG BLOW COMING. ARE THOSE COVERS SECURE?

NOW THEY ARE!

Dear Windy,

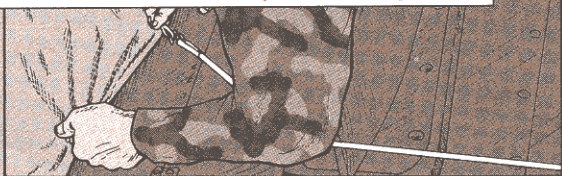
The long Black Hawk engine covers do a good job, except in strong wind. A strong wind can lift the top of the cover and dirt and sand, as well as rain and snow, blow under and in.

We solved the problem by using the cinch cord that holds the cover in place.

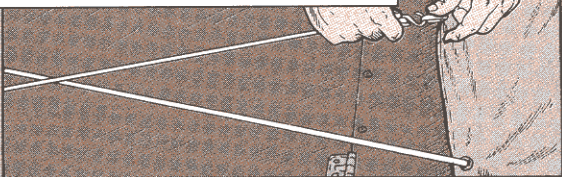
Just unhook the cord ...



... and run it across to same spot on other engine cover



Do the same from other side to make an "X"



When you're done, you've crossed your Hawk and made an X of the cords.

This will give greater tension to hold the covers in place.

SSG Geoffrey Puppel
Ft Campbell, KY

Looks like Sergeant Puppel has gotten a firm hold on this problem. Good job, Mechanics, to save wear and tear on the grommets where the cords hook, use Sergeant Puppel's fix only when strong winds are forecast.

Windy

MAR 96

Latch on to This



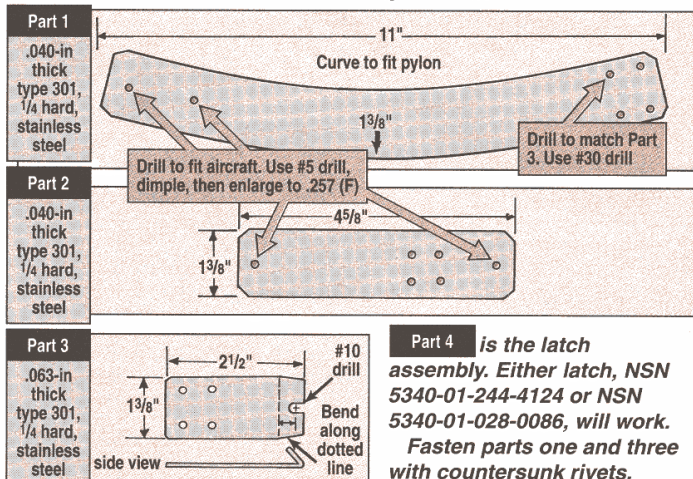
LATCH ON TO THIS FIX TO SAVE BIG BUCKS ON REPAIRS TO YOUR CHINOOK!

Dear Windy,

Vibration causes the lower latch fitting assembly (Item 47 in Fig 136 of TM 55-1520-240-23P) on the Chinook aft pylon clam shell doors to wear out fast. The latch alone costs \$150. If it fails in flight and the doors get damaged, you're looking at a \$45,000 bill!

I made a repair strap to help the latch keep the doors tight. All four parts can be made and assembled in a sheet metal shop.

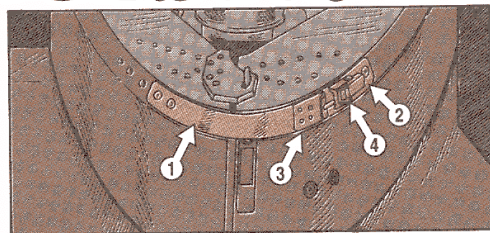
Here's what they look like:



Here's how it all fits together:

Fit the parts to the aircraft and adjust the latch assembly for a snug fit.

Ron Dawson
Ft Meade, MD



Another winner, Ron. Chinook mechs, this fix has been blessed by both ATCOM and the SMART program. ATCOM says the lower fitting will only last about 50 flight hours, so put Ron's latch repair on now. If you have any problems, call ATCOM at DSN 693-3261 or 314-263-3261.

Windy

CH-47D...

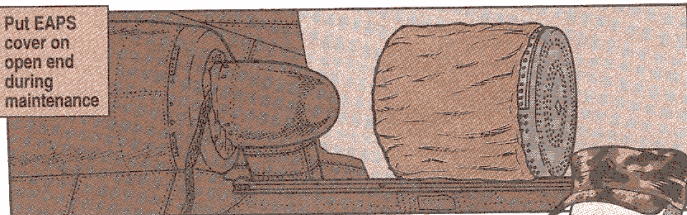
Put It on Backwards

Dear Windy,

When doing maintenance on the Chinook with the engine air particle separator (EAPS) slid forward, small items can fall into the inside swirl tube holes.

Put an end to this FOD by putting the EAPS cover on backwards. Now the swirl holes are covered and nothing can fall inside the EAPS.

Put EAPS cover on open end during maintenance



SSG David L. Green
Ft Rucker, AL

A PERFECT FOD-FIGHTING FIX-QUICK, EASY AND NO-COST! WELL DONE!

BANGIN' THE PINS

OOF!
I TOLD YOU
NOT TO TRY
AND FORCE ME!
NOW I'M
STUCK!

DON'T
TELL ME!
TELL THE
GUY
SWINGING
ME!

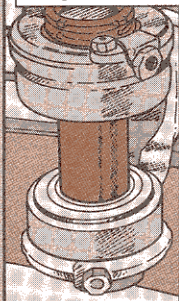
Dear Windy,

Spread the word to new Chinook mechanics that the vertical hinge pins on rotor heads have a top and a bottom.

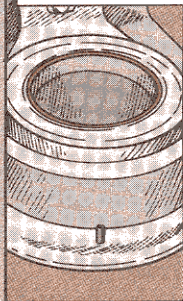
I know it seems obvious and it IS to guys with a lot of hangar time. But I've seen too many new mechanics stick the pin in upside down and bang away to drive it in place.

It doesn't take much banging to get the pin stuck, crush the seals and damage the hinge.

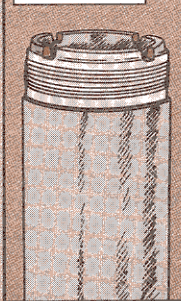
Upside down pin
will get stuck ...



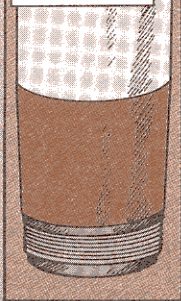
... and crush seals
and damage hinge



Tooling slots
are at top



Look for taper
at bottom



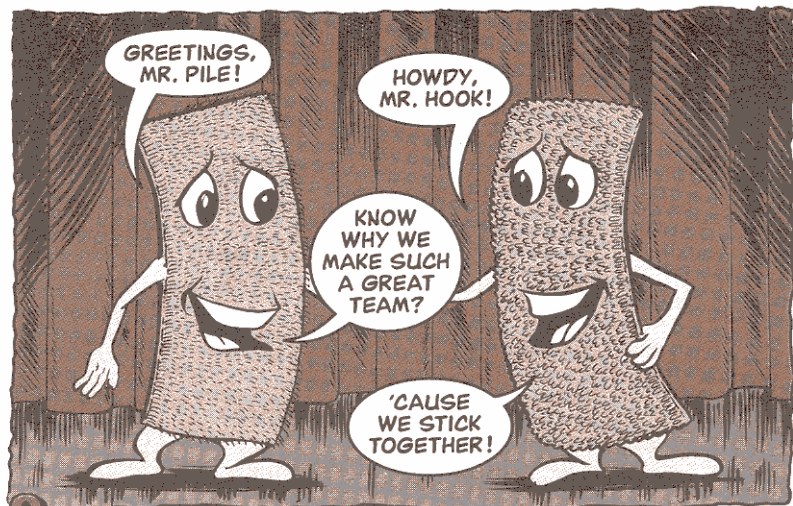
So let those new guys know that the tooling slots in the pin are at the top, and that the bottom has a slight taper.

CW4 D. L. A.

Dear Chief D. L. A.,
You just did, Sir. Thanks!

Windy

Hook and Pile It



Seems like there's always a need in ALSE shops for hook and pile fastener tape.

Clothing, storage bags and carrying equipment need the holding power and quick-release ability that hook and pile fasteners give you.

Here's a handy list of hook and pile fasteners:

Item	Width (inches)	Color	NSN 8315-
Hook	1	Olive green	00-106-5973
Hook	1.5	Olive green	00-151-6481
Hook	2	Olive green	00-450-9837
Hook	2	Black	00-926-4931
Hook	4	Sage green	01-187-7773
Pile	1	Olive green	00-106-5974
Pile	1.5	Olive green	00-151-6483
Pile	2	Olive green	00-498-6631
Pile	2	Black	00-926-4930
Pile	4	Sage green	01-187-7774

The sage green hook and pile is good for attaching organizational and unit patches on aircrew flight clothing. It matches the color of the hook and pile already on the clothing. Order it from S9T on a DD Form 1348-6. Note in the REMARKS block that the NSN is not on the AMDF.

WHIP ANTENNA

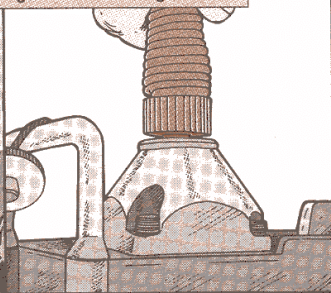
Without a working antenna, radio communications are impossible. That's why PM for your PRC-77 must include care of the 3-ft AT-892 blade antenna and the 10-ft AT-271A whip antenna. Here's the long and short of it:

CHARLIE,
CALLING BRAVO. COME
IN, BRAVO. BRAV-

DARN! WHAT'S WRONG
WITH THIS RADIO?

- ✓ Screw the antenna down snug to the mount. Leaving a gap creates a weak point where the antenna could snap off.

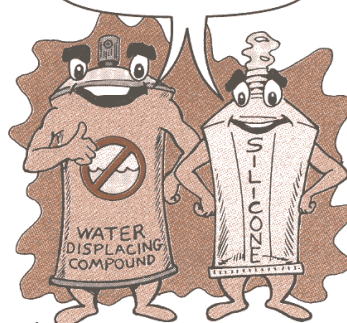
Tighten antenna snug to mount



TROUBLES

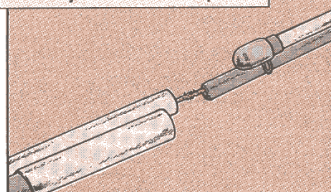
- ✓ Fight corrosion by spraying the connector threads with water displacing compound, NSN 6850-00-142-9389. The compound repels moisture and covers the threads with a protective film. After the spray dries, coat the threads with silicone compound, NSN 6850-00-880-7616.

WE'RE THE
GUYS YOU NEED TO
PREVENT CORROSION ON
YOUR ANTENNA MOUNT.



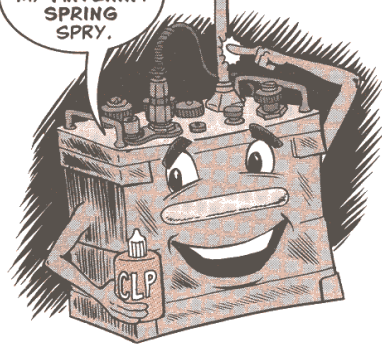
- ✓ Look at the cord threaded through the sections of the AT-271A. If it's broken or badly frayed, get your unit repairer to replace it with NSN 4020-00-281-8439.

Cord frayed or broken? Replace it



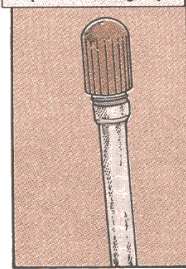
- ✓ Inside the lower section of the AT-271A is a small spring that holds the cord tight. Protect the spring from moisture and rust by putting a few drops of CLP down the lower section. Get a 4-oz bottle with 9150-01-079-6124.

A LITTLE
CLP WILL KEEP
MY ANTENNA
SPRING
SPRY.



- ✓ An AT-271A without a tip cap is just a pointed spear waiting to stick somebody. If the cap's missing, replace it with NSN 5999-00-259-5009.

Replace missing caps



Fold Here

An antenna needs to stand tall to do its job. If it droops or if its sections fall off, your radio loses range. That's exactly what will happen if you store the antenna the wrong way.

Fold the AT-892 this way: Fold the blade loosely toward the concave (curved inward) side. If you force it to the other side, you'll put a permanent kink in it that'll make it droop. You might even snap the blade.

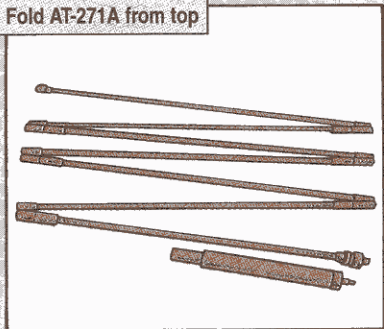
Fold AT-892 toward concave side



Fold the AT-271A this way: The trick is to start folding from the top. The cord inside the whip connects to a spring in the base. Folding the antenna from the top relieves tension on the spring and cord.

Folding from the bottom puts stress on them. Too much stress will stretch or break the spring. It could even snap the cord. Then you'll lose antenna sections.

Fold AT-271A from top



I READ
YOU LOUD
AND CLEAR,
BRAVO!

WE'RE
SENDING AND
RECEIVING LIKE
A CHARM!

THANKS
TO GOOD
PM!

OUTSTANDING CABLES



The RF cables on your AN/GRC-103 radio really stand out—about six inches from the radio, that is.

That puts the cables in the line of foot traffic inside your commo shelter—which means you could snag them when moving gear around.

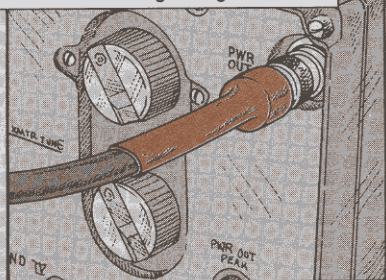
If those cables get snagged hard enough, you'll pull the wiring away from the connectors. Then you have to send them off to DS for repair. That costs your unit time and money.

Heat-shrink tubing, NSN 5970-00-926-2571 or 5970-00-959-6336, strengthens the cable where the insulation and connector meet.

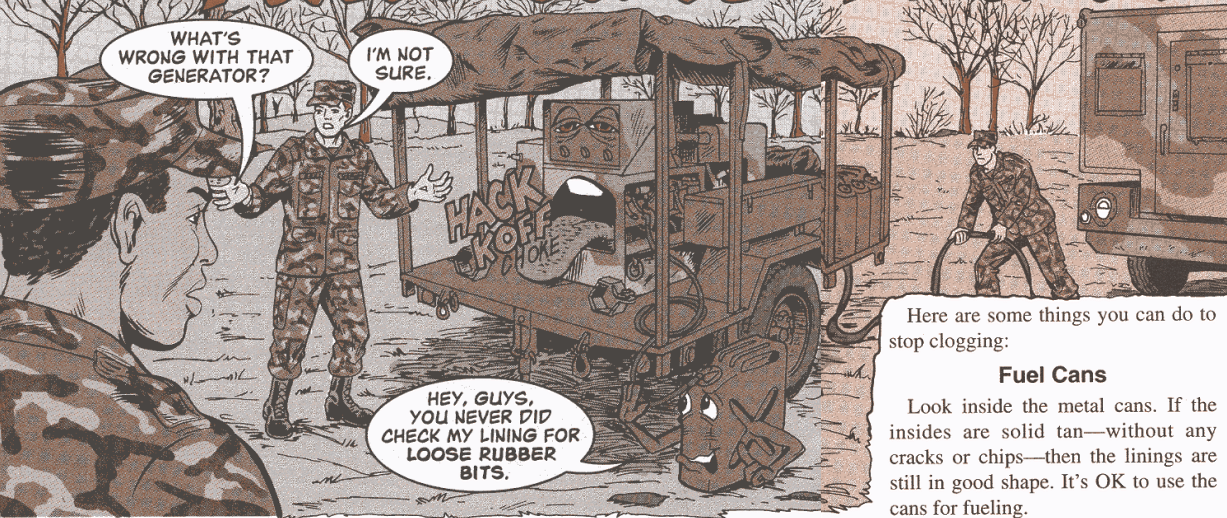
Cut off a 3-in length of tubing. Slip it over the cable so that two inches of tubing cover the insulation and one inch covers the first section of the connector. Then shrink the tubing with a heat gun or blow dryer.

The tubing tightens around the cable and reinforces it. The tubing also helps protect the cable against moisture.

Heat shrink tubing strengthens cable



Farewell to Fuel Clogs



WHAT'S WRONG WITH THAT GENERATOR?

I'M NOT SURE.

HEY, GUYS, YOU NEVER DID CHECK MY LINING FOR LOOSE RUBBER BITS.

HERE'S HOW TO CLEAN THE FUEL TANK STRAINER.



Strainers

Ask unit maintenance to clean the fuel tank and auxiliary fuel pump strainers. Here's how to clean the fuel tank strainer:

- ◆ Shut down the engine.
- ◆ Pull the strainer out of the fuel tank.
- ◆ Use an air hose to blow the larger rubber pieces out of the strainer. For safety and better control over the airflow, attach an air gun, NSN 4940-00-333-5541, to the hose.

If you're still using metal cans to supply fuel to your generator, here are a few things to remember:

Fuel gradually eats away the rubber lining inside a metal can, reducing it to tiny rubber bits floating in the fuel. If you pour that fuel directly into your generator's fuel tank, sooner or later those bits clog the tank's strainer.

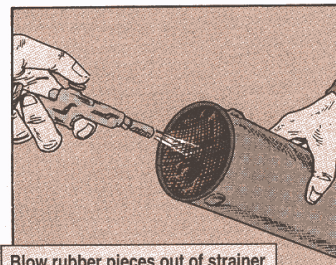
Same thing happens if you use an auxiliary fuel line to feed fuel from a metal can to the auxiliary fuel pump: Rubber clogs the pump's strainer.

A clogged tank strainer makes it hard to fill the tank. A clogged pump strainer chokes off fuel to the engine.

Look inside for damaged lining



If the linings are cracked or chipped, they'll look darker in those places, like paint peeling. Replace those cans at once.



Blow rubber pieces out of strainer

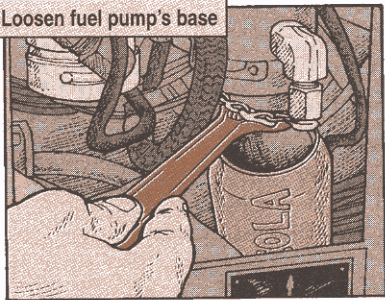
- ◆ Clean the strainer in drycleaning solvent, NSN 6850-00-664-5685.

THAT LEADS TO A NUMBER OF ENGINE PROBLEMS, LIKE LOW POWER, MISFIRE AND KNOCKING, OR FAILURE TO START.

Cleaning the auxiliary fuel pump strainer is a little trickier. Procedures may vary from one generator model to the next, so refer to your TM for specific instructions. But, in general, here's what you need to do:

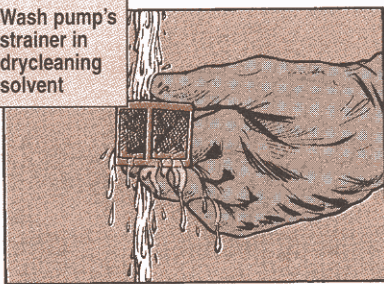
- ◆ Shut down the engine.
- ◆ Unhook the auxiliary fuel line from the pump. Hold the line connector upright so that fuel doesn't leak out of the line.
- ◆ Put a cup or can under the pump to catch any fuel that runs out when you remove its base.
- ◆ Loosen the pump's base with pliers or an adjustable wrench. Turn the base clockwise until it comes off.

Loosen fuel pump's base



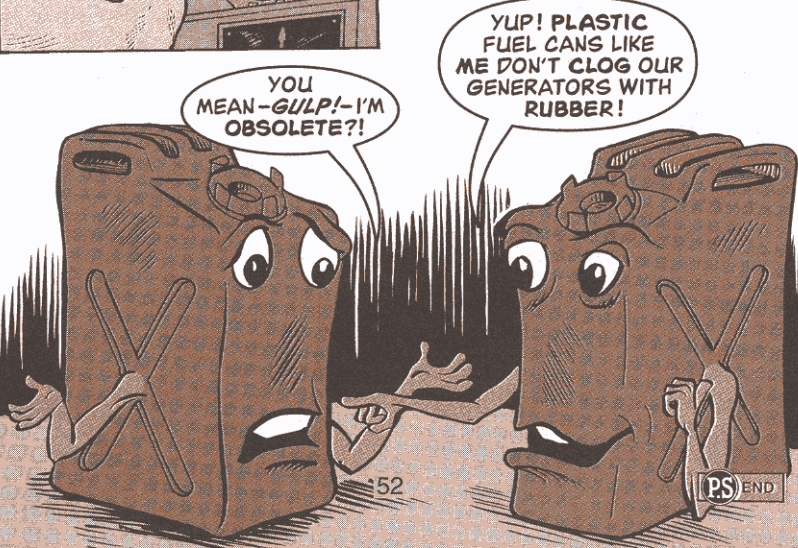
- ◆ Take the strainer out of the pump and clean it in drycleaning solvent. Never use an air hose on it. The strainer is made of very fine mesh, and high-pressure air could damage it.

Wash pump's strainer in drycleaning solvent



Of course, the easiest way to keep rubber out of your generator is to use plastic fuel cans instead of metal ones. Plastic cans don't have rubber linings.

Get a 5-gal, sand-colored plastic can with NSN 7240-01-337-5268. NSN 7240-01-337-5269 brings you the same can in olive drab.



Check Trailer Mount Bolts



DID YOU CHECK THE MOUNTING BOLTS ON THAT TRAILER?

WHY?

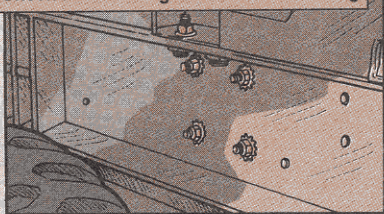
Drivers, that vehicle behind you doesn't need your generator as a hood ornament.

That's what will happen if you don't check the mounting bolts on trailer-mounted generators before driving.

The vibration of normal driving will eventually cause the bolts to work loose.

Check them every time you drive so you keep your generator for field power—and that vehicle behind you won't take it home on the hood.

Check all mounting bolts before traveling



THERE'S A GOOD REASON.

YIPE!!

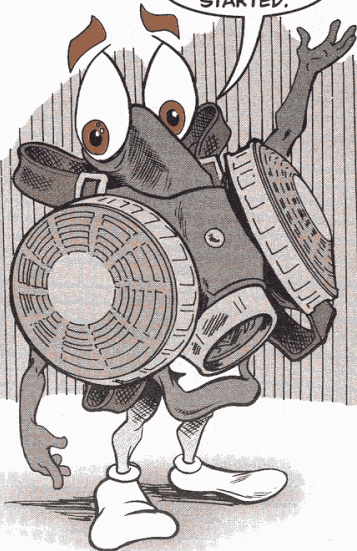
CRASH

Now You Can Breathe Easier

Your health may depend on the proper use of a respirator if your workplace has severe air pollution. A respirator's filters trap those dangerous critters produced by maintenance operations like sanding, grinding, welding, spot painting, brake and clutch repair, and use of adhesives.

You can't grab just any respirator and start to work, though. Different respirators are designed to protect you from different hazards or contaminants. It's important you know which type of respirator is used with which job.

HERE'S WHERE TO GET STARTED.



First, get your local safety or industrial hygiene folks to identify and measure the hazards in your work area. They'll tell you which respirator is best for each job.

Next, you need medical clearance to wear a respirator. Certain medical conditions, such as asthma, allergies, or high blood pressure could prevent you from being issued a respirator.

Then, you must be trained before using the respirator. You'll learn why the respirator is required, what it protects you from, how to tell if it fits properly, and how to care for it.

54



Fit Testing

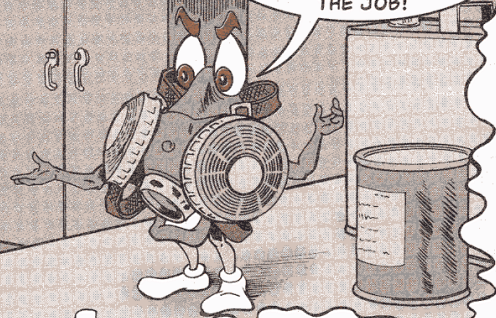
Fit testing is required before using **any** respirator. During fit testing, your installation's respiratory protection (RP) specialist will help you select the most comfortable respirator for your facial shape and features. You'll also wear the respirator in a test atmosphere and perform the required function tests. These tests let you know if your respirator doesn't fit or if it needs repair.

Be sure you let your supervisor or RP specialist know if there is any problem.

Fit testing and medical clearance are not one-time affairs. Depending on your unit's particular hazard, the RP specialist will schedule fit-testing and medical clearance semiannually or annually.

PS 520

WAIT!
YOU MAY HAVE A
POORLY FITTED RESPIRATOR,
OR EVEN THE WRONG
RESPIRATOR FOR
THE JOB!



Maintain

Before and after each use, check your respirator for cracks, holes, nicks and cuts. Work the buckles and feel the rubber face piece and elastic parts for flexibility and signs of wear. If you find any problems, turn in the mask to your supervisor. Remember, wearing a faulty or badly fitted respirator can be as bad as wearing no respirator.

Report any mask defects

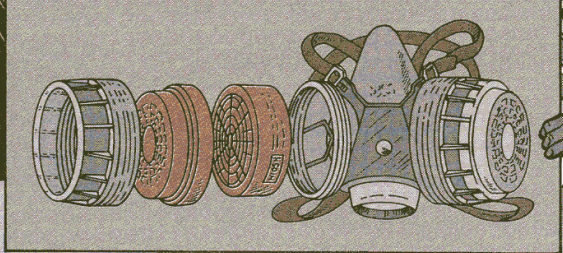


PS MORE

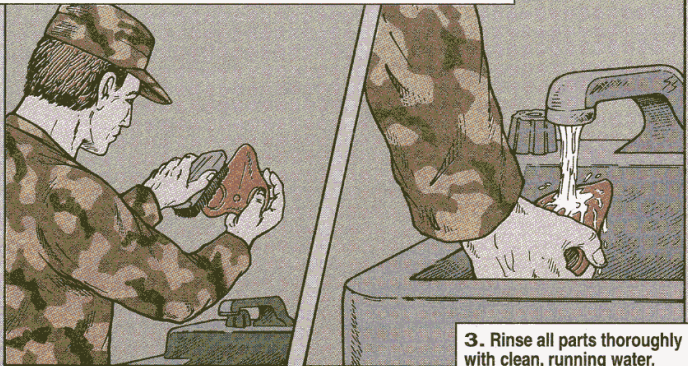
IF YOU ARE THE ONLY USER, MILD SOAP AND WATER ARE ALL YOU NEED TO CLEAN THE RESPIRATOR. IF A RESPIRATOR IS TO BE USED BY MORE THAN ONE PERSON, IT MUST BE DISINFECTED BETWEEN USERS. ALSO, YOU ALWAYS CLEAN THE RESPIRATOR BEFORE YOU STORE IT.

HERE'S HOW TO DO IT...

1. Remove filter cartridges or canisters, headbands, speaking diaphragms, and valves from rubber face piece. Remember, filter cartridges, canisters, and filter items cannot be cleaned.

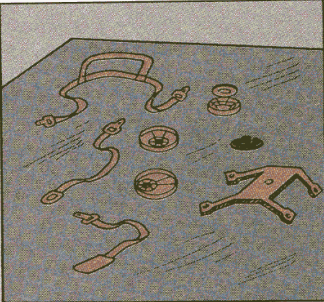


2. Put all other pieces in a warm solution of cleaner/sanitizer, such as liquid bleach, NSN 6810-00-598-7316. Use one tablespoon to four gallons of water. Let them soak for a few minutes. If necessary, lightly scrub mask with a brush to remove things like paint specks.



3. Rinse all parts thoroughly with clean, running water.

4. Place parts on a clean surface to air dry.

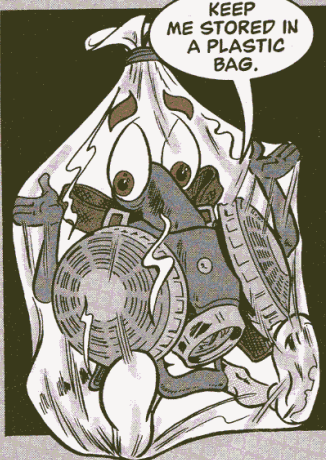


Storage

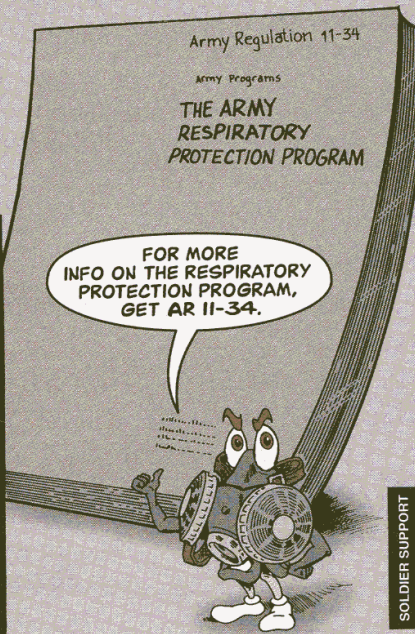
After the respirator is cleaned, or cleaned and disinfected, store it away from dust, sunlight, heat, extreme cold, excessive moisture and chemicals.

Respirators used on a routine basis can be stored in plastic bags. Never store them in lockers or tool boxes unless they are in protective containers or cartons.

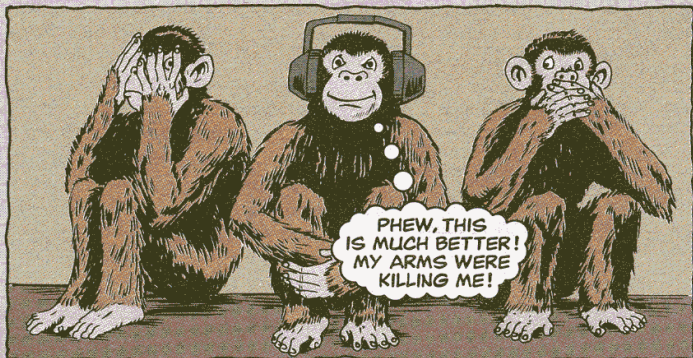
KEEP ME STORED IN A PLASTIC BAG.



FOR MORE INFO ON THE RESPIRATORY PROTECTION PROGRAM, GET AR 11-34.



HEAR NO EVIL



Help your equipment operators and crews protect their hearing by posting these warning signs and decals:

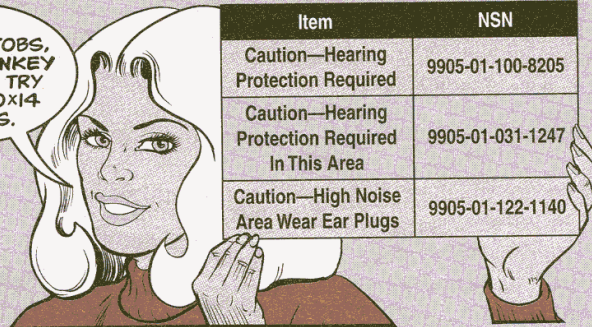
Equipment	Size	NSN
Aircraft	CAUTION HEARING PROTECTION REQUIRED	2 inches 7510-00-629-6637
		2 1/2 inches 7510-00-629-6638

Check out Section VI of TM 55-1500-345-23 for where to put aircraft decals.

Equipment	NSN
M1, M1A1, M1A2, and IPM1 tanks	CAUTION HEARING PROTECTION (HELMET) REQUIRED 9905-01-079-2903
All 2 1/2-ton trucks, M911, and M123 10-ton trucks	CAUTION Hearing protection is required for driver and co-driver. (Reference MIL-STD 1474) 7690-00-510-0365
M88A1, M60A3TTS, M728 CEV, M109 FOV, M992 FOV, M110 FOV, M578 and all construction equipment	CAUTION HIGH INTENSITY NOISE HEARING PROTECTION REQUIRED 9905-00-198-2728

Check out your vehicle's -10, -20P or -24P technical manual for where to locate these hearing decals.

FOR
BIGGER JOBS,
DON'T MONKEY
AROUND. TRY
THESE 10X14
SIGNS.



Item	NSN
Caution—Hearing Protection Required	9905-01-100-8205
Caution—Hearing Protection Required In This Area	9905-01-031-1247
Caution—High Noise Area Wear Ear Plugs	9905-01-122-1140

Bolts for Odd Jobs

Have you worked on any do-it-yourself projects around the motor pool lately? Odd jobs like putting up shelves or repairing the cage in your tool room?

Then you know the importance of keeping a variety of bolts on hand. You also know what a pain it can be to find the right NSNs or part numbers.

Now the Defense Industrial Supply Center (DISC) has made things a little easier. They've published a catalog containing 2,017 NSNs for non-metric hex head machine bolts.

Sizes range from a 0.190-in diameter up to 1 1/4-in diameter. Each size comes in various lengths and materials: Steel, cadmium-plated, corrosion-resistant steel or aluminum alloy. The tensile strength of each bolt is also listed.

For copies of the catalog, call DISC at DSN 442-2721 or commercial (215) 697-2721. You can also fax your request to DSN 442-0909. Or you can write to:

Defense Industrial Supply Center
ATTN: DISC-NBC
700 Robbins Ave.
Philadelphia, PA 19111-9970

Just one thing to keep in mind: Never use these bolts to repair your equipment. Instead, use the bolts recommended by your equipment's TM. The TM lists the specific grade bolt required for your gear. The wrong grade bolt could snap under stress, causing major damage.

PS 520



What's Your Number?

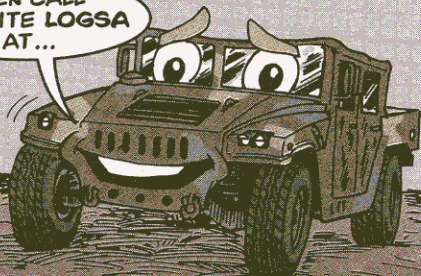
Your Army vehicles need registration numbers to travel on public highways. But what if the registration number has been removed from the vehicle and you can't find it in any historical records? Or what if a vehicle was transferred to your unit without a registration number?

No sweat. The Logistics Support Activity (LOGSA) issues records and maintains Army vehicle registration numbers. Just jot down all you can on the vehicle, such as the serial number and nomenclature.

DSN 645-9729/9715
Commercial (205) 955-9729/9715

Executive Director
USAMC Logistics Support Activity
ATTN: AMXLS-RRS (Veh Reg)
Redstone Arsenal, AL 35898-7466

THEN CALL
OR WRITE LOGSA
AT...



FOUR
OUT OF FIVE
DOCTORS
AGREE!

Medical RODs

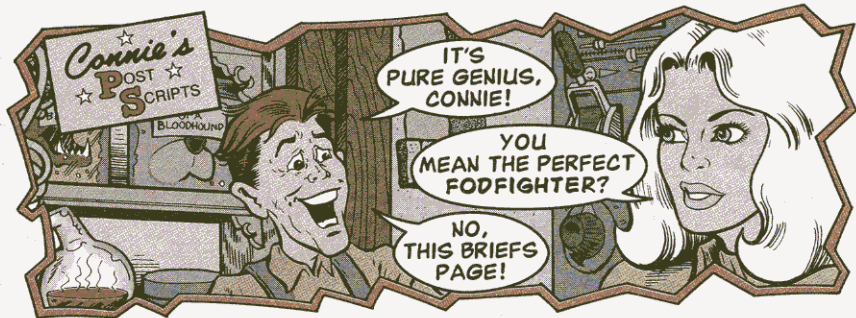
When you file a discrepancy report on a medical item, be sure it goes to the right place. Send all SF-364s (Report of Discrepancy) and SF-380s (Report and Processing Medical Material Complaints/Quality Improvement Report) to:

DPSC-MRCM
2800 S. 20th St
Philadelphia, PA 19145-5099
Or fax them to: DSN 444-8005
Commercial (215) 737-8005

Send SF-361s (Discrepancy in Shipment Report) to:

DPSC-OMRR
2800 S. 20th Street
Philadelphia, PA 19145-5099
Or fax them to: DSN 444-2663
Commercial (215) 737-2663





SEE/HMMH AOAP Oil Cap

There's no need to order the entire AOAP oil sample valve just to get a new valve cap for your small emplacement excavator or high mobility material handler. The cap is NSN 4730-00-203-3638. Make a note until the cap is added to Fig 15 of TM 5-2420-224-24P.

ULLS Helpline

If your local computer support or LAO folks can't help you with an ULLS problem, call the software Customer Assistance Office at Ft Lee, VA. Here are the phone numbers:
 DSN 687-1051
 Commercial (804) 734-1051

Revised Aviation TM

Your new Aeronautical Equipment Maintenance Management Policy and Procedures manual, TM 1-1500-328-23, has some revised info you should know about. Look for a full explanation of the tolerance factor for flight-hour, time-change components; revised tolerance factors for inspections that are based only on flight hours; guidance for processing defective or condemned items prior to disposal at the DRMO; and what to do when you find a counterfeit part.

Electrical Surge Protector

Would you spend \$20 to protect your computer or general electrical equipment from lightning or electrical surges? Then order surge protector, NSN 6150-01-396-9455. It gives your equipment a high degree of protection and carries a lifetime guarantee.

CDL Training on Computer

The Transportation School has put together a computer course that mirrors the civilian commercial drivers license (CDL) training. This course can help with your military driver's training and makes it easier for drivers to pass the CDL test. Ask your local TASC for computer-assisted instructions (CAI) 551-10.

Preformatted Computer Disks

You can now order preformatted, high-density, double-sided 3 1/2-in disks for your IBM compatible PCs from GSA. Here is what's available:

NSN 7045-01-375-	Disk brand
8543	Maxell
8544	BASF
8545	Syncom
8546	Verbatim

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

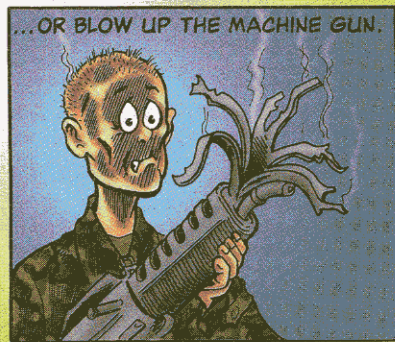
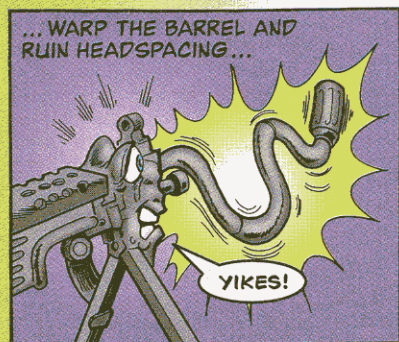
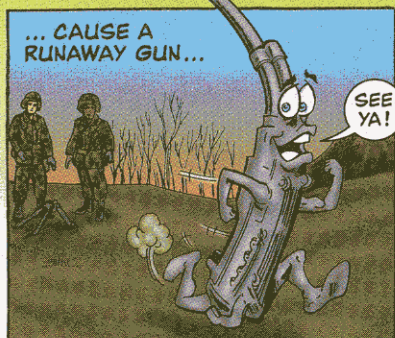
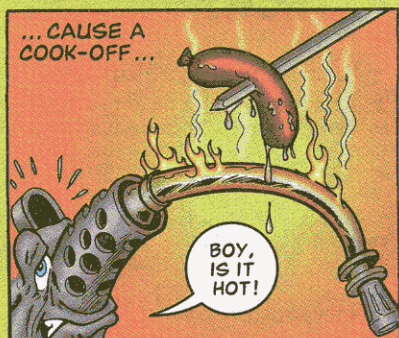
Would You Stake Your Life ^{right now} on the Condition of Your Equipment?

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For sale by the Superintendent of Documents, U.S. Government Printing Office Washington, DC

DON'T SPARE THE SPARE!

FIRING AGAIN AND AGAIN WITH THE SAME BARREL CAN ...



TAKE YOUR SPARE BARREL TO THE FIELD AND CHANGE BARRELS WHEN YOU'RE SUPPOSED TO!