

Issue 420

TB-43-PS-420

PS

November
1987

THE PREVENTIVE MAINTENANCE MONTHLY



I TURNED
AWAY FROM
THE SKID!

WHEN I
STARTED TO
SKID, I KEPT
MY WHEELS
STRAIGHT!

DON'T THEY
KNOW THEY TURN
INTO THE DIRECTION
OF A SKID?

Approved For
Public Release;
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Winter Driving Tips
See Page 27

PS**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

TB 43-PS-420, 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, questions or comments on material published in PS. Just write to:

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Camouflage...

If It**Shines, Wash It!**

HEY SARGE, I'VE GOT THIS ONE SHINING LIKE A NEW PENNY!

THAT'S THE WHOLE PROBLEM, SOLDIER!

When it comes to vehicle camouflage, dull is beautiful.

Spit and polish is as GI as reveille. And some folks feel that driving dull, camouflage-painted vehicles is for the birds. So, with the aid of Armor-All, baby oil, brake fluid, diesel fuel and a few personal mixtures, they transform their shadowy military vehicles into slick mean machines.

The use of any coating not authorized by regulation, specification, standard, TM or TB is strictly prohibited according to TACOM Msg AMSTA-MTC 091700Z Jul 86.

Glossy cosmetic coatings defeat the effectiveness of the camouflage paint and pattern.

A great deal of trouble and expense goes into vehicle war paint. It's designed to help protect a vehicle and its crew from enemy detection.

Shiny camouflage stands out like frost in June. A fancy shine could some day cost you your life!

So, if your vehicle shines, wash it with an ammonia and water mix. Soap and water also remove the coating, but ammonia is faster.

Wash it 'til it's dull!

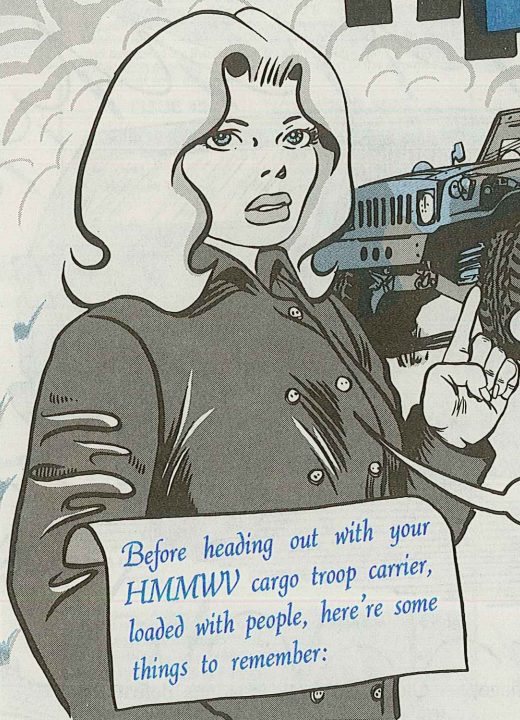
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HMMWV...

Tips for

Drivers!



Before heading out with your HMMWV cargo troop carrier, loaded with people, here're some things to remember:

You've got to be careful as you go tooling cross-country. Those cargo trucks used as troop carriers do not have seat belts or roll over protection for passengers. The HMMWV is a stable brute, but accidents do happen... most often because some driver just wasn't paying attention.

Safety

Speed kills. Never speed with a carrier loaded with troops. You may get away with it once or twice, but one day fate will catch up to you.

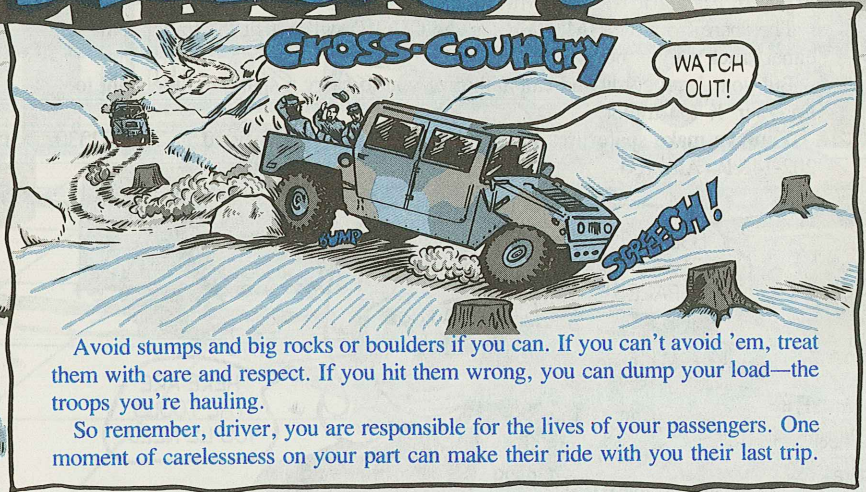
Stay alert. Safe driving depends on knowing your vehicle and road conditions at all times. Normal speed becomes excessive speed as road conditions change. It's up to you to keep an eye on the weather and the resulting change in road and terrain conditions and drive to match.



HEY, WHAT'S THE MATTER?
CAN'T YOU TAKE
A FEW BUMPS?

TROOP CARRIER DRIVERS,
THE LIVES OF YOUR
PASSENGERS ARE IN YOUR HANDS.
THEY DEPEND ON YOU TO
DRIVE SAFELY!

cross-country



Avoid stumps and big rocks or boulders if you can. If you can't avoid 'em, treat them with care and respect. If you hit them wrong, you can dump your load—the troops you're hauling.

So remember, driver, you are responsible for the lives of your passengers. One moment of carelessness on your part can make their ride with you their last trip.

Spaced Out

Terminal lugs on the slave receptacle on some HMMWV's are so close together they can touch and arc. That makes the rubber boot and cables on the receptacle hot enough to catch fire.

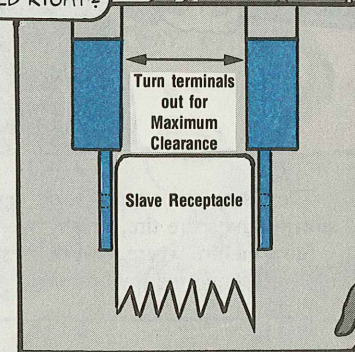
Most terminal lugs are protected by shrink insulation, but don't depend on it alone. You need some space, too.

Play it safe. Check out the terminal lugs and their boots during your next PMCS.

Take out the companion seat. Eyeball the rubber boot covering the terminal lugs. The boots must be 2-ply. The 2-ply style boots have two cords at either end. If your HMMWV has 1-ply boots, get your mechanic to replace them, pronto.

Examine the lugs where they connect to the slave receptacle. Position the lugs so there's the most space between them.

ARE YOUR HMMWV'S
TERMINAL LUGS
INSTALLED RIGHT?



Spare Tire Blues

When you get a flat tire on your ¾-ton trailer you can be in a heap of trouble, if you're towing it with a HMMWV.

The spare from the HMMWV (or the CUCV) will not fit the trailer. Nor will either truck's tools be of any help.

But your local command can authorize you to carry a spare and the right tools for your ¾-ton trailer.

You can make spare tires for ¾-ton trailers using parts listed in TM 9-2330-202-14&P (Aug 83).

USE THESE PARTS TO MAKE SPARES:

M101A2, M116A2

ITEM	NSN
Wheel	2530-01-155-3905
Tire	2610-01-148-1635
Valve	2640-01-555-2829

ALL OTHER MODELS

Wheel, with side ring assembly	2530-00-738-8452
Inner tube	2610-00-051-9266
Inner tube flap	2640-00-208-7541
Valve core	2640-00-050-1229
Tire valve cap	2640-00-060-3550
Pneumatic tire	2610-00-540-4719

HERE ARE THE TOOLS YOU'LL NEED:

ITEM

ITEM	NSN
Hand jack	5120-00-233-6829
Jack handle	5120-00-357-6106
Lug wrench (double head socket)	5120-00-293-2452
Bar (Lug wrench handle)	5120-00-243-2419

There's no mounting bracket or other hardware for stowing the spare tire, or any specific location.

Stow the tire where it works best for you—either in the truck or in the trailer.

Come Clean



OH, I JUST LOVE THIS!

Cream cleaner and detergent make cleaning plastic windows on HMMWV's easier. Here's how you do it:

Wash the windows with detergent and water, using a soft, clean cloth. Use detergent, NSN 7930-00-282-9699. It's Item 6 on Page D-2 of TM 9-2320-280-10.

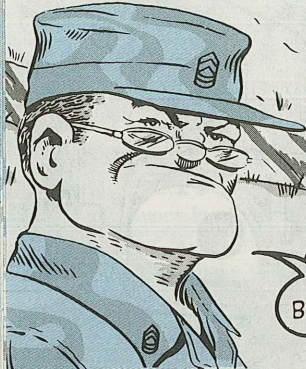
Rinse with clean water.

Apply cream hand cleaner, NSN 8520-00-082-2146, with a clean, soft cloth or sponge.

Wipe the cleaner off right away with a dry cloth.

THE CREAM CLEANER REPLACES THE CLEANER LISTED AS ITEM 12 ON PAGE D-3.

Head Off

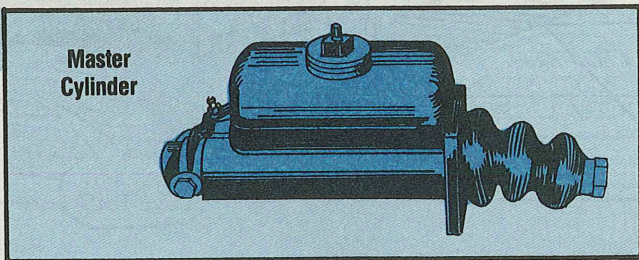


DON'T YOU THINK YOU'RE GOING TOO FAST?

POOR MAINTENANCE IS CAUSING A LOT OF BRAKE SYSTEM FAILURES.

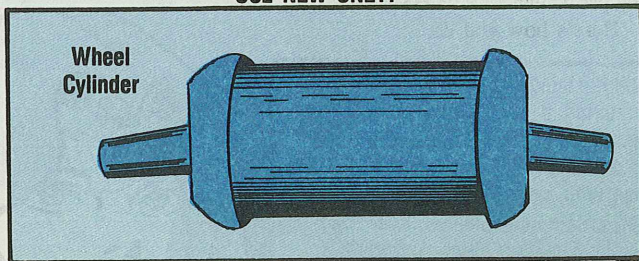
Here're some points to keep in mind when you're working on brakes:

Use only new master cylinders and wheel cylinders. That's spelled out in TACOM MSG AMSTA-MTB, 011200Z Feb 85.



Master Cylinder

USE NEW ONLY!



Wheel Cylinder

- Use only new or rebuilt air-hydraulic cylinders or power boosters to repair brakes. Parts from the can point may look OK, but may fail as soon as the truck gets on the road.
- On CUCV's, be sure you match the booster to the truck. M1009's use a smaller booster, NSN 2530-01-154-1294. All other models use booster NSN 2530-01-157-3005.
- Be sure brake line fittings are properly connected so you get a tight seal. A cross-threaded fitting can leak under pressure.

Brake Failure

I HATE TO SAY THIS, BUT ...

Be sure any fluid you add is the right kind—silicone brake fluid for most gear—

Be sure all metal hydraulic lines are steel—not steel-plated or copper—and of the right size. Copper lines burst under pressure.

If you're not sure whether a line is steel, use a magnet. If the magnet sticks to the line, it's steel. No magnet? Use your pocket knife to try to nick the line. You can't cut a steel line. And you need to replace a copper line.

Replace any worn mounting bolts, pins, springs or lines you find or that drivers report. The rule is, "If it looks worn or cracked, replace it."

Use the right tools when you're working on the brakes. Use open end wrenches, for example, to tighten fittings. Using pliers instead would damage fittings and maybe leave them loose.



Keep container closed to keep moisture and dirt out

and is not contaminated with dirt or water.

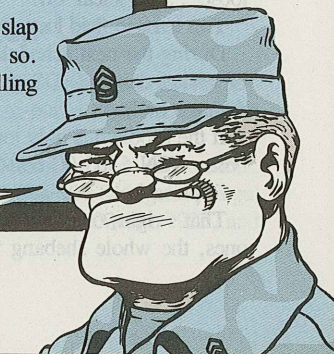
Be sure the fluid level in reservoirs is right.

Check your work closely when you finish. Check brake operation in the motor pool, and look for leaks. Then give the vehicle a road test to find any problems.

Head this:

While a vehicle's NMC for brake work, slap a red tag on the steering wheel saying so. That'll stop someone from driving a rolling accident waiting to happen!

REMEMBER — TAGGING IT COULD SAVE LIVES!



Transmission Bolt Change!

HERE'S THE WORD, GUYS! THIS FELLA IS REPLACING ME!



Pass the word! M939 5-tonners came with transmission mounting bolts that are too light to do the job.

The original Grade 5 bolts can't be tightened enough to hold. Bolts vibrate loose... and shear off.

That leads to fluid loss, gasket damage, busted transmissions or broken bell housings.

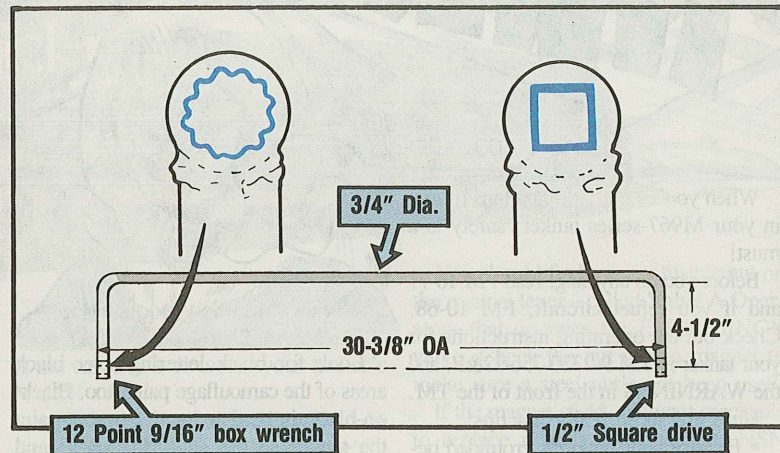
During the next scheduled service, look for loose bolts, fluid leaks or evidence of gasket damage. DS gets the repair job if there're any sheared bolts, gasket damage or leaks.

If the problem is only loose bolts, unit mechanics have the OK to put in Grade 8 bolts, NSN 5305-00-638-8920, and lock washers, NSN 5310-00-004-5033.

Replace bolts one-at-a-time.

That's right, one-at-a-time. If you remove all the old bolts before putting in new ones, the whole shebang falls out.

You can get to the four top bolts through the transmission access door in the cab. Reach the other eight bolts from underneath using this homemade wrench extension.



Torque the new bolts to 41-49 lb-ft. Never use this much torque on the old bolts. You'll twist the heads off and that means a DS repair job.

THIS INFO IS IN TACOM MSGAMCPM-TVM 072020Z OCT 85. SEE YOUR TACOM LAR IF YOU DON'T HAVE A COPY, OR WRITE HALF-MAST. HE'LL SEND YOU ONE!



Trucks...

Stop Air Line Freeze-Up

Moisture in air brake lines will freeze in cold weather and block the lines. That's why most trucks have an alcohol evaporator to put alcohol into air lines to prevent moisture from freezing.

All trucks except the 10-ton M.A.N. use methyl alcohol in their evaporators. NSN 6810-00-597-3608 gets one gallon. NSN 6810-00-275-6010 gets a 5-gal can. The M.A.N. takes a 50/50 mix of antifreeze. NSN 6850-00-181-7933, and denatured ethanol, NSN 6810-00-543-7415.

Think Safety Around Fuel!!

YOU CAN'T BE TOO CAREFUL!

When you've got 5,000 gallons of fuel in your M967-series tanker, safety is a must!

Before you do anything, read FM 10-71 and if you refuel aircraft, FM 10-68. Check out the operating instructions for your tanker in TM 9-2330-356-12&P, and the WARNINGS in the front of the TM.

Here are some really hot tips:

• Be sure your tanker's grounded before you dispense or load any fuel. Bond the tanker to the vehicle being fueled, or the tank you're loading from.

• Smoking around tankers is bad for your health. A spark can touch off fumes . . . causing an explosion or fire!

If you notice someone smoking too close to your tanker, shoo 'em away. Or, tell them to **put out** the smoke.

• Make sure the NO SMOKING markings on your tanker can be read, too. If



the lettering has been painted over, get the warning restenciled.



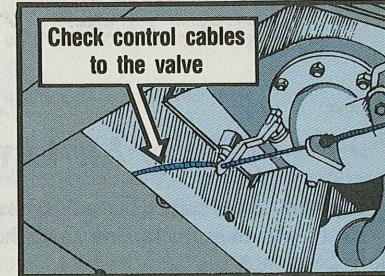
Look for black lettering over black areas of the camouflage paint, too. Black-on-black is hard to read, so spot-paint the tanker so the FLAMMABLE and NO SMOKING WITHIN 50 FEET warnings are easily seen.

Paint the sign in a color that contrasts to the camouflage. Never paint a block over the camouflage to stencil the sign on.

You'll find painting info in Para 4-8 of TM 9-2330-356-12&P.

• Make sure the emergency valve on your tanker closes the main tank outlet.

If the control cables to the valve are



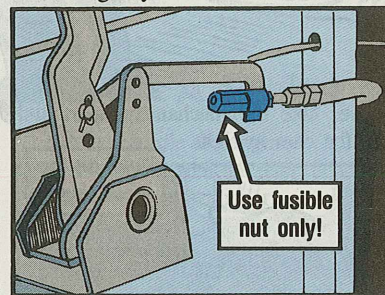
frozen with corrosion, the valve may not close.

Cables that are not properly adjusted can also keep the valve open.



Check the operation of the valve like it says in Items 10 thru 12 of the PMCS. If the valve fails to work, your tanker's NMC!

• Nothing but a fusible nut will do on the emergency valve cable. If there's a



fire, the nut melts, releasing the cable and closing the valve.

If the wrong nut is used, the valve won't close and won't stop the flow of fuel.



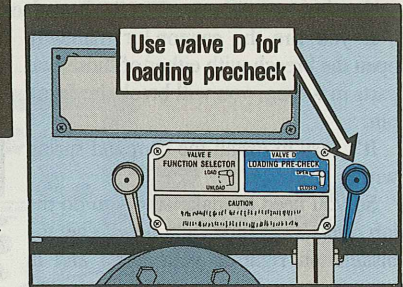
A LITTLE CAUTION AND CARE WILL HELP KEEP YOU AND YOUR BUDDIES ALIVE!

You should find a brass fusible nut on the control lever—called Valve A Operator—that operates the EMERGENCY valve. Check the nut with a magnet to make sure a steel nut's not been used.

If the magnet sticks, get your mechanic to replace it with a fusible nut, NSN 5310-01-077-3663, ASAP!

• Make sure your tanker's automatic shutoff works. When you bottom load your tanker, the shutoff automatically stops the flow of fuel when the tank fills up.

When you start bottom loading, run the



loading precheck called for in Para 2-11g of the -12&P.

If the float valve doesn't shut off the fuel flow in 20-25 seconds, STOP LOADING! Get your mech on it right away.

Stop Firing!



A lot of firing mechanism assemblies are being damaged because the cam or spring is installed wrong.

If you fire the cannon or manually open the breech with either of those two parts in wrong, you will break the firing pin.

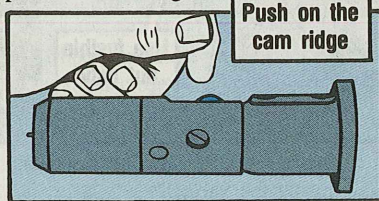
It's easy to install the cam and spring wrong.

So you need to make sure you do the job right. Take time right now to get the installation right in your mind and in your tank.

Eyeball Pages 3-178 and 3-179 of TM 9-2350-264-10-3, then do this:

Check the assembled mechanism by pushing down on the cam, which is shown as Item 24 on Page 3-179. If the firing pin moves out about 1/8 inch, the cam is installed right. If the pin doesn't

move, take the mechanism apart and put the cam in right.



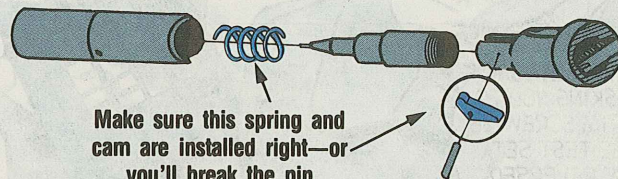
Measure the distance from the face of the firing mechanism to the tip of the firing pin. If the distance is 3/4 inch or more, the spring is installed wrong.



Firing pin sticks out more than 3/4-in? Reassemble the mechanism according to the TM

... Damage

Disassemble the mechanism and make sure the spring is installed BEFORE the firing pin when you put the mechanism back together. If the spring is installed after the firing pin, the pin will break during firing or when you manually open the breech.

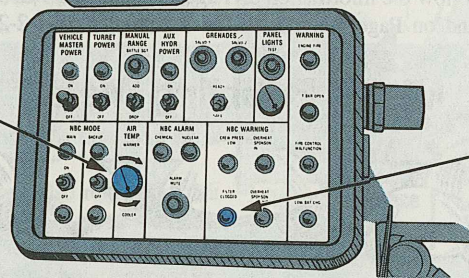


Make a note until your TM's are updated. But until then you can find the basic instructions in AMCCOM Maintenance Advisory Msg AMSMC-MAW 211620Z Mar 87. If you don't have a copy, see your local AMCCOM Logistic Assistance Representative.

A Flicker Is Just a Light

When you idle the engine at 1,250-1,350 RPM for 6-8 minutes with the NBC system working and the temp control knob in COOLER, the NBC clogged filter warning light may flicker.

Air temp control knob in COOLER



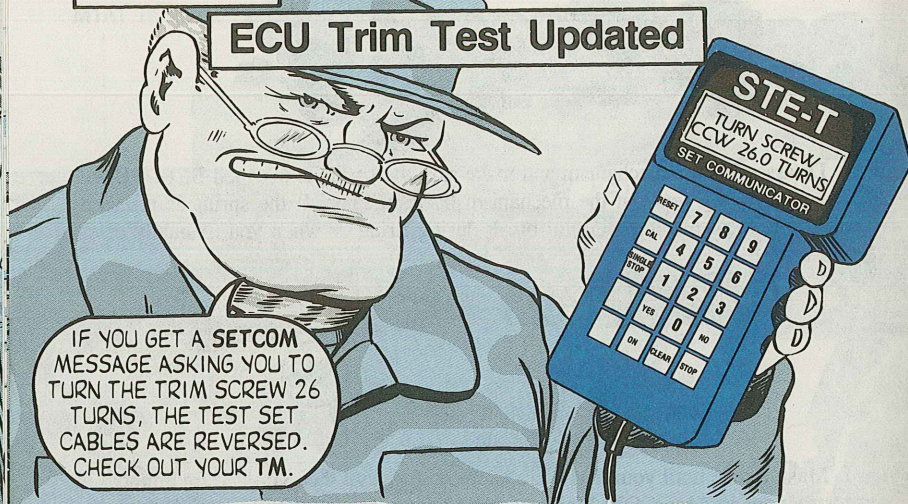
Filter warning light

Not to worry. That happens when an anti-icing valve opens to get rid of ice in the condenser.

Incoming warm air triggers the filter clogged switch, which makes the light flicker.

So pay no mind to the flicker. You've only got problems when the light stays on. That means you need a filter change.

ECU Trim Test Updated



IF YOU GET A SETCOM MESSAGE ASKING YOU TO TURN THE TRIM SCREW 26 TURNS, THE TEST SET CABLES ARE REVERSED. CHECK OUT YOUR TM.

Mechs, when you're pulling an Electronic Control Unit (ECU) trim test, reversed connector cables lead to damage to the ECU.

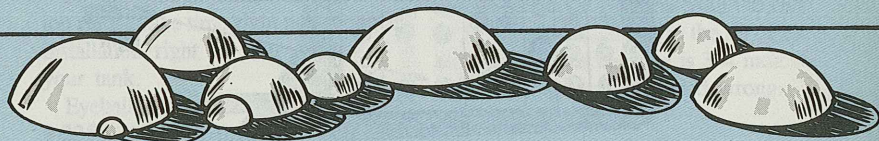
If the CIB-to-ECU cables are hooked up backwards, you'll get a false message on the STE-M1/FVS SETCOM.

That message will tell you to turn the ECU pot 26 times/rotations to the right or left direction.

Doing so will destroy the ECU pot and damage the ECU. The normal SETCOM message says three turns/rotations either right or left are required to adjust the ECU trim.

Never turn the pot 26 times. Instead, if you get that message, check your cables. Make sure you follow the information on Page 19-27 of TM 9-2350-264-20-1-2-2 for the M1A1 and on Page 19-22.5 of TM 9-2350-255-20-1-2-2 for the M1.

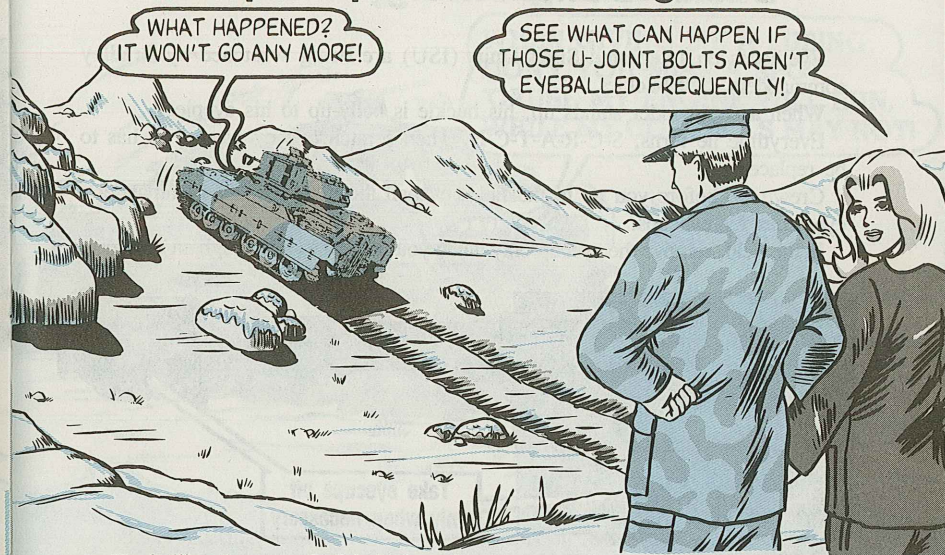
MLRS Bubbling Metal



Bubbling of the metal on the upper sponson surfaces of your MLRS carrier is caused by fluids used during the building of the vehicle being trapped inside and expanding.

To correct the problem, eyeball Para 2-9 on Page 2-24 of TB 43-0001-39-2 (Apr 87).

Keep Prop Shaft Bolts Tight



Eyeballing the prop shaft bolts is no longer a casual, sometime thing, crewmen. Because of the safety involved it's a required after-operation check.

If those bolts come loose and shear off, you'll be riding in a vehicle that can go out of control.

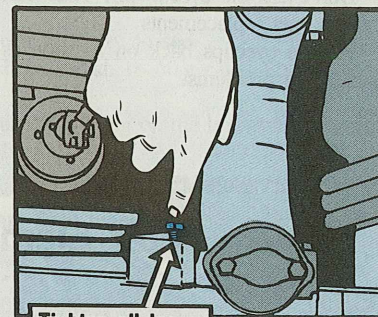
Look for loose or missing bolts. If you find any, report your vehicle NMC.

You mechs re-torque a loose bolt by torquing it to 86-94 lb-ft. Then loosen and torque again to 86-94 lb-ft.

When you replace a bolt, use NSN 5306-01-132-3369. Make sure that the head of the bolt is flush against the U-joint. Otherwise, the bolt may work loose again.

You mechs must also remember that if you use an adapter to get at the bolts, convert the torque value. Page 2-29 of TM 9-2350-252-20-1-1 has the conversion info for Bradleys.

Pages 2-33 through 2-35 of TM 9-1450-646-20-1 have it for MLRS.



Tighten all loose shaft screws

PAGES 2-23 THROUGH 2-35 OF TM 9-1450-646-20-1 HAVE THE CONVERSION INFO FOR MLRS.



Buckle Down on Sight Problems

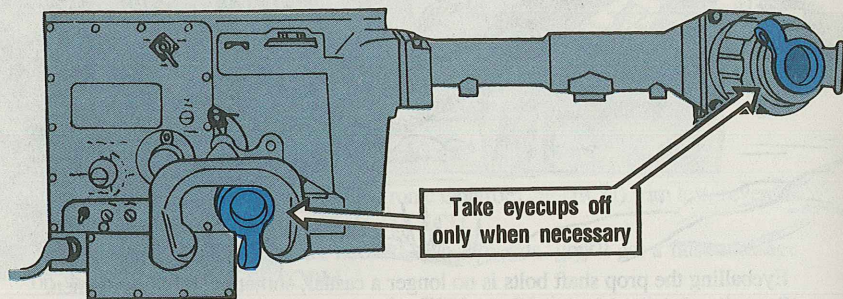
Eyepieces on Integrated Sight Units (ISU) are being scratched by Bradley commanders' belt buckles.

When a commander stands up, his buckle is belly-up to his eyepiece.

Everytime he turns, S-C-R-A-T-C-H. Then scratch one eyepiece...it has to be replaced.

Crewmen, before you go to the field, eyeball the gunner's and commander's eyepieces for eyecups.

In the field, remove the eyecup only when you need to look through an eyepiece.



Don't jerk the eyecup off. That tears the eyecup's rubber retaining strip. It's hard to get replacements.

Put the eyecups back on as soon as you're finished looking. That will stop scratching problems.

M109's, M110A2, M578, M992...

Clean Filter Element

Mechs, what's going on out there?

The headshed says an awful lot of transmission main oil filter elements inside the transmission are being used, and they're in short supply.

Problem is, you're supposed to clean the element, not toss it. Tossing it wastes a lot of Uncle's money.

Just clean the filter element with P-D-680 drycleaning solvent and reuse it. The only time you replace the element is when it's damaged.

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REUSE THE FILTER
AFTER CLEANING, UNLESS
IT'S DAMAGED!



Beating Bearing Seizure

WHEN GIVING ME A LUBING,
DON'T YOU MISS A SPOT.
'CAUSE MY ENGINE WILL RUN,
WHILE MY CONTROLS MAY NOT!



Balky steering, shifting and throttle controls on M88A1 recovery vehicles are not necessarily caused by cold weather.

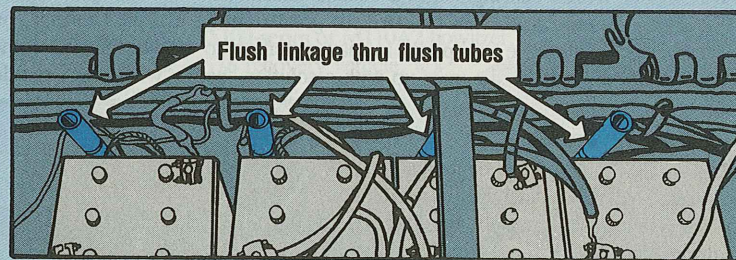
Dry linkage bearings work slowly, bind and even seize up.

Often you'll find that somewhere in the control linkages a lube point or two has been overlooked.

Not all lube points are out in the open and easy to see.

Make sure all the lube points get their fair share of grease. Follow LO 9-2350-256-12.

When you've got the batteries out, lube the fitting on the linkages underneath. Make sure no corrosion is eating on the linkage.



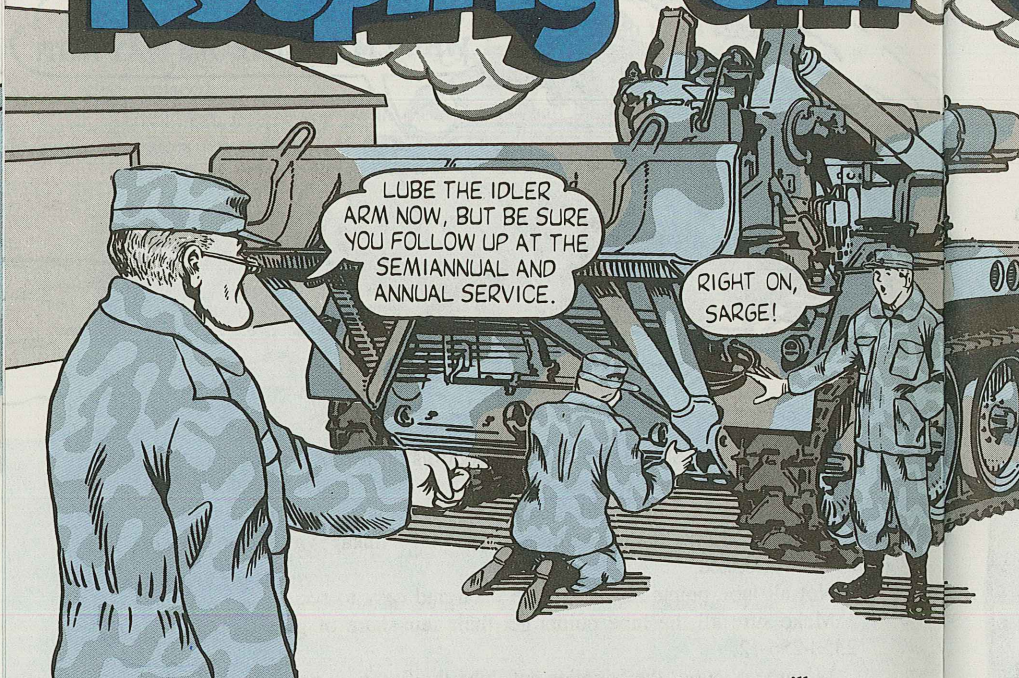
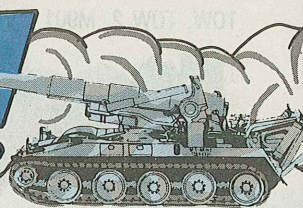
At least once a month, flush the linkage under the batteries through the linkage flush tubes. This will remove any battery residue that may have fallen under the box.

Put the lube where it's needed, when it's needed, and balky controls caused by bearing seizure will be a thing of the past.

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Keeping 'em Greasy!



Trailing idler arms on an M110 or an M578 must have lube or you'll soon have rusted or frozen bearings—and a vehicle that's NMC.

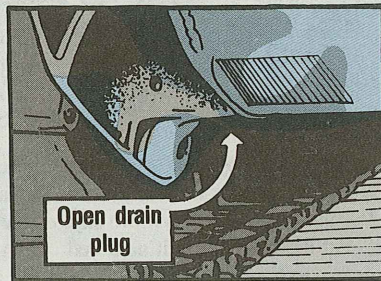
There's an alignment problem between the grease fittings and the bearings, on some vehicles. The grease you pump in may never get to the bearings on some vehicles. Until the headshed comes up with a solution, here's what you must do to keep your vehicle "up":

Semiannual Servicing

Remove the drain plugs on both trailing idler arms. After the water has drained out, run your finger around the inside of the drain hole.

If there are metal shavings in the drain hole, take the arm apart and repair it.

No metal shavings? Put the plugs back in place.



Annual Servicing

Pull the trailing idler arms and the road arms. Remove the inner and outer bearings. Throw away all old gaskets and seals.

Eyeball the arm housings. If they're out of round or elongated, report it to your DS unit.

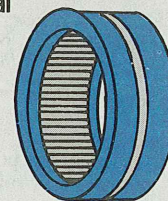
Clean the bearings with dry cleaning solvent, P-D-680. Replace any damaged bearings and repack them with GAA.

Use new gaskets and seals when you install the inner and outer bearings.

Remember, the inner seal lip faces the hull and the outer seal lip faces the arm. If the seals go in wrong, the lube's gone faster than you can say "trailing idler arm."

Re-install the arms and you're set until the next semiannual service check.

Make sure the inboard seal lip faces inward...



...and outboard seal lip faces outward

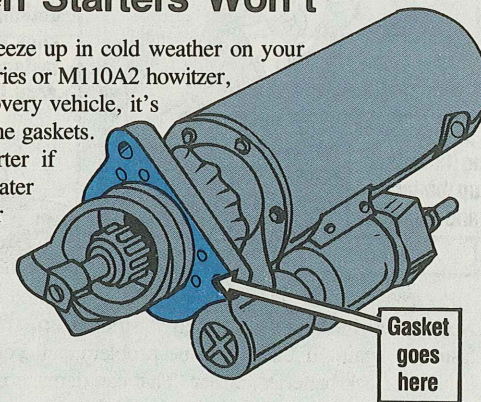
M113-Series FOV, M109's, M992's, M110A2's, M578's...

Frozen Starters Won't

If you have starters that freeze up in cold weather on your M113-series carrier, M109-series or M110A2 howitzer, M992 FAASV or M578 recovery vehicle, it's a good bet you could use some gaskets.

Water gets inside the starter if the gasket is missing. That water will freeze in cold weather and stop your starter cold.

Mechs, next time you pull the powerpack, make sure the starter has gasket, NSN 5330-00-980-1546.



Keeping TOWs



HERE'S HOW TO KEEP
YOUR TOW ON THE GO!

When you unplug the W2J1 cable from your M901's Missile Guidance Set (MGS), the cable usually ends up on the floor where a big boot can crunch its connector.

Mechs, tie up that cable with two electrical tiedown straps, NSN 5975-00-111-3208, and a 10-in rubber strap, NSN 4210-00-340-0980.

Assault and Battery

TOW MGS's are being left powerless because operators are removing batteries wrong.

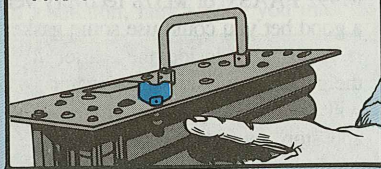
MGS wing fasteners are disappearing faster than ice on a July day because operators are jerking the battery out without fully unscrewing all the fasteners. That breaks the retaining clips that hold in the fasteners. The fasteners vibrate out.

The MGS battery is NMC if it doesn't have at least four fasteners—and they're in short supply.



After unscrewing
all wing fasteners,
lift up battery
slow and straight

Jerking out batteries breaks retainer clips and loses wing fasteners. Get fastener replacements with NSN 1440-01-148-8601



So make sure all fasteners are fully unscrewed before you lift out the battery. Never jerk the battery out. Lift it straight up. If you feel resistance, check the fasteners again. If that's not the problem, tell your repairman.

Never stack batteries, either. That can damage not only wing fasteners, but the batteries themselves if they take a tumble.

on Their Toes

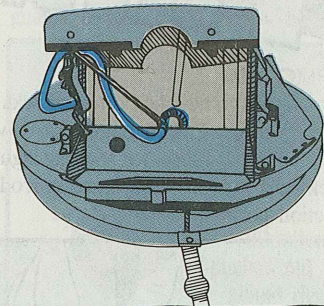
Stopping Cable Crunch

Remove the hook from each end of the elastic cord.

Thread one strap through the cable's loop in the MGS housing cover and through the hole in the end of the elastic cord. Pull the tiedown tight.

Wrap the other strap right below the connector and push it through the hole in the other end of the elastic cord. Lock it tight.

Then whenever you unplug the W2J1 cable, the cord will pull the cable up to the housing cover and out of harm's way.



This'll keep cables
out of harm's way

Insure Limiters Limit

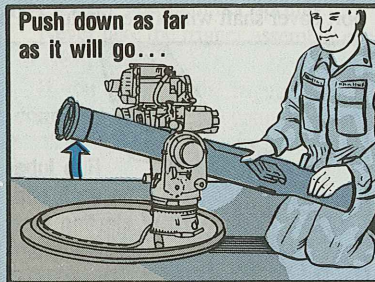
Stops on the elevation-depression-limiter on TOW's fail during firing.

Then the launch tube suddenly swings up or down, letting the TOW's back blast burn the vehicle... or you.

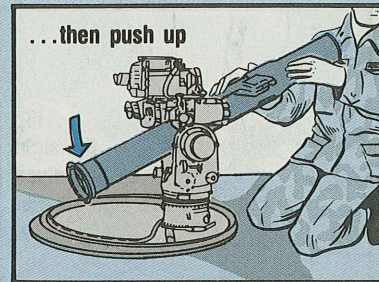
To stop swinging and swaying, test both the elevation and depression stops during your before operation checks.

Do it like this:

- Put a launch tube in the traversing unit.
- Elevate the launch tube as far up as it will go. Gently push down on the tube's rear end to make sure the elevation stop holds.



Push down as far
as it will go...



...then push up

• Test the depression stop by tipping the launch tube down as far as it will go. Gently push up on the tube's rear end. If you feel either stop give, report it.

Hitting the

PM

Bullseye

PMCS plus . . .

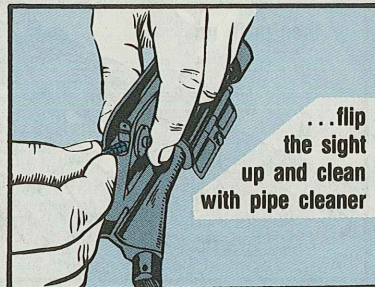
. . . tips that go beyond normal checks to cure problems PMCS might not solve.

Try these fast fixes for sticking sights, backward forward assists and corroded ejection ports.



Clean out grit, then . . .

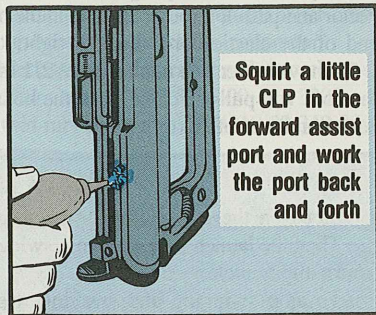
Grit makes the rear sight hard to flip. Get grit out with a doubled-over pipe cleaner dabbled with a drop of CLP. Work



. . . flip the sight up and clean with pipe cleaner

the pipe cleaner around the sight's base. Then flip the sight up and clean the other side of the sight's base.

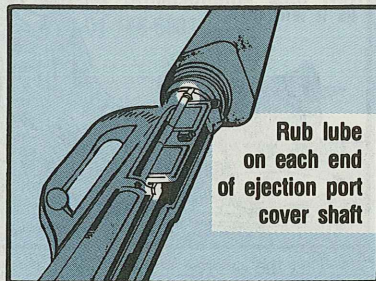
⊙ Grit also makes the forward assist slow to respond. If it moves hard, give the forward assist port inside the upper



Squirt a little CLP in the forward assist port and work the port back and forth

receiver one squirt of CLP. Work it up and down several times to work out grit. Clean the inside and outside of the upper receiver.

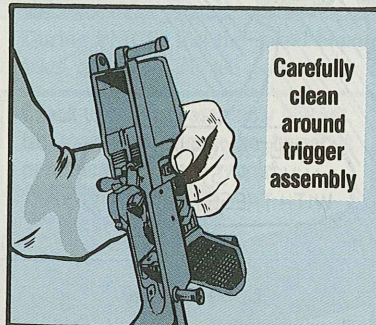
⊙ Prevent corrosion on the ejection port cover shaft with a weekly lube. Put



Rub lube on each end of ejection port cover shaft

a small dab of lube on a cloth and rub each end of the shaft.

⊙ Carefully clean around the trigger assembly with a pipe cleaner and CLP.



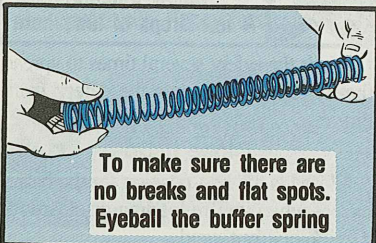
Carefully clean around trigger assembly

Dirt and sand quickly clog the works. Blow out hard-to-reach dirt with your own lung power once you've knocked dirt loose.

Be gentle. It doesn't take much to bend the trigger and hammer springs.

Never take the trigger assembly apart to clean it.

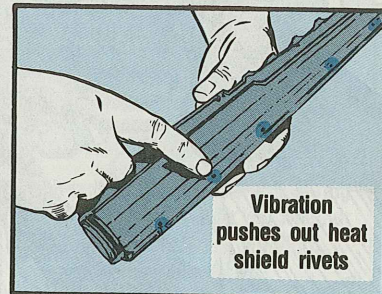
If you can't get the trigger assembly completely clean, tell your armorer.



To make sure there are no breaks and flat spots. Eyeball the buffer spring

⊙ Eyeball the buffer spring for breaks and flat spots.

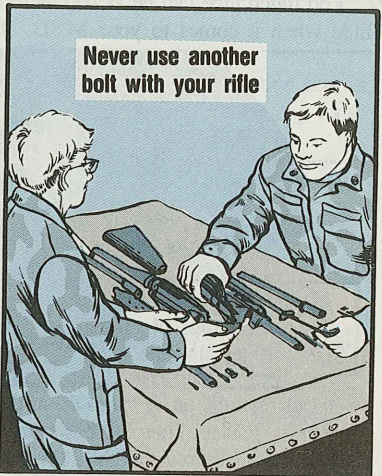
⊙ If you hear a rattling inside the handguards, the heat shields need to be checked



Vibration pushes out heat shield rivets

by your armorer. That rattle could be a death rattle for you if the enemy hears it.

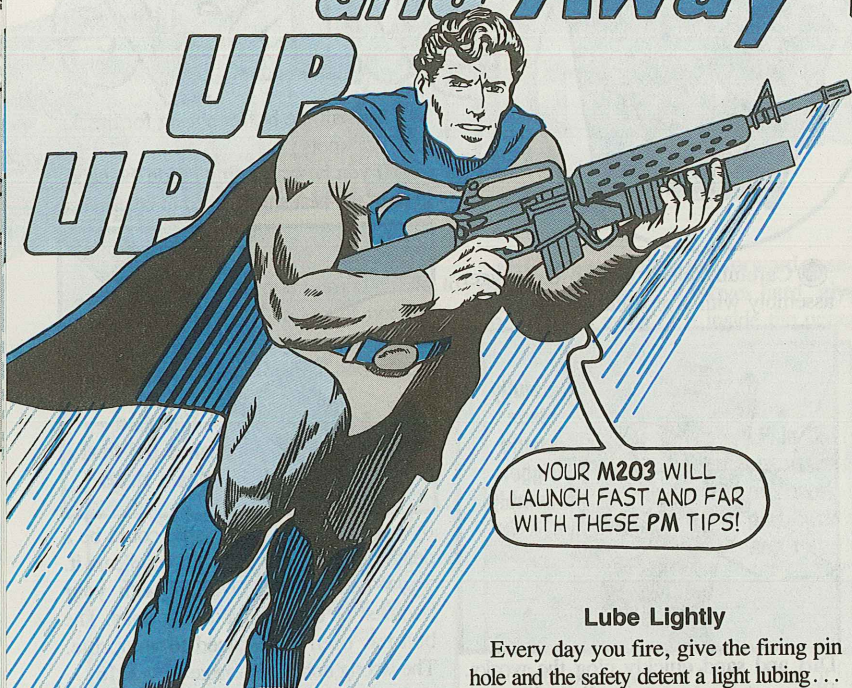
⊙ When you clean rifles with your buddies, be careful not to mix bolts. The bolt has been headspaced to your rifle. The wrong bolt can damage your M16 . . . or you.



Never use another bolt with your rifle

and Away With PM

UP UP

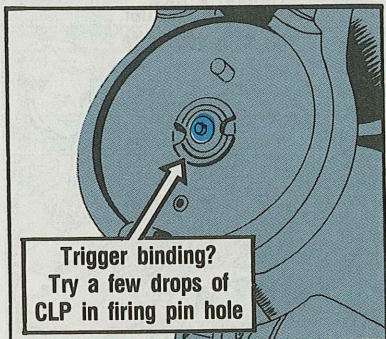


YOUR M203 WILL LAUNCH FAST AND FAR WITH THESE PM TIPS!

Lube Lightly

Every day you fire, give the firing pin hole and the safety detent a light lubing . . . that means a few drops.

Too much lube can be as bad as too little when it comes to your M203. If



Trigger binding?
Try a few drops of CLP in firing pin hole

you pour the lube on, it cakes up in the launcher's insides. Then DS has to take the launcher apart to get all the gunk out.



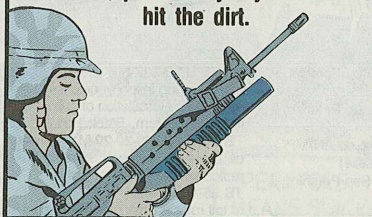
Safety binding?
A few drops of lube here

Work the safety several times to spread the lube. This prevents the safety from binding.

Close It Up

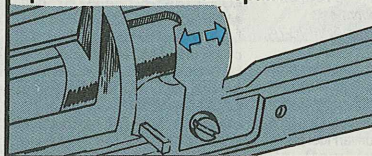
Closed is the best position for the barrel except when you're loading or cleaning. That keeps out crud.

Close the barrel when you're thru cleaning or loading. That helps keep crud out, particularly if you have to hit the dirt.



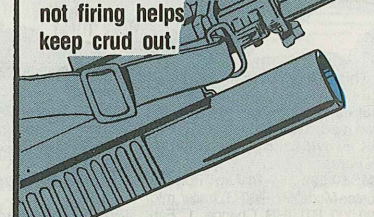
During PMCS, feel the barrel bracket for any up-and-down movement. If the bracket moves at all, tell your armorer.

Check your barrel assembly bracket. No movement along the barrel is permitted. DS must repair!

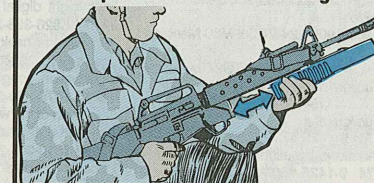


When you move the barrel back and forth to test the stop and latch, move it only back and forth. If you twist the handgrip, you'll wear out mounting bracket bushings.

If you have to hit the dirt, check the barrel before you fire again. If there's dirt or crud in the barrel, clean the stuff out before you fire. Keeping the barrel closed and latched when you're not firing helps keep crud out.



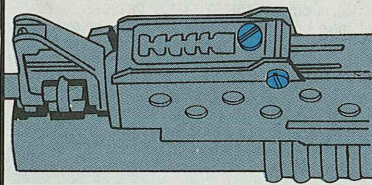
Push-pull the barrel assembly during your pre-op check—tells you whether the stop and latch are working.



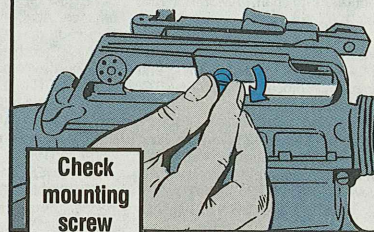
Off Target?

If you're always off-target, check the leaf sight windage and elevation screws and the quadrant sight mounting. Loose screws let sights slip. Report any loose screws.

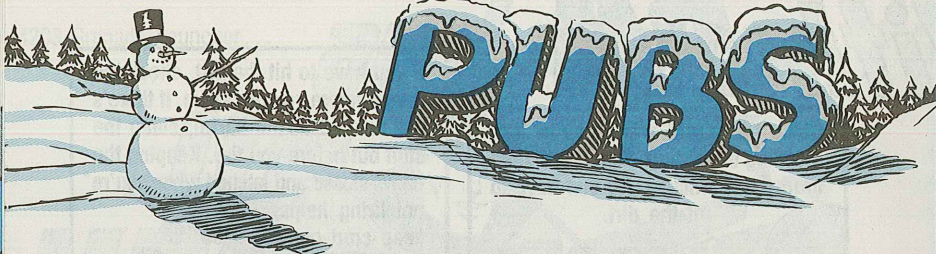
Check the leaf sight windage and elevation screws. Loose screws cause the sight to slip. Report loose screws.



Check your quadrant sight. If it's loose, report it.



Check mounting screw



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

TM 5-4520-251-14 Aug Portable heater Model PH-400-G, trailer mtd; 400,000 BTU/HR Change 1, Feb; Change 2, Mar
 TM 5-4610-215-10 May ROWPU 600-1, 600-3
 TM 5-4610-215-24 Jun Water purification unit, reverse osmosis, Model ROWPU 600-3
 TM 5-6115-614-12 Jul 86 200-KW MEP009B generator set, diesel engine driven
 TM 9-1005-224-24 Jul M60 Machine gun
 TM 9-1425-450-L Sep TOW 2 weapon publications
 TM 9-1425-470-L Sep TOW weapon publications
 TM 9-1425-473-L Sep M65 TOW missile publications
 TM 9-1425-600-24P-2 Sep Patriot missile
 TM 9-1425-600-24P-3 Sep Patriot missile
 TM 9-1425-647-24P Sep Multiple Launch Rocket System
 TM 9-1425-655-24P Sep AN/TSQ-73 air defense command and control system

TM 9-1430-388-24P Sep Pershing II missile
 TM 9-1430-393-24P Sep Pershing II missile
 TM 9-1430-1533-24P Sep AN/MPQ-57 radar (HAWK missile)
 TM 9-1450-396-24P Sep Pershing II missile
 TM 9-1450-485-10 Sep M667 carrier for Lance missile system
 TM 9-5855-450-24 Jun Night vision sight (TOW 2)
 TM 11-5805-727-20P Aug OA-9102 (V)/FSC, OA-9103(V)/FSC and OA-9098/FSC voice orderwire groups
 TM 11-5815-615-10 Sep AN/UXC-7 lightweight digital facsimile
 TM 11-5826-306-20P Sep AN/ARN-148 Omega navigational set
 TM 11-5855-262-24-1 Jul AN/PVS-7A night vision goggles
 TB 10-1670-250-20-1 May One-time inspection of the withdrawal line guide ring, MK-J5D parachute container
 TB 55-1510-201-20-20 Jun One-time inspection of engine-driven fuel pump on U-8F aircraft
 TB 55-1520-214-30-10 May One-time inspection of governor control rod OH-6A/H-6
 TB 55-1520-237-20-90 May One-time and recurring inspections of longitudinal links and lateral clevis for cracked bearing inner race

TB 55-1520-237-50-2 Jun One-time and recurring inspections of oil cooler splines, and installation of spline wear indicator system, Black Hawk
 TB 55-1520-238-20-20 May Deletion of the area weapon system firing restriction on AH-64A
 TB 55-1520-238-20-21 May Inspection of tail rotor swashplate clevis ring on AH-64A
 TB 55-1520-241-20-43 May One-time inspection of pivoting and swiveling actuators CH/47A, B, C
 TB 55-2840-248-50-45 Jun AH-64A engine wiring harness inspection, PAS rigging test and collective rate POT test
 FM 10-68 May Aircraft refueling
 LO 5-4320-226-12 Aug DED pump, wheel mtd, 350 GPM, 275-ft head
 LO 5-4610-218-12 Aug Water purification unit, EMC Model EMC-1500S
 LO 5-4610-221-12 Aug Water purification unit, MET-PRO Model 1500-2600A
 LO 5-4610-223-12 Aug Water purification unit, MET-PRO Model 3000V
 LO 5-5420-209-12 Sep Ribbon bridge transporter, interior bay and ramp bay
 LO 5-6115-598-12 Aug Generator set, GTEd, AC 150-KW
 LO 9-1440-531-12 Sep HAWK zero length launcher
 LO 9-2350-267-12 Sep M992 ammo carrier

Maintenance & Safety-of-Use Messages

MICOM SOU-MSG— Advisory, Operational, Antenna mast group, OE-349/MRC, In-yeet middle of lower antenna drive for weld cracks and adhesion to part, AMSMI-LC-AM, 202100Z Jul 87.

TACOM SOU-MSG 87-58— Advisory, Operational, Crane cable on M.A.N. trucks, hazard warning and inspection procedure, AMSTA-MTC, 311300Z Jul 87.

TACOM SOU-MSG— Rescinds TACOM Msg 87-28 and provides inspection procedure required before removing RT forklift from deadline, AMSTA-MV, 221030Z Jul 87.

TACOM SOU-MSG 87-61— One-

time inspection of HEMTT fuel probe, NSN 6680-01-158-9374, on M978 tank truck with serial numbers 27697 and lower, AMSTA-M, 061300Z Aug 87.

TROSCOM MSG 87-20— Maintenance Advisory, Instructions on inspection and tightening of Interim Ram Air Parachute System automatic opening device power cable locking nut, AMSTR-MES, 231302Z Jul 87.

TROSCOM MSG-87-21— Maintenance Advisory, Valve stem to rocker arm clearance adjustment procedures for 1½-, 3- and 6-hp engines, AMSTR-MES, 241930Z Jul 87.

TROSCOM MSG-87-23— Maintenance Advisory, Limit use of freon

cleaning agents on diver's gear to procedures in this message, AMSTR-MES, 121932Z Aug 87.

TROSCOM SOU-MSG-13-87— Safety device kit, NSN 7310-01-130-4907, required on M2 and M2A burner units made prior to Jan 83, AMSTR-MES, 281205Z Jul 87.

TROSCOM SOU-MSG-14-87— Emergency deadline of portable disc sander, NSN 5130-00-340-0719, Model No. 1201 made by Air, Inc., AMSTR-MES, 1114391Z Jul 87.

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

Winter Driving Tips



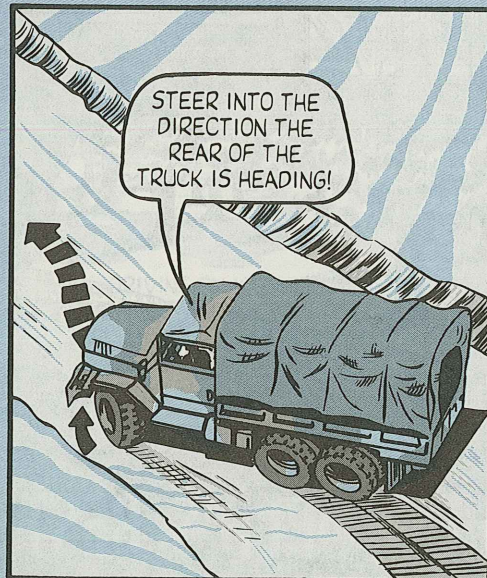
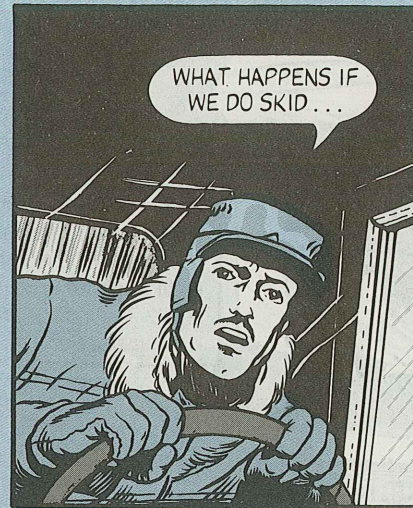
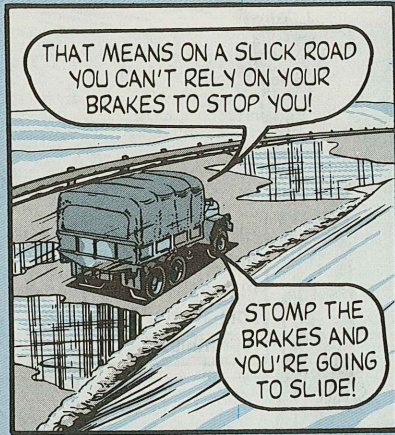
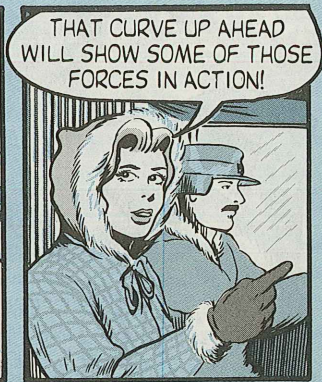
OPERATORS, WINTER MEANS SLICK ROADS AND HAZARDOUS DRIVING CONDITIONS. HERE ARE SOME WAYS TO MAKE YOUR JOB SAFER...

Adjust your driving to the road conditions along your route. Steep hills, sharp curves, ice or snow-covered roads mean trouble. Combine these with natural forces and... look out!

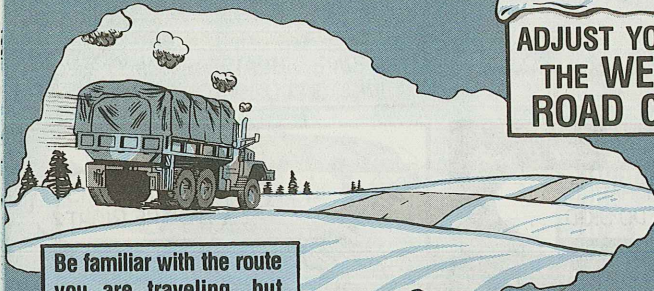
Black and white photostats of this material are available from PS for reprinting.




LET ME SHOW YOU WHAT I MEAN!



ADJUST YOUR DRIVING TO THE WEATHER AND ROAD CONDITIONS



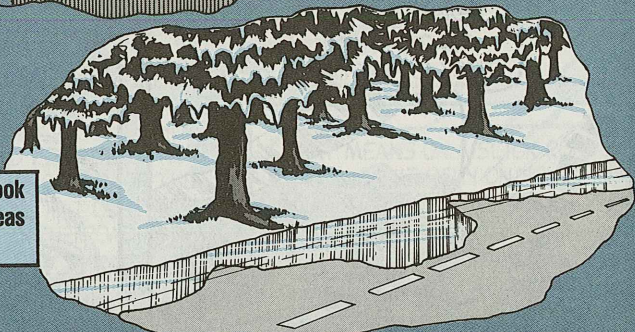
Be familiar with the route
you are traveling...but
maps aren't enough!



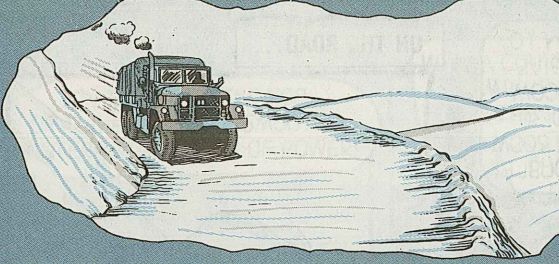
Look ahead, keep your
eyes moving...be ready
to stop at all times, ease
up to a halt, 20 to 30 feet
short. That extra room
is for unexpected trouble!



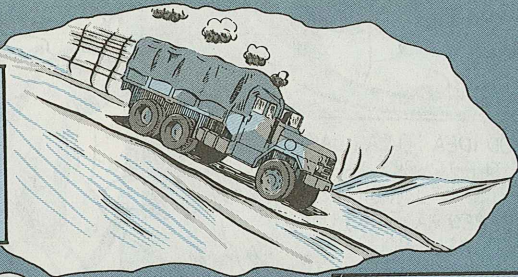
Use extra caution
on sharp curves!



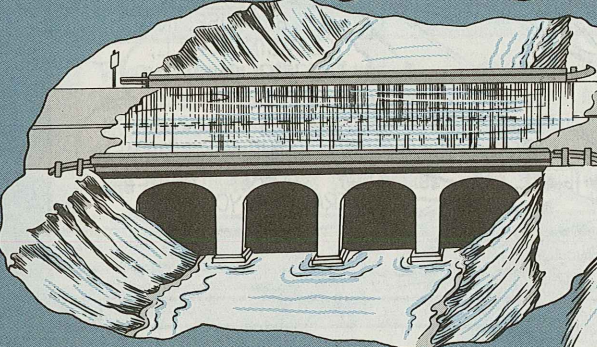
The road might look
clear but shaded areas
stay icy!!




Feed enough gas
to help you around
curves and to hold
traction, easy...
no jerking.



Slow down before
going into a curve
or downgrade. En-
gine drag helps
too, just ease off
on the gas!



Bridges and overpasses
freeze first. Cold air passes
under them and water
will freeze fast. Easy on
the gas, no jerks, roll
thru, keep traction.



WHEN DRIVING ON ICE AND SNOW...
CAUTION IS THE ONLY WAY TO GO...
JUST GIVE YOUR BRAKES A TAP,
AND YOU'LL AVOID A MISHAP,
SO TAPS (FOR YOU) THEY WON'T BLOW!

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

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

STAY ALERT—BE READY TO STOP AT ALL TIMES. GIVE YOURSELF PLENTY OF ROOM—EASE TO A HALT 20 TO 30 FEET SHORT. THE EXTRA ROOM IS FOR UNEXPECTED TROUBLE!

ON THE ROAD...

IT'S A GOOD IDEA TO LAY BACK AND LET THE TRUCKS AHEAD MAKE IT FIRST TO AVOID GETTING STOPPED HALFWAY UP! ALSO, KEEP YOUR DISTANCE...

... BECAUSE, IN CLIMBING A HILL, THERE'RE ONLY TWO BIG FORCES TO HELP... **MOMENTUM AND TRACTION (GRIP)**... THE MORE MOMENTUM YOU HAVE, THE LESS TRACTION YOU NEED!

INCREASE TRACTION BY KEEPING YOUR TIRES IN GOOD CONDITION AND PROPERLY INFLATED. BE SURE YOUR LOAD IS EVENLY DISTRIBUTED, TOO! AVOID POOR DRIVING THAT'LL BREAK TRACTION—LIKE JACK-RABBIT STARTS, SUDDEN STOPS, AND SHARP TURNS!

GET A RUNNING START, SO WHEN YOU REACH THE PEAK—YOU'VE GOT ENOUGH MOMENTUM LEFT TO GET YOU OVER!

Watch that shift... particularly the downshift. It can break your grip on the road. Make each shift as smooth as possible.

NOV 87

TRY TO GET TO THE TOP OF THE HILL IN ONE SMOOTH, UNINTERRUPTED FLOW OF POWER!

WITH A CONVENTIONAL TRANSMISSION, YOU MIGHT EVEN LUG A BIT AND GET OVER THE TOP OF THE GRADE IN ONE OR TWO GEARS HIGHER THAN YOU'D USE IN DRY WEATHER!

When you're on a dry road you can shift down to a lower gear using your engine as a brake. But on ICE, remember that the engine holding back your wheels is applying force to 'em just as brakes do. It can throw you into a skid. If you feel your truck start to slide—speed up your engine until your wheels are not sliding... and if you have to use your brakes... Tap, Tap, Tap 'em.

GOING INTO CURVES—
Slow down before you enter the curve, steer smoothly and evenly—no jerking.

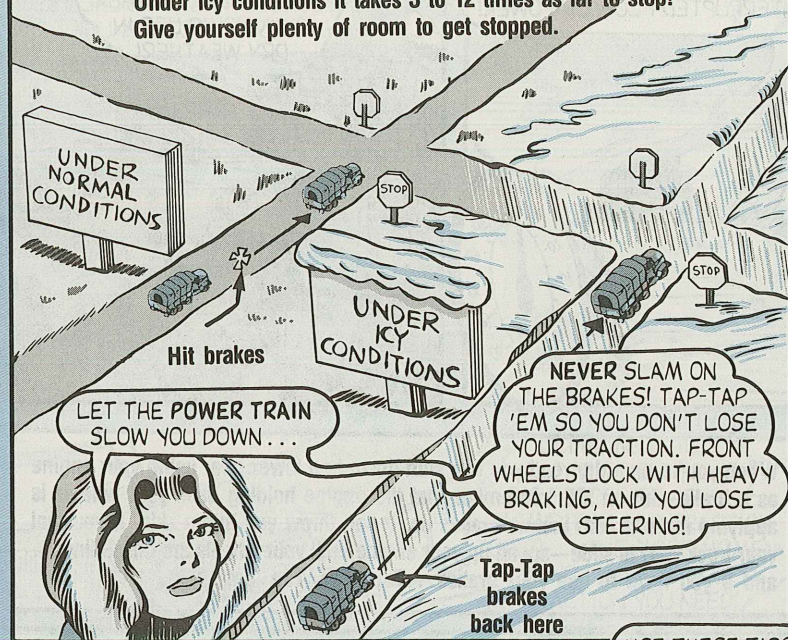
GET THE FEEL OF THE CURVE. NEVER GO TOO FAST OR THE CENTRIFUGAL FORCE'LL SLING YOU OFF THE ROAD!

NOV 87

33

STOPPING...

Under icy conditions it takes 3 to 12 times as far to stop!
Give yourself plenty of room to get stopped.

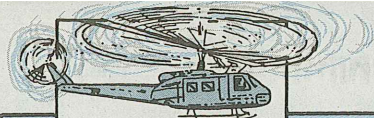


Tap-Tap
brakes
back here

USE THESE TIPS
AND EVEN THE
MOST ADVERSE
WINTER DRIVING
CONDITIONS ARE
EASIER TO DEAL WITH!



LET'S HEAD BACK
TO THE BASE,
SPECIALIST SIMS!



AIR MOBILITY

SOF Messages...

Cover Sheet Insures Coverage

Dear Editor,

When we receive a Safety of Flight message, we may have 1 or 2 birds at depot or AVIM and several others out in the boonies on a training exercise.

So it's not easy to make sure SOF requirements are applied to all birds in our unit.

We solved the problem by developing our own message cover sheet. It has space for the message info, a listing of affected aircraft in our unit, forms required, signatures of quality control and other personnel, and entries on required forms and records.

AIRCRAFT MESSAGE COVER SHEET

TWX NUMBER: _____ TB NUMBER: _____ DATE: _____
SUBJECT: _____

ACTION REQUIRED: _____

ACFT SER #	2408-5	2408-13	2408-15	2408-16	REMARKS

MESSAGE READ & REVIEWED BY:

	5.	6.
1.		
2.		
3.		
4.		

FILE NUMBER: _____ FILED BY: _____

2408-13 entry:

STATUS	FAULTS AND/OR REMARKS	ACTION TAKEN	SIGNATURE

2408-15 entry:

2408-16 entry:

MWO NUMBER	DATE OF MWO	PRI	ECH	MWO TITLE AND KIT NUMBER	MAN ORGANIZATION	DATE MWO APPLYING

Additional 2408-13 entries, if required:

STATUS	FAULTS AND/OR REMARKS	ACTION TAKEN	SIGNATURE

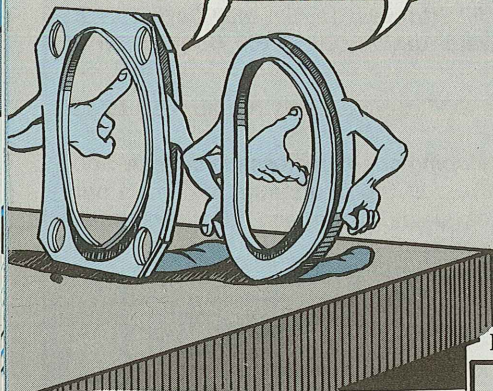
There may be other ways to control SOF message compliance, but this cover sheet works for us.

SSG Dennis Haza
Ft Riley, KS

(Editor's note: Sounds like you've got it covered!)

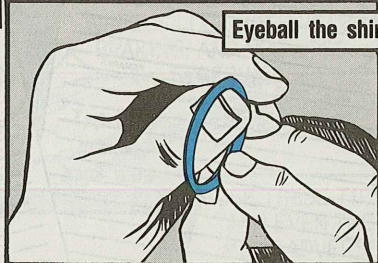
Shimmy, Shimmy

DON'T FORGET TO
FLATTEN OUR EDGES
BEFORE YOU USE A
MICROMETER ON US!



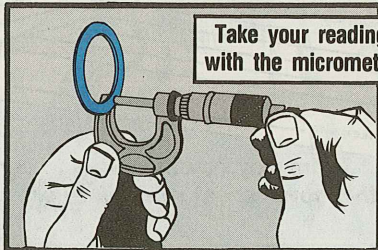
Eyeball the shim before you put the

Eyeball the shim



micrometer on it. If the shim has raised edges, flatten them out before taking the measurement.

**Take your reading
with the micrometer**

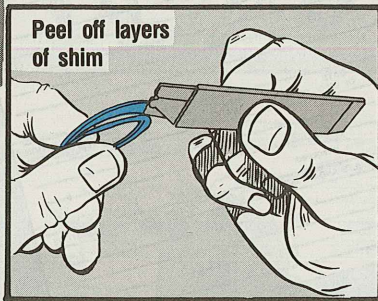


Then take your reading. This will give the exact thickness of the shim.

Careful, Huey mechs, when you have to replace shims in your bird's tail rotor hub and blade assembly.

When you peel off layers of shim stock

**Peel off layers
of shim**



to get a required thickness, you can get a shim with a raised edge.

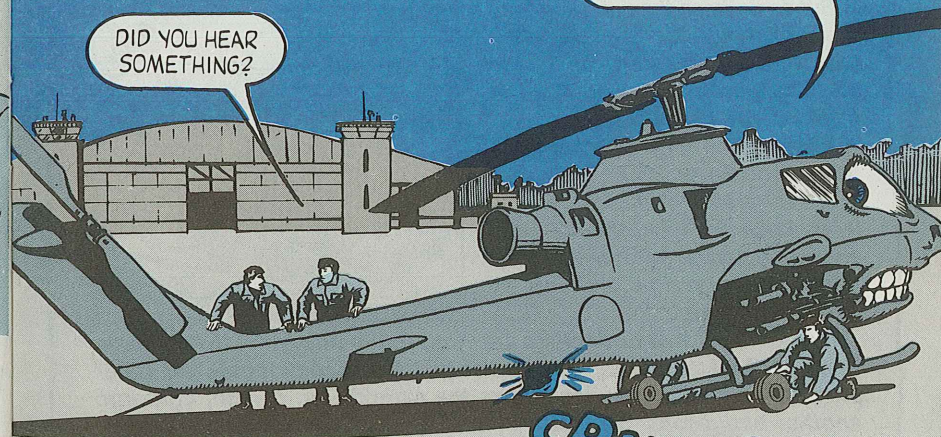
The shim between the tail rotor hub and the static stop is a good example. It's Item 27 in Fig 145 of TM 55-1520-210-23P-1.

It's not as wide as the points of the micrometer, so if you're not real careful, raised edges can give you a bum reading.

Down and Dirty

OH, MY ACHIN' ANTENNA!

DID YOU HEAR
SOMETHING?



CRUNCH

Your Mod Cobra's UHF/VHF antenna sticks out like a sore thumb, mechs, making it mighty accident prone. If you aren't extra careful when attaching ground wheels and towing the bird, you could put the antenna out of commission.

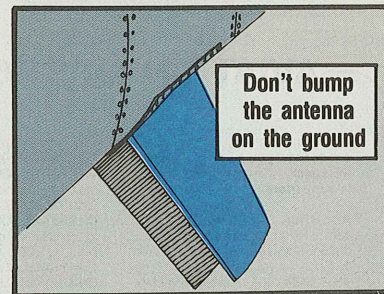
Para 1-21 of TM 55-1520-234-23-1 says to force the tailboom down as the handling wheel pumps are actuated in order to take some of the load off and make pumping easier.

But don't overdo it like some mechs and slam the antenna into the ground. If the fiberglass cracks, moisture can get into the antenna and short out the radio wires inside.

So come down easy with the tailboom when you're helping with the towing chores. You don't have to touch the antenna to the ground in order to get the wheels pumped up.

And use the same care when you're helping tow the bird. Avoid bumps and depressions that might bounce the antenna against the ground.

**Don't bump
the antenna
on the ground**



Fit To Be Tied

Dear Editor,

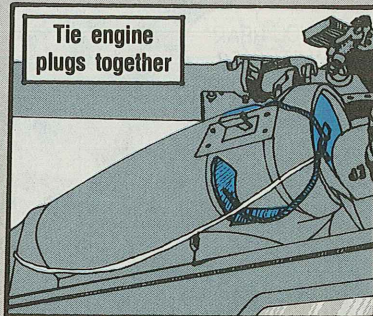
Styrofoam plugs are dandy little gadgets for keeping birds, bugs, trash, rain and snow out of our Black Hawk's engine inlets and exhausts.

But sometimes they're more trouble than they're worth. Like when they come loose and get blown away by wind gusts or rotor wash from nearby helicopters.

That's when they become a potential source of FOD.

We solved the problem—most of it, anyhow—by tying the inlet and exhaust plugs together. Use anything that's available—such as parachute string.

It's not likely that both plugs are worn to the point that they'll come loose at the same time. So, when one plug comes loose, the other plug keeps it from blowing across the airfield and, maybe, right into another bird's rotor blades.



SSG Thomas Booth
Ft Lewis, WA

(Editor's note: Sounds like you've tied up some loose ends.)

AVIATION MESSAGES

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

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

AH-1-87-03, SOF, Maintenance Mandatory, Restriction due to interference of pilot map light assembly bracket, 101900Z Jul 87.

AH-1-87-04, SOF, Maintenance Mandatory, Revision to restriction due to interference of pilot map light assembly bracket, 132000Z Jul 87.

AH-64-87-15, SOF, Technical, Revision to engine wiring harness inspection,

PAS Rigging Test, and Collective Rate Pot Test, 242200Z Jul 87.

CH-47-87-06, SOF, Technical, Replacement of engine cross shaft bolts, 092200Z Jul 87.

CH-47-87-07, SOF, Technical, Revision to replacement of engine cross shaft bolts, 101830Z Jul 87.

CH-47-87-08, SOF, Technical, Selected CH-47D helicopters, immediate grounding to replace three-way hydraulic valves, 160100Z Jul 87.

UH-1-87-08, SOF, Maintenance Mandatory, Inspection for cracked tailboom attachment fittings, 162030Z Jul 87.

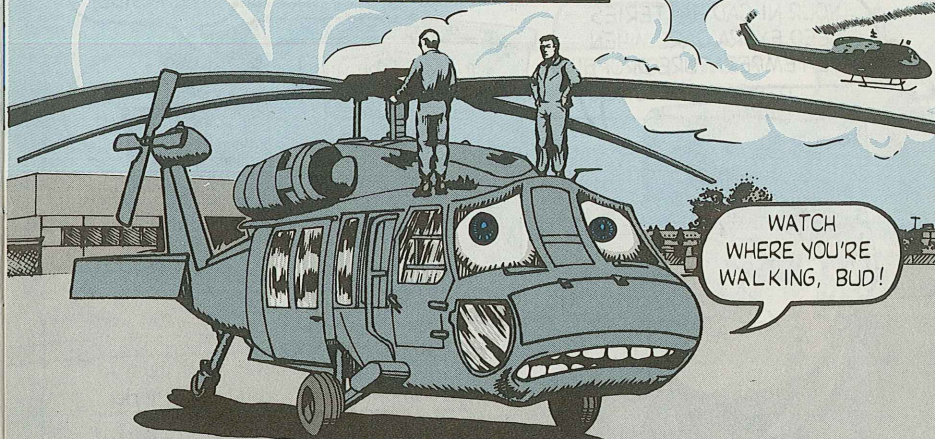
GEN-87-03, SOF, Technical, Inspection of night vision goggles AN/AVS-6(V)1, and AN/AVS-6(V)2, 291300Z Jul 87.

MIM-GEN-87-XSOF-01, Time change components, historical data and mutilation, 091900Z Jul 87.

MIM-AH-1-XSOF-03, Shipping reducer plug assembly for all T-53 engine fuel controls, 131500Z Jul 87.

MIM-UH-1-XSOF-05, Shipping reducer plug assembly for all T-53 engine fuel controls, 131500Z Jul 87.

Step Lightly



You've got to be careful where you plant your feet when you hike around on top of Black Hawks.

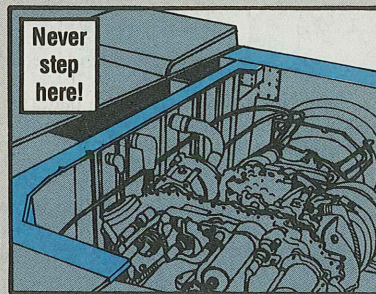
If you step on an unsupported NO STEP area, you may crack the bird's skin.

Never put your foot on the engine firewall when the engine cowling is open. The firewall won't hold you.

But when the cowling's closed, step where you want. Your weight's distributed along the entire firewall.

Always close the cowling before climbing up to inspect the rotor hub or anything else.

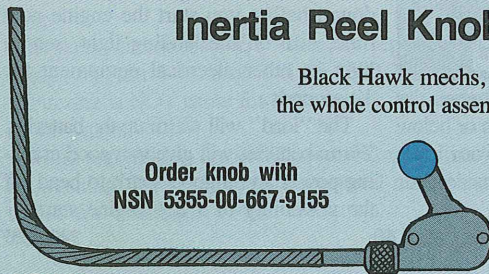
If you're not sure what areas are safe to walk on, grab a copy of TM 55-1520-237-23-2. Figure 1-6 shows steps, handholds and walkways, as well as NO STEP areas.



Inertia Reel Knob NSN

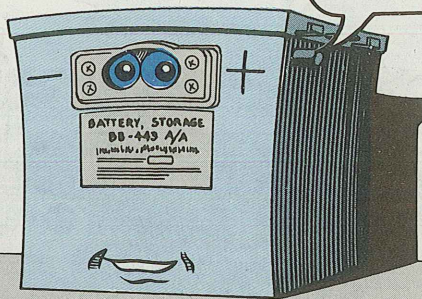
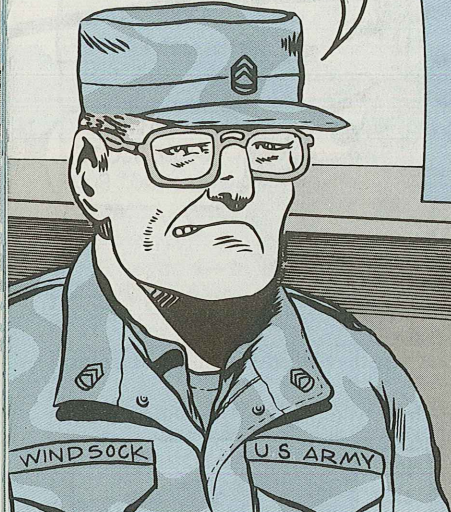
Black Hawk mechs, you no longer have to replace the whole control assembly for the pilot's or co-pilot's seat belt inertia reel just because a knob's missing or broken. If the knob's all you need, get a new one.

Order knob with
NSN 5355-00-667-9155

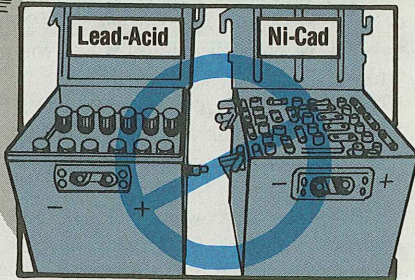


Just Say "Charge It"

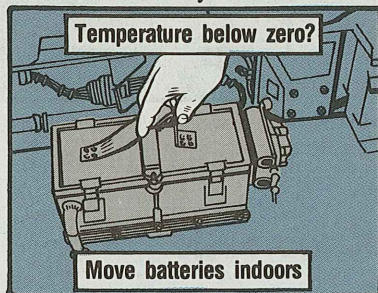
YOUR NI-CAD BATTERIES NEED EXTRA CARE WHEN THE TEMPERATURE DROPS!



But be sure you never store them in the same area with lead-acid batteries.



Your bird's nickel-cadmium batteries don't usually need any extra attention. But during extremely cold weather, a little extra care can save you a lot of hassle.



The best thing you can do when the temperature drops down to zero or below is to remove your batteries from birds parked outside and put them inside your maintenance hangar.

Fumes from lead-acid batteries will cause total discharge of nickel-cadmium batteries, whose cells will then have to be replaced.

Set batteries on a shelf or dunnage—never on the bare floor. This will give a more stabilized battery temperature.

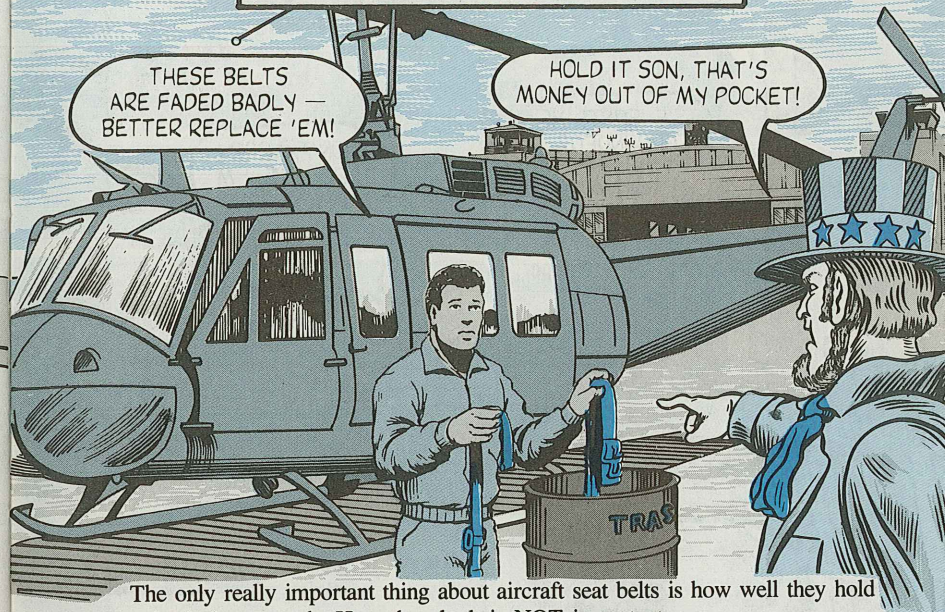
If you can't or don't remove your batteries when the temperature dips way down, before you start the engine next time, turn on the landing light, search light or other electrical equipment for 30 seconds.

The "load" will warm up the batteries. Warm batteries will give you good cranking power and a good spark to head off the possibility of a hot engine start.

Beauty's Only Skin Deep

THESE BELTS ARE FADED BADLY — BETTER REPLACE 'EM!

HOLD IT SON, THAT'S MONEY OUT OF MY POCKET!



The only really important thing about aircraft seat belts is how well they hold you in during a crash. How they look is NOT important.

Seems some crew chiefs replace seat belts because the fabric has been faded by sunlight. Or because they've been discolored from rubbing against metal and hardware. It's costing Uncle big bucks that could be better spent elsewhere.

The only good reasons for replacing crew and passenger seat belts are:

CUTS across the webbing, horizontally or vertically.

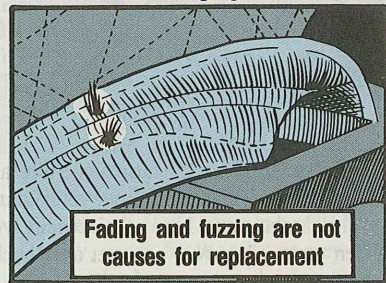
DISCOLORATION caused by caustic soaps and acids.

FRAYED webbing more than 2 inches long.

Broken stitches are NOT cause for replacement. You can repair stitching like it says in Para 3-311b of TM 55-1500-204-25/1.

Fuzzing is NOT cause for replacement. It's caused by broken individual filaments in the yarns.

Mold and mildew are NOT good reasons, either, unless you can't remove them by washing. Para 3-311c of the general maintenance manual tells how and what to use for washing.

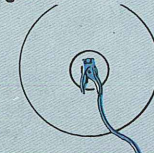


A Killer Is Lurking

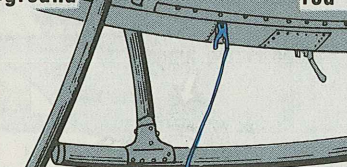


Here's the long and short of it:

Ground the refueling vehicle by attaching the ground rod clip to the nearest ground rod.

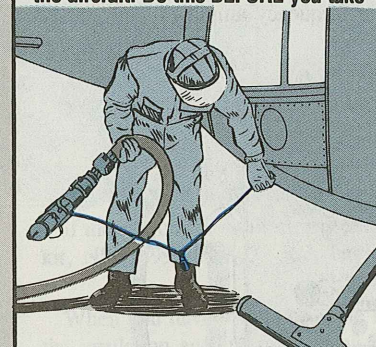


Ground the aircraft by attaching one end of the ground cable to the ground rod



and the other end to a bare metal part of the aircraft, such as the axle or some other unpainted metal part.

Next, bond the refueling nozzle to the aircraft. Do this BEFORE you take

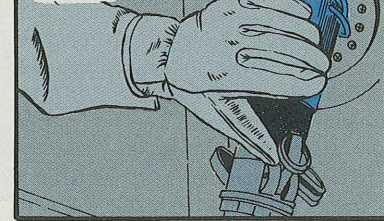


the dust cap off the nozzle and the cap off the fill port. If the bird has a receiver for the bond plug, use it. If not, clamp the alligator clip to any bare metal part of the aircraft.



HERE'RE SOME OTHER THINGS TO REMEMBER:

If the CCR nozzle and fill port will not mate, look for dirt in the port. Wipe out the port with a clean rag, wipe off the nozzle and lock the parts together.



Don't ever leave the nozzle unattended during refueling.



If the tank is not going to be filled completely, watch for the pilot or crew chief to signal when to stop the fuel flow.

Stop the flow of fuel completely before unlocking the nozzle from the port.

Carry the nozzle back to its hangar. Don't lay it on the ground or drag it across the ground.

Replace the nozzle's dust cap before you disconnect the nozzle bond.

One small spark can turn your aircraft refueling operation into a big bang. Small sparks can come from your failure to keep static electricity under control. This is the same kind of electricity you've felt—and even seen in the dark—when you walk across a carpet and touch something that's grounded, like a light switch.

Static electricity also comes from friction of fuel flowing thru a hose. As the static charge builds, it strains to jump across any gap separating it from other parts of the refueling setup.

You can't prevent static, but you can prevent it from arcing and sparking. So don't give it a chance. Make sure you ground the refueling vehicle, the aircraft and bond the refueling nozzle to the aircraft BEFORE you stick the nozzle into the bird's fuel tank filler hole.

Keep Bottoms Up With PM

Tip-top PM on your AN/VIC-1 intercom set's control boxes start at the bottom.

The audio connectors on the bottom of the box are sometimes neglected 'cause they're out of sight.

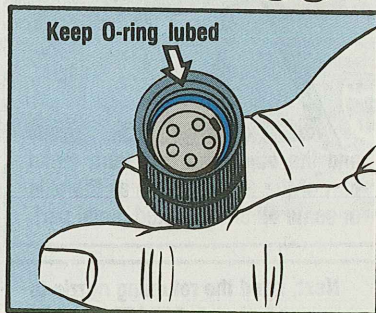
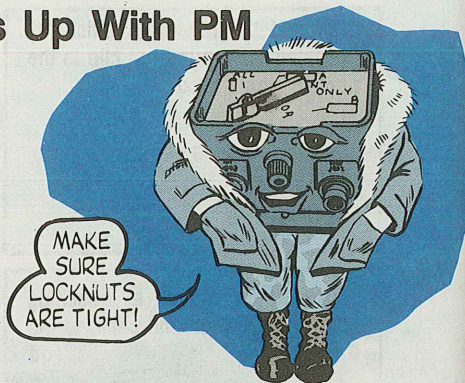
If the connector pins are corroded, rub them clean with a pencil eraser.

Make smooth, tight connections with your handset or headset by keeping the connector's O-ring lightly lubed with silicone (8-oz), NSN 6850-00-880-7616. Be sure it's a light coat. Too much grease can insulate the connection.

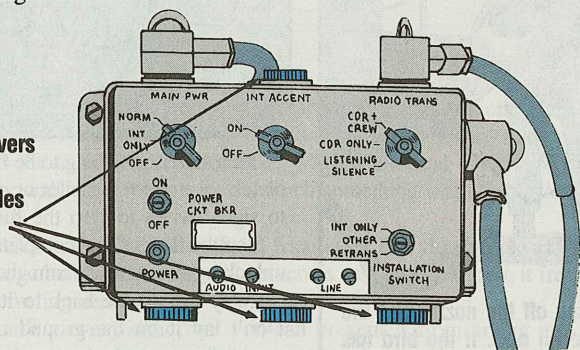
Keep the connector's locknut tight. If it comes loose, the connector will twist the wires inside. Then, before you know it the wires will break.

If a locknut's missing, get your repairman to replace it with locknut, NSN 5310-01-062-6473.

Support has to replace locknuts missing from the power and commo cable receptacles on all boxes and the AM-1780 audio frequency amplifier. But you keep them snug.



Keep covers on idle receptacles



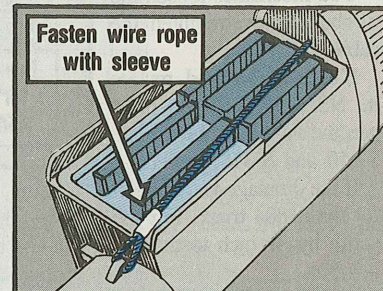
Be sure to protect an unused receptacle from dirt with a dust cap, NSN 5935-00-933-3752.

Cable PM Pays

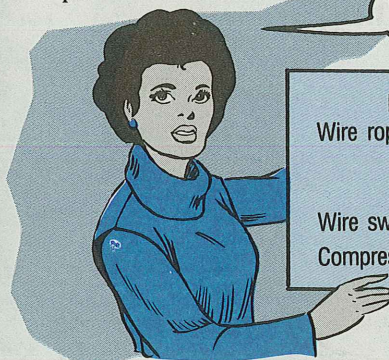
Cover your 26-pair cable connector when it's not connected.

Without the cover, dirt and dust gang up on the cable assembly to knock out circuits. Also, if you leave the cover off, contact pins get bent or broken. Then you can't hook up the connector with the receptacle.

So make sure the cover is on both the receptacle and the cable connector.



If the wire rope holding the cover is broken or missing, get your repairman to put on another one.



YOUR REPAIRMAN WILL NEED:

ITEM	NSN
Wire rope	4010-00-222-4482 (1000-ft reel) or 4010-00-575-6233 (by the foot)
Wire swaging sleeve	4030-00-431-5536
Compressing tool	5120-00-323-2292

Cap It

If the cap on the connector is cracked or broken, have it replaced. Replacement kit, NSN 5999-01-073-5507, has enough caps to repair ten connectors.

Protect Cable

When you have to lay the cable in the path of heavy boots or vehicles, protect the insulation and internal wiring by burying the cable.

Otherwise, the jacket on the cable will get scuffed and the wiring inside will be mashed or broken.

Bury the cable 6 to 12 inches deep. In sandy ground, you may want to go down as much as 3 feet.

Shelter Tiedown...

Snug RATT Rig to CUCV

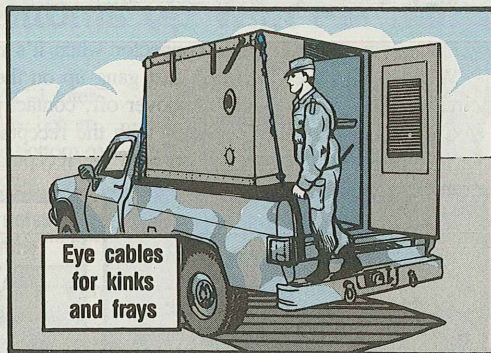
To make sure your RATT rig stays in the CUCV, keep the sling snug.

Eye the four sling cables for kinks and frays. If you find any, report it.

You mechanics loosen the turnbuckle to straighten the cable.

If the cable's frayed, replace it. NSN 3940-00-115-6380 gets the sling assembly for the S-250 and S-318 shelters.

If the dunnage is damaged or missing, rebuild it. SB 11-640 has the instructions for the M884 truck. For the CUCV, make it like the SB says, but cut down the width by $\frac{3}{4}$ inch to make it fit in the bed.



Commo Shelters...

PCB Warning

PCB (Polychlorinated Biphenyls) is toxic and has been banned by the Environmental Protection Agency!

Some communication shelter's power line filters contain PCB's.

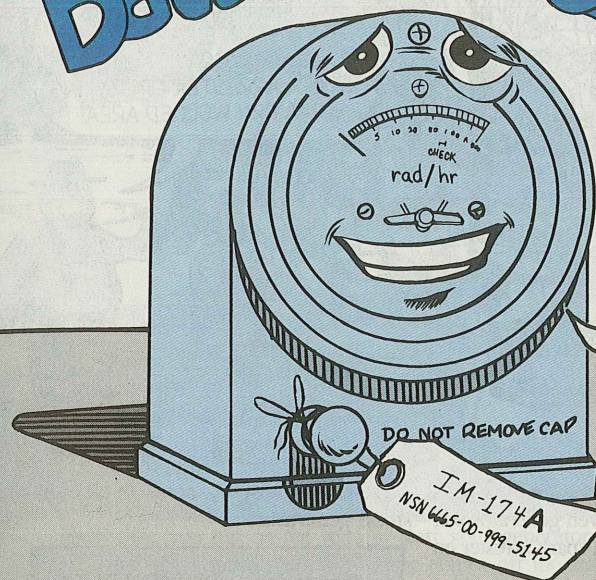
The CECOM Safety Office has a guide that tells you now to identify, label, handle, store, transport and dispose of PCB items.

TO GET A COPY OF THE GUIDE, WRITE:

**Commander
USACECOM
ATTN: AMSEL-SF-SEE
Ft Monmouth, NJ 07703-5000**

Radiacmeter...

Battery Conversion

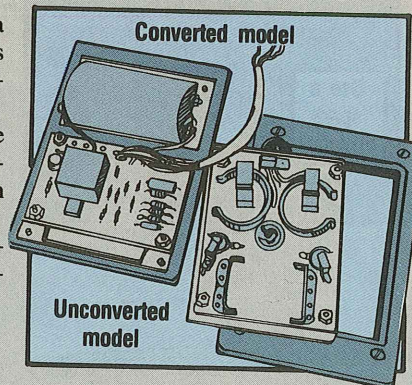


If your IM-174A radiacmeter uses a multiple battery power source, it needs to be converted to a single dry-cell battery setup.

Fill out a DA Form 2407, Maintenance Request. In Block 16, put "D" cell conversion, TM 11-6665-232-12, Lexington Blue Grass Army Depot (LBAD).

Send the 2407 along with the radiacmeter to your support for TMDE processing to:

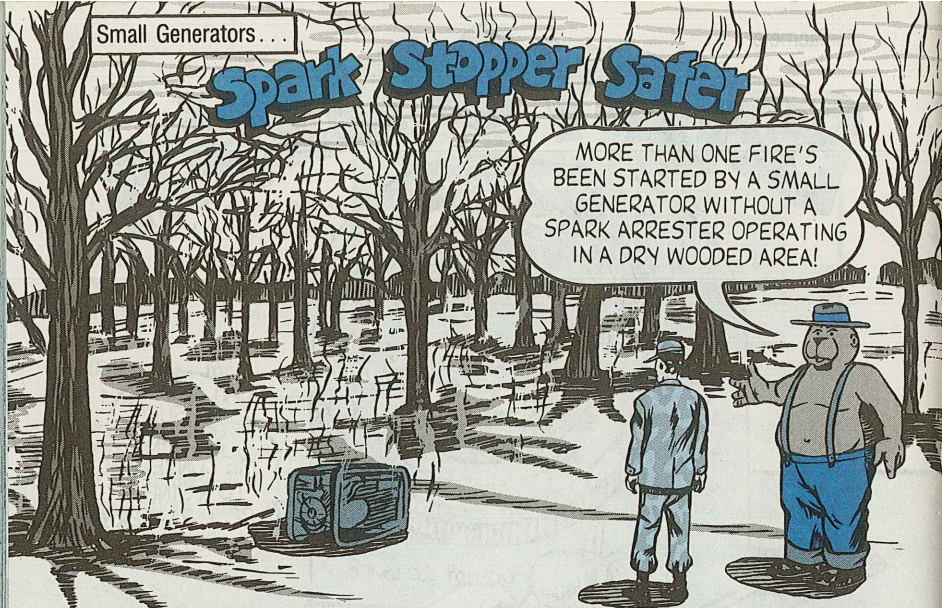
**Commander
LBAD
Receiving Branch
Warehouse #220
Lexington, KY 40511-5101**



The converter set gets a DA 80 label changing the calibration recall date. Make sure you adjust the date on your calibration records.

Spark Stopper Safer

MORE THAN ONE FIRE'S BEEN STARTED BY A SMALL GENERATOR WITHOUT A SPARK ARRESTER OPERATING IN A DRY WOODED AREA!



Next time you're headed for the woods with your gasoline-driven generator set, make sure you've got a spark arrester on the muffler.

Here are the spark arrester kits for small generators:

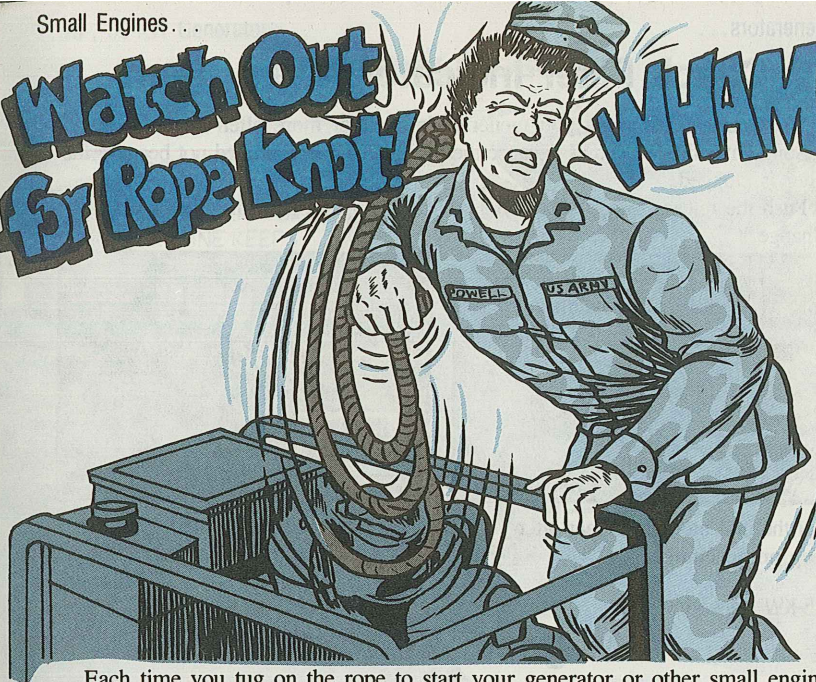
Generator	NSN 2990-01-032-
.5- and 1.5-KW	0755
3-KW	7384
5-KW	0757
10-KW	3750

If the kit's not in your parts manual, use the end item in your MTOE or MTDA as the authority for a kit. Each kit comes with installation info.



ONLY YOU CAN PREVENT FOREST FIRES!

Watch Out for Rope Knot! WHAM!



Each time you tug on the rope to start your generator or other small engine equipment, the knotted end of the rope comes off the starter pulley.

Look out! That knot can smack you in the eye and cause serious eye injury.

To avoid eye damage, use goggles, NSN 4240-00-052-3776, whenever you start your generator or other pull rope gear. The goggles are authorized by Appendix A of CTA 50-970.

3-KW Generator

Capacitor NSN

You can't get regulator capacitor C4 shown on Page FO 3.1 Change 5 of TM 5-6115-271-14 with PN CL65CP140MP3. Instead, use NSN 5910-01-119-4334. It's for capacitor, PN M39006/22-065, which works fine.

Fuel Line Nut

Use NSN 4730-00-012-0704 for the tube coupling nut on the fuel line assembly. The nut's not in the TM, but the line is shown as Item 1, Fig 4 of TM 5-2805-203-24P.

NSN for Stud

Get a turnlock fastener stud for your PU-620/M generator set's distribution box by ordering NSN 5325-00-297-9662. The stud's Item 23 in Fig 4-6 of TM 5-6115-365-15.

Check Filter Indicator Again, Sam

You could be changing your generator's air filter more often than necessary. Sometimes the red shows because the indicator's been bumped not because the filter is clogged.

Push the release button. If the filter turns red again, then the filter's clogged. Change it.



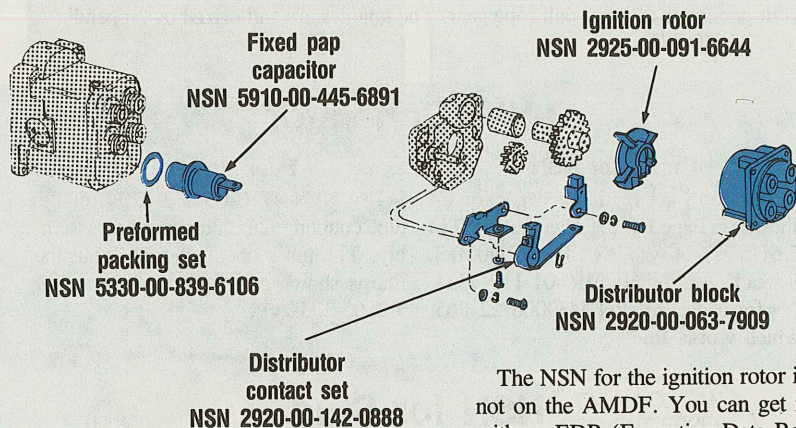
If the indicator stays clear after you push the button, the filter's still good. Just keep on generatin'.

7.5-KW Generator...

Magneto Kit Parts

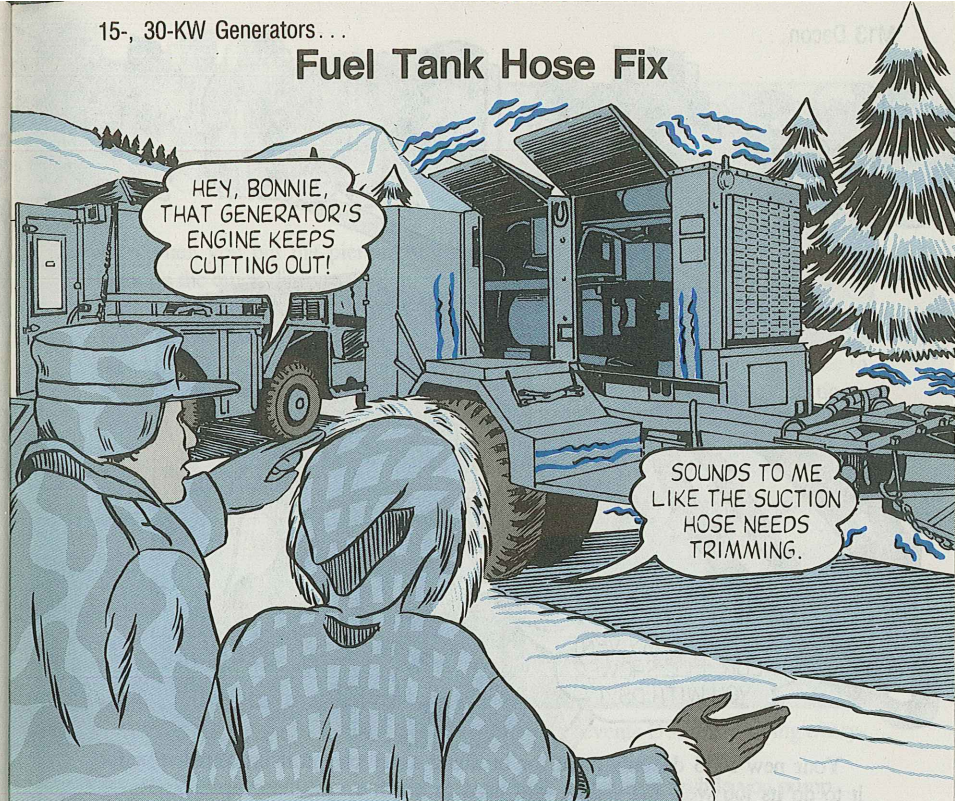
You can no longer get the magneto repair kit for the 7.5-KW generator set.

If you need to repair a magneto you have to get the parts by the piece and here's what you need:



The NSN for the ignition rotor is not on the AMDF. You can get it with an EDR (Exception Data Request) by ordering the item on a DD Form 1348-6 using RIC N32.

Fuel Tank Hose Fix



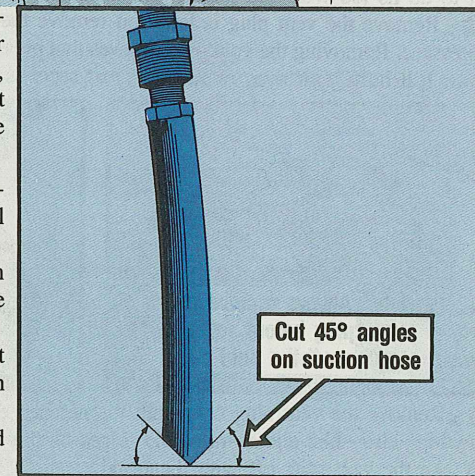
If the suction hose's not siphoning the fuel out of your generator's plastic fuel tank, chances are the engine'll cut out on you. Here's how to insure fuel flows—

1. Disconnect the fuel line fitting from the elbow on the fuel tank.

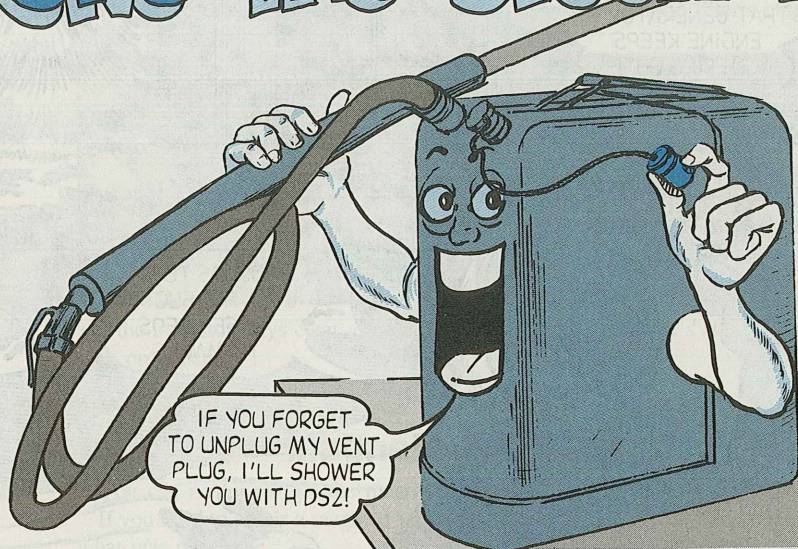
2. Unscrew the bushing from the fuel tank and remove the hose from the tank.

3. Cut two 45-degree angles at the bottom end of the suction hose.

Put the hose in the tank and reconnect the fuel line.

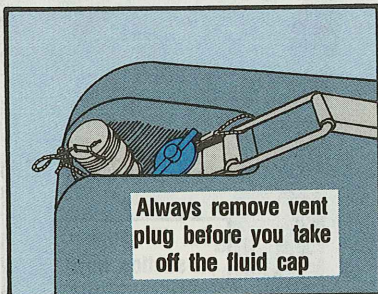


Give the Brush to Problems

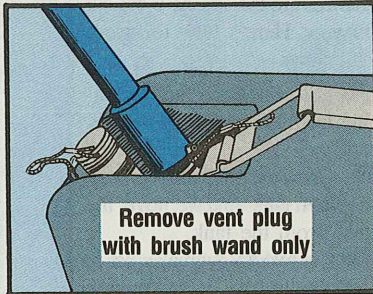


Your new M13 decon's great for brushing away chemical problems. But for it to do its job well and safely, you need to brush up on these tips:

➤ Remove the vent plug before you remove the outlet cap. The M13's under pressure. Removing the vent plug relieves that pressure. If you forget, DS2 squirts out. It'll burn your eyes or lungs in just seconds.

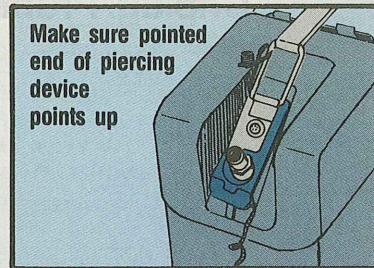


Always remove vent plug before you take off the fluid cap



Remove vent plug with brush wand only

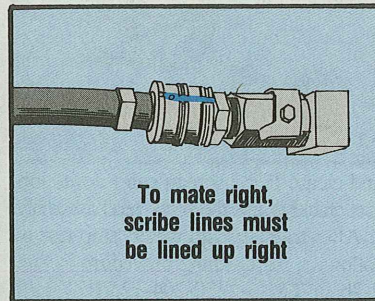
➤ Remove the vent plug only with the notched end of the brush wand. Using anything else—like pliers—ruins the ridges on the vent cap. Then it's impossible to take the vent plug off with the wand.



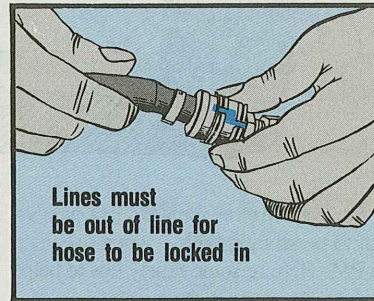
Make sure pointed end of piercing device points up

➤ When you put the piercing device back on the quick-disconnect plug, make sure the sharp end points up. If it points down, it could cut somebody.

➤ Line up the scribe lines on the hose couplings when you connect the hose to the pump and quick-disconnect plug. Otherwise, you can't mate the connections.



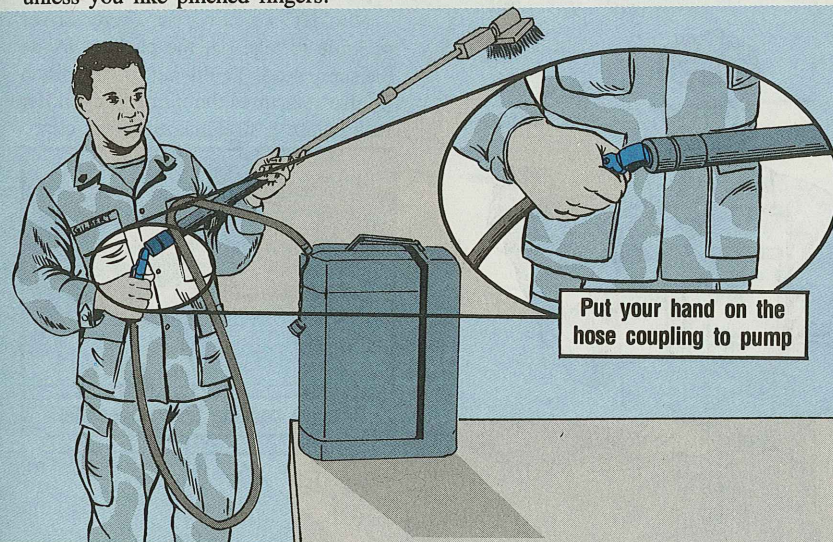
To mate right, scribe lines must be lined up right



Lines must be out of line for hose to be locked in

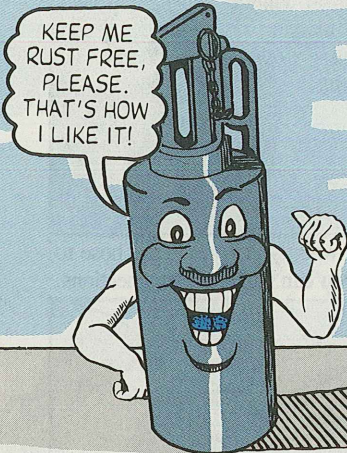
Twist the lines apart to lock the connection. That prevents DS2 from flying everywhere when you start pumping.

➤ Keep your hand away from the pump's back and housing while you pump... unless you like pinched fingers.



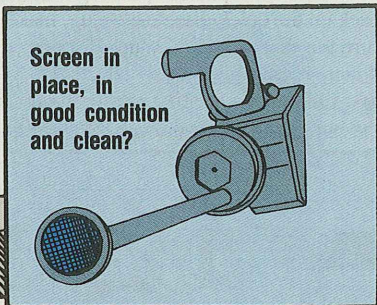
Put your hand on the hose coupling to pump

Unplug Problems with PM



If rust gets bad enough to break off and block the siphon tube strainer screen, you need a new M11.

During PMCS, make sure the siphon tube screen is in place, in good condition



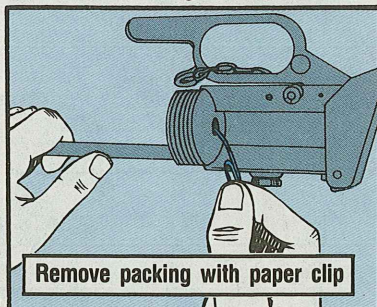
and clean. If the screen can't do its job, rust quickly ruins the spray head assembly.

After training with water, stop rust by following the cleaning procedure in Para 2-7b in TM 3-4230-204-12&P.

Leaks

Water leaks mean a bum seal inside the spray head. Report it. It's your NBC NCO's job to replace 'em.

NBC NCO's, never use a screwdriver or knife to take out the packing inside the spray head. You'll damage the piston tip that punctures the nitrogen cylinder. Instead use a straightened paper clip.

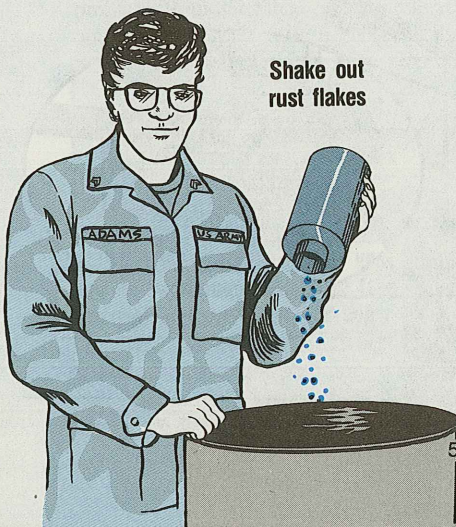


For your M11 to spray straight, you've got to be straight with it when it comes to PM. Here're some timely tips to help.

Rust and Corrosion

- Rusted doesn't mean busted. Water causes rust inside an M11. Just wipe and shake out rust flakes from the container.

Shake out rust flakes



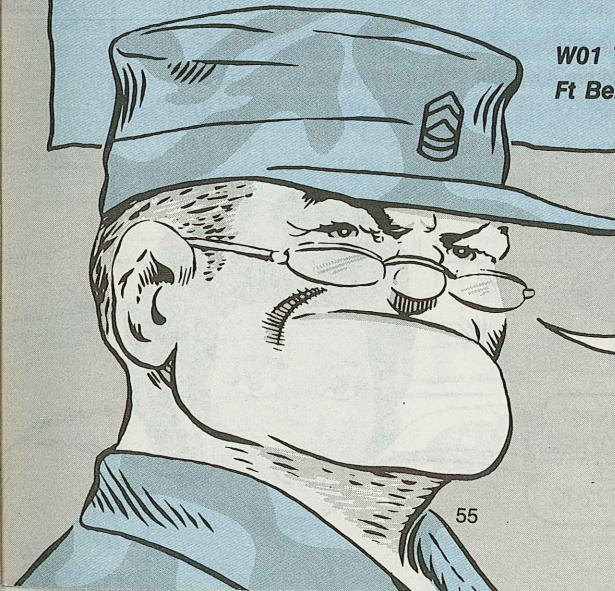
Handy Dandy Shop Items

Dear Half-Mast,

Here's a list of shop items we use every day. I keep track of them on 3x5 cards in alphabetical order. Thought you might want to pass 'em on to your readers.

ITEM	NSN
Ground cloth, plastic, OD green, 4x5-ft	1015-00-073-5378
O-Ring fabrication kit	4940-01-131-1915
RTV silicone rubber adhesive, 3-oz tube	8040-00-843-0802
Buffing compound, rubber, 16-oz can	2640-00-138-8324
Tape, electrical, 3/4-in wide x 108-ft roll	5970-00-419-4291
Plastic strap, ratchet type	
Length	NSN 5975-00-
6 5/16 inches	074-2072
13 1/4 inches	156-3253
10 13/64 inches	570-9598

W01 T.N. Thompson
Ft Benning, GA



Components by the Numbers

USE NSN 8340-01-026-6095 TO GET A COMPLETE LIGHT-WEIGHT HEX TENT. FOR COMPONENTS, USE:

ITEM	NSN 8340-00-
Liner	262-3700
Cover	241-8435
Tent, cover, liner	269-1374
Line, 19-in	252-2299
Line, 19-ft	252-6911
Line, 21½-ft	252-6913
Line, 30-ft	252-2304
Line, 35-ft	252-6910
Intermediate eave line, 12½-ft	252-6912
Corner eave line, 12½-ft (yellow)	262-3658
Slip	205-2759
Pole, 5- to 9-ft telescopic	188-8413
Pin, 9-in aluminum	261-9749

FOR MORE INFO ON THIS AND OTHER TENTS SEE TM 10-8340-222-10.

Coffee Classing Tips

Most of the time it's OK to operate gear with minor oil leaks (Class I or II). Just watch the fluid level in the component and do the checks in your PMCS.

But you're in big trouble if the leak graduates from a Class II to a Class III. That's when you put 'er in "Park" and call a mechanic.

So how do you know when an oil leak is a Class I, II or III?

HERE'S A SIMPLE WAY TO CLASSIFY OIL LEAKS BY USING COFFEE AS AN EXAMPLE.

CLASS II

Stick your finger in the coffee again, and then hold it over the cup. Notice the drop that refuses to fall. Class II leaks form drops that are not heavy enough to drip. They're most often caused by seal and gasket wear. Clean the spot and check it regularly.

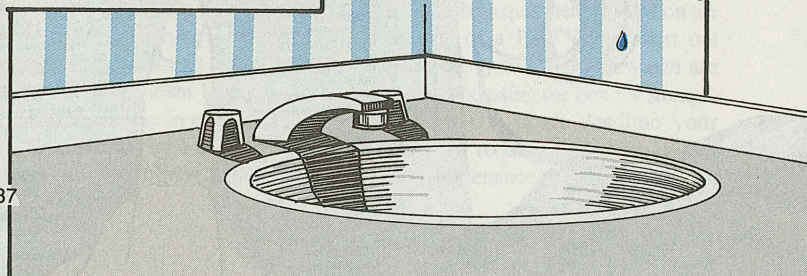
CLASS I

Dip your finger in a cold cup of coffee and then wipe your finger across your forearm. There will be some dampness, a little stain, but no drops. This is what a Class I leak looks like. On your equipment, wipe the area dry and keep an eye on it.

CLASS III

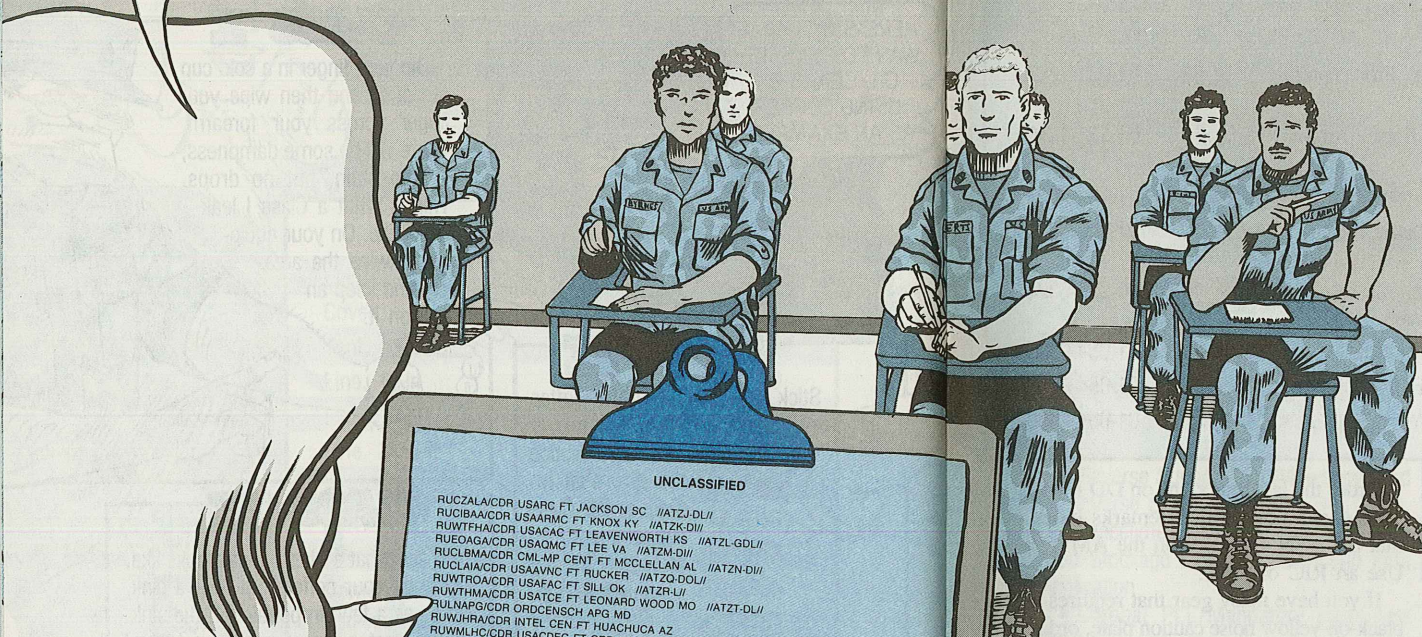
To see what a Class III leak looks like, slowly tilt your coffee cup over a sink. Watch as a few drops fall into the sink. That's what happens when seals and gaskets are totally worn out.

Class III leaks are the most serious. They make your equipment NMC. Report these pronto. Record Class III leaks on DA Form 2404.



What Do They Mean?

A, SAFETY-OF-USE (SOU) MESSAGE DIRECTS YOU TO DO ONE THING OR ANOTHER, DEPENDING ON THE DANGER TO CREW AND EQUIPMENT.



UNCLASSIFIED

RUCZALA/CDR USARC FT JACKSON SC //ATZJ-DL//
 RUCIBAA/CDR USAARMC FT KNOX KY //ATZK-DU//
 RUWTFHA/CDR USACAC FT LEAVENWORTH KS //ATZL-GDU//
 RUEOAGAC/CDR USAQMC FT LEE VA //ATZM-DII//
 RUCLEBMA/CDR CML-MIP CENT FT MCLELLAN AL //ATZN-DII//
 RUCLIA/CDR USAAVNC FT RUCKER //ATZQ-DOL//
 RUWTRQA/CDR USAFAC FT SILL OK //ATZR-LI//
 RUWTHMA/CDR USATCE FT LEONARD WOOD MO //ATZT-DLI//
 RULNAPG/CDR ORDCENSCH APG MD //ATZU-LI//
 RUWJHRA/CDR INTEL GEN FT HUACHUCA AZ
 RUWMLHC/CDR USACDEG FT ORD CA
 RUODGDA/COMDT ORDMCMS REDSTONE ARSENAL AL
 BT
 UNCLAS

NOTE THIS IS A SAFETY-OF-USE MESSAGE AND HAS NOT, REPEAT, HAS NOT BEEN TRANSMITTED TO UNITS SUBORDINATE TO ADDRESSEES. ADDRESSEES SHOULD IMMEDIATELY RETRANSMIT THIS MESSAGE TO ALL SUBORDINATE UNITS. PAGE 04 RUCIFRA5541 UNCLAS

SUBJECT SAFETY-OF-USE MESSAGE NO. SOU-MES-02-87. ONE-TIME INSPECTION OF GASOLINE ENGINE DRIVEN (GEN) HEATERS, DUCT TYPE, 400,000 BTUH, HUNTER MODEL PH-400-G, NSN 4820-01-136-2139. DEFECTIVE FUEL PRESSURE CHECK VALVE, PART NO. P356-50, FSCM 91816, NSN 4820-01-201-1471

1. SUBJECT PORTABLE HEATERS ARE A POTENTIAL SAFETY HAZARD WITH THE PRESSURE CHECK VALVE THE VALVES ARE POSITIVE SEALS. LEAKING FUEL INTO THE COMBUSTION CHAMBER PRIOR TO STARTING OF GASOLINE ENGINE. CAUSE A PREMATURE IGNITION AND BAKING OF FUEL INTO THE COMBUSTION CHAMBER MAY OCCUR.

2. DEPOT-STORED HEATERS SHOULD BE INSPECTED PRIOR TO TRYING TO START THE UNIT. AFTER THE NEW VALVE IS INSTALLED, THE UNIT MUST STILL BE INSPECTED AS OUTLINED IN PARA 3.

3. A ONE-TIME INSPECTION IS REQUIRED. THE HEATER IS OPERATING CORRECTLY. THE FOLLOWING INSPECTION AND CORRECTION SHOULD BE PERFORMED ON ALL HEATERS OUTSIDE IN OPEN AREAS. NOT IN AREAS:

A. REVIEW TM 5-4520-251-14 (REV 1) AND TM 5-4520-251-14 (REV 2), ETC. OPERATING PROCEDURES FOR THE HEATER.

B. USE THE GENERAL OPERATING PROCEDURES FOR THE HEATER, STEP A(7), "BUT DO NOT PUSH DOWN THE HEAT EXCHANGER SECTION SHOULD NOT BE STARTED UNTIL YOU ARE READY TO START ENGINE. CONTROL KNOB 3" (SEE PAGE 2-17 OF TM). YOU SHOULD BE INSTALLED PRIOR TO TRYING TO START THE HEAT EXCHANGER SECTION SHOULD NOT BE STARTED UNTIL YOU ARE READY TO START ENGINE. CONTROL KNOB 3" (SEE PAGE 2-17 OF TM).

C. IF THE BURNER DOES NOT LIGHT, THE HEAT EXCHANGER SECTION SHOULD NOT BE STARTED UNTIL YOU ARE READY TO START ENGINE. CONTROL KNOB 3" (SEE PAGE 2-17 OF TM).

D. IF THE BURNER IS NOT LIGHTING, THE HEAT EXCHANGER SECTION SHOULD NOT BE STARTED UNTIL YOU ARE READY TO START ENGINE. CONTROL KNOB 3" (SEE PAGE 2-17 OF TM).

FIG 15, ITEM 53, PAGE 15-2, "M" (SEE PAGE 2-17 OF TM).
 HP2-4826-2, FSCM 92878, NSN 4820-01-201-1471
 CHANNELS AND HEATER PLACEMENT VALVE, PART NO.

Here's a rundown of SOU's and what they require:

- **Operational**—these SOU's change the way you operate your equipment or sets limits on what you can and can't do with your equipment. For instance, this type message can stop you from swimming your M113 personnel carrier, although it won't stop you from operating it on land. The restrictions stay in effect until the problem is corrected by a limited urgent Modification Work Order (MWO).

• **Technical**—deadlines all or the part of your equipment that has materiel or maintenance deficiencies.

Here, a 5-ton wrecker's winch can be declined, but the truck can be used for operations that do not require winching. A technical SOU deadlines a particular model of equipment. The equipment remains declined until the problem is corrected by an urgent Modification Work Order.

• **One-time inspection**—deadlines your equipment right now! The SOU demands that you inspect your equipment for a specific problem, before it's used again.

This would be like inspecting the air-hydraulic cylinder seals on all 2½-ton trucks before using any truck again.

In this case, the deadline ends after you inspect the equipment or the specific component and find it's safe.

If you find the safety problem, the equipment remains declined 'til it's fixed.

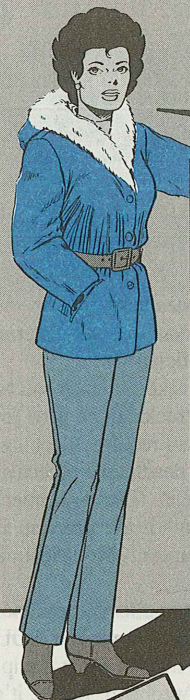
• **Advisory**—contains new operating or maintenance info the operator or mechanic needs.

For instance, equipment stowed on the battery box of a FISTV can short out the electrical system. So, crewmen are directed to stop using the box for storage.

These SOU's don't deadline your equipment or require immediate inspection or maintenance.

Safety Signs

HERE'S A LIST OF SAFETY SIGNS FOR YOUR MAINTENANCE AREA. ORDER THEM FROM GSA.



Legend	Size (inches)	NSN 9905-
Caution Hearing Protection Required	10 × 14	01-100-8205
Caution Hearing Protection Required	8 × 18	01-031-1247
Caution High Noise Area Wear Ear Plugs	10 × 14	01-122-1140
Caution Eye Protection Required	10 × 14	01-100-8203
Caution Do Not Operate Without Eye Protection	10 × 14	01-100-8204
Caution Wear Goggles When Using This Machine	7 × 10	00-956-6324
Caution Highly Flammable	10 × 14	01-054-0428
Caution Highly Flammable	7 × 10	01-054-0427
Caution Watch Your Step	10 × 14	01-054-0450

Order the last four signs on DD Form 1348-6 and note in the Remarks block that the NSN's are not on the AMDF. Use an RIC of GSA.

If you have noisy gear that requires a black-on-yellow noise caution plate, order it with NSN 9905-00-198-2728. The sign is 2.13 × 4.6 inches and has an adhesive backing.

AR 385-30, Safety Color Code Markings and Signs, tells you which type and color signs and symbols to use in dangerous areas.

Connie's
★ POST ★
SCRIPTS

NEITHER RAIN, SLEET NOR SNOW WILL STOP YOU FROM YOUR MISSION. IF YOU ADJUST YOUR DRIVING, FOR A WINTER ROAD'S CONDITION.



MRSA Hotline

The US Army Materiel Command's Materiel Readiness Support Activity has installed a hotline on which you can call regarding any of its many field assistance programs.

As the link between the user soldier and the materiel supplier, MRSA produces many products for use by the Field Army and others. (See PS 413 on how to get a customized pubs listing; PS 409 on initial peacetime PLL.)

While MRSA will provide assistance or sources of assistance on any materiel readiness subject, it is especially prepared to assist in the specific subjects listed below. Just call AUTOVON 745-3082/3083 or COMM (606) 293-3082/3083 night or day.

- Tool Improvement Program Suggestions (TIPS)
- Reverse Support List Allowance Card — Reverse SLAC
- Peacetime Prescribed Load List/Authorized Stockage List (PLL/ASL) End Item Application
- Combat PLL/Mandatory Parts List (MPL)
- Equipment Oriented Publication Data Base (EOPDB)
- Army Oil Analysis Program (AOAP)
- Warranties
- Standard Army Maintenance System (SAMS) Work Order Logistic File (WOLF)
- The Army Maintenance Management System (TAMMS) Equipment Data Base
- Army Vehicle Registration Program

- Modification Work Order (MWO) Status
- Sample Data Collection
- Army Readiness Reporting
- Force Mod Lessons Learned
- National Training Center (NTC) Lessons Learned
- Total Package Fielding

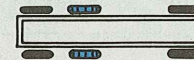
★ DOD Maintenance Awards ★

Congratulations to these winners of the 1986 Secretary of Defense Maintenance Awards:

- 1st Bn, 6th Inf, 1st Bde, 1st AD, USA, Illenheim, Germany
- US AMERICA (CV66) US Atlantic Fleet, USN Carrier AEW Sqn 123, US Atlantic Fleet, USN Shore Intermediate Maintenance Activity, Charleston, US Atlantic Fleet, USN Charleston, SC
- Marine Heavy Helicopter Sqn 466, Fleet Marine Force Pacific, USMC, Tustin, CA
- 50th Tactical Fighter Wing, US Air Forces Europe, USAF, Hahn AB, Germany

Tire Chains

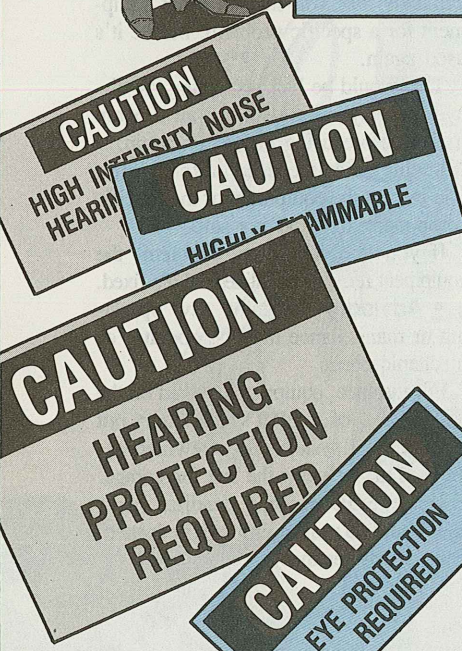
Order chains for the 14.00x20 radial tires on M939A1 5-ton trucks with NSN 2540-00-933-9033.



Mount the chains only on the forward rear axle

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

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



GOT PROBLEMS WITH A PERSONNEL HEATER ?

Your maintenance information
chain reads like this:

Vehicle TM

TM 9-2540-205-24&P
(Maintenance manual and RPSTL
for vehicular compartment heaters)

Your DS unit, Logistic Assistance
Representative, DIO, MAIT

TACOM Hotline
AUTOVON 786-8291/6993/6998
Comm 313-574-8291/6993/6998

USE IT!

PIN: 061635-000