

Issue 528

# PS

November  
1996

## THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-528

Don't be a  
turkey—pass  
this issue  
along!



Approved for  
Public Release;  
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Unlimited

Half-Mast's Christmas Vacation  
... See page 27

# PM Really Is Simple

Sometimes the simplest things cause the most problems. They're so simple that we imagine others always remember them so we don't have to. After all, our time is important and needs to be spent doing complicated stuff.

When those simple things are PM tasks, however, we walk instead of ride. We go hungry instead of having a meal. We lack ammunition because a resupply vehicle broke down.

That's often the way it is with trucks and tanks and personnel carriers and fighting vehicles and helicopters and trailers, and on and on. If we're lucky, someone else does the PM. Then we don't have to walk, or go hungry or lack ammo. If we're really lucky, we won't get hurt or even die because we didn't do those simple things ourselves.

All of us are responsible for the equipment we use or operate...responsible to make sure that it works like it should when it's supposed to.

When you lay down your weary head, remember that what you did today could save—or cost—your life tomorrow.

Preventive maintenance is no lark. But it is easy and simple to accomplish if everyone does his or her job.





# THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-528, 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. 5307  
Redstone Arsenal, AL 35898-7466

Or E-mail to:

psmag@logsa.army.mil

By Order of the Secretary of the Army:

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02482

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# CLEATS GO IN

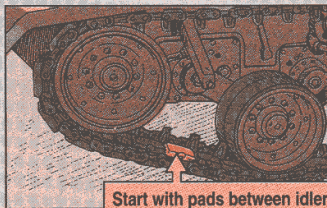
Most tankers feel that nothing can stop their M1-series tank...until you throw a little ice and snow into the equation. Without traction, you're going nowhere.

FM 9-207 says it's OK to remove track pads to improve traction. But that damages track components and doesn't always work very well.

For those of you with T158 track, special ice cleats, NSN 2530-01-369-9994, are now available to prevent all that slipping and sliding.

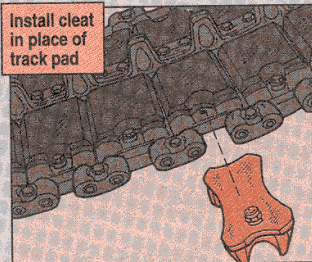
Here's how to install 'em:

1. Clean the left and right track to remove all dirt and debris.
2. Position the first track shoe between the compensating idler wheel and the number one roadwheel.



# ICE AND SNOW

3. Remove the track shoe's inner and outer pad and self-locking nut.
4. Install two ice cleats on the track shoe in place of the removed pads.
5. Lock each cleat in place with a new self-locking nut, NSN 5310-01-102-2711. Torque the nuts to 260-300 lb-ft.
6. Follow steps 3-5 for the track on the other side of the tank.
7. Move the tank forward to position the next track shoe needing cleats.



For best performance, every fifth track shoe should receive a set of cleats. That means you'll need a total of 64 cleats for each vehicle (32 per track).

Remember, these cleats are for T158 track only. They will not work with T156 track. There are no cleats available in the supply system for T156 track.

## Caution vs. Warning

Dear Half-Mast,

Both the **OVERHEAT SPONSON IN** and **OVERHEAT SPONSON OUT** lights on the M1A1 tank commander's panel are yellow.

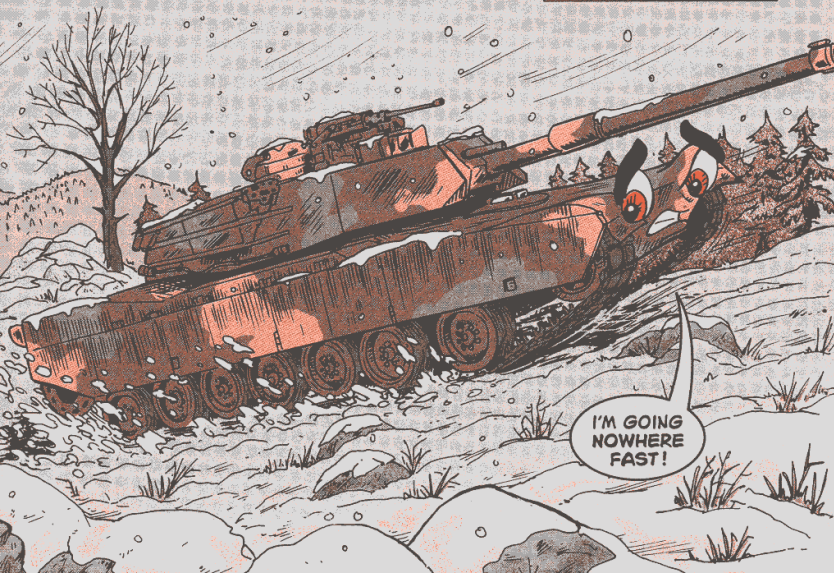
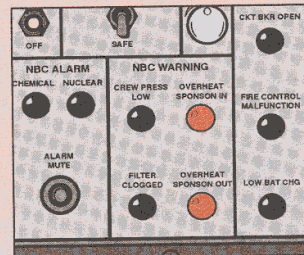
These are warning lights, not caution lights. Since ignoring the lights could result in an NBC filter fire, it seems like a red light would grab the crew's attention a lot faster. What do you think?  
SFC P.G.

Dear Sergeant P.G.,

I think you're right, and so does ACALA. Both lights should have red lenses.

Have your mechanic remove both yellow lenses and replace 'em with red ones, NSN 6210-00-176-4954. ACALA is making this change on new tanks and those in for rebuild, too.

*Half-Mast*



# Stuck in the Mud?

**M**ud that's soft during the day can freeze as hard as concrete at night. The next morning, your vehicle is stuck fast.

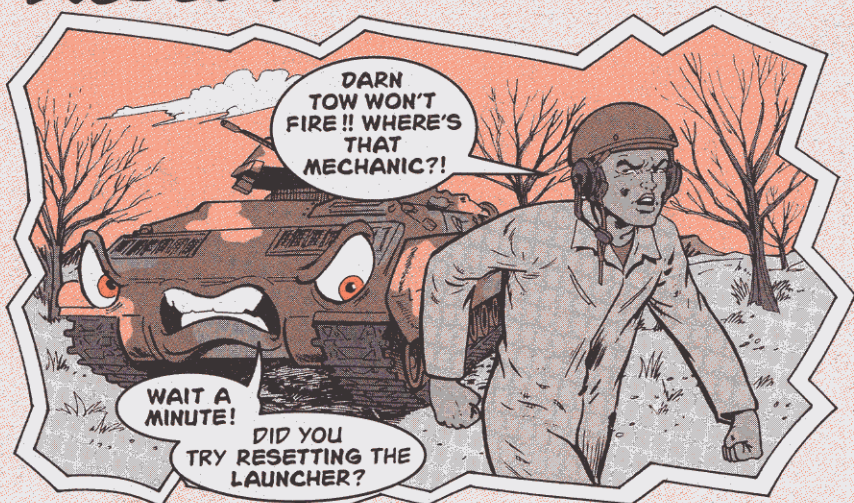
Don't think you can rock your vehicle loose, either. You'll end up with broken track, snapped drive sprocket teeth, bad U-joints—and a vehicle that's **still** stuck in the mud.

The time to prevent the problem is the night before.

- ✓ Park your vehicle on high ground if possible. The water drains downhill so the mud won't be quite as deep.
- ✓ Avoid parking in the deep ruts worn by other vehicles. Some are deep enough to bottom out your vehicle's hull. Leave it there and you may not be moving 'til spring.
- ✓ Use a shovel to scoop out mud that's collected between and on roadwheels and drive sprockets. If the mud's not there, it can't freeze.



# Reset TOW Launcher

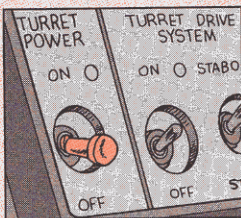


The Bradley's modified TOW missile launcher has a new armor control unit with a pillow block protection circuit.

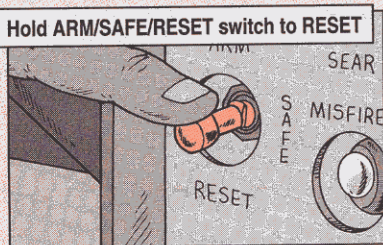
Any obstruction that binds the launcher actuator mechanism trips the circuit to prevent damage to the pillow block. But, it also shuts down the launcher.

Before reporting a broken launcher to your mechanic, try resetting the protection circuit and removing the obstruction yourself. Here's how:

1. Turn the TURRET POWER switch to OFF.



2. Wait six seconds, then hold the ARM/SAFE/RESET switch to RESET and turn the TURRET POWER switch back to ON.

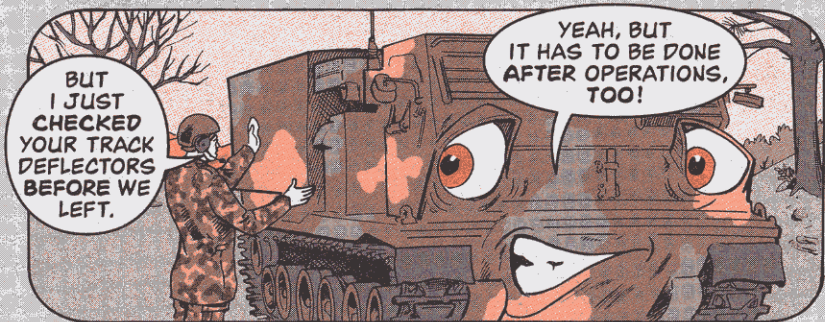


That disengages the launcher and returns it to the safe position. Remove the obstruction and you're ready to go again.

If the problem persists, have your support clean the pillow block and umbilicals. Dirt buildup could be causing the obstruction problem.

MLRS...

# Deflect Deflector Problems



**C**rewmen, make a habit of checking the track deflectors on your MLRS **before and after** every operation.

The deflectors protect the roadwheel arms from being slapped by the track. A loose deflector can get caught in the track and break off.

Worse yet, the deflector can get caught between the track and idler wheels, causing a lot of damage.

If you see a loose deflector, ask your mechanic to tighten it.

## MLRS Nut Switcheroo

**T**he NSN and part number for the MLRS's track pad nut is wrong in TM 9-1450-646-24P (Jun 94). Item 4 of Fig 13 should be NSN 5310-00-241-6664 (PN MS51943-44). Make a note until the TM is updated.

M2A2/M3A2 Bradleys...

## Don't Swim Bradleys

**A**rmor improvements have added a lot of weight to the M2A2/M3A2 Bradley—9,300 pounds for vehicles with armor tiles and 3,300 pounds for those without. In both cases, that's enough to sink them when swimming.

TACOM Safety-Of-Use message 96-07 prohibits all M2A2/M3A2 Bradley swimming operations.

But that doesn't make your vehicle NMC. All water barrier NMC criteria have been suspended until the swim system can be strengthened to handle the additional weight.

If you need a copy of the message, see your TACOM LAR or write to Half-Mast.

# The Hub's the Rub

Mechanics, there are two types of roadwheel hubs on the M992-series ammo carrier: grease- and oil-filled. Each one takes a specific ballistic access cover.

Grease hubs take cover, NSN 5340-01-311-4736. Oil hubs take cover, NSN 2530-00-884-4869. Grease covers on oil hubs are OK. The problems start if you put an oil cover on a grease hub.

Grease pressure pushes out the window that's normally used for checking the oil. The grease leaks out and it doesn't take long for a dry hub to burn up.

If your unit has M992A2s, check all of the roadwheel hubs right now. Some of these carriers left the depot with the wrong covers.

It's easy to tell the covers apart. Grease covers have the fitting in the center of the hub. The fittings on oil covers are around the window.



NO  
RUB  
HERE!

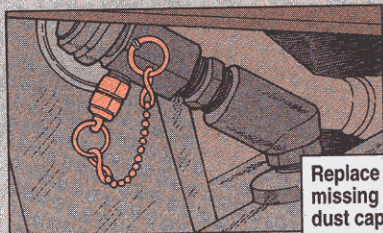
All Vehicles ...

## Keep Valve Capped

Hydraulic bleeder valve, NSN 4820-01-120-4532, has a dust cap that often gets lost or destroyed.

Without the cap, dirt and dust get into the oil. To replace the cap, you have to replace the entire valve at a cost of about \$90.

Save money and valves with cap, NSN 4730-00-633-4398. It fits fine and costs less than 60 cents. Attach it to the valve's chain with wire, NSN 9505-00-293-4208, and you won't lose it.



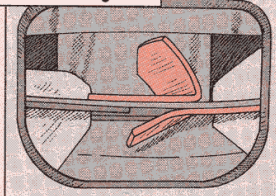


**M**echanics, connecting the pulley to the M113 carrier's 100- or 200-amp generator can be a frustrating job.

Try as you might, the pulley locknut can't be tightened without turning the armature shaft.

Some mechanics jam a screwdriver into the cooling fins. That holds the shaft still while they tighten down the locknut. It also bends the cooling fins.

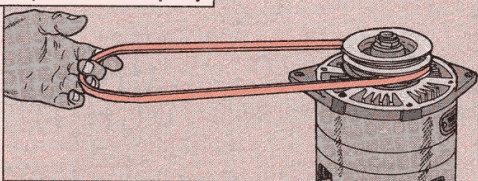
Using a screwdriver bends cooling fins



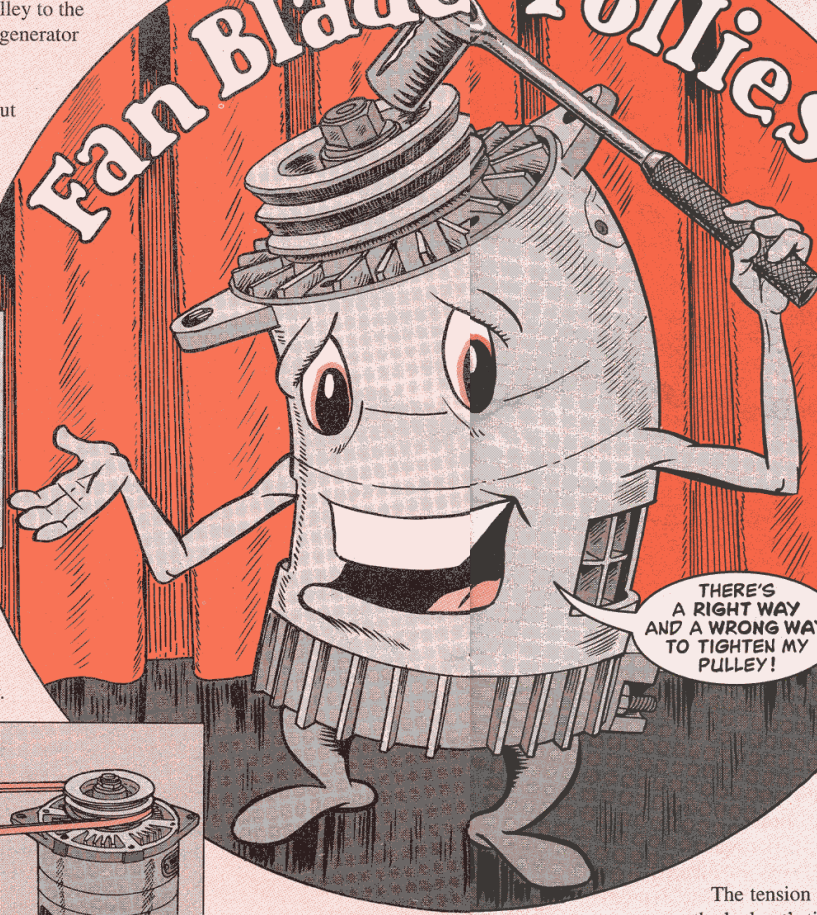
Here's a better way to do the job:

1. Put the pulley in place on the armature shaft.
2. Loop the pulley belt on the bottom groove of the pulley.

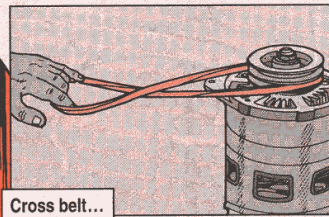
Loop belt over lower pulley



# Fan Blade Follies

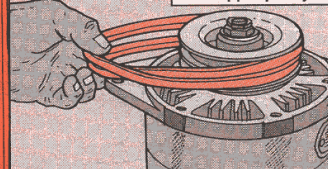


3. Cross the belt and put the other loop on the top groove of the pulley.



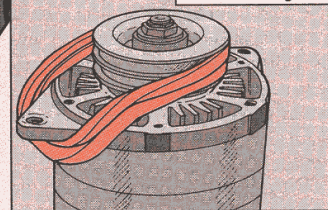
Cross belt...

...and put other loop over upper pulley



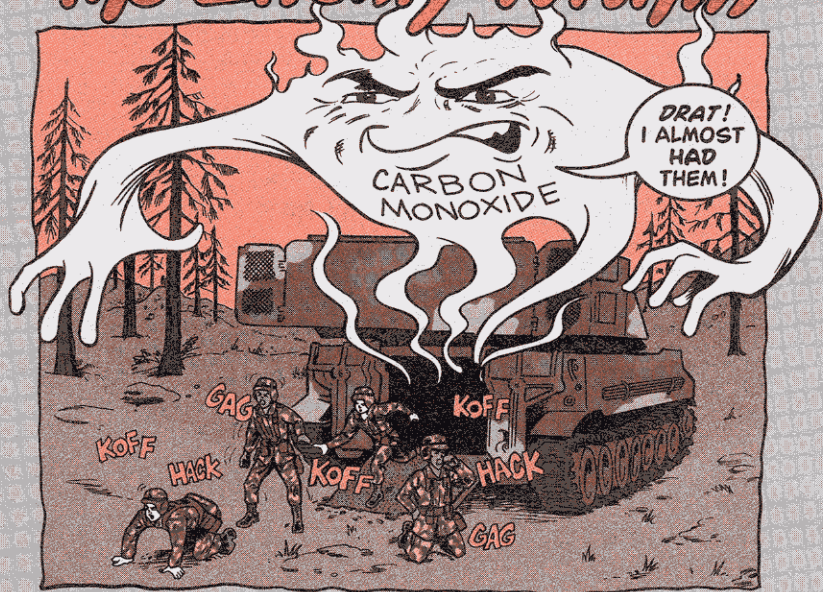
4. Stretch the crossed end of the belt over the generator's mounting ear.

Stretch crossed belt over mounting ear



The tension locks the shaft in place with no damage. After the locknut's tight, the generator is ready to install.

# The Enemy Within



When the enemy outside—cold weather—makes you button up your M109A6 Paladin, you have to face the enemy inside—carbon monoxide.

Carbon monoxide comes from the exhaust of personnel heaters, the engine, and from firing the main gun. If it's not vented, carbon monoxide levels will continue to grow until they become deadly.

Your best protection is awareness and ventilation. Follow these basic tips:

- \* Do your PMCS on time. That's the only way to make sure ventilation systems and blowers are working properly.
- \* Never operate the personnel heater in an enclosed area unless it is adequately vented.
- \* Do not idle the engine for long periods unless you're sure the personnel compartment is ventilated.
- \* Do not drive your Paladin with the inspection plates, cover plates or engine compartment doors removed unless it's necessary for maintenance.
- \* Be alert at all times for the symptoms of carbon monoxide poisoning: Headaches, dizziness, loss of muscular control, and drowsiness. If you experience these symptoms, get out of the vehicle, stay warm and avoid physical exercise.

Tanks, Howitzers ...

# NEW CANNON CLEANING KIT

Here's good news for soldiers tired of the endless scrubbing it takes to keep cannon tubes clean.

A portable cleaning kit is now available that gets tubes clean in about 15 minutes.

The kit, NSN 1025-01-407-6027, comes with a diesel-powered machine, high- and low-pressure wands, a 50-ft long high-pressure hose and hose reel, five gallons of cleaning detergent, and operating instructions.

IN ADDITION  
TO THE BASIC CLEANING  
KIT, YOU'LL NEED THESE  
ACCESSORIES TO CLEAN  
SPECIFIC CANNON  
BORES.



The cleaning kit can also double as a high- and low-pressure washer and steam cleaner.

Table 63 of CTA 50-909 is your authority for ordering the kit. Operating instructions and repair parts will not be added to your operator TMs.

For more information about the kit, call Azure Blue, Inc., at (702) 356-2709. Or write:

Azure Blue, Inc.  
765 E. Greg St  
Sparks, NV 89431

105mm Cannon	
Item	NSN
Bore-cleaning head	1025-01-423-4941
Drying and oiling brush, 105mm	1015-01-423-4652
Drying and oiling bonnet (25 per box)	1025-01-423-4940
High-pressure hose, 25-feet	4720-01-423-4653
120mm Cannon	
Item	NSN
Collapsible brush	1015-01-423-4623
Replacement brushes (4 ea)	1015-01-423-4845
Bore-cleaning head	1025-01-423-4941
Drying and oiling brush, 120mm	1015-01-423-4654
Drying and oiling bonnet (25 per box)	1025-01-423-4940
High-pressure hose, 25-feet	4720-01-423-4653
155mm Cannon	
Item	NSN
Collapsible brush	1025-01-423-4648
Replacement brushes (4 ea)	1025-01-423-4839
Bore-cleaning head	1025-01-423-4941
Drying and oiling brush, 155mm	1025-01-423-4776
Drying and oiling bonnet (25 per box)	1025-01-423-4940
High-pressure hose, 25-feet	4720-01-423-4653

# Kingpin Is the Thing

As the M860A1 trailer kingpin goes, so goes the Patriot. If the kingpin breaks, whatever Patriot component is being hauled quickly stops being hauled.

Kingpins **do** break. One Patriot unit had several snap off in just a few months.

A bit of eyeballing and measuring can weed out weak kingpins. Before you hook up the trailer again, do this:

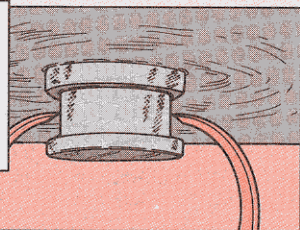
✓ Thoroughly wipe off the kingpin and clean it with dry cleaning solvent. (Grease can hide problems.)

✓ Look for cracks, gouges, and chips. Any cracks in the kingpin make it NMC, as do nicks, chips or gouges deeper than 1/8 inch.

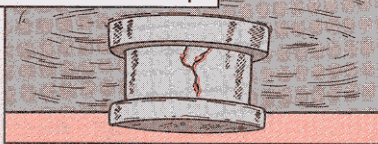
✓ If the kingpin has lots of wear, use a micrometer or calipers to see if it is out-of-round. If there is no micrometer or calipers in your motor pool, support will have them.

Measure at the 12 and 3 o'clock positions on the kingpin. A variance of 1/16 inch or more over 25 percent of the kingpin means it needs to be replaced.

If you notice unusual wear, measure with calipers



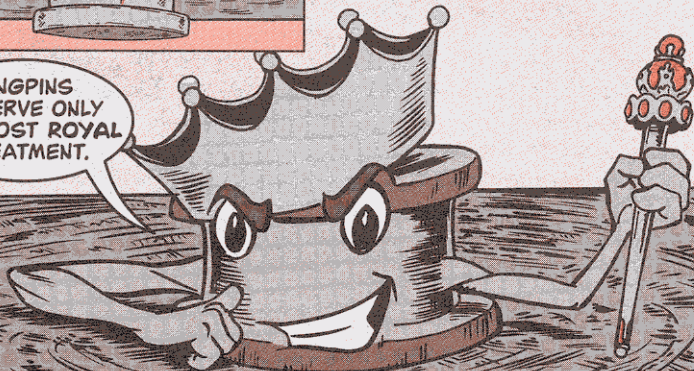
Wipe off grease and look for cracks or chips



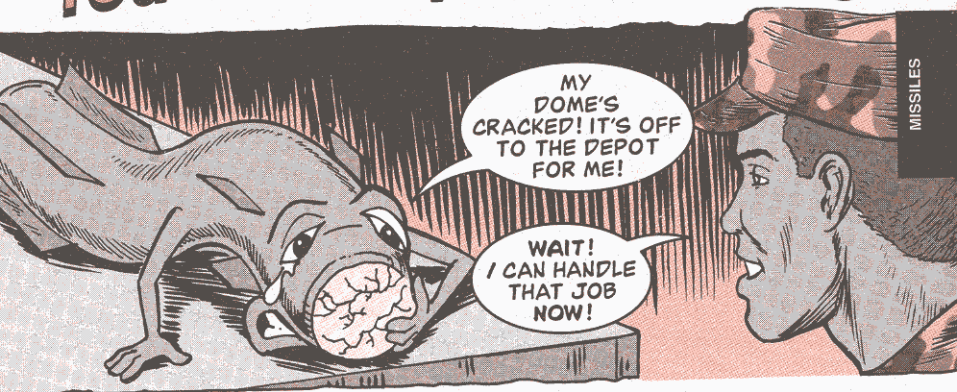
If you have any doubts about the strength of the kingpin, report it.

In the future, check the kingpins after every mission.

KINGPINS  
DESERVE ONLY  
THE MOST ROYAL  
TREATMENT.



# You Can Replace Domes



MISSILES

**C**louded seeker domes mean Hellfire missiles may not be able to track the target. Cracked domes let moisture in the seeker assembly. For training missiles only, you repairmen can now take dome problems into your own hands.

If your trainers have bad domes, order new ones with NSN 1420-01-251-2124. If the EMI gasket is damaged, order a new one with NSN 5999-01-167-4704.

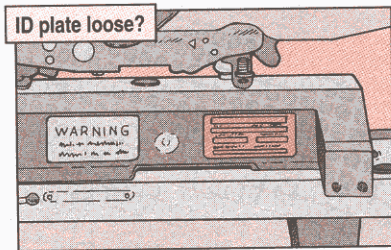
A special tool for removing and installing the dome is being distributed to the field. Instructions on how to do the job will be added to TM 9-6920-475-23&P.

In the meantime, your local Hellfire contractor field service representative can help you do the job.

## Data Plates

While you're checking for bad domes on training or tactical missiles, eyeball the launchers and electronic control

signal programmers for loose or missing data plates. Without the plates, you will have trouble tracking the launchers and programmers for maintenance and accountability. If a plate's loose, stick it back on with adhesive, NSN 8040-01-212-6310.



If it's missing, get a new plate by writing:

**USA MICOM**  
AGMS Project Office  
ATTN: SFAE-MSL-HD-S-R  
Redstone Arsenal, AL 35898-5610

Or call DSN 788-0923 or commercial (205) 842-0923.

# Gun Down Gun Problems

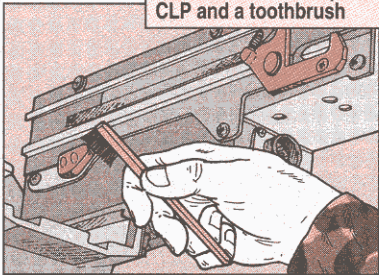
Dear Editor,

CLP is the answer to a couple of problems we've run into with the Avenger's new MP3 machine gun:

If the hook on the MP3's remote charging system gets dirty and binds, the hook won't pull the bolt far enough so that it can extract. Result: a hangfire.

Prevent binding by cleaning the hook assembly and the mount's ramp with CLP and a toothbrush after every firing. Test the hook before you go to the field for binding. Give it a shot of CLP if needed.

Clean hook and ramp with CLP and a toothbrush

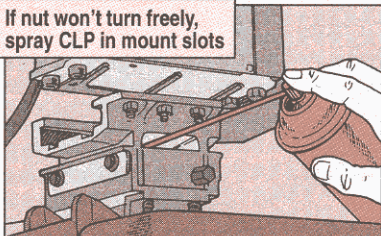


When you boresight the gun mount, the azimuth adjusting nut

should turn freely once the rear mount nuts are loosened. If the nut doesn't want to turn and you force it, it will break off. That means a whole new mount.

The likely problem is a binding mount. Squirt CLP (or any lightweight oil) in the slots that the mount moves in. Wait a few minutes and turn the azimuth nut again. It should now turn easily.

If nut won't turn freely, spray CLP in mount slots



If it won't turn easily, stop. It's time for your repairman to check out the problem.

SFC Daniel Hunt  
US Army Air Defense School  
Ft Bliss, TX

FROM THE DESK OF THE Editor 

Lube seems to be the answer to many of our problems today. Good show.

THANKS TO THESE TIPS, I'M READY TO DRAW, PARDNER!

## Keep on Trackin' Rounds



Dear Half-Mast,

Are we supposed to keep track of the rounds we fire with our Avenger's MP3 machine guns? If so, how do we do it?

SFC D.H.

Dear Sergeant D.H.,

Yes, you do need to track rounds fired. After 2,500 rounds, parts like the extractor, sear slide, firing pin, and cocking lever need to be checked for wear and maybe replaced. The firing limits for the MP3 parts are on Page 16-38 in TM 9-1440-433-24-2.

Track rounds fired with DA Form 2408-4. Para 5-4 in DA Pam 738-750 tells you how.

*Half-Mast*

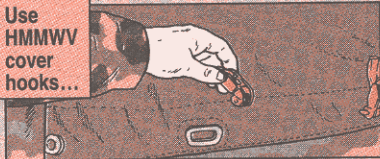
## A Better Fastener

Dear Editor,

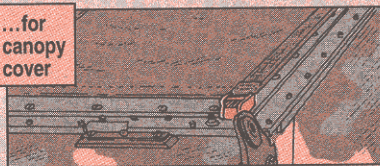
You've recommended in PS that Avenger units replace the metal fasteners on canopy covers with hook-and-pile fasteners.

Hook-and-pile won't scratch the canopy, but it wears out fast. We've had better luck using the plastic hooks from the HMMWV cargo cover. They don't scratch the canopy, either, and they last.

Use HMMWV cover hooks...



...for canopy cover



Your canvas shop can put on the hooks and probably has them as bench stock or you can order them with NSN 5340-01-203-6542.

CW2 Jeffrey Swindle  
3/61 ADA  
Ft Carson, CO

FROM THE DESK OF THE Editor 

Your suggestion has really hooked us. Thanks.

SEE...

# Watch Your Step



SEE operators, keep your feet off the cap to the air brake system's antifreeze reservoir.

A heavy tread will break the cap. This lets water and dirt get into the reservoir and then into the airbrake system, where it can stop your brakes from stopping you.

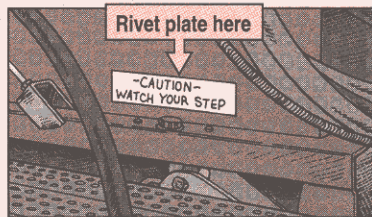
To help you remember, get your mechanic to put a data plate on the tool box just above the cap. It says, "CAUTION—WATCH YOUR STEP." Get it with NSN 9905-01-054-0450.

Here's how it's mounted:

- 🔥 Use the plate as a template.
- 🔥 Drill four 1/8-in holes.
- 🔥 Pop rivet the plate in place.

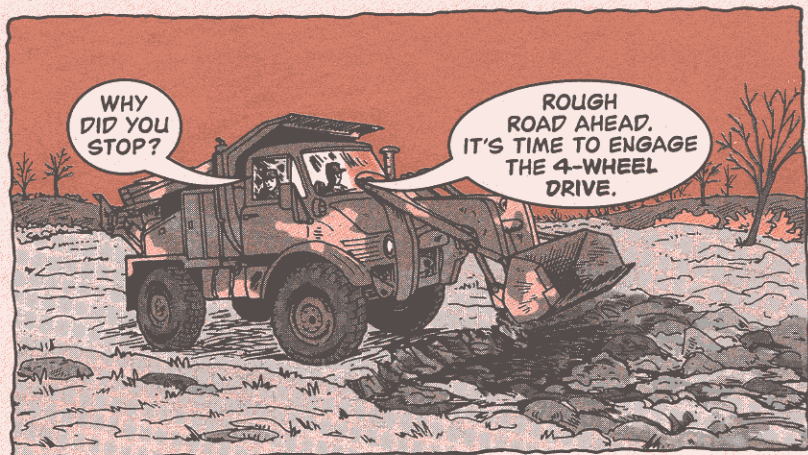
NSN 5320-00-510-7823 brings a package of 100 pop rivets. Use the pop riveter from the No. 1 Common shop set.

If the reservoir cap is already busted or missing, order a new one on a DD Form 1348-6 with CAGE 64678 and PN 000 431 78 33 using project code JZC in card columns 57-59.



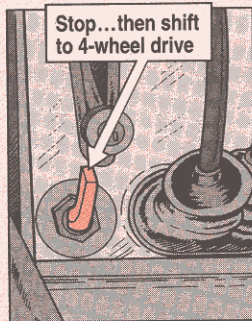


# THE FOUR-WHEEL SHUFFLE



**O**perators, you'll damage the SEE's differentials or U-joints if you try to engage four-wheel drive or lock the differentials when a wheel is spinning in the sand or mud.

Your best bet is to engage four-wheel drive before driving into sand, dirt



or mud. If you forget and the wheels start spinning, **stop**. Then shift into four-wheel drive and move out.

Never drive on a hard surface road when the four-wheel drive with differential locks is engaged. That puts a real strain on differentials, U-joints, and tires.

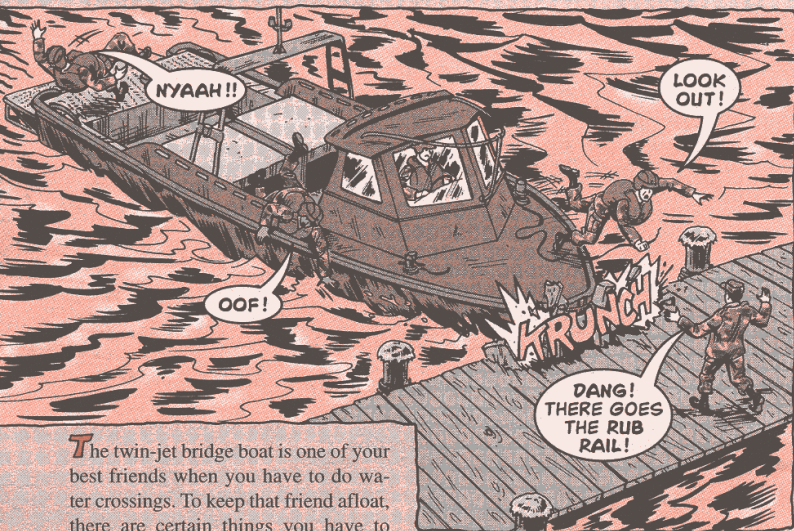
## SEE Hood Latch

**F**orget looking in the -24P TM for a small emplacement excavator's hood latch. It's not there. Use NSN 2510-01-238-0232 to get the latch.

## MW24C Shank Tooth

NSN 3815-01-163-0812 gets the shank tooth for the scoop loader's bucket. The parts info for Item 23 in Fig 152 of TM 5-3805-262-24P is wrong. Make a note until the TM is updated.

# PM Floats Your Boat

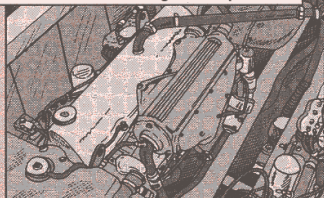


The twin-jet bridge boat is one of your best friends when you have to do water crossings. To keep that friend afloat, there are certain things you have to remember.

Make sure the bilge plug is in before you launch your boat or the hull will fill with water. If it does, you're sunk, literally.

Watch for water in the engine compartment, too. If it gets above the

### Watch for water in engine compartment

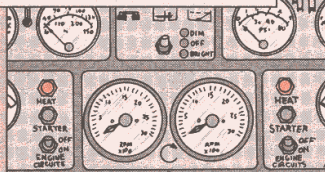


engine mounts, use the manual bilge pumps to get rid of it before starting the engine. If you don't, water will drown—and damage—the engine.

### Getting Started

Go easy on starters and batteries during start-up. Press the heat switches

### Press heat switches for 20 seconds



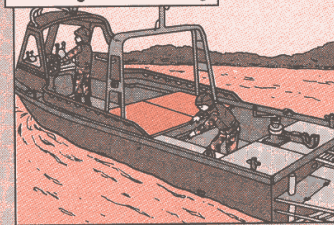
for 20 seconds before you try to start the engines. If the engines don't start after 30 seconds, wait two minutes before you try to start them again. Otherwise, the starter motors will burn up.

Never try to start both engines at the same time. It'll run down the batteries. It's a good habit to always start the port engine first, then the starboard engine.

Always let up on the start button as soon as the engine starts, too. If you don't, you can knock out the starter.

Whenever your bridge boat's motors are running, remember to keep the engine hatch covers closed unless you are doing maintenance. The fire extinguishers can't operate with the hatches open, for one thing. For another, someone could fall through the hatch.

### Close engine hatch doors when engines are running



Never run the engines in neutral to charge the battery for more than 15 minutes without the water jets engaged, because the engine will overheat and serious damage will occur. Charge the batteries like it says in TM 5-1940-277-10.

Take time to check the boat hull frequently for damage. It only takes one little leak to ruin your day.

### Check hull frequently for damage



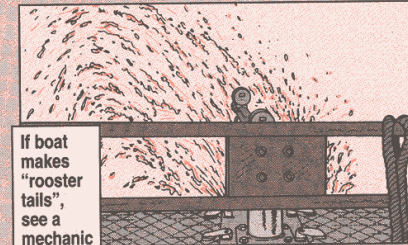
Check the steering wheel. If the rods are loose, replace the steering wheel.

Never put the transmission in reverse to move the boat to the rear. Pull the scoops to the rear as needed to move the boat backward. Use reverse only to flush the engines.

Never rev the engines as you put the transmission in gear, either, or you'll damage the transmission, and it won't go in gear.

Tight, high-speed turns will damage the steering linkage. If you must make a sharp turn, slow down first or you'll swamp the boat and sink it.

When you turn your boat and see "rooster tails" of water behind your boat, it could mean the scoops need adjustment or repair, the scoop linkage has dirt in it, or the scoop brushes could be missing or damaged. Get a mechanic to check it.



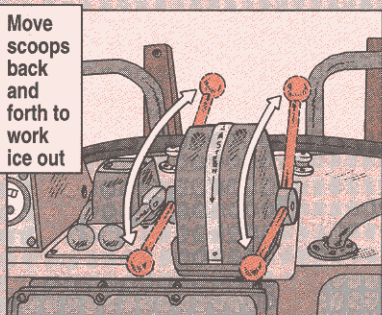
If boat makes "rooster tails", see a mechanic

## Cold Weather

In cold weather, the engines are hard to start because the heat switch takes longer to work. Remember, though, you can only press the heat switch for 20 seconds at a time. Hold it longer and eventually it or the starter will burn up.

It's good practice to start the engines every two hours and let them run for about five minutes during cold weather. No more than that, though. Running the engine in neutral overheats it and can do serious damage.

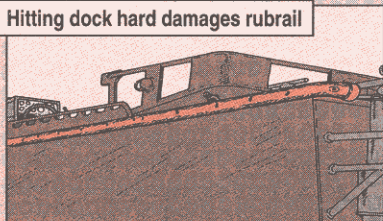
Running the engine in neutral can also let ice form in the scoop linkage.



When that happens, you won't be able to steer the boat until you move the scoops back and forth to work the ice out. Move the scoop controls and steering wheel often when the boat isn't running so that they don't freeze in place.

If you see ice forming, remove it. You don't have to recover the boat from the water to remove the ice if you can chip it off.

When you bring your boat back in, nose up gently. If you hit a dock, bridge or bank hard, it damages the rubrail. Without that rubber rubrail, the metal



nose of your boat hits other metal—like the bridge—and the metal gets damaged.

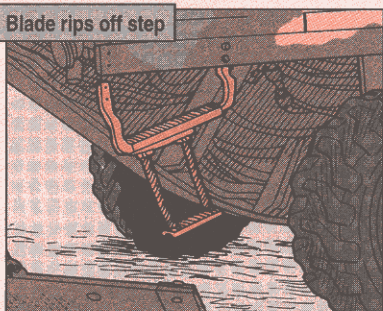
PS END

## 130G Grader Step Fix

The 130G grader's old cab steps get banged up when the blade is raised and turned to the travel position.

Unit mechanics can now replace the old step with a rubber step assembly that bends forward and backward without getting banged up or ripped off.

Eyeball Para 3-19 of EIR Digest TB 43-0001-39-8 (Mar 96) for info on how to install the new step assembly. If you don't have a copy of the TB, see your TACOM LAR or write to MSG Half-Mast.



## TO USE OR NOT TO USE— AND WHERE?

It'd be real simple if all Army vehicles could be equipped with tire chains when road conditions warrant their use.

Unfortunately they can't. Some vehicles can't use chains at all, and others can use chains only on specific axles.

Follow the general rules found in FM 21-305, Manual for the Wheeled Vehicle Driver (Aug 93), for the use of tire chains.

Then, follow the specific rules found in each vehicle's -10 TM. These rules may not mirror those in the FM. If there's a difference, just remember that the -10 rules are the ones you follow.

Here are some exceptions to the rules:

- ☞ **M939A2-series 5-ton:** use no chains. The central tire inflation system (CTIS) deflates tires to provide traction on snow/ice.
- ☞ **M939A1-series 5-ton:** use chains only on the intermediate axle.
- ☞ **Palletized loading system (PLS):** use chains only on axles No. 3 and 4 (non-steering axles).
- ☞ **HEMTT:** use chains only on both rear axles. On M978 tankers, never use chains when driving on paved surfaces. That could cause sparks.
- ☞ **HMMWV:** use chains on all four wheels to prevent drive train damage. It's OK to use chains on runflat tires, too.



HMMWV...

## Muscle and Zippers Don't Mix

**A** stuck zipper on a HMMWV's soft top needs cleaning and lube, not muscle. Muscle just ruins the zipper.

Drivers, you've got to remove grit and sand caught in the zipper teeth. Do it with an old toothbrush. Then lube the zipper teeth with zipper lube, NSN 9150-00-999-7548. That NSN brings a box of 24 sticks.

If you've already ruined a zipper, here's a tip to keep your soft top from flapping until it's repaired or replaced:

Use hook and pile tape. It won't be waterproof and it isn't as strong as a zipper, but it works.

Get a yard of 1-in wide, self-adhesive hook with NSN 8315-01-115-7617. Matching pile is NSN 8315-01-043-9881. Cut and place pieces of tape where they'll do the most good.



## Stop "West Coast" Quakes

**S**ometimes you've got to put up with shakes and shimmies—that ol' HMMWV rattles pretty good even at idle. That means those "West Coast" mirrors shake, too. It's something you get used to.

What you don't have to put up with are loose mirror mounts that cause heavy-duty quaking and even lost mirrors.

Keep mirrors tight by using the rivet installation tool kit, NSN 5180-01-210-4978, from the special tools list in TM 9-2320-280-20P.

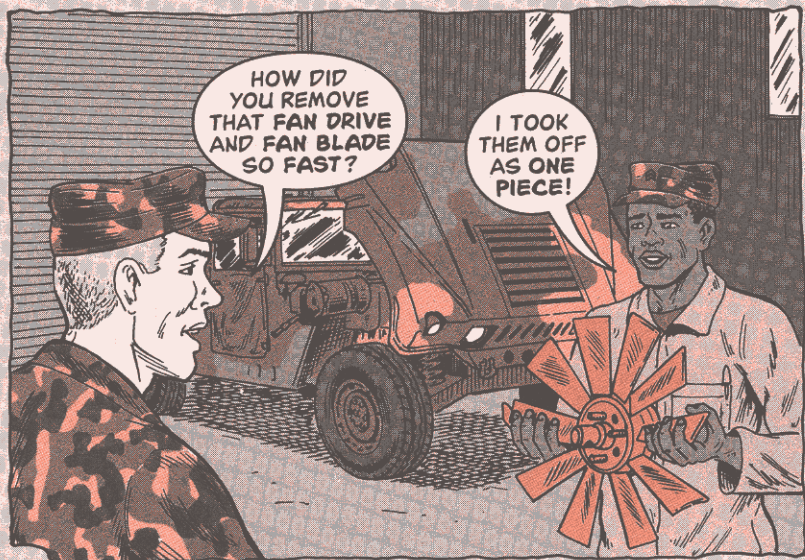
The riveter, when used as described on Page 10-110 of the -20-3 TM, clinches each rivet shank against the windshield metal. It's as tight a mount as you're going to get.



Rivets help eliminate "quaking"



# FAN DRIVE & BLADE OFF AS ONE



You can now remove the HMMWV's fan drive and fan blade as an assembly without removing the fan shroud and radiator.

Save that time and effort by using the word on Pages 3-13 through 3-15 in TB 43-0001-39-8 (Mar 96).

To make it easier to get to the four socket-head screws mounting the drive to the water pump pulley, you'll need to disengage the fan drive clutch. That takes compressed air applied to the clutch adapter.

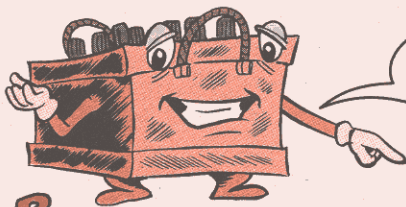
Add a quick-disconnect to make fan disengagement a snap. With your commander's approval, add one using the info in Para 3-10, Pages 3-25 through 3-28, in TB 43-0001-39-3 (Dec 94).

## HMMWV Alternator Bracket Mod

Put an end to broken brackets or stripped threads on your HMMWV's alternator using plans in TB 43-0001-39-7 (Dec 95) that help you change the alternator bracket from a two-bolt design to a one-through-bolt design. Get Pages 3-19 through 3-26 of the TB from your local TACOM LAR or from Half-Mast.

HMMWV ...

# Add Battery Drains

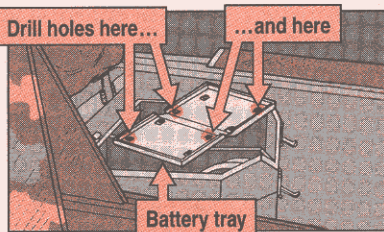


IF WATER POOLS  
IN THE BATTERY TRAY,  
DRILL SOME HOLES TO  
LET IT OUT.

**R**emove the tray and drill four 1/2-in holes in the corners where there are no mount bolts. Do not drill holes in the metal battery box underneath the tray.

You don't want water pooling around the batteries, because it causes corrosion in the summer and damage when it freezes in winter.

If the holes are already there and just plugged up, open them with a stick or pencil until the water runs out.



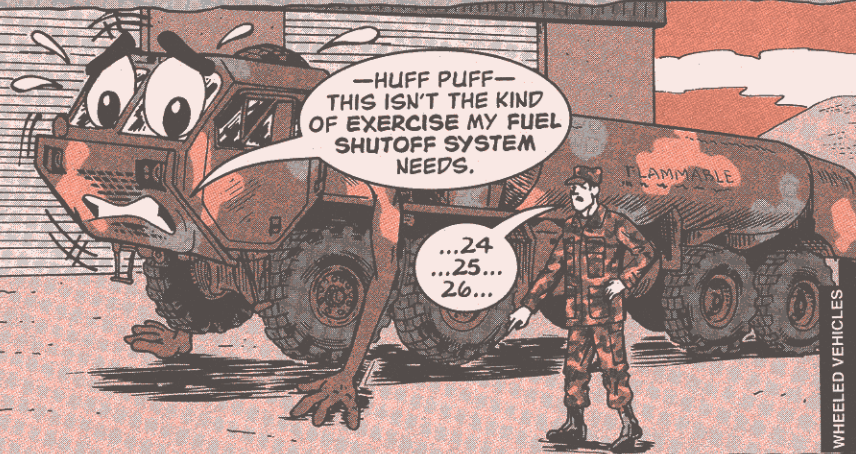
## No Step Here!

**T**he HMMWV's tow pintle looks like a handy step. Trouble is, it swivels in a complete circle. Your foot can slip off and—*ouch!*—you end up with a cracked shin, sprained ankle, or worse.

Play it safe.  
Lower the tailgate to get in and out of your truck.



# KEEP LEVER FIT

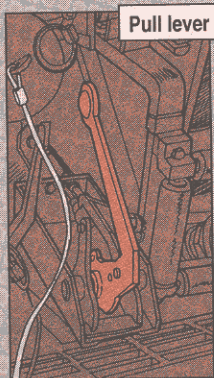


WHEELED VEHICLES

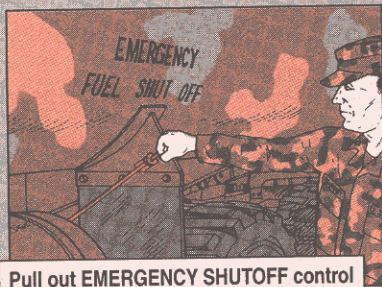
**W**ithout occasional exercise, the emergency fuel shutoff lever on your M978 HEMTT tanker can fail when you need it. You could end up wading in diesel fuel.

Put your tanker's emergency fuel lever on a program of weekly exercise. It's an easy routine:

1. Pull the MC MANUAL CONTROL EM VALVE lever towards you. That opens the V1 emergency valve, letting you dispense fuel.



2. Pull out the EMERGENCY SHUTOFF control. The MC MANUAL CONTROL EM VALVE should pop back into place and close down the V1 valve. That stops fuel flow during a spill or fire.

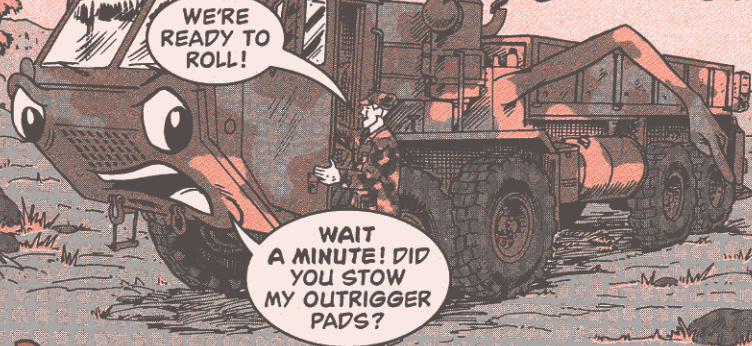


If the lever closed, your system is in good shape. If it didn't, call in your mechanic. The lever needs adjustment, lube or replacement.



M977, M985 HEMTTs ...

# Don't Blow It, Stow It!



**D**rivers, leaving the pad attached to your M977 or M985 HEMTT's outrigger jack may save you a little time, but it can also cause a lot of damage.

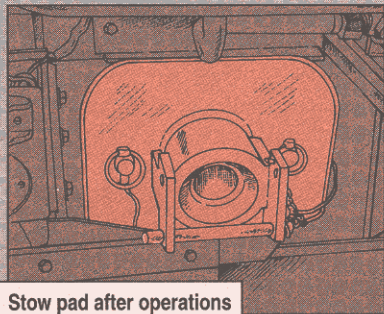
Leaving it in place lets the pad swing freely back and forth. When the truck goes over bumps, the pad can catch on the tire treads.

If you're lucky, only the tire is damaged. Sometimes the pad is ripped loose or the entire outrigger jack is bent and has to be replaced.

Save some money instead of a little time. Stow the outrigger jack pad **before** you move out.



Outrigger pad can catch on tire tread



Stow pad after operations

## HEMTT PTO Assembly

NSN 2520-01-143-1277 gets the HEMTT's power takeoff assembly. NSN 2520-01-198-5733 (Item 1, Fig 238, TM 9-2320-279-20P) is wrong. If you ordered—or received—the wrong part, see TACOM Maintenance Advisory Message 96-002. It has the details for getting credit. If you need a copy of the message, see your TACOM LAR or write Half-Mast.

# Half-Mast's Christmas Vacation

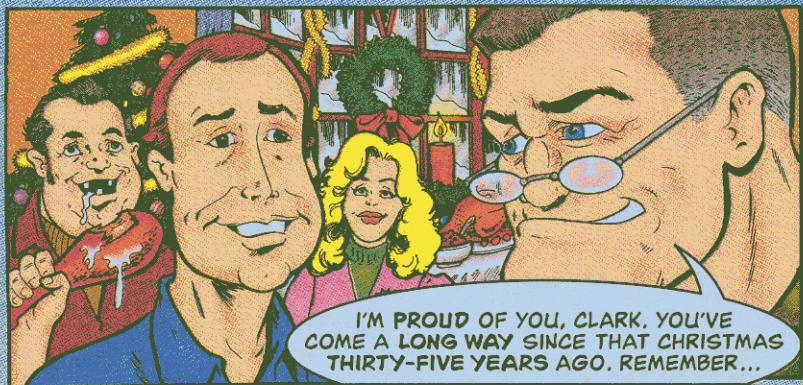
Merry Christmas

IT'S  
GONNA BE  
BEAUTIFUL,  
CLARK!

THANK  
YOU,  
EDDIE!

GREISWOLD





I'M PROUD OF YOU, CLARK. YOU'VE COME A LONG WAY SINCE THAT CHRISTMAS THIRTY-FIVE YEARS AGO. REMEMBER...



GOLLY GEE, UNCLE HALF-MAST, LOOK WHAT SANTA BROUGHT ME! CAN I SET IT UP?

SURE, CLARKY, BUT DON'T FORGET TO...

GEE WILLIKERS! I KNOW HOW TO DO IT!

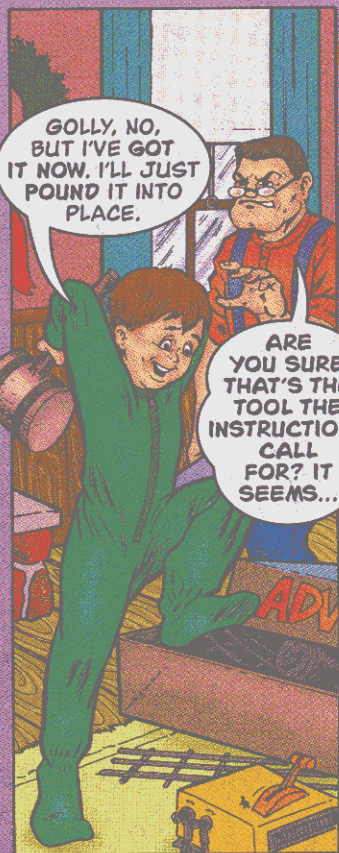


GEE WHIZ—  
THIS DOESN'T SEEM  
RIGHT, UNCLE  
HAL-MAST.

Clark

THE  
FIRST STEP  
IN DOING ANY JOB  
IS TO READ AND  
FOLLOW THE  
INSTRUCTIONS.  
DID YOU?

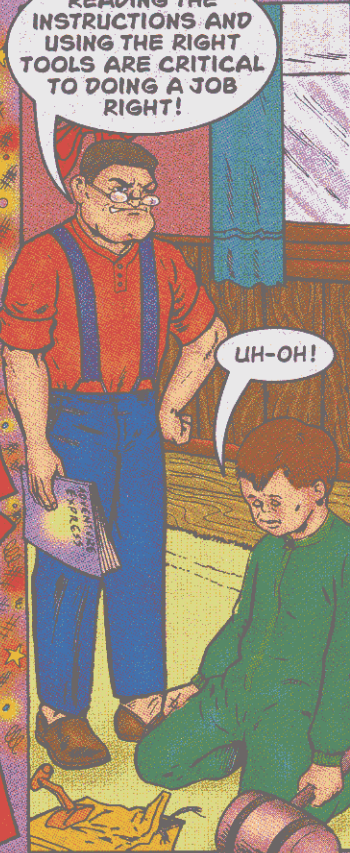
ADVENTURE  
EXPRESS  
INSTRUCTION  
MANUAL



GOLLY, NO,  
BUT I'VE GOT  
IT NOW. I'LL JUST  
POUND IT INTO  
PLACE.

ARE  
YOU SURE  
THAT'S THE  
TOOL THE  
INSTRUCTIONS  
CALL  
FOR? IT  
SEEMS...

**CRASH**



READING THE  
INSTRUCTIONS AND  
USING THE RIGHT  
TOOLS ARE CRITICAL  
TO DOING A JOB  
RIGHT!

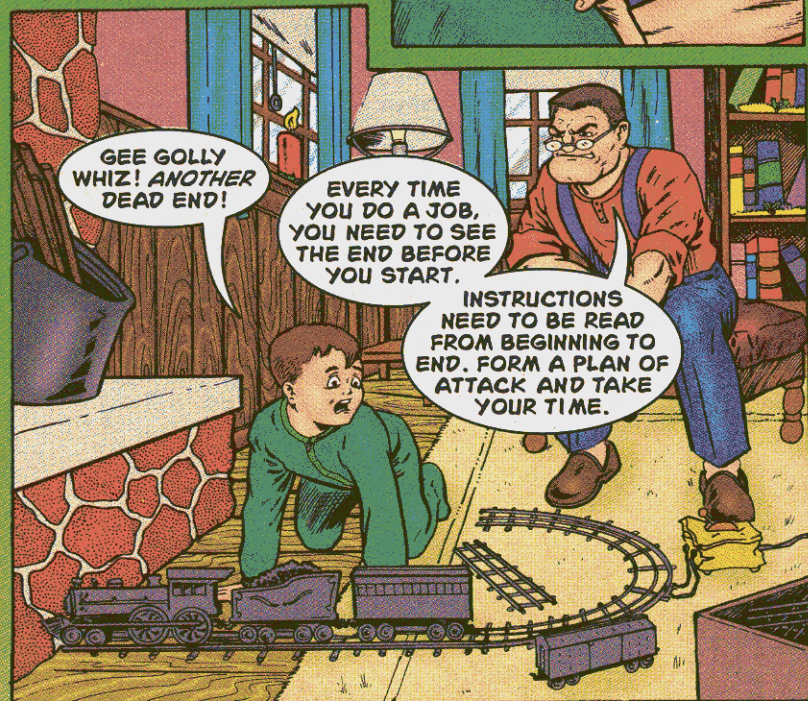
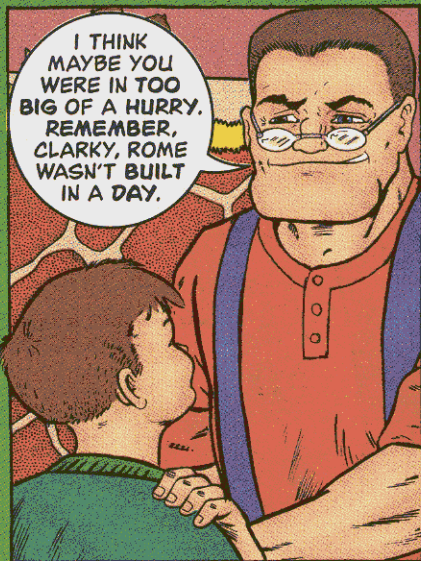
UH-OH!

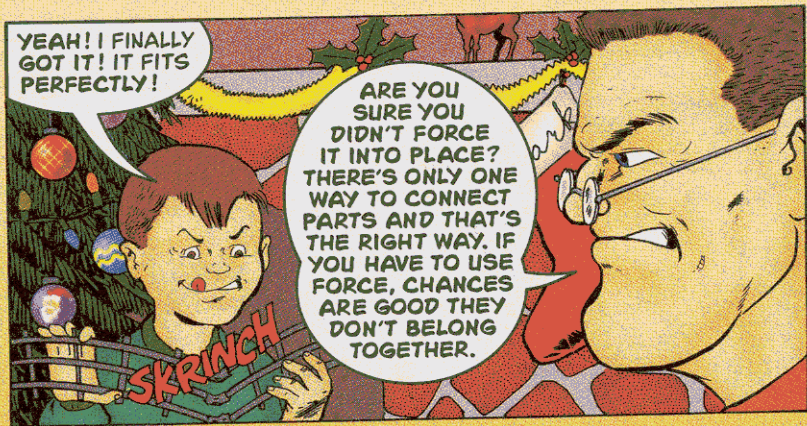


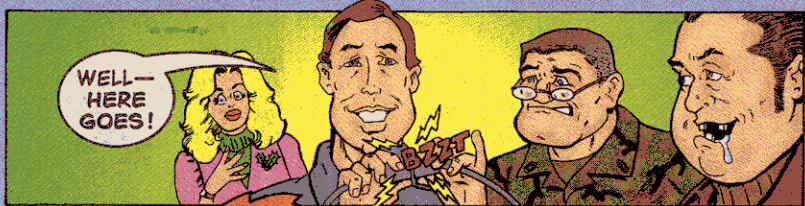
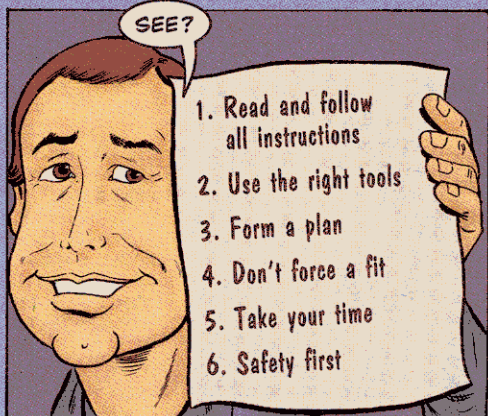
*Follow the book, a job to tame,  
Use the right tools, a path to fame.  
A fit you don't force,  
Safety first, of course,  
Or Sparky may be your new name.*

**WE HAVE THE WORLD'S BEST EQUIPMENT**

*Take care of it*









# Install Radios by the Book

If you plan to install a vehicular radio, don't be caught without a copy of SB 11-131-1, Vehicular Sets and Authorized Installations (Vol 1).

The SB tells you which installation kit your vehicle needs and what's in each kit.

Section III of the SB lists types of vehicles, radios that can be mounted in them, installation kit NSNs and book plans containing installation instructions.

Section V has a component listing by NSN for each kit.

The SB's easy to use. For example, if you plan to install an AN/VRC-44 in an M1038 HMMWV,

look in Section III. There you'll find the installation kit MK-2504/VRC, NSN 5820-01-208-1903. The book plan for this kit is No. 879.

Use the kit NSN, in this case 5820-01-208-1903, to find the component listing in Section V. The kit FSC NSNs in that section are listed in NIIN sequence (the last nine digits).

Installation kits for SINCGARS radios are listed in a separate supply bulletin:

SB 11-131-2, Vehicular Sets and Authorized Installations Volume II (SINCGARS).

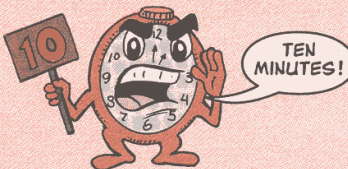
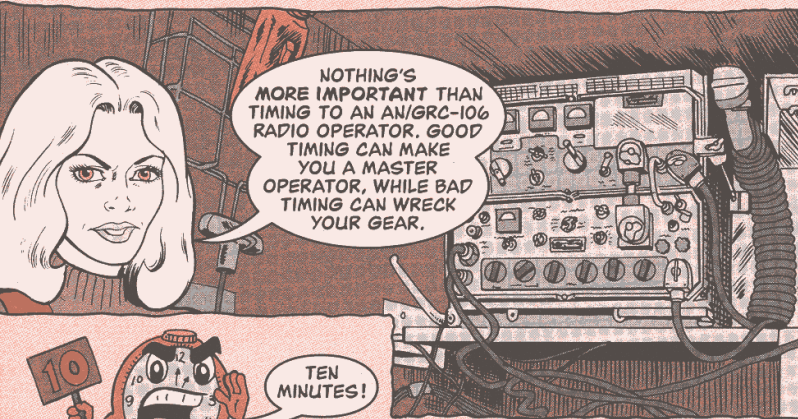
Installation kits for the KY-57, Communications Security Equipment, are listed in SB 11-700.

SB 11-131-1			
3-47. VEHICLE, HIGH MOBILITY, MULTI-PURPOSE WHEELED, 1-1/4 TON UTILITY TRUCK, M998, M1038			
SINGLE INSTALLATIONS			
Radio set	Installation kit Type no.	Installation kit NSN	Installation instructions
AN/VRC-46, -64 AN/GRC-160	MK-2502/VRC	5820-01-208-1901	Book Plan Ref. No. 859
AN/VRC-12 AN/VRC-47	MK-2503/VRC	5820-01-208-1902	Book Plan Ref. No. 878
AN/VRC-44 AN/VRC-48	MK-2504/VRC	5820-01-208-1903	Book Plan Ref. No. 879
AN/VRC-49	MK-2505/VRC	5820-01-208-1904	Book Plan Ref. No. 880
561 Surface kit for	MK-2477/GSG-10 (V)	5820-01-208-1900	Book Plan Ref. No. 900

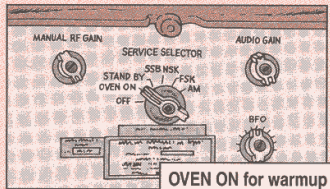
SB 11-131-1			
Table 5-1. Component Listing - CONT			
NSN/PPL	Component	End Item	Vehicle
5820-01-208-1903 PPL 10228	Installation Kit	MK-2504/VRC	M966, M998, M1025, M1036, M1038, M1026
	Book Plan Ref. No. 879	Installation Instructions for Radio Set AN/VRC-48, 44 in Tow Carrier, M966, M1036; in M998, M1038; in M1025, M1026	Ea 1
5820-00-908-6416	PPL 3687	Antenna Tie Down Kit	Ea 2
5820-01-215-9394	A3046181	Bracket - Radio Rack Mounting	Ea 2
5995-00-823-2725	SM-D-415551	Cable Assembly, Power, Electrical, CX-4721/VRC (2 ft 6 in)	Ea 2
	SM-D-415563	Cable Assembly, Radio Frequency (22 ft 6 in)	Ea 1
5820-01-208-1903 PPL 5170	SM-D-415563		

If you don't have copies of these pubs, ask your pubs clerk to order them.

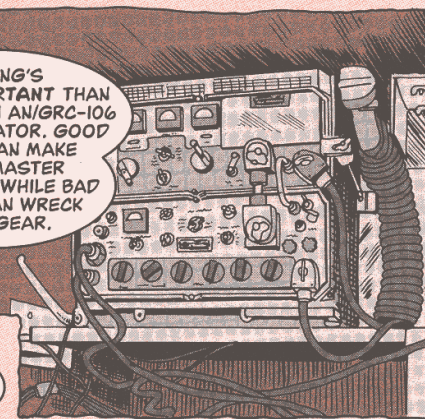
# In the Nick of Time



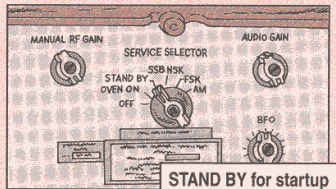
The RT-662 or RT-834 receiver-transmitter needs to warm up before operation. Set the RT's SERVICE SELECTOR switch to OVEN ON. Allow the RT to warm up for at least 10 minutes before applying primary power.



If you try to transmit before the radio's completely warmed up, a power surge could blow out a power amplifier tube.



Once the RT's warmed up, begin your starting procedures by setting the SERVICE SELECTOR switch to

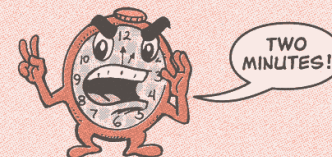
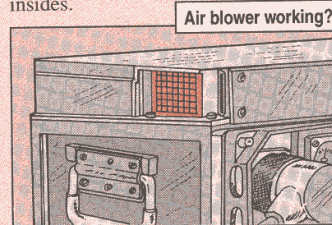


STAND BY. Then set the AM-3349 amplifier's PRIM PWR switch to ON. Let the amplifier warm up for 1 1/2 minutes.

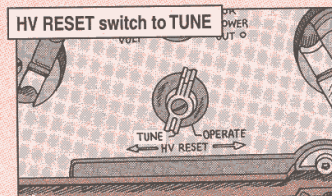
# of Time



While you're waiting, put your hand near the blower to see if it's working. If no air is blowing out, shut down immediately. Ask your unit maintainer to take a look. A faulty blower can't do its job of cooling your radio. Heat builds up and damages the set's insides.

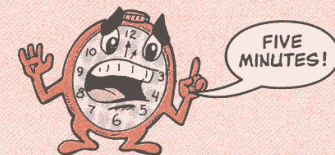
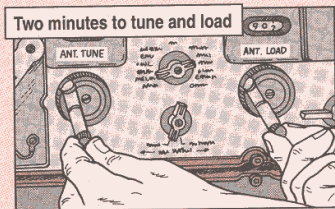


Tuning and loading your antenna puts your timing to the test. You get only two minutes to tune and load after you



set the amplifier's HV RESET switch to TUNE. All the while your radio's building up heat. If you try stretching

that two minutes into three or more, your radio overheats and burns out the amplifier.

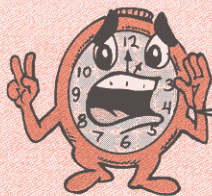


If you're not tuned and loaded in two minutes, set the HV RESET switch to OPERATE and the SERVICE SELECTOR switch to STAND BY. Let the amplifier cool down for five minutes.

After five minutes' cooling, turn the SERVICE SELECTOR switch back to its earlier setting. Turn the HV RESET switch back to TUNE.



Illustration of the woman's face from the top left, looking towards the right.



TWO  
MINUTES TO  
SHUTDOWN!

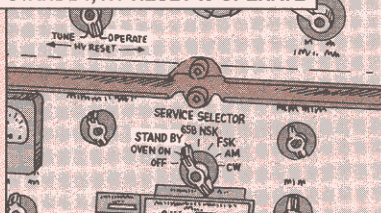
If you plan to stop radio operations for more than an hour, then completely shut down your radio.

Set the SERVICE SELECTOR switch to STAND BY for two minutes before shutting off primary power. That gives the set a chance to cool before the heat exchanger shuts down.

Remember to set the HV RESET to OPERATE before you turn the radio off. Left in TUNE, the high voltage reset relay won't energize, and you'll

have a dead set the next time you try to power up.

SERVICE SELECTOR switch to  
STANDBY, HV RESET to OPERATE



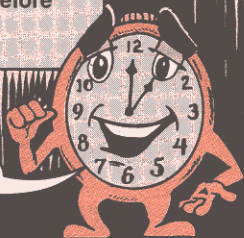
If you plan to stop radio operations for a brief time—an hour or less—then place the set in stand by. Keep the HV RESET switch in OPERATE. Turn the SERVICE SELECTOR switch to STAND BY.

This keeps the radio warm and ready for quick operation.

TO  
SUM IT  
UP...

- ▶ 10 minutes to warm up the RT.
- ▶ 11½ minutes to warm up the amplifier.
- ▶ Two minutes to tune and load the antenna.
- ▶ Five minutes to let the amp cool down if you fail to tune and load within two minutes.
- ▶ Two minutes in STAND BY before shutting off primary power.

TIMING IS  
EVERYTHING!



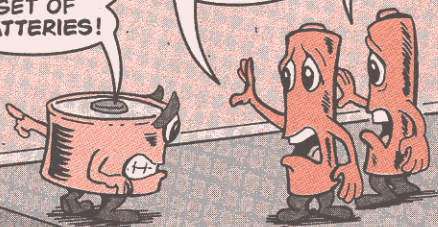
# Spare Me!



THAT SOLDIER JUST TOOK A PAIR OF NIGHT VISION GOGGLES, BUT ONLY ONE SET OF BATTERIES!

WHAT WAS HE THINKING?!

WAIT! YOU NEED US, TOO!



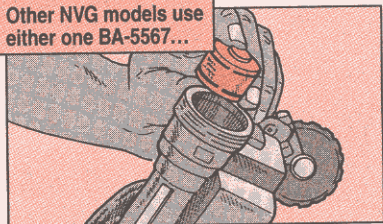
**T**he next time you go to the field, remember to take spare batteries for your night vision goggles (NVG).

Some soldiers are heading to the field without any spares. When the NVG batteries run down, their night eyes go blind.

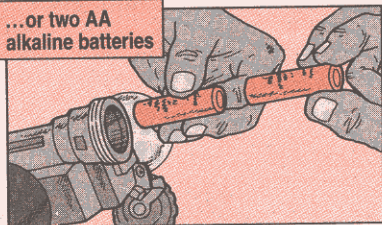
What kind of batteries should you pack? That depends on your NVG. The AN/PVS-5B, -5C, -7A and -7B use either one BA-5567/U lithium battery, NSN 6135-01-090-5365, or two AA alkaline batteries, NSN 6135-00-985-7845.

The AN/PVS-5 and -5A use only the BA-5567/U.

Other NVG models use either one BA-5567...



...or two AA alkaline batteries

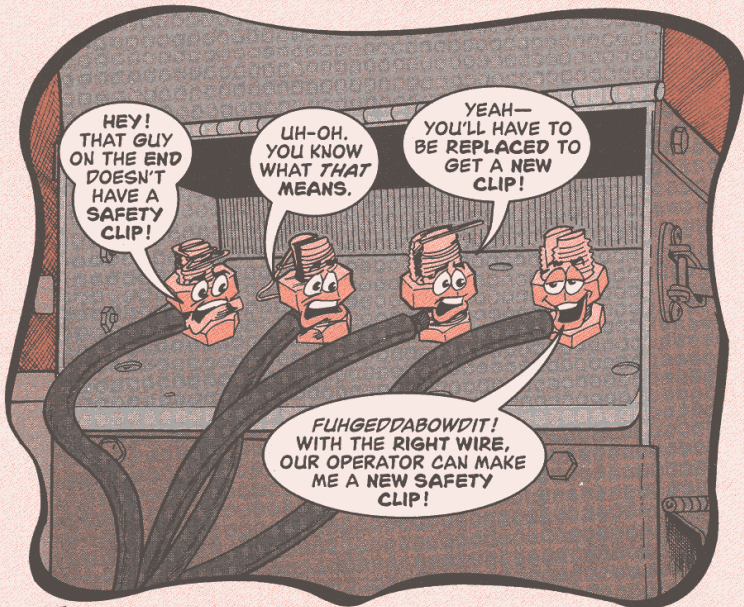


AN/PVS-5 and -5A use only BA-5567



The alkalines are preferred for training exercises. They're easier to get and cheaper than lithium batteries. For combat missions in temperate climates, either the lithium or alkaline will do. If you're heading out in very cold weather—0°F or less—take the lithium batteries. They'll last longer.

# Make Your Own Clips



**T**here are no replacement safety clips for the load and ground terminal nuts on 10-KW and smaller generators. You would have to order the whole terminal to get new clips. Instead, make your own clips.

First, pick the wire you need from this chart:

Wire NSN 9505-	MEP Generator Models											
	002A	003A	015A	016A	017A	018A	021A	022A	023A	025A	026A	112A
00-804-3814 .042 inch	G	G	L-G	L-G			L-G			G	G	
01-049-0144 .050 inch	L	L				L			L	L	L	L
00-596-1668 .051 inch					L-G	G		L-G	G			

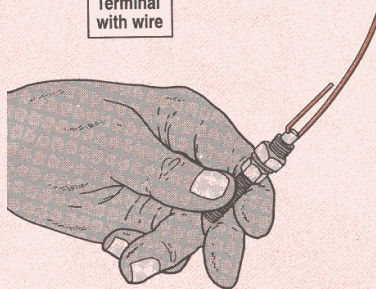
L=Load Terminal      G=Ground Terminal

# Own Clips

Cut off about three inches of the wire. Be sure the wire is short enough to keep the clips from touching another terminal or the generator frame in both the open and closed positions. Put the wire through the hole in the terminal.

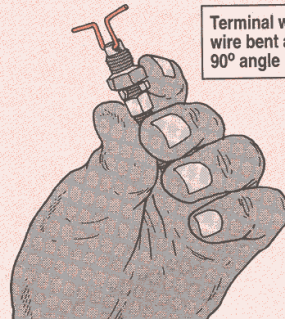
Hold the terminal so you can bend both ends of the wire straight up. Try to keep the wire in a straight line with the terminal body.

Terminal with wire

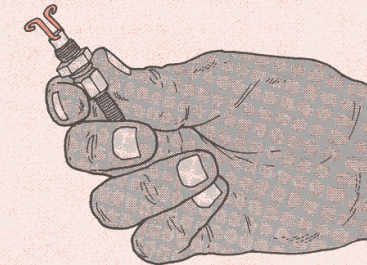


Next, bend the wire into back-to-back 90° angles. The legs of both angles should be about 1/2 inch long.

Terminal with wire bent at 90° angle

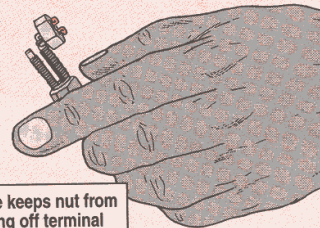


Bend the ends of each 90° angle down and around into a U-shape.



Terminal with wire ends bent into U-shape

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



Wire keeps nut from falling off terminal

To make safety clips on larger generators, use .090-in diameter wire, NSN 9505-00-596-1662.

No wire available? As a temporary fix, you can straighten an ordinary paper clip to make the safety clip.

# THRUSTER OR CARTRIDGE?

Dear Windy,

According to TB 9-1300-385, Munitions Restricted or Suspended, the overhaul and retirement life schedule for the Black Hawk's cargo hook thruster assembly, NSN 1377-01-211-7212, is 48 months.

But when I tried to order one, they told me it was in short supply and to order just the pressure cartridge, NSN 1377-01-211-7211.

Is this acceptable? Can I extend the life of the thruster by replacing the cartridge?

SGT S. R. H.



Dear Sergeant S. R. H.,

Yes, the thruster is in short supply, and yes, you can extend the life of the thruster by replacing the pressure cartridge. The cartridge determines the retirement life of the thruster. As a bonus, the cartridge is some \$225 cheaper than the thruster. The only time you need to replace the thruster is when it has been fired.

Windy



# Flashing the Field

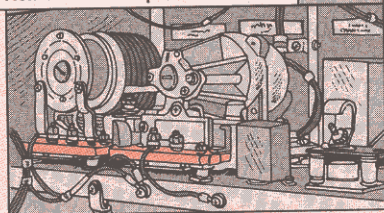
I FEEL LIKE MY GENERATOR'S LOST ITS MAGNETISM!

MAYBE IT NEEDS ITS FIELD FLASHED.

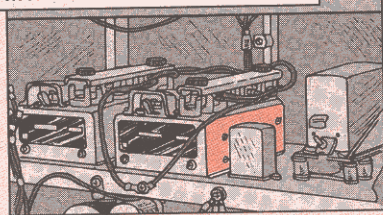
When the starter generator on your Huey fails, it may be due to a loss of residual magnetism in the generator's field poles. This magnetism is a small field that is supposed to stay in the generator when it's shut down. The generator uses it to get going again. If your generator has lost its magnetism, you need to flash the field to get it back. Here's how:

1. Remove the carbon pile voltage regulator from the mounting base or, if you have the solid state voltage regulator, disconnect the wire from terminal F+/A.

Remove carbon pile from base...



...or disconnect F+/A on solid state



2. Put the battery switch in OFF.
3. Attach one end of a 16-gauge jumper wire to terminal A of the carbon pile voltage regulator's base **or** to the wire disconnected from terminal F+/A of the solid state voltage regulator. The other end goes to the positive bus.
4. Switch the battery ON, momentarily, then back to OFF.
5. Remove the jumper wire.
6. Install the carbon pile voltage regulator or reconnect the wire to terminal F+/A of the solid state voltage regulator.

If this doesn't get the starter generator working, try again. If it doesn't work this time, you've got another problem. Report it.

# KEEP AN EYE ON THE BORESCOPE

**A** workman is only as good as his tools when it comes to delicate optical instruments like borescopes.



An abused or poorly maintained borescope is worthless. Borescopes need cleaning and service to stay reliable. Here are some things to remember about maintaining and using your borescope:

**Use the protective case.** The borescope is not a wrench to be left lying around. When you're done with a job, put the scope immediately in its protective case. Use the covers provided with the case.

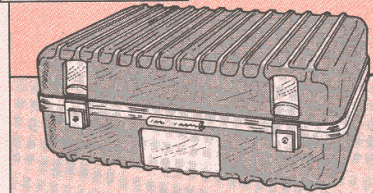
**Keep it clean.** There are three areas on the borescope that need cleaning—the eyepiece, the lens and the end of the light bundle. Clean all three with isopropyl alcohol, NSN 6810-00-855-6160.

Carefully wipe down the entire borescope with a lint-free cloth before you store it.

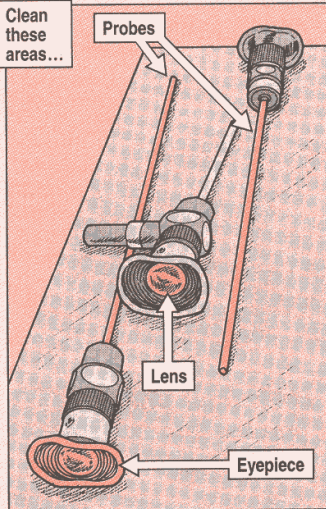
**Insert with care.** Your borescope takes a perilous journey into the unknown, the inside of an engine. Don't force it into making the trip too fast. Slow and steady will get your borescope in place and intact.

**Keep it cool.** Borescopes hang out in hot places—engines. Make sure those engines have cooled down before you insert the borescope. You'll damage the probe for sure if you use it near parts hotter than 150°F.

Use the protective case



Clean these areas...



...and light bundle





# POL Final Drain



WELL, I GUESS IT'S ALL OVER FOR US.



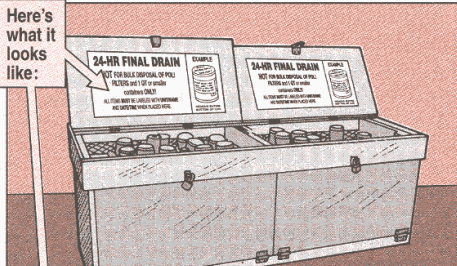
—SIGH—  
YEP, IT'S TIME FOR THE FINAL DRAIN.

**24-HR FINAL DRAIN**  
NOT FOR BULK DISPOSAL OF POLI  
FILTERS and 1 QT or smaller containers ONLY!  
ALL ITEMS MUST BE LABELED WITH UNIT/NAME AND DATE/TIME WHEN PLACED HERE.

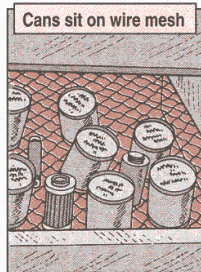
**EXAMPLE**

**24-HR FINA**  
NOT FOR BULK DISPOSAL OF POLI  
FILTERS and 1 QT or smaller containers ONLY!  
ALL ITEMS MUST BE LABELED WITH UNIT/NAME AND DATE/TIME WHEN PLACED HERE.

Dear Windy,  
We took an old storage cabinet and converted it into a final drain receptacle for filters and small POL cans.



Here's what it looks like:

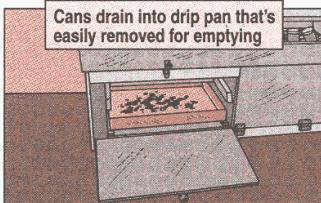


Cans sit on wire mesh

**24-HR FINAL DRAIN**  
NOT FOR BULK DISPOSAL OF POLI  
FILTERS and 1 QT or smaller containers ONLY!  
ALL ITEMS MUST BE LABELED WITH UNIT/NAME AND DATE/TIME WHEN PLACED HERE.

**EXAMPLE**

REMOVE ENTIRE BOTTOM OF CAN



Cans drain into drip pan that's easily removed for emptying

Labeling the cans with unit, date and time ensures that a can is removed by the person who put it there. You lose your drain privileges if a can remains longer than 24 hours.

SPC Kyle Hemsted  
2/82 Avn Bn  
Ft Bragg, NC

SPECIALIST HEMSTED'S POL DRAIN WORKS WELL. USE HIS AS A MODEL FOR ONE THAT FITS YOUR UNIT'S NEEDS.



## Spotlight on Flashlights

Is your two-cell, fixed-focus flashlight too puny for maintenance in the dark corners of your aircraft?

You can get a foot-long, water-resistant, adjustable beam, three-cell, Krypton bulb flashlight for around \$20 with NSN 6230-01-247-7549.

For smaller jobs, two mini flashlights are available.

Use NSN 6230-01-353-4468 for a box of six mini flashlights with a push on/off switch and a flip on/off red filter. The six will cost you around \$100.

Use NSN 6230-01-259-4495 for one mini flashlight with a twist on/off switch.

You can get an amber, red and blue lens filter kit for the mini flashlights with NSN 6230-01-382-4309. This kit also comes with a rubber cap and a lanyard.

A green night vision lens filter kit comes with NSN 6230-01-393-2365.

Use Appendix A of CTA 50-970 as your authorization for flashlights and filters.

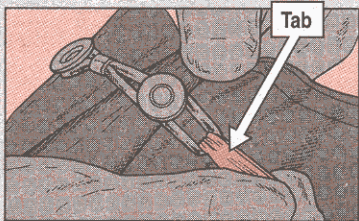
# Keep Tabs on Your Boots

Dear Editor,

When you're completely dressed out in your chemical gear, it's almost impossible to unbuckle the green overshoes. You'd need the fingers of a pickpocket to unhook the buckle loop while wearing gloves.

We made unbuckling easy by fashioning tabs out of tape. Cut a 2 1/2-in length of duct tape or something similar. Trim it to a width of 1/4 inch. Run the tape through the buckle loop and fold the tape back on itself. You're done.

MAJ John Michaels  
SFC Rickey Bolding  
HHB, 11th ADA Bde  
Ft Bliss, TX



FROM THE DESK OF THE Editor

Thanks for buckling down and coming up with such a good idea.

## Realistic NBC Training

GET MORE  
BANG FOR YOUR  
NBC TRAINING BUCK  
WHEN YOU USE  
ME!



**S**imulator projectile airburst liquid (SPAL) adds realism to training. SPAL simulates a chemical attack by exploding a non-hazardous plastic projectile filled with antifreeze. Soldiers can train with M8 and M9 detector paper and practice looking for contamination on the ground. Your ammo folks order SPAL with NSN 1370-01-047-3479.

# Panning for Sand

Dear Editor,

Everyone has a problem getting sand out of the eyelens rims inside the M40/M42 masks.

The recommended way is to shake out most of the sand and wipe out the rest with a dry cloth. You have to be careful doing this or you scratch the eyelenses.

An easier and safer way to clean out sand is what we call panning for it. Turn the mask face down. Soak a clean cheesecloth in water. Squeeze a tablespoon of water in the center of an eyelens.

Swirl the water around the eyelens like you were panning for gold. Do this until all the sand has collected in the center of the eyelens. Trap the sand with a dry cheesecloth. Turn the mask over and pull the cheesecloth away. The sand is gone.

Do the same with the other eyelens.

**SGT Van Henson  
HHB, 11th ADA Bde  
Ft Bliss, TX**

FROM THE DESK OF THE *Editor* 

*I think your cleaning suggestion pans out well. Good job!*



Add water

Trap sand

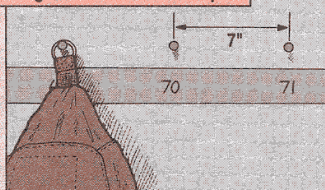
Turn mask over

# Inside the NBC Room



The M40 and M42 carriers are about two inches larger than the M17 mask carriers. That means you'll need more room when you hang them on the wall in the NBC room. If you try to cram the masks together, they can be damaged. Pull the nails you used to hang the M17s and put them seven inches apart.

Hang masks seven inches apart



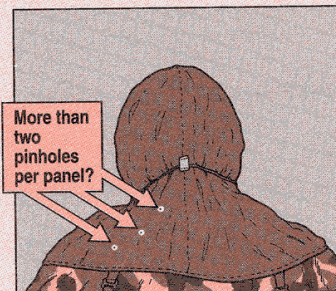
Use the masks' faceforms if the masks won't be worn for more than 30 days. The faceform helps the mask keep its shape and seal. When the faceforms aren't being used, store them in the



Use faceform if mask isn't worn for more than 30 days

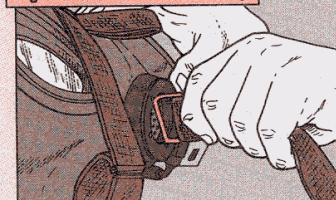
NBC room. If you leave them in the carrier, they will disappear or be broken in the field. Order new faceforms with NSN 4240-01-260-8697.

The hood can't be repaired, but it can have up to two pinholes in each panel and still do its job. More or bigger holes mean the hood can't fully protect your soldiers. Don't pitch the hood, though. Order a new one and use the old hood for training. Use a grease pencil to write TRAINING on the old hood.



Side voicemitter loose? The D-ring on the carrier works great for tightening it.

Tighten voicemitter with D-ring



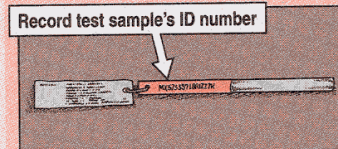
## Track Your Sample

NBC NCOs, if you lose track of an AN/PDR-27 radiac set's MX-7338 radioactive test sample, you could face a barrage of questions.

Test samples are covered by Nuclear Regulatory Commission (NRC) regulations. Lose one and you'll answer to them.

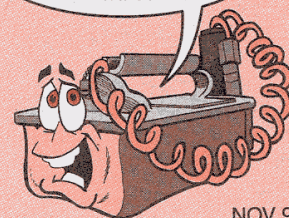
So, take a few precautions to keep the sample from getting lost:

When you hand out an AN/PDR-27, record the ID number of the test sample beside the serial number of the radiac set.



When a soldier turns the set back in, make sure he also turns in the test sample. The chain that holds the test sample to the radiac set's case breaks easily.

ASK YOUR ARMORER TO REINFORCE THE CHAIN WITH SAFETY WIRE.





**FIRE! FIRE! FIRE!**

—COUGH  
COUGH—

I TOLD  
YOU THOSE PINE  
NEEDLES  
WOULD CAUSE  
TROUBLE!

Most units count on the M1950 Yukon heater to keep their tents warm in the winter. If you don't put safety first when using this heater, you could come out of a sound sleep one night to cries of "Fire!"

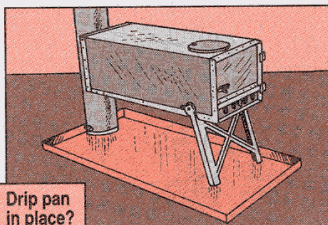
Since flames can engulf a tent in less than 10 seconds, that might be the last voice you hear.

Play it safe. Follow the procedures in your operator's manual and these tips for safe heater operation:

### Safety First

- 🔥 Always clean and inspect the heater before operation or storage. Clean the heater by the book—TM 10-4500-200-13. Never use water to clean soot from the stovepipe.
- 🔥 Never refuel a heater that is in operation. If you spill any, it could ignite.
- 🔥 Always post a fireguard at night and make sure there's enough ventilation.

- 🔥 Never operate the heater at full capacity. An overheated stove can warp the grate or cause a fire.
- 🔥 Have fire extinguishers available in every tent that has a stove or heater.
- 🔥 Keep flammable material, such as pine needles or spruce boughs, away from the heater.
- 🔥 Always use drip pans. Without them, fuel drips directly on the ground. If fuel comes in contact with coals or flame, it could ignite.



Drip pan  
in place?

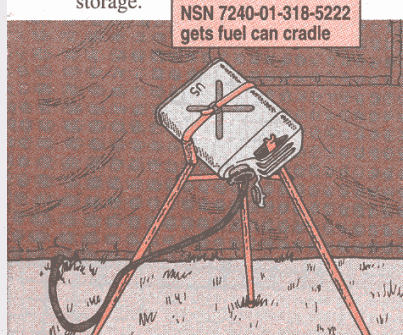
- 🔥 Never block exits with MREs, water cans, or by rolling the snow flaps inside

and holding them down with personal gear. In case of a fire, seconds count!

### Fuel Tips

Fuel hoses leak or break at  $-25^{\circ}\text{F}$ . Warm the hoses before uncoiling them, and try to make all connections in a warm area. Make arctic hoses that are good to  $-65^{\circ}\text{F}$  by using hose, NSN 4720-00-542-3304 or NSN 4720-00-913-5910.

Use a can cradle, NSN 7240-01-318-5222, to hold the heater's 5-gal fuel can. It's sturdy, lightweight, field-repairable and can be folded for easy storage.



NSN 7240-01-318-5222  
gets fuel can cradle

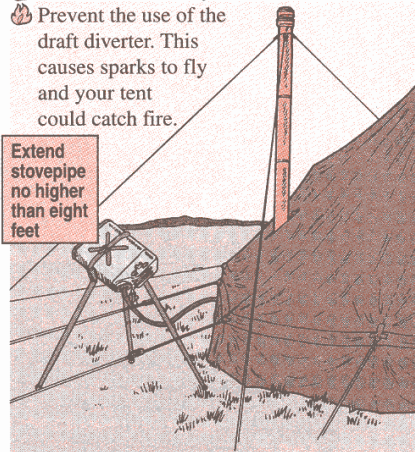
NSN 7240-01-318-8636 brings replacement straps for the cradle.

### Stack Hints

The tapered stack of the M1950 was not made to be extended beyond its normal length. Extensions can:

- 🔥 Leak carbon monoxide
- 🔥 Fall and set fire to your tent
- 🔥 Prevent the use of the draft diverter. This causes sparks to fly and your tent could catch fire.

Extend  
stovepipe  
no higher  
than eight  
feet



Use the M1950 only in tents that need a stovepipe no higher than eight feet.

If you need more stack, use the H-45 heater, NSN 4520-01-329-3451.

### Burner Repair Kit

You can get a burner repair kit for a Yukon's oil burner with NSN 4520-01-202-4520. The kit contains a loop and two retainers, cotter pins, and screws.

# New Feed Adapter

Dear Half-Mast,

When we put our old metal feed adapter in 5-gal plastic fuel cans, the can leaks. It leaks because over time the adapter has stripped the can threads, preventing a good seal. When the can is inverted, fuel leaks on the ground, creating a hazard.

How can we stop these leaks?

SFC A.G.F.

Dear Sergeant A.G.F.,

Start with the new plastic feed adapter, NSN 7240-21-912-7162.

The new adapter has a spring-loaded shut-off coupler on the supply line that automatically stops the flow of fuel when disconnected. It also has a shut-off valve located over the vent tube opening which prevents fuel spillage when the can is inverted.

When you order the feed adapter, you'll also get a male fitting that mates with the female fitting on the adapter. The male fitting must be connected to the 1/4-in heater fuel line using a pipe-to-hose adapter, NSN 4730-01-230-3602.

*Half-Mast*



KEEP ME FROM LEAKING WITH A PLASTIC FEED ADAPTER.

400,000-BTU Heaters . . .

## Cool Down Countdown

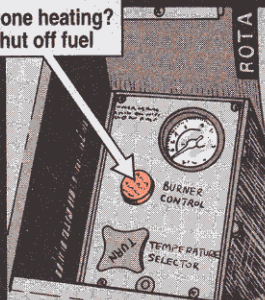
**W**hen your 400,000-BTU duct type heater's done heating, let it cool off for a few minutes before you shut it off.

If you don't, you'll burn out the igniter and it won't start next time you need it. That'll mean a cold time in the old tent tonight.

When you're done heating, pull out the fuel control valve (BURNER CONTROL). Let the engine run for three minutes or until the temperature drops below 150°F.

Then you can safely kill the engine.

Done heating?  
Shut off fuel



# Logistics Management Training



COMMANDERS,  
THE ARMY'S MAINTENANCE  
MANAGEMENT ARENA IS  
CHANGING FAST!


If you need to catch up, consider the Senior Officer Logistics Management Course (SOLMC) at Ft Knox, KY.

This week-long session introduces you to new maintenance concepts and equipment—and refreshes you on the old ones.

You'll learn about:

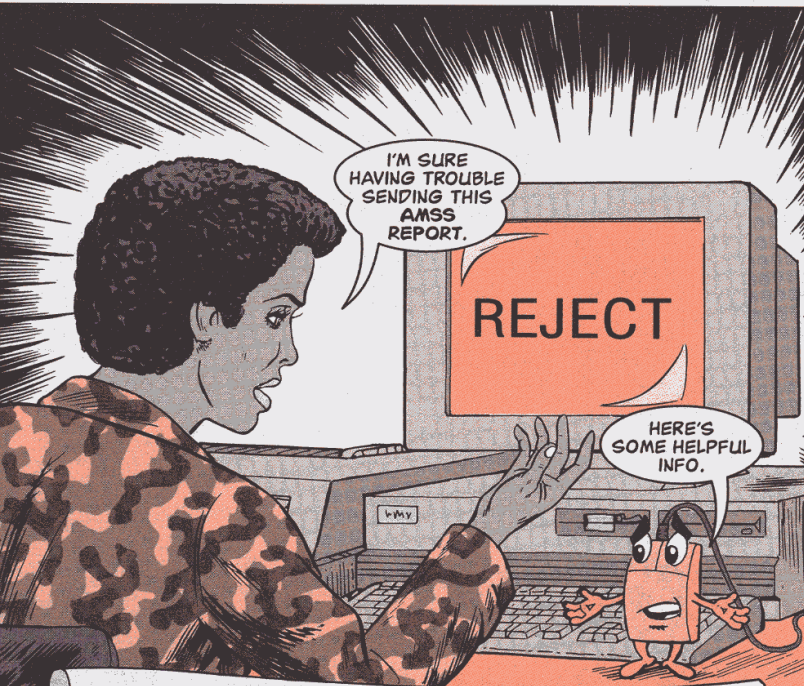
- Unit level logistics system (ULLS)
- Unit status reports
- Army materiel status system (AMSS)
- Environmental issues
- Preventive maintenance indicators on commo, missile, medical, troop support and power generation equipment.

SOLMC is on the Army Training Retrieval System (ATRS) as 8A-F23.



IF YOU  
WANT MORE INFORMATION,  
CALL (502) 624-7133/8152  
OR DSN 464-7133/8152.

# AMSS Reporting Made Easy



Dear SGT Habla,

We here at the ULLS Customer Assistance Office are getting lots of phone calls from units having trouble sending the Army Materiel Status System (AMSS) information through SAMS to LOGSA. The procedures must go in the proper sequence to work correctly.

There are four ways to send the AMSS report based upon the level of the unit sending the data. Since PS Magazine reaches most ULLS users, will you pass these procedures along?

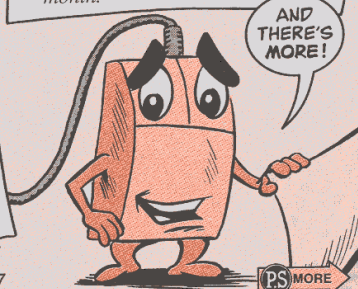
ULLS CAO, Ft Lee



SURE THING. BUT FIRST, HERE ARE SOME TIPS TO USE BEFORE SENDING THE INFORMATION...

- ✓ The fault process must include ALL fault information up to, but not later than, the close of business on the 15th of each month.
  - ✓ Timely SAMS and source of supply transactions/status updates are critical to accurate AMSS reporting.
  - ✓ The Return From Dispatch process should be completed prior to running the End of Report Period process to make sure the current usage data is reported.
  - ✓ If not SAMS supported, send End of Report Period information directly to LOGSA.
  - ✓ The best time to run the reports is the 16th of each month. However, they can be processed early provided no maintenance actions take place for the remainder of the period.
- Likewise, the report can be processed later provided no actions in the new period have been performed.

- Now for the procedures:  
**UTES/MATES/DETACHMENTS**
1. Update all fault information.
  2. Send trans/receive status from source of supply.
  3. Send trans/receive status from SAMS.
  4. Update fault information as a result of status received.
  5. Make sure battalion indicator is set to NO and the parent company's UIC is the reporting UIC.
  6. Process any AMSS report to update AMSS data.
  7. Back up database.
  8. Run Send To Higher process.
  9. Send diskette (AMSS005.DAT) to parent unit.
  10. Run End of Report Period process to advance the AMSS report date to the next month and to create rollover records on the Maintenance Request Register. Do not send these two diskettes to SAMS. Save them to reuse next month.





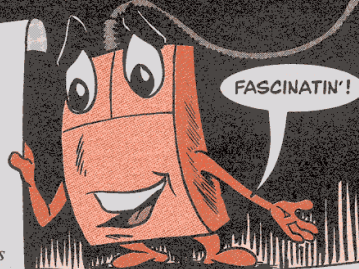
## COMPANY LEVEL

1. Update all fault information.
2. Send trans/receive status from source of supply.
3. Send trans/receive status from SAMS.
4. Update fault information as a result of status received.
5. Make sure battalion indicator is set to NO and the parent battalion's UIC is the reporting UIC.

6. Process any AMSS report to update AMSS data.

**NOTE:** Steps 7–9 and 13 apply only if unit has detachment(s)

7. Change battalion indicator to YES and make sure battalion UIC is listed as the reporting UIC.
8. Receive From Lower process to read diskettes from detachments.
9. Run any AMSS reports as required by command.
10. Back up database.
11. Run Send To Higher process.
12. Send diskette (AMSS005.DAT) to Battalion Roll-up box.
13. Change battalion indicator back to NO.
14. Run End of Report Period process to advance the AMSS report date to the next month and to create rollover records on the Maintenance Request Register. Do not send the first diskette (AWAME130.DAT) to SAMS. Save it to reuse next month. Forward the second diskette (AWCAP131.DAT) to the office or individual responsible for equipment readiness input to the Unit Status report (DA Form 2715).



## COMPANY LEVEL AS BATTALION ROLL-UP

Follow steps 1–11 listed in the Company procedures above.

12. Make sure battalion indicator is set to YES and battalion UIC is listed as reporting UIC.
13. Receive From Lower process to read diskettes from **Other** companies.
14. Run any AMSS reports as required.
15. Back up database.
16. Run End of Report Period process. Send the first diskette (AWAME130.DAT) to SAMS. Forward the second diskette (AWCAP131.DAT) to the office or individual responsible for equipment readiness input to the Unit Status Report (DA Form 2715).
17. Change battalion indicator back to NO.
18. Run End of Report Period process to advance the AMSS report date to the next month and to create rollover records on the Maintenance Request Register. Do not send these two diskettes to SAMS. Save them to reuse next month.

## BATTALION/BRIGADE STAND ALONE BOX

1. Make sure battalion indicator is set to YES and battalion UIC is listed as reporting UIC.
2. Receive From Lower process to read diskettes from all companies.
3. Run any AMSS reports as required by command.
4. Back up database.
5. The battalion box **must** run End of Report Period process. Send the first diskette (AWAME130.DAT) to SAMS.
6. Change battalion indicator back to NO.
7. Run End of Report Period process to advance the AMSS report date to the next month and to reset the information in the AWCXM005 (Asset Control and Report File). Do not send these two diskettes to SAMS. Save them to reuse next month.

YOU MIGHT SAY YOU'RE A HIT WITH AMSS!



MY DATA TRANSMITTING PROBLEMS ARE SOLVED.



PS END

## Call for ULLS Help



If you have questions about your unit level logistics system (ULLS), help is just a phone call away.

First, call your local computer support or logistics assistance representatives. If you still need help with a special problem, call the ULLS Customer Assistance Office, Ft Lee, VA. Their numbers are (804) 734-1051 or DSN 687-1051.

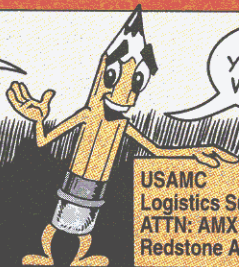
# MIC Phone Changes



THE PHONE NUMBERS FOR THE LOGISTICS SUPPORT ACTIVITY'S MAJOR ITEM CENTER PRODUCTS HAVE CHANGED. NOW WHEN YOU NEED INFORMATION, CALL...

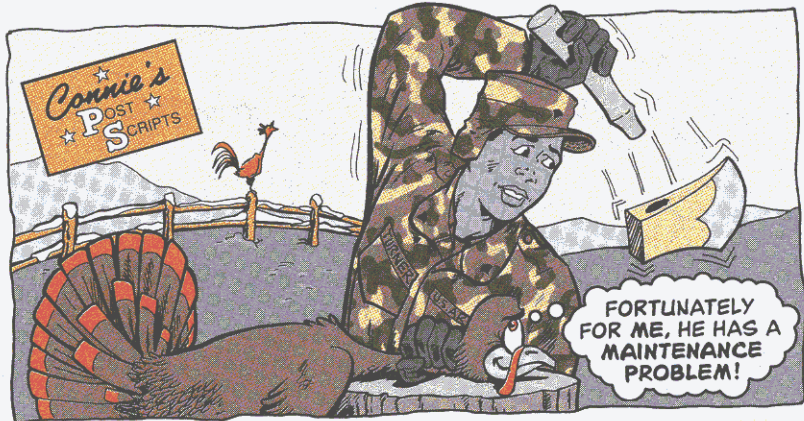
Product	DSN 645-
Army Central Service Point	6864/6863/6861
DA Master Project Codes; Installation Activity Codes	6852
Routing Identifier Codes	6726
Asset Force Information (formerly CICF)	6860/6859
Logistics Army Authorization Document System (formerly I25)	6888/6726/6906
Requisition Validation; Major Item Requisition Validation	6896
Equipment Release Priority System; General Ledger	6896
Total Army Equipment Distribution Program	6717/6719/6577
Army War Reserves	6718
Integrated Major Item System	6896
Distribution Execution System	8131
Continuing Balance System—Expanded	7197/7549
Standard Property Book System—Redesign	7554
National Guard	7547
Reconciliation/Compatibility	6177
Unique Item Tracking	7218/7754/7555/8358
End Item Code	6888

THE COMMERCIAL AREA CODE AND PREFIX FOR ALL EXTENSIONS ARE (205) 955-.



OR YOU CAN WRITE...

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



### Natick Hotline

Got a problem or question about Army food, clothing, equipment, shelters or airdrop systems? Do you have an idea on how to improve them? Then call the Soldier Systems Command-Natick Hotline at (508) 233-5341 or DSN 256-5341. The Hotline folks answer your call from 7am to 4:30pm ET. After hours, you'll get a recording. Be ready to give your name, rank, address, phone number, the name and NSN of the item, and your problem, question or suggestion. Natick promises to get back to you within 48 hours.

### FMTV Headlight

NSN 6240-00-752-2424 gets the 12-volt headlight for the FMTV trucks. The NSN shown as Item 12 in Fig 57 of TM 9-2320-365-24P and -366-24P is wrong.

### 2½-Ton Steering Kit

Want easier steering for your 2-ton trucks? Get your direct support shop to add a steering assist kit, NSN 2530-01-388-4240. It'll cost your unit about \$1,000.

### HEMTT Pliers

NSN 5120-00-223-7398 gets the 10-in slip-joint pliers shown as Item 38 on Page B-17 of TM 9-2320-279-10-1. The NSN shown in the TM gets the wrong pliers.

### CUCV Mirror Fix

The CUCV windshield's rearview mirror can fall off the windshield from heat, cold and vibration. Stick it back on with some tough adhesive. NSN 8040-00-221-3813 gets a 1.75-oz tube and NSN 8040-00-634-7121 gets a 1-qt can.

### HMMWV Brush Guard Kit

Protect your HMMWV's fiberglass front end with the brush guard kit, NSN 2590-01-328-2904, in Fig 353 of TM 9-2320-280-20P. Figure 353 also lists the often-lost quick release pin, NSN 5315-01-249-0555.

### M1022 Dolly Set Hose

Get the two 26½-in hydraulic hoses missing from the M1022's TM with NSN 4720-01-365-2545. Make a note until TM 9-2330-379-14&P is changed.

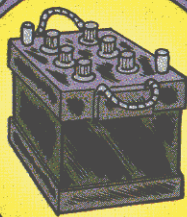
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**Would You Stake Your Life *right now* on the Condition of Your Equipment?**

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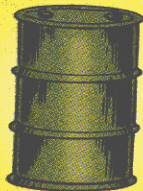
# IN COLD WEATHER IT'S THE



**BATTERIES**



**ANTIFREEZE**



**OIL  
(WINTER WEIGHT)**



**RUH  
RUH  
RUH**



## IS YOUR EQUIPMENT PROTECTED?