

Issue 541

PS

December
1997

TB 43-PS-541

THE PREVENTIVE MAINTENANCE MONTHLY

LOOK IN
THE ANNUAL
INDEX UNDER TENT
MAINTENANCE.

DINING
FACILITY

Approved for
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Annual Index
... See Page 27

"Ownership"

Some people drive the heck out of a rental car. Their philosophy is, I don't own it, so why should I take care of it?

Some soldiers treat military equipment the same way. Their philosophy is that it belongs to Uncle Sam and he has deep pockets. No reason in the world I should treat it right, they think.

Maintenance? Forget it!

Correct operating procedure? Blow that off.

Run it hard and stick it in the barn. No skin off my nose if it dies an early death.

OK. But what if the guy who had that equipment before you had the same philosophy? And the guy before him?

Those were the guys who spilled the soup, but you may be the guy they spilled it on.

Could be that when you need to move, shoot and communicate the most, your equipment won't respond because the guy before you treated it like a rental car.

Break the chain! Treat your equipment like your life depended on it. Operate it correctly. Maintain it like you would that new car in your driveway. Think ownership, not rental.





THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-541, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user.

ISSUE 541 DECEMBER 1997



WHEELED VEHICLES

2

HMMWV Starting Procedure	2-3
HMMWV Cargo Cover Bows	3
HMMWV Steering Linkage	4-5
M939 Truck Safety Precautions	6
M1070 HET Airline Check	7
M1000 HET Trailer Bows	8
FMTV Transmission Oil Check	9
M989A1 HEMAT Parking	9
Lead-Acid Battery Terminal Connectors	10
PTO-Driven Winches	11



SMALL ARMS

35

Machine Gun Spare Barrels	35
Small Arms Cleaning	36
M242 Bolt and Track Assemblies	37
M4 Carbine Rack	37
M4 Carbine Inspection	38-39



AVIATION

40

AH-64A, OH-58D Sway Braces	40
AH-64 Helifire Jamming Info	41
Helifire Missile PM	42-44
UH-60A Seat Check	44



COMBAT ENGINEERING

12

M1A1/M1A2 Sponson Access Cover	12-13
M1 Mine Blade Pins	13
MLRS Shock Absorber	13
M2/M3 Bradley Fuel Filter/Separator	14
M2/M3 Bradley Safety Latch	15
M2A2/M3A2 Bradley Drain Plug	15
M981 FISTV Voltage Regulator	16-17
M113A3 FOV Alternator	17
M113 A3 FOV Generator	18
M113 FOV Track Bushing Wear	19
M1019A4/A5 SP Howitzer Hydraulics	20
M119A1 Towed Howitzer Hand Brakes	21



COMMUNICATION

45

AN/GRA-39 Radio Battery Box	45
SINCGARS Cable Hookups	46-47
Generator Nut and Bolt Check	48-49



NBC

50

M17 Decor Burner Starting	50-51
---------------------------	-------



SOLDIER SUPPORT

52

M1941 Space Heater Cautions	52-54
Cold Weather Clothing Protection	55
Electrical Connector Tool Kits	56-59



LOGISTICS MANAGEMENT

60

Equipment Warranties	60
----------------------	----

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:

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Just a Little Reminder on Starting

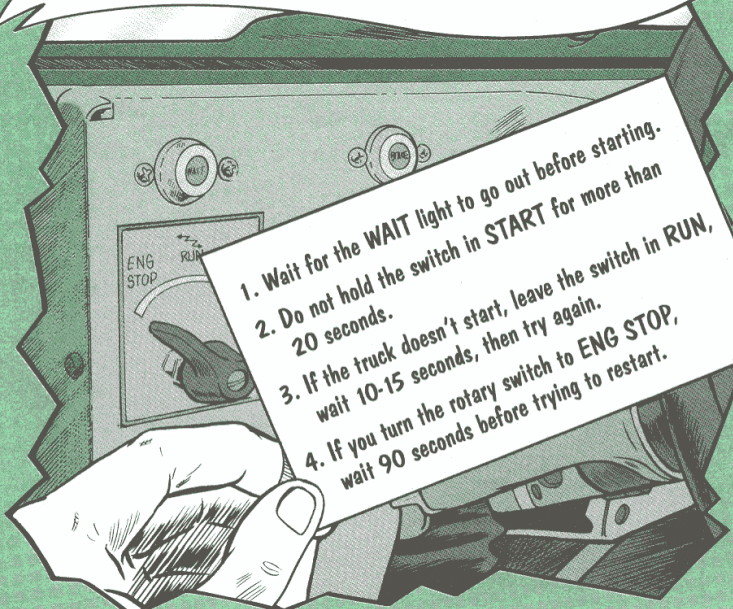
Dear Editor,

To keep the right starting procedures in front of our HMMWV drivers, we've laminated 3x5 cards with the info and taped one near the start switch in each HMMWV.

This serves as a reminder for our trained primary drivers, and as a quick primer for those who have to fill in for them.

We've replaced fewer glow plugs and controllers, and best of all, had fewer broken glow plugs removed from engines since we've been posting the cards.

1LT James R. Garrett
C Co, 1/35th Armor
APO AE

- 
1. Wait for the WAIT light to go out before starting.
 2. Do not hold the switch in START for more than 20 seconds.
 3. If the truck doesn't start, leave the switch in RUN, wait 10-15 seconds, then try again.
 4. If you turn the rotary switch to ENG STOP, wait 90 seconds before trying to restart.

FROM THE DESK OF THE Editor 

Whatever works, Sir, whatever works. For those of you who need it, here is the right starting procedure:

1. Wait for the WAIT light to go out before starting.
2. Do not hold the switch in START for more than 20 seconds.
3. If the truck doesn't start, leave the switch in RUN, wait 10-15 seconds, then try again.
4. If you turn the rotary switch to ENG STOP, wait 90 seconds before trying to restart.

If you don't wait, the glow plug controller thinks it's a new start and gives the plugs a new pre-glow cycle. Since the plugs are already hot, they'll get even hotter, which burns them out.

If your truck won't start after three tries, you've got other problems, so call in your mechanic.

No Drooping Necessary

You can do something about the droop between bows on the cargo cover of soft-top HMMWVs.

That droop holds water, which causes leaks and other damage.

To keep water from puddling, add a third bow as a brace between the other two to hold the cover up enough so the water will run off.

All the info on how to use the set-up is available in the Jan 96 versions of TM 9-2320-280-10 (Page 2-179) and TM 9-2320-280-24P-1 (Fig 288). The bow is NSN 2540-01-337-0242. It's held in place with two screws, NSN 5305-01-109-0587.



Steering Linkage PM

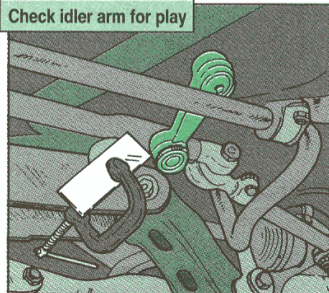


Here's what you operators and mechanics need to do to keep the wheels turning safely:

Mechanics Inspect

Idler arm—check out Pages 8-56 and 8-57 of TM 9-2320-280-20-2 (or

Check idler arm for play



A couple of inspections and a liberal lubing every six months or 3,000 miles (whichever comes first) under normal conditions keeps a HMMWV's steering linkage in great shape.

Course, you'll need to make those inspections and lubings more often when operating in mud, snow or desert conditions.

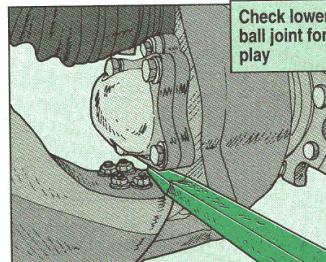
If you think you can let the steering linkage go without the inspections and lube, however, just wait 'til a linkage part fails and somebody gets injured or killed!

THE DRIVER MUMBLED SOMETHING ABOUT THE STEERING FAILING.

Pages 8-48 and 8-49 of TM 9-2320-387-24-1 for the XM1114 model) for the procedures to measure the play in the idler arm. No more than 1/4-in play is allowed.

Lower ball joint—check out Page 6-60 of the -20-2 (or Page 6-56 of the

Check lower ball joint for play



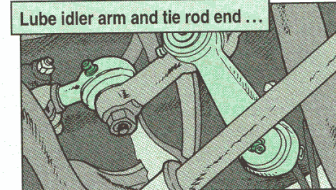
-24-1 for the XM1114) for the procedures to measure the play in the lower ball joint. No more than 1/8-in play is allowed.

Operators Lubricate

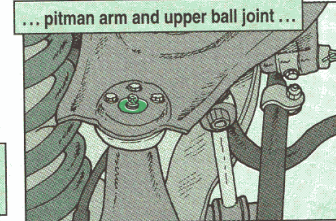
Use GAA on the idler arm, tie rod ends, pitman arm, radius rod and upper ball joint, as spelled out by the LO on Pages G-3 through G-14 of TM 9-2320-280-10 and TM 9-2320-387-10.

The lower ball joint doesn't need lube.

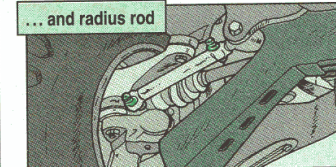
Lube idler arm and tie rod end ...



... pitman arm and upper ball joint ...



... and radius rod



GO SLOW ON WET ROADS

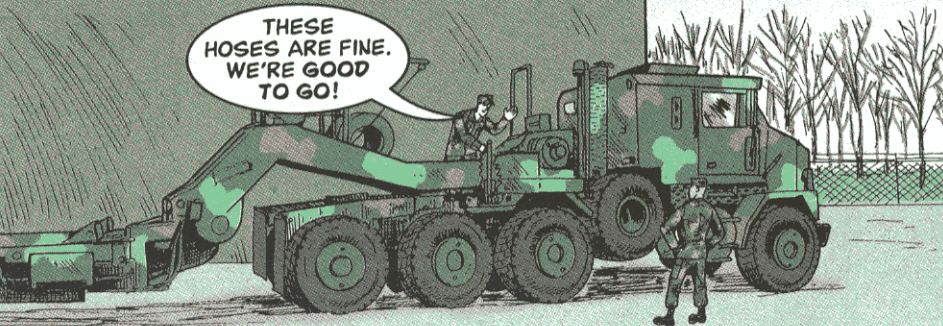
Driving on wet roads while carrying a light load can spell trouble for your M939/A1/A2-series truck. That combination has led to several accidents in Bosnia.

What's the solution? Just slow down and take TM 9-2320-272-10 to heart. Here are the rules of the road for safe driving on wet roads:

- Slow down to a maximum speed of 40 mph, per TACOM Ground Precautionary Message 96-04, (Dec 95).
- Use front-wheel drive.
- Drive in 1-4 range.
- Keep engine speed below 2,100 rpm when putting the truck in motion, per the CAUTION on Page 2-105.
- Remember to pump the brakes gradually when stopping. Sudden stops lock the wheels, stall the engine and cause the truck to lose power steering.



SERVICE & EMERGENCY AIR HOSE CHECK



Drivers, every part of your M1070 tractor's brake system must work right to ensure safe hauling of the M1-series tank.

That includes the gladhand hoses. Before every mission, check out both service and emergency air hoses to ensure that your rig's brakes work as designed.

Check Hoses

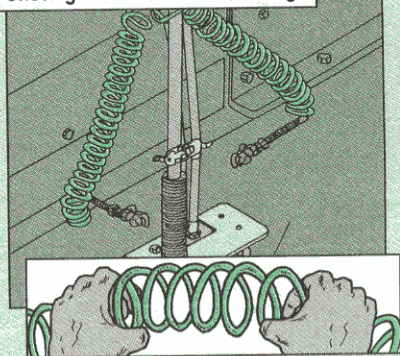
Check the gladhand hoses for cracks or deformities like so:

✔ Grasp one end of the coiled section of the hose in each hand (with four or five coils between the hands) and stretch the coiled section 15–18 inches. Repeat the process at the other end of the hose.

✔ Grasp an area in the center of the coiled section in each hand (with four or five coils between the hands) and stretch that coiled section 15–18 inches.

Repeat the entire process for the other hose.

Check gladhand hoses for damage



Report these Problems

Let your mechanic know if you hear a crackling sound when the hose is stretched, or you see cracks or breaks any time.

If you find any damage, do not drive your HET until both air hoses have been replaced.

To get replacement hoses, call Ron Papiernik at TACOM, DSN 786-8070, (810) 574-8070.

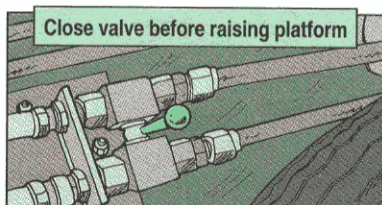
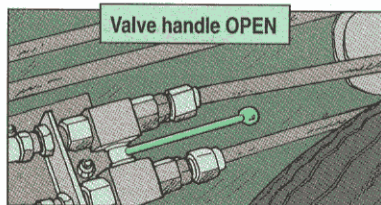
Isolate Bogie Before Limp-home

If you're trying to limp home with a damaged bogie on your M1000 HET semi-trailer, follow the instructions in Para 2-34 of TM 9-2330-381-14 **to the letter**.



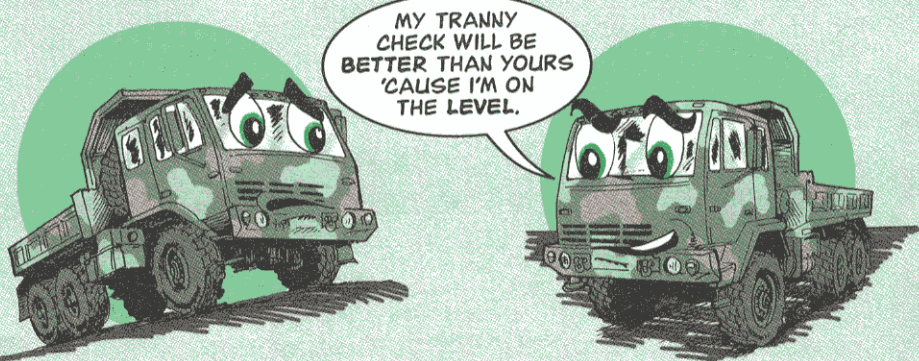
Pay special attention to the **WARNING** on Page 2-218 to close the suspension isolation valve for the damaged bogie before you adjust the platform height.

If the valve is open, and the axle isolation chain assembly is installed, raising the platform may break the assembly chains. That can damage equipment or injure anyone nearby.



Make sure the suspension isolation valve handle for the damaged bogie is pulled completely out to the **CLOSED** position before raising the platform.

Right Check, Right Oil



There's only one right way to make an accurate check of your FMTV's transmission oil level—and only one right oil to use.

The check must be made with:

- ✓ The transmission oil at operating temperature (160°F–230°F)
- ✓ The engine running
- ✓ The transmission in neutral
- ✓ The truck parked on a level surface.

The oil level should be between the HOT ADD and the HOT FULL lines. Add oil as necessary if the level is below HOT ADD. If it's above HOT FULL, call in your mechanic.

The only oil to use in an FMTV transmission is OE/HDO-15W40.

Nothing else works right, and anything else voids the warranty!

M989A1 HEMAT ...

Parked Means Stay Put

Never move the HEMAT trailer by hand when it is disconnected from its towing vehicle. One soldier was recently killed when he and his buddies tried and lost control.

True, the 11-ton trailer's brakes engage when it's disconnected from its tractor. Problem is, you can override the brake control valve. Get enough guys and you can even move the trailer.

Moving all that weight around by hand can cause an accident, especially on an uneven surface.

Connectors & Covers Are Different

WE KEEP THE GREASE IN AND THE CORROSION OUT...

...OF BATTERY TERMINALS.

If you have vehicles that have battery terminal “covers” and connectors that don’t look normal, you’d best treat them differently than normal, too.

These covers and connectors exist for one big reason: To keep terminals coated in grease so corrosion won’t form.

One design is a metal cap with a grease fitting, a cable connector and two knurled knobs to hold the assembly on the battery post.

The problem with this connector is that some mechanics gouge the post to hold it in place. Enough gouging and the battery cannot be turned in when it’s dead **without a statement of damages**.

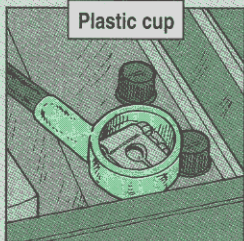
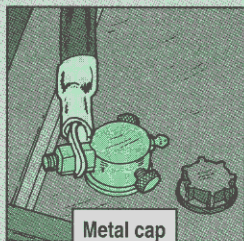
Snug those knobs just enough to hold the connector in place—and no more. Don’t get rough with the grease gun, either.

Another unusual terminal cover is a plastic “cup” that fits over each cable and under the terminal connectors.

It doesn’t need to be filled with grease to do the job. Just grease the connector and the post. The cup keeps the grease in place so it doesn’t get smeared all over or melt away in the heat.

If you fill the cup with grease, you’ll have a messy time tightening the nuts. And, there’s not much room in the cup to begin with.

If your vehicle has the “normal” connectors, just do the regular PM for them. See your TM.



A LESSON FROM THE REAL WORLD



Most times the “real world” is the best learning resource for preventive maintenance. Here’s a good lesson for those of you who have vehicles with PTO-driven winches:

Suppose you engage the PTO drive to use the front winch, but forget that the cable and hook are still wrapped around the front bumper.

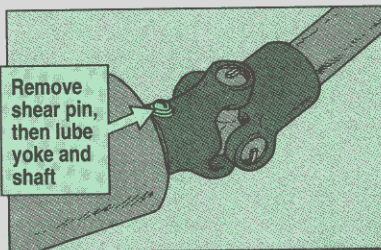
Normally, the overload created by this mistake will break the shear pin, which lets the shaft yoke rotate harmlessly on the gearbox shaft.

But, if you’ve never applied lube to the yoke and shaft during service, the yoke will rotate about a quarter turn before it freezes and rips the shaft out of the gearbox (or, worse yet, it tears a chunk out of the transmission case).

You can prevent this damage by remembering to clear the cable and hook from the bumper before engaging the PTO, and by doing just a little PM.

Lube the outside of the winch shaft and the inside of the yoke coupling during PMCS.

Pull the shear pin, slide the yoke back and coat the surfaces with GAA.



WHOOOPS!
I FORGOT TO
UNHOOK FROM
THE BUMPER.

OUCH!
THAT’S NOT
ALL YOU FORGOT!
SOME LUBE WOULD
HAVE KEPT MY
SHAFT YOKE
INTACT!

KRAKIN

YANK

A Place for Everything...

Mechanics, removing the NBC sponson access covers on the M1A1 and M1A2 tank is simple. Putting 'em back on is another matter.

The bolts that hold the access covers in place come in three different sizes: 1 1/8 inches, NSN 5305-00-432-3755; 1 1/4 inches, NSN 5305-00-724-7219; and 2 inches, NSN 5305-00-071-2071.

Put the right bolt in the right hole and you've got no problems. Mix up the 1 1/4-in bolts with the 1 1/8-in bolts, though, and you could end up with a hole punched in the NBC condenser.

The 2-in bolts aren't a problem because they measure 1/2 inch in diameter and won't fit in the 5/8-in holes.

Here's the right way to go:

 The 1 1/8-in bolts go in the four inboard holes on the two smaller plates. Make sure you include a flat washer, NSN 5310-01-379-9615, and torque the bolt to 100-105 lb-ft.

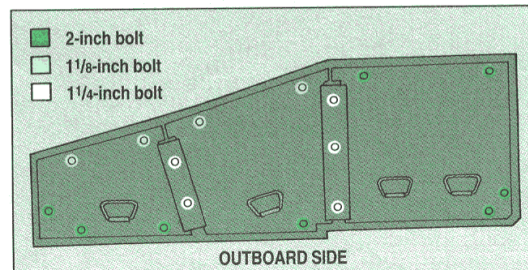
 The 1 1/4-in bolts go in the retaining plates that join each of the covers together. **Do not** add a washer to these bolts. Torque 'em to 100-105 lb-ft.

 All of the outboard holes and the two inboard holes on the large plate take 2-in bolts, NSN 5305-00-071-2071, with washer, NSN 5310-01-379-9615. Torque these bolts to 75-80 lb-ft.

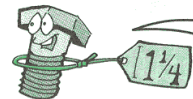
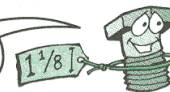
When removing the access covers, save yourself a big headache by tagging the hardware as you take it off.

Extra Note

When lifting the access covers, go easy. Forcing the covers will break the locator clamp screws. Then, the entire turret has to be removed in order to replace the screws.



THESE TAGS WILL KEEP US IN OUR PLACE.



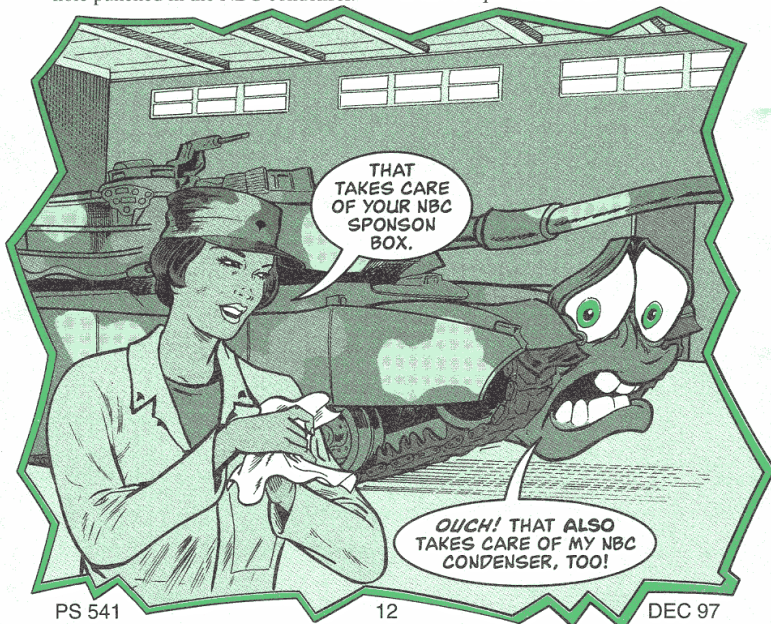
THAT'S WHAT I HEAR.

M1 Mine Blade Pins

New mounting pins for the M1-series tank's mine clearing blade (MCB) are now available with NSN 5315-01-437-9868. The new pins are safely installed from the side of the MCB. That means no more crawling under the MCB frame—a real safety hazard should the MCB slip off its jacks. Change 1 to TM 9-2590-509-23&P will add the new pins.

MLRS Shock Absorber Washer

NSN 5310-01-413-1037 gets the flat washer for MLRS shock absorbers. The NSN shown as Item 15 in Fig 9 of TM 9-1450-646-24P gets the wrong washer.



Stop Fuel Filter Glop



Drivers, it takes daily attention to keep those nasty glops out of your Bradley's fuel filter separators.

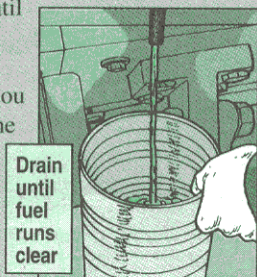
The -10-1 TMs say to drain water **AFTER** every operation. If you forget, the separator starts to rust. The rust and water mix with contaminants in the fuel to create a gloppy buildup that can plug the bottom of the separator.

As fuel flow lessens, the Bradley's engine begins to sputter and jerk. On comes the **FUEL FILTER CLOGGED** light.

Things can get even worse in the winter. Water buildup freezes into a solid plug that stops fuel flow completely. It can also crack the separator as the ice expands and contracts.

Changing the filter won't fix the problem, either. Once the damage is done, the only fix is to have your mechanic remove and clean the separator with a mixture of water and liquid detergent, NSN 7390-00-990-7391.

So, drain the filters after each operation. Continue draining into a container until clean fuel comes out. Make sure you dispose of the fuel in an approved hazardous waste container.



Give Strap the Boot

A lot of Bradley drivers use a strap to tie open the safety latch on the driver's hatch handle so that both hands are left free to open and close the hatch.

Unfortunately, with the safety latch disengaged, there's nothing to keep the open hatch from falling on the driver's head if it gets jarred.



Protect yourself by opening and closing the hatch the right way. Here's how:

1. Unlock and remove the padlock from the lock lever.
2. While holding down the driver's hatch with one foot, open the lock lever.
3. Hold the periscope guard with both hands and raise the driver's hatch to the full-open position.
4. Eyeball the safety latch to make sure it's locked.

Bradley Drain Plug

Use NSN 4730-00-640-0279 to get a new final drive drain plug for your M2A2/M3A2 Bradley. The drain plug listed for Item 2 of Fig 13 in TM 9-2350-284-24P-1 is too small.

TWO MUST ADJUST REGULATOR

Adjusting the voltage regulator on your M981 FISTV is a two-person job, mechanics. If you try to go it alone and get it wrong, you'll burn up the regulator—maybe even the vehicle's entire charging system.

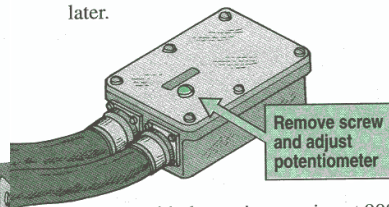
Before you get started, make sure the batteries are fully charged. TM 9-6140-200-14, Maintenance Manual for Lead-Acid Storage Batteries, tells you how to test them. Adjusting the regulator before the batteries are fully charged will damage the regulator.

Then follow these steps:

1. The first mechanic determines the current voltage of the batteries. Connect the red (+) lead of a multimeter to the positive post of the vehicle's battery and the black (-) lead to the ground of the other battery.

It's a good idea to check the voltage on the multimeter's batteries first. That'll ensure a good reading.

2. The second mechanic adjusts the regulator. Remove the screw on top of the regulator. Hang on to the preformed packing. You'll need to put it back in later.



Then, with the engine running at 900 to 1,100 rpm and all external loads

off, insert the screwdriver in the potentiometer slot and turn it counter-clockwise to increase voltage, or clockwise to decrease the voltage. The first mechanic will guide you to the proper setting.

3. Set the voltage seasonally, according to temperature:

Temp	Voltage
90°F and above	27
50°F–89°F	28
49°F and below	29



M113A3 FOV ...

Drain Away Alternator Problem

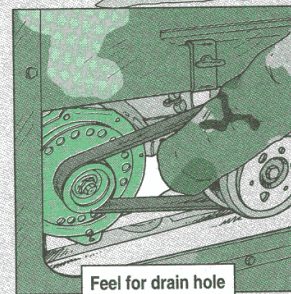
If your M113A3 has a Neihoff 200-amp alternator mounted on the lower left side of the engine, you could have a problem.

Seems that some of these alternators were manufactured without drain holes in the right location. Trapped water makes the alternator seize up. That burns the drive belts.

Take the time right now to check the bottom of the alternator for a drain hole.

No drain hole? Your vehicle is FMC, but you still need to get it fixed. Your TACOM LAR has specific instructions on where and how to drill the drain hole. If you don't have the right equipment, your support folks can drill the hole for you.

**UH-OH!
THERE GOES MY
ALTERNATOR!**

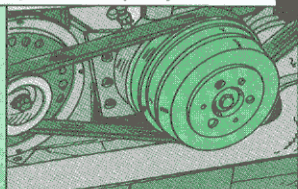


Now It's Up to You

Mechanics, the SMR code for the generator drive pulley, NSN 3020-01-249-0154, on the M113A3 FOV is changing from PAHZZ to PAOZZ.

That means **you** now remove and replace the pulley, not GS. So, make a

Eyeball drive pulley for cracks



note
until
Fig
52
of

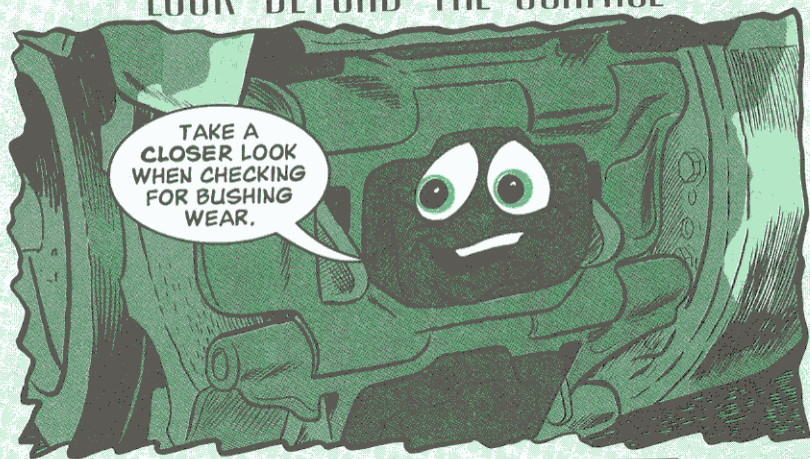
TM 9-2350-277-24P is updated.

Eyeball the pulley for cracks, particularly in its front center area. If you see any, replace the pulley like this:

1. Remove the screw, washer and preformed packing from the pulley.
2. Use 1/4-in bolts as jack bolts to separate the pulley from the assembly.
3. Install the new pulley. The screw and washer can be reused, but you have to replace the preformed packing, NSN 5330-00-542-1329.

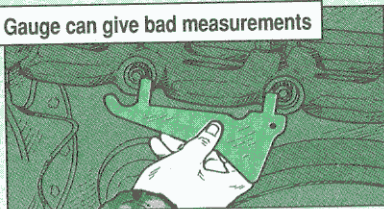


LOOK BEYOND THE SURFACE



The results you get when measuring bushing wear with your M113 carrier's track and sprocket gauge can be misleading. You need to look closer.

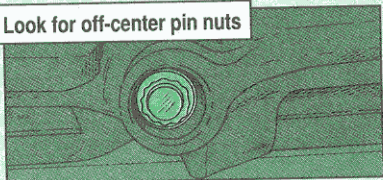
Gauge can give bad measurements



Sometimes the gauge, NSN 5220-01-041-9920, indicates the bushing wear is OK, even though the pin nuts are rubbing against the bushing bores. This is because one pin bushing in one shoe may wear more than the pin bushing in the other shoe.

So always—every time—after you've used the track and sprocket gauge, look to make sure the pin nuts are centered in the bushing bore.

Look for off-center pin nuts



If the pin nut is touching the inside surface of the bushing bore, the shoe's no good. Replace it.

Replace shoe if pin nut touches bore



The track and sprocket gauge is still a quick way for measuring sprocket wear and track tension. But it's just a guide—like it says in your -10 TM. Always let your eyes and common sense be the final judge when it comes to bushing wear.

Dry Up Water Problems

Mechanics, if an M109A4/A5 howitzer has water in its hydraulics, the AOAP sample will show it. That means you have to replace the hydraulic fluid and filters like the AOAP report says. Problem solved, right?

Well, not completely.

The hydraulic filters only remove solid particles, not water. The hygroscopic breather assembly handles that responsibility. So changing the fluid and filters may fix the problem, but not the source of the problem.

Remember, whenever you replace the hydraulic fluid and filters for water contamination, take a look at the breather assembly, too. If the desiccant has turned pink, yellow or white, replace the assembly. Or, if you've got the clear, plastic assembly, wipe out the bowl and replace the desiccant with NSN 6850-00-680-2233.

Operators, you can do your part by making sure you drain all water from the air line filter after every operation.



Prevent Hand Brake Lockup

After a few trips to the field with your M119A1 towed howitzer, dirt and sand accumulate in the wrong places.

One of those wrong places is the howitzer's hand brakes. Enough dirt and sand can freeze the locking hook in place.

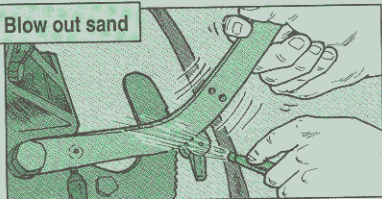
Dirt and sand jam locking hook here:



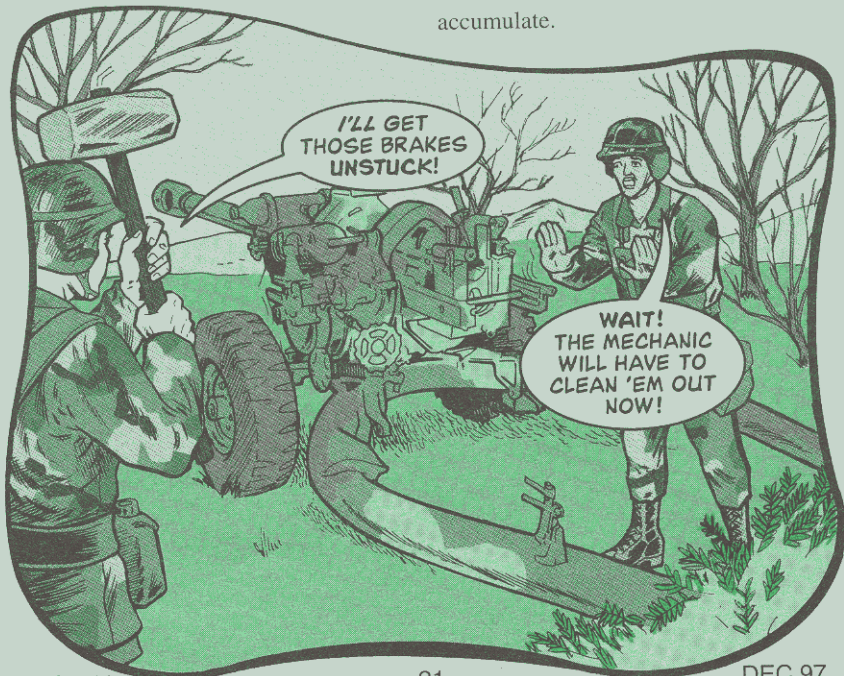
Try as you might, those brakes won't come loose. They're stuck that way until your mechanic can clean 'em out.

You can prevent that problem by exercising the brakes while blowing

Blow out sand



them out with 30 psi compressed air after every mission. That gets the dirt and sand out before too much can accumulate.

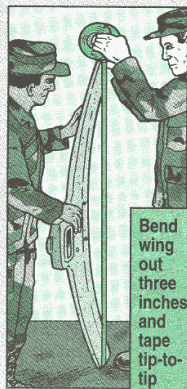


Keeping Your

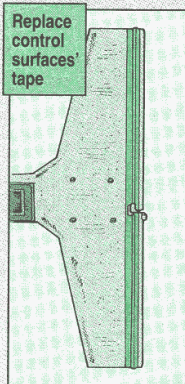
The radio-controlled miniature aerial target (RCMAT) won't make it through many flights without your help.

Wing

Flexing during turns and high winds cracks the wing assembly. To reinforce the wing, stand it on one end and bend it out three inches. Run a strip of 3-in wide tape, NSN 7510-00-890-9874, from one tip to the other on the underside of the wing.



The tape should be slightly longer than the normal wingspan so that it overlaps each wingtip when you let the wing flex back into shape. Run your hand along the tape to make sure all of it is sticking to the wing. Another wing-saver is to remove the duct tape that came on the RCMAT's wing and tail control surfaces. Replace it on the top and bottom of the wing and tail with the 3-in



RCMAT Flying

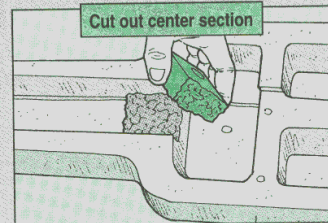
wide tape. Trim the tape away from the notch in the center of the wing.

Fuselage

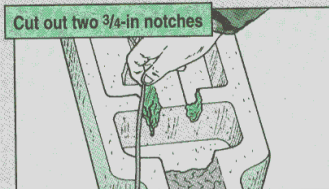
To strengthen the fuselage, add two wood stiffeners along its length. (Poplar or ash sticks work best. You can get them at most hobby shops.)

Here's how:

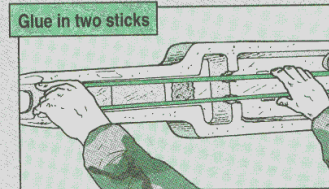
1. Remove the wing assembly.
2. Use a knife to cut out the center section in the nose to a depth of 1 1/2 inches.



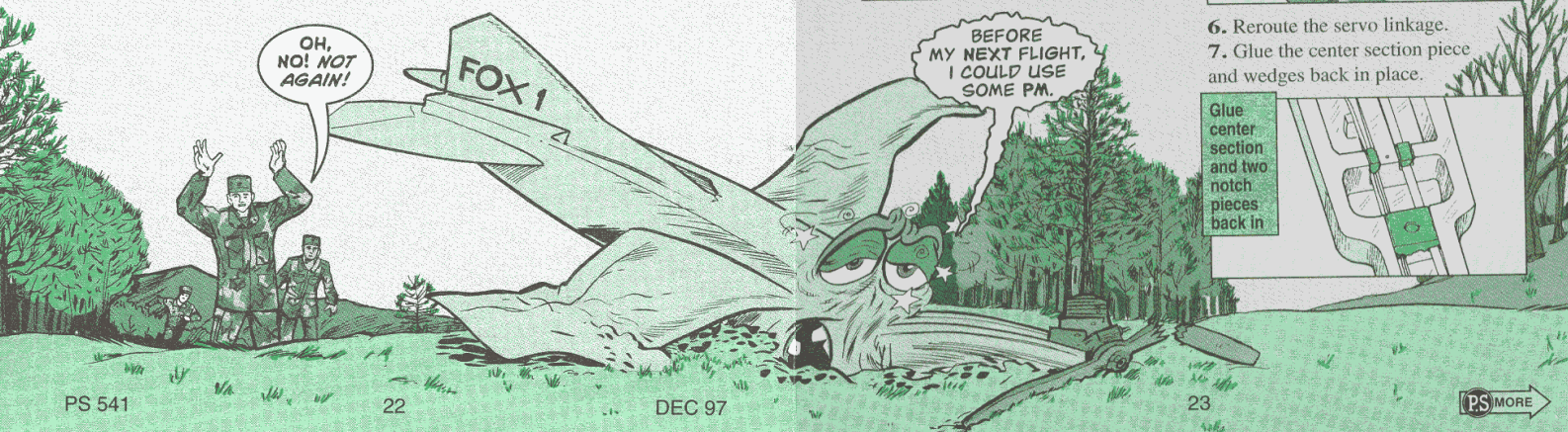
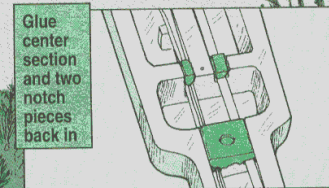
3. Cut two 3/4-in wide notches in the next section behind the nose like so:



4. Gently pull out the servo linkage.
5. Install two 3/8 x 1/2-in sticks cut to 4 1/2 inches. Glue them in place. Epoxy glue works best.

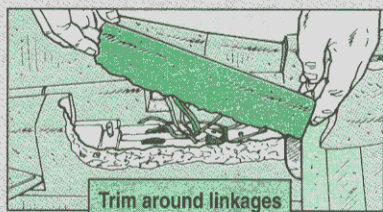


6. Reroute the servo linkage.
7. Glue the center section piece and wedges back in place.



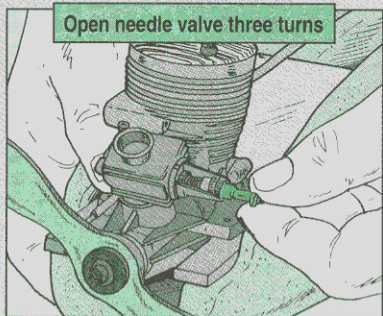
Control Linkages

The styrofoam covering the control linkages makes them difficult to adjust. So trim the styrofoam down to the level of the linkages.



Engine Prep

The engine will last longer and run smoother if you break it in slowly. Secure the engine to a test stand or something similar. Open the needle valve

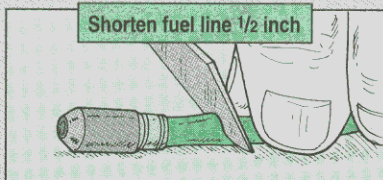


three turns and start the engine. Run two tanks of fuel through the engine.

On the third tank, turn up the valve every two minutes until you reach peak rpm. Then turn the valve back two notches and run the engine until it's out of fuel. The engine's broken in.

Shorten Clunk

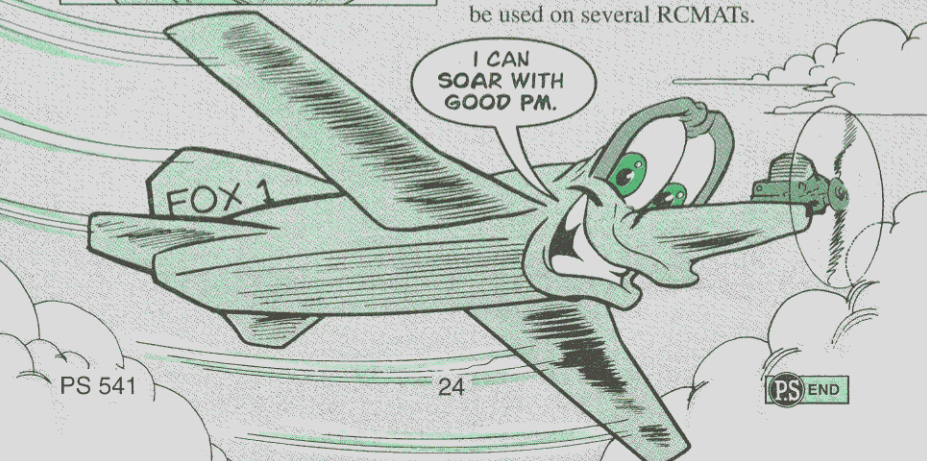
If the clunk (the piece at the end of the fuel line) touches the back of the fuel tank, the engine will cut out during flight. Cut out that problem by screwing out the clunk and trimming



off 1/2 inch of fuel line. Reinstall the clunk. It should move freely in the tank.

Safer Starting

Starting the engine will be safer and easier with a 2 1/2-in spinner for the propeller. There are no spinners in the supply system, but hobby shops sell them for around \$2. One spinner can be used on several RCMATs.



MLRS...

Battery PM Needs Battery Tools

DON'T LET
THE WRONG TOOL
CHEW UP YOUR POSTS
AND CLAMPS.

Dear Editor,

The tool kit for MLRS repairmen does not contain any tools for working on launcher batteries. Repairmen use what they have—standard pliers and wrenches—and the clamps and posts are chewed up by these tools. That's when MLRSs start having electrical fault problems and batteries don't last long.

We've found that spending a few dollars for battery tools saves batteries and troubleshooting. Our truck motor pool had extra battery service kits, NSN 6140-01-192-9404. The kits have every tool you need for batteries, but cost over \$40.

A cheaper alternative is to order:

Battery terminal pliers,
NSN 5120-00-943-9929,
(spreads terminals
for installation)

Battery terminal puller,
NSN 5120-00-944-4268

Battery brush, NSN 5120-00-926-5175

1/2-in combination
wrench, NSN 5120-00-
228-9506 (removes
and installs terminals)

These four tools cost less than \$18. Order enough for every MLRS repairman.

SPC David Ferrell
703d MSB
Ft Stewart, GA

FROM THE DESK OF THE Editor

These tools are being added to the tool kit. You can order them now if you don't want to wait.

An Illuminating Idea

Dear Editor,

The turret light in the Avenger gets broken because its electrical cable is only soldered to the light assembly.

Replacing the light—you have to order the whole assembly—costs more than \$500.

The light can usually be fixed simply by soldering the light and cable contacts together. If that doesn't work, use a flashlight as your turret light. A flashlight works just as well and doesn't cost \$500. Store the flashlight behind the seat.



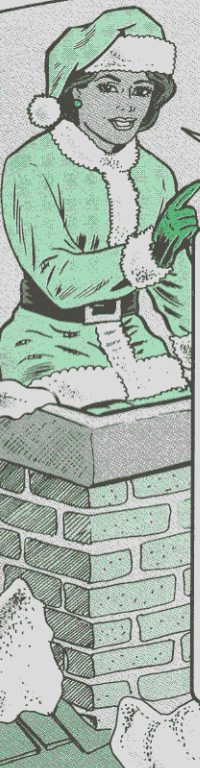
Solder contacts here

SFC V.L. Shephard
703d MSB
Ft Stewart, GA



Readers Quiz

HERE ARE SOME KEY
QUESTIONS ABOUT EQUIPMENT
FEATURED IN THIS ISSUE OF
PS. SEE IF YOU KNOW
THE ANSWERS.



WHEELED VEHICLES—How do you check the service and emergency brake air lines on an M1070 HETS tractor? (Page 7)

COMBAT VEHICLES—Why should you never tie open the safety latch on the Bradley's driver's hatch? (Page 15)

MISSILES—What tools in the MLRS tool kit are best for servicing the batteries? (Page 25)

SMALL ARMS—Can the M12 rifle rack store the M4 carbine? (Page 37)

COMMO—What part of the AN/GRA-39 radio set control group's battery box is often neglected during preventive maintenance? (Page 45)

NBC—What is the best remedy for burner starting problems on the M17 decon? (Pages 50–51)

SOLDIER SUPPORT—What's the best way to head off flooding problems with the M1941 space heater? (Pages 52–54)

LOGISTICS MANAGEMENT—Name three ways you can find out if your equipment is under warranty. (Page 60)

Don't Spare the Spare

If you spare the spare barrel for the M2, M60, M240, and M249 machine guns during firing, the barrel being fired gets VERY hot. And then the following can happen:

- A cookoff
- A warped barrel
- A worn-out bolt and barrel
- Ruined headspacing and the machine gun can explode during firing

Sparing the spare puts you and your machine gun in danger. That's why you must:

- Take the spare barrel to the range.
- Keep track of rounds fired and rate of fire.
- Change the barrel when you reach the rounds limit.

For the M60 and M240, change the barrel every 10 minutes during sustained fire (100 rounds per minute) and every two minutes for rapid fire (200 rounds per minute).

For the M249, during both sustained fire (50 rounds per minute) and rapid fire (100 rounds per minute), change the barrel every 200 rounds.

For the M2, change the barrel at the end of every firing session or if the barrel is damaged, regardless of rate of fire.

If it's a hot, sunny day, change the barrel more often on all the machine guns.



Clean by the Book

Dear Half-Mast,

The cleaning tanks in our motor pools and arms rooms were recently replaced with chemical-free tanks that recycle the fluid. Are these OK for cleaning rifles and machine guns?

MAJ T.D.

Dear Major T.D.,

No, Sir, they're not OK. Chemical-free cleaning tanks use water-based solutions for cleaning. That stuff causes corrosion in weapons. Instead of using the tanks, clean with CLP and the other materials spelled out in the -10 and -20 TMs for each weapon.

Half-Mast

Once Is Enough...Honest



If someone in authority tells you a rifle, machine gun, or pistol must be cleaned three times before it's really clean, he's misfiring.

Once is enough...if you do it right the first time. Right means doing it by the weapon's -10 TM.

All operator TMs for small arms say to clean weapons after so many rounds or after so much time. If you clean and lube like the TM says, the weapon is clean enough for firing, for storage, and **for inspection**.

If the weapon is going to the arms room for storage, it doesn't need cleaning again for 90 days, unless it shows signs of corrosion.

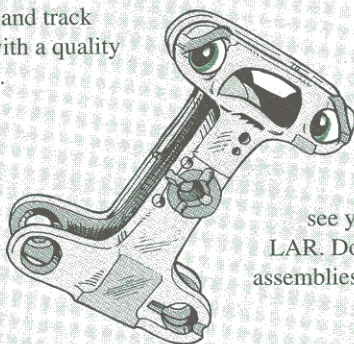
Save the white glove test for barracks inspections. Any weapon that has been properly cleaned and lubed will have a film of CLP. So spots on a white glove mean a weapon has been cleaned correctly. A spotless glove means problems.

Track Bad M242 Tracks

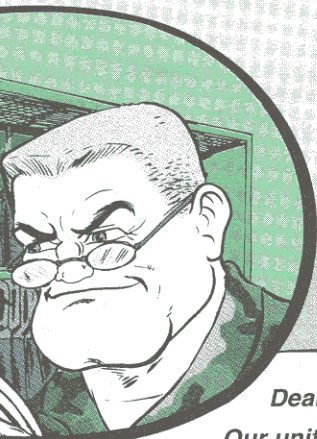
Bad bolt and track assemblies for the M242 automatic gun are showing up in the field. The assemblies, NSN 1005-01-088-4385 and P/N 12524390, weren't made according to specs. They won't fit on the M242.

Armorsers, check your bolt and track assemblies. Make sure the safety pawl actuator, idler sprocket shaft, and clevis assembly fit in the bolt-and-track holes.

If you spot any bad bolt and track assemblies, turn them in with a quality deficiency report (SF 368).



Any questions—
see your local ACALA
LAR. Do not modify these
assemblies to make them fit.



M4 Carbine ...

Adapt M12 Rack for M4

Dear Half-Mast,

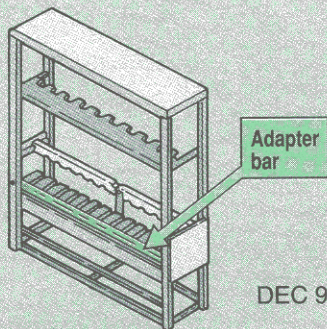
*Our unit is getting M4 carbines and we need to find
how to make adapter bars for our M12 racks. Without the bar,
you can't lock M4s in the rack. Where do we look?*

SGT M.B.

Dear Sergeant M.B.,

*Look no further than the M16A2
rifle's TM 9-1005-319-23&P.
Instructions for making the bars begin
on Page 2-70 in Change 4. You'll have
to get your support to make the bar
because you don't have the necessary
tools.*

Half-Mast



Be Your Own Inspector



WHEN YOU CLEAN AND MAINTAIN YOUR M4 CARBINE, HERE'RE A FEW THINGS TO LOOK FOR. PROBLEMS? TELL YOUR ARMORER.

Sights—Damaged, missing or stuck?

Charging handle—Won't lock in forward position?

Forward assist—No spring tension, won't move easily?

Upper receiver—Barrel loose? (Use hand pressure only to check.) Carrying handle loose? Damaged? Round nuts missing? Chamber pitted?

Handguards—Cracks on retaining flange? Heatshields rattle? Front tabs missing?

Flash suppressor—Loose, busted?

Sights—Bent or stuck?

Bore—Dirty? Obstructed?

Bayonet stud—Broken?

Ejection port cover—Loose, missing, won't close?

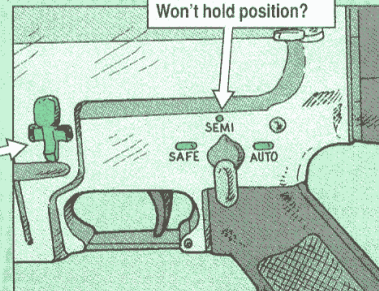
Trigger—Hammer does not engage sear, lock-release levers or trigger?

Buttstock—Loose, separated from lower receiver? Swivel busted? Butt plate or plate screw missing? Deep cuts or cracks longer than one inch?

Magazine—Doesn't slip easily into well or lock in place? Follower stuck or spring weak? Catch won't hold or release magazine?

Bolt catch—Doesn't hold bolt and carrier open?

Selector lever—Sticks? Won't hold position?

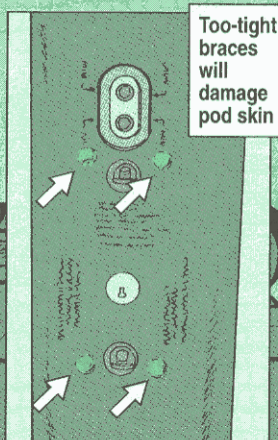
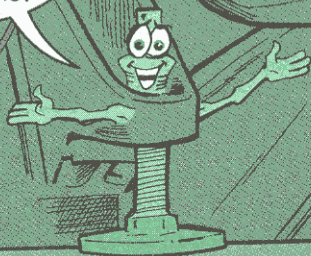


TIGHTENING THE SWAY BRACES

Loose sway braces on your Apache's M261 and Kiowa's M260 rocket launcher cause the pod to move during firing. That means erratic rocket trajectories and missed targets.

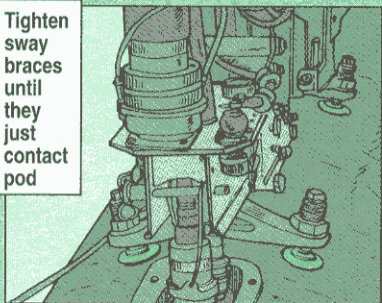
Too-tight sway braces grind into the skin of the pod, denting it and giving a birthplace to corrosion.

HERE'S HOW
TO TORQUE THE
SWAY BRACES ON
THE APACHE TO
AVOID BOTH
PROBLEMS.



1. Loosen all four jam nuts and finger tighten the braces evenly until they just make contact with the rocket pod.

Tighten
sway
braces
until
they
just
contact
pod



2. Get a couple of pound-inch torque wrenches. Set them to 100 lb-in.

3. Using the wrenches, simultaneously tighten the two front sway braces by 1/4 turns. Then do the same on the back two braces.

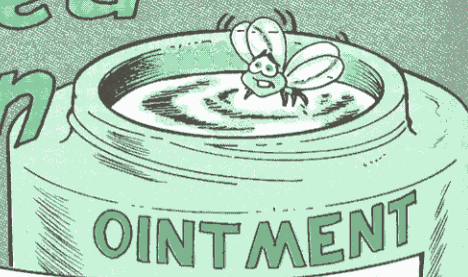
4. Alternate tightening the front and rear sway braces until all four are torqued to 100 lb-in.

5. Hold the sway braces with a wrench and torque the jam nuts to 200 lb-in.

For the Kiowa, follow the same procedure, but instead of simultaneously torquing the front and rear braces, torque one at a time in a criss-cross pattern like this:

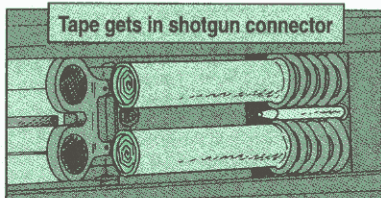


A Jammed Shotgun



Dear Windy,

PS has recommended taping over the Hellfire missile trainer's umbilical connectors to keep out rocks and dirt. Rocks and dirt in the connector is a problem and this seems like a good idea, but there's a fly in the ointment.



Often the trainer is loaded in the field at night and the tape on the connector is not seen. The missile gets shoved on the launcher and the tape is rammed up inside the launcher's "shotgun" connector.

At the least, you've got a gummy mess. At the worst, you've damaged the trainer's pins and the launcher's connector.

**SGT Howard
Ft Hood, TX**

Thanks for pointing out that "fly," Sergeant. The best way to protect the Hellfire trainer's connectors is to keep the missile in its storage container. That means in the field, too!

Also, MWO 9-6920-475-50-1 adds a cover to the connector. That will make taping over it a thing of the past. The MWO is being done in the field by depot maintenance teams on a five-year schedule.

Until your time comes, keep the missile boxed and judge whether to use tape on a case-by-case basis. If you're operating in a rocky, sandy area like Ft Irwin, tape may be worth the risk.

Windy

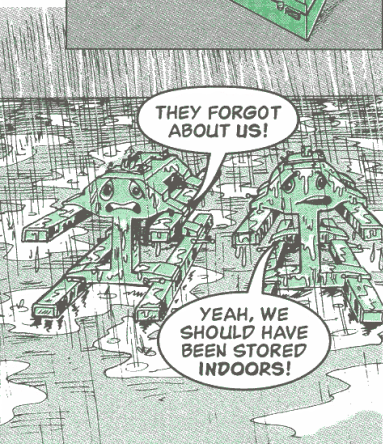
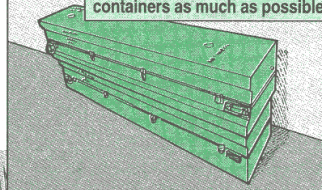
It doesn't take much damage to put out a Hellfire's flame. Even a 1-in scratch on the laser seeker throws the missile off-target. Protect your Hellfires so they can serve you.

Storage

Most Hellfire damage happens during storage because too many units worry more about saving space than saving missiles. Storing Hellfires on end almost guarantees they will take a fall, breaking fins and the laser seeker.

Anytime Hellfires—real and trainers—
are not mounted, they should be locked safely in their storage containers.

Keep Hellfires in storage containers as much as possible



THEY FORGOT ABOUT US!

YEAH, WE SHOULD HAVE BEEN STORED INDOORS!



IF YOU WANT ME TO SERVE YOU, YOU BETTER DO SOME SERIOUS PROTECTING.

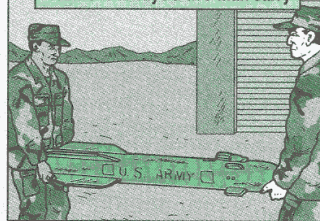
GOTCHA!

When you remove launchers from the Apache, store them indoors, out of the weather, so that they don't become corroded from rain and humidity. Store them flat. If a launcher's left sitting on end, it can easily tip over. Then the rail end caps break. Turn it on its side and the locking handle snaps off as soon as you set it on the floor.

In the Field

The missile is always a two-man carry. It weighs 100 pounds. One person risks dropping the missile. One bad fall knocks out a Hellfire.

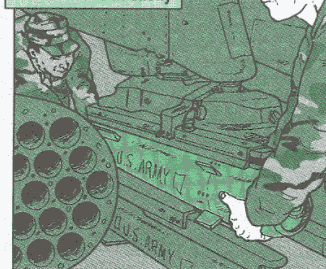
Hellfire is always a two-man carry



Never slam a missile into the launcher. That'll break the shotgun connectors. Firm pressure is all you need. If the missile won't slide home easily,

the connectors are probably misaligned. Your repairman needs to check it out.

Slide missile in easily

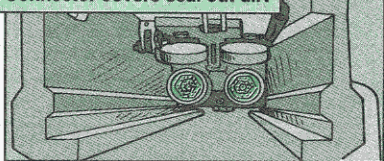


When you download missiles, push the dust covers down on the launcher connectors. That prevents dirt from plugging the connectors and causing misfires.

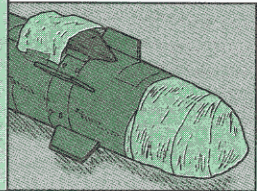
If you must download Hellfires in the field and you don't have storage containers to put them in, at the very least cover the laser seeker and the umbilical connector. A FOD can will protect the seeker. A plastic bag seals dirt out of the connector.

Keep feet off the launcher rails. One misplaced foot bends the deice covers and connectors, or the wiring harness connector cover.

Connector covers seal out dirt



Cover umbilical connector and laser seeker when not in storage container



**DON'T
HANG FIRE ON
HELLFIRE PM!**

PS END

UH-60A...

Tug on the Seat

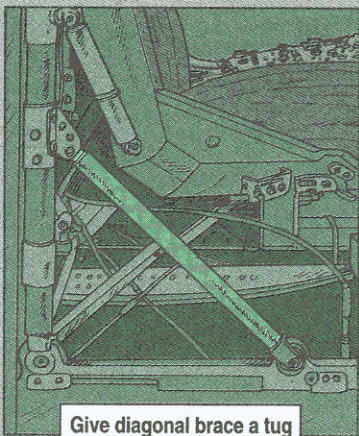
The armored crew seat carriage assembly on your Black Hawk needs a tug.

The bushing where the diagonal brace on the seat meets the rail guide assembly may be splitting. So grab onto either diagonal seat brace and tug it toward you. While you're pulling, eyeball the bushing. Is it splitting?

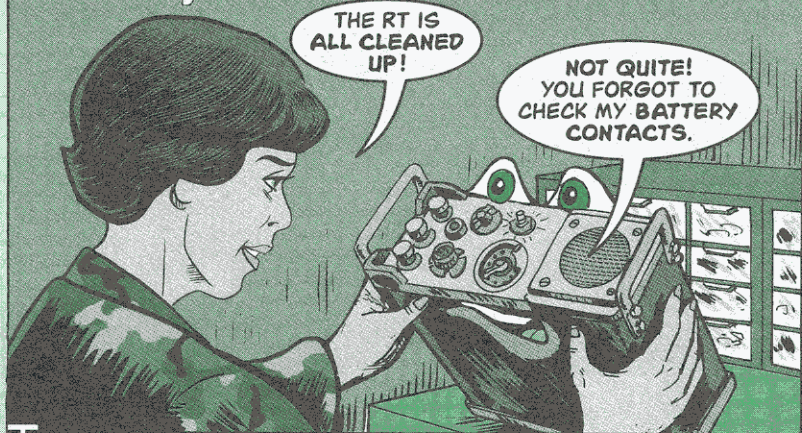
A split bushing takes away the crash protection of the seat. If the bushing is split, replace it. Do the same check with the other diagonal brace.

Bone up on the info on Page 2-308 of TM 1-1520-237-23-2 so you'll be able to spot a bad bushing.

Give diagonal brace a tug



Battery Box Contacts Need PM



Think **battery box contacts** when you pull PM on your AN/GRA-39 radio set's C-2328 remote and C-2329 local control units.

Here's why:

- Sometimes the spring contacts work loose. If they slip and slide, they won't make good contact with the D cell batteries. Ask unit maintenance to glue them down.

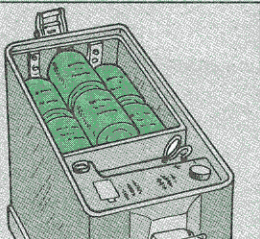
- Over time, the battery box cover may not be holding the batteries tight enough. That can cause poor contact.

Snug up the batteries by slipping a piece of cardboard or folded paper between the batteries and the cover pad.

- Dull, dirty, corroded contacts can't make a good connection. Clean 'em up—especially after you return from the field.

Use a polishing cloth, NSN 7920-00-985-6849, or isopropyl alcohol, NSN 6810-00-753-4993, and a lint-free cloth.

Cardboard or paper can snug up batteries

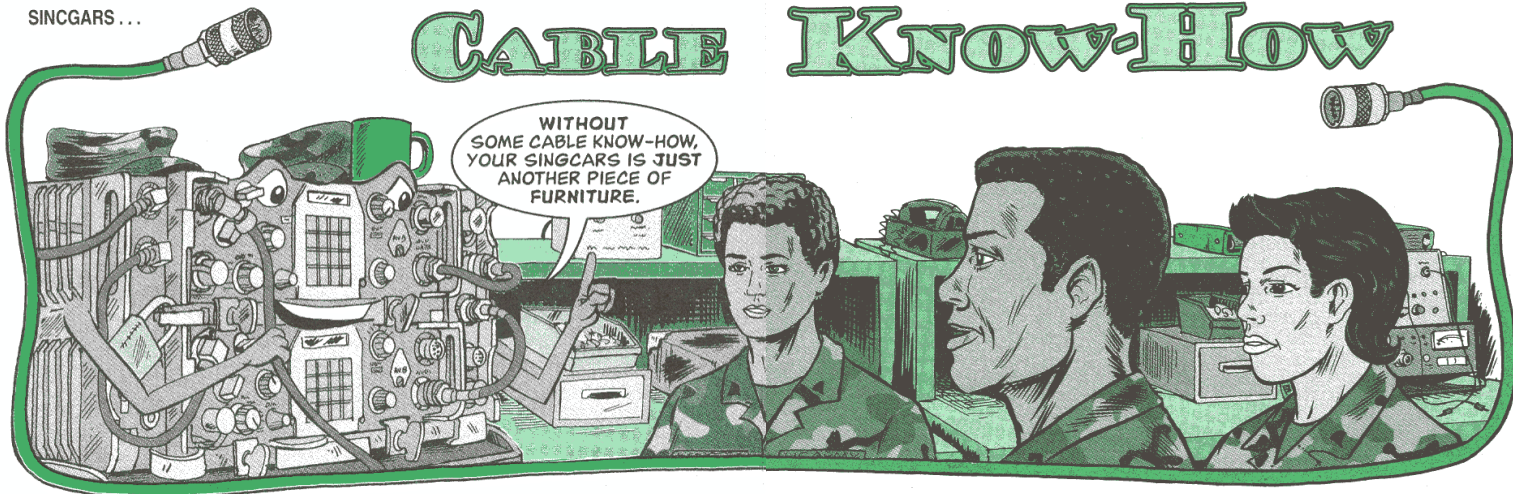


Clean dirty or corroded contacts



CABLE

KNOW-HOW



The SINGGARS long range/long range (LR/LR) vehicular radio has more gear than any other SINGGARS radio. It has two receiver-transmitters (RTs), two power amplifiers and two antennas.

It follows that cable hookup is twice as confusing. Since all the RF cables look alike, it's hard to tell them apart. A cable connected to the wrong receptacle can silence your commo or overload a power amplifier.

Cable Basics

When you connect the cables for your LR/LR radio, you need to know these basic connections:

① W-4 audio cable goes from the AUD/DATA connector on the upper RT to the J4 connector on the AM-7239 amplifier-adapter.

② W-4 audio cable goes from the AUD/DATA connector on the lower RT to the J5 connector on the amplifier-adapter.

③ W-2 RF cable goes from the ANT connector on the lower RT to the J2 connector on the AM-7238 power amplifier on the left side of the amplifier-adapter.

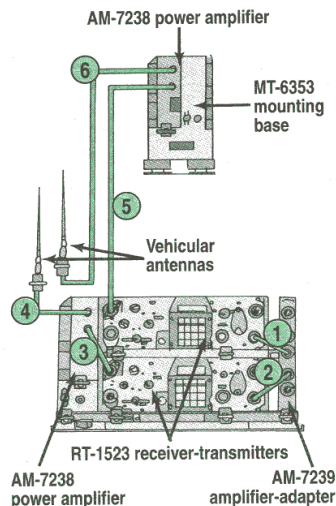
④ CG-3855 RF cable goes from the J1 connector on the power amplifier to the vehicular antenna.

⑤ CG-3856 RF cable goes from the ANT connector on the upper RT to the J2 connector on the second AM-7238 power amplifier.

⑥ CG-3855 RF cable goes from the J1 connector on the second power amplifier to the second vehicular antenna.

For more info on hooking up cables on your LR/LR radio, see Chap 3 of TM 11-5820-890-20-1.

Here's where to route cables ...



Color Coding

An easy way to make sure you get the cables connected right is to color code the cables to their receptacles with tape.

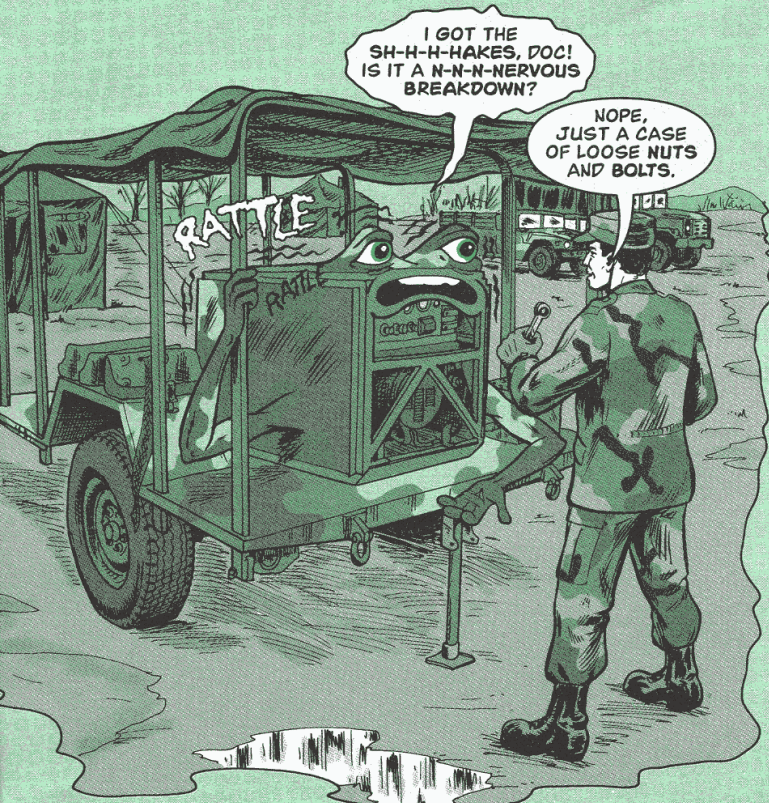
HERE ARE SOME COLORFUL TAPES TO HELP IDENTIFY CONNECTIONS...

Color	NSN 7510-00-
black	551-4874
dark blue	550-7124
green	550-7129
red	550-7126
white	550-7127
yellow	550-7125

Got the Shakes?

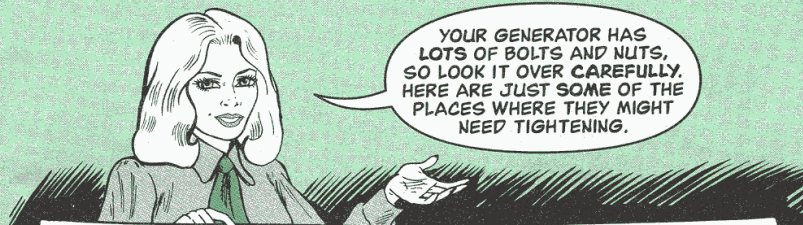
Generators have engines, and those engines vibrate. Over time, that vibration loosens nuts and bolts, causing all sorts of problems, such as:

- Oil and fuel leaks
- Dirty air filters
- Loose grounding on gauges, which can lead to bad readings

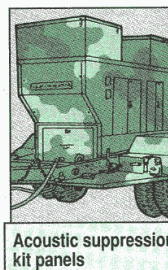


- A poor earth ground, which can shock you or damage your equipment
- Loose terminal wires on the starter, making the engine hard to start

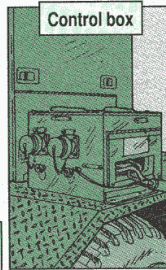
Get rid of the shakes. During PMCS, check bolts and nuts for looseness. Just grip them between your thumb and forefinger and try to turn them. If they're loose, tighten them with a wrench.



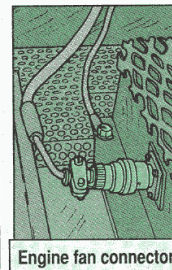
Generator mount



Acoustic suppression kit panels

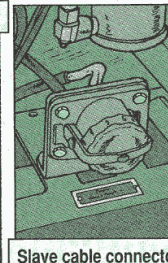
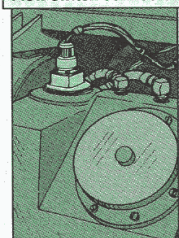


Control box

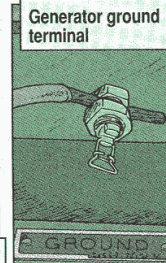


Engine fan connector

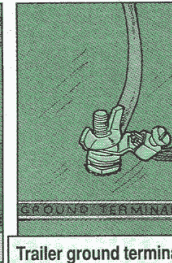
Flow switch connector



Slave cable connector



Generator ground terminal



Trailer ground terminal

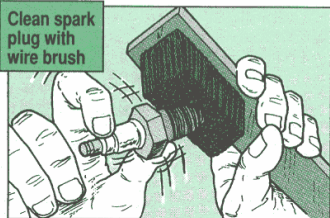
Stop Starting Problems

If you can't start your M17 decon's burner, you won't do much deconning. And if you keep trying to start it, fuel collects in the bottom of the heat exchanger—sometimes as much as a half-gallon. Then you get dangerous stuff like a flash ignition or backfiring.

Stop burner starting problems like this:

Keep the burner spark plug and the heat exchanger coil clean. Before you go to the field, unscrew the burner plug and clean off any carbon with a wire brush. If the plug is burned or cracked, get it replaced.

Clean spark plug with wire brush

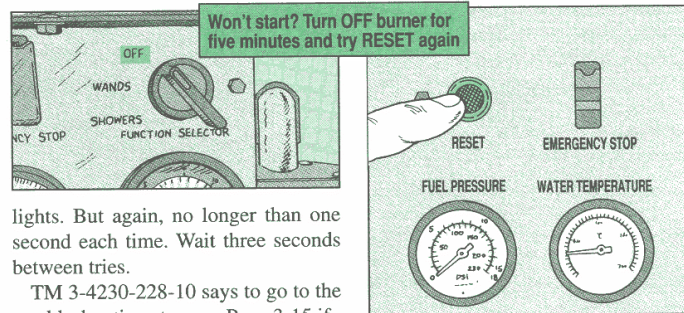


Be sure to blow out any carbon particles trapped between the plug insulator and the plug body.

Your repairman cleans the heat exchanger at least every 100 hours of operation. If the heat exchanger doesn't immediately heat water, it probably needs to be cleaned. If the automatic ignition fails to ignite the burner while

you're operating in the shower or syphon injector modes, wait till the BURNER RESET INDICATOR lights. Then push the indicator—but for no more than one second. If you hold the button down longer, fuel collects in the heat exchanger.

If the burner doesn't ignite, it's OK to hit the button twice more after it

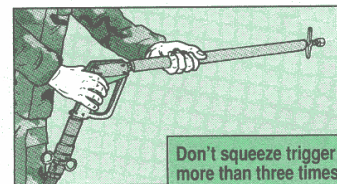


lights. But again, no longer than one second each time. Wait three seconds between tries.

TM 3-4230-228-10 says to go to the troubleshooting steps on Page 3-15 if the burner still won't fire up. Instead, turn off the M17 for five minutes once the water temperature drops below 32°C. If the water is hotter, fuel fumes build up in the burner and cause too big an explosion. Reset the FUNCTION SELECTOR switch and try again. Sometimes that does the trick. If it doesn't, troubleshoot.

If the burner doesn't ignite in the steam wand mode after three one-second squeezes of the steam wand trigger, turn off the M17 and do the same 5-minute wait once the water temperature is below 32°C. Still no luck? Troubleshoot.

Never squeeze the trigger more than three times. And be sure to wait about three seconds between squeezes.



If, despite your best efforts, fuel does collect in the heat exchanger, you and your repairman can pull off the top of the burner, tip the M17 on its side, and drain the fuel into an approved container. Let the burner air dry. Then troubleshoot to find what's wrong.

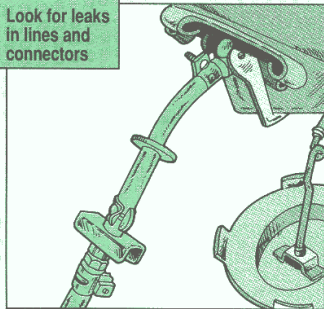
Invitation to Disaster

A leaky or flooded M1941 space heater is an open invitation to a tent fire. Decline that invitation with good preventive maintenance.

Fuel Lines

Before lighting your heater, check the fuel lines and connections for leaks. Fix any leaks before lighting up.

Look for leaks in lines and connectors



When you hook up the overflow line, remember to...

- keep the hose lower than the fuel overflow connection on the float valve assembly.
- keep kinks out of the line.
- keep the line out of traffic areas.
- keep the line running downward, outside and away from the tent.
- use an approved container to catch the overflow fuel.

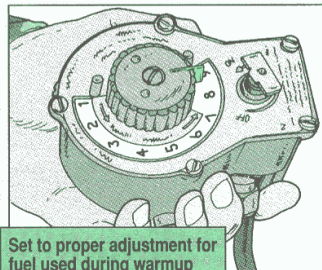
Heater Setup

The fuel control valve will work the way it's supposed to work only if the heater and valve are at or near level.

For tents with wooden floors, set the stove in a sandbox or on some other non-combustible surface. Use a sandbox if you're setting the heater on top of snow, too. Otherwise the heater melts its way into the snow.

Firing It Up

When starting the heater on oil or diesel, turn the ON-OFF valve to ON and set the adjustment knob to 9.

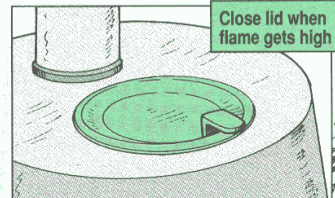


Set to proper adjustment for fuel used during warmup

After the bottom of the burner gets wet with fuel, turn the adjustment knob to 0. Drop a small wad of lighted

paper or a lighted piece of oily rag into the burner.

If you're burning gasoline, begin by dropping a lighted match or burning paper into the burner. Then, turn the ON-OFF valve to ON with the adjustment knob set to 0. **Keep your face and hands away from the opening!**



Close lid when flame gets high

Replace the top lid when the bottom of the heater is full of fire.

PS MORE



I'M FREEZING!

I CAN'T FEEL MY TOES!

IT MUST BE 20 BELOW!

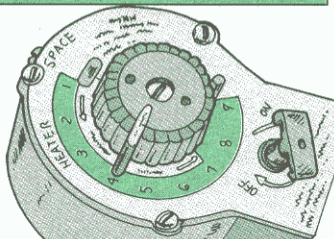
YEAH, IF WE HAD DONE OUR SPACE HEATER PM LIKE BILKO DID, WE WOULDN'T BE WAITING FOR A CHANCE TO WARM UP IN THE SUPPLY TENT.

Adjusting the Flame

The heater takes five minutes to warm up with gasoline, 15 minutes for oil. After that much time has passed, use the adjustment knob to adjust the flame.

Gasoline: Set the adjustment knob between 0 and 7. Setting it above 7 wastes fuel, makes heavy smoke and is a safety hazard.

Set at 0-7 for gas and 0-9 for oil or diesel



Oil/Diesel: Set the knob between 0 and 9, but never leave the knob at 9, even in the coldest weather. At the maximum setting, the heater or the flue can get hot enough to set your tent on fire.

If you get heavy, black smoke from your heater, turn the adjustment knob to 0 and let the excess fuel burn off. Then, reset the control knob.

Keep Fuel Strainer Clean

A clean fuel strainer lets your heater get a good flow of fuel. But be sure not to damage or bend the strainer when you clean it.

A damaged strainer can let unfiltered fuel into the system. That can clog the float valve assembly.

Replace a damaged strainer with NSN 5411-01-231-1754.

BILKO REALLY KNOWS HOW TO MAKE GOOD PM PAY OFF.

YEAH, NOW HE'S CHARGING AN ADMISSION FEE!

Restoring Water Repellency



Every time you wash the parka and trousers of the extended cold weather clothing system (ECWCS), the clothes lose some water repellency protection.

An ECWCS that does not repel water will not protect you from hypothermia.

So, if you put your ECWCS through some rough wash and wear last winter, it's time to restore that water protection. Here's how:

1. Wash the ECWCS in your washing machine like it says on the care label on the clothing.
2. When the wash cycle is complete, turn back to the last rinse cycle and fill the machine with water.

3. Add the water-repellent laundry additive following the instructions on the bottle. Your unit can order a box of 24 8-oz bottles with NSN 8030-01-408-9446. You can take a bottle home and treat your ECWCS. Don't worry if your wet clothes have a white film, it will not show up after they dry.

4. Tumble dry the clothes on permanent press and at the medium or low heat setting until completely dry.

A field or post laundry can get five gallons of the additive with NSN 8030-01-408-9444, or 55 gallons with NSN 8030-01-408-9445.

If protecting your ECWCS is your responsibility alone, head for the PX and buy single bottles of additive. There are three brands in the PX system that will do a good job. They are Protex 2000, X-Pel and Stormshed.

If you can't get it through the PX system, you can order directly from the manufacturer.

Get X-Pel from:

CALED Signal Chemical
26 Hanes Drive
Wayne, NJ 07470

Or call: (201) 696-7575.

Get Protex 2000 from:

M and M Marketing Inc.
4001 Kennett Pike, Suite 134
Wilmington, DE 19807

Or call: (302) 658-7007.

Get Stormshed from:

Evergreen Specialties Inc.
3808 Valley Brook Drive
Wilmington, DE 19808

Or call: (302) 234-1935

Order'em Piece-by-Piece

All the **tools** you need to install the electrical connectors in the Bendix and Douglas kits are found in electrical tool kit, NSN 5180-00-876-9336. Just don't expect to find the **connectors** there.

The connectors are authorized by SM 9-4-5935-S01, but it hasn't been updated since May 62. A lot of NSNs have changed since then.

Here are the parts that make up the two kits. But don't order complete kits unless you need every type of connector listed. Order only the connectors you need.

Bendix kit,
NSN 5999-00-570-1380

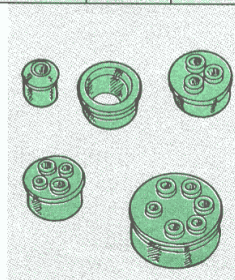
Bushing, rubber: 30° chamfer

NSN 5365-00-	ID (inch)	OD (inch)	Length (inch)
641-8645	0.495	0.715	0.481
514-4455	0.620	1.057	0.717
514-4457	0.682	1.057	0.697
514-4454	0.745	1.057	0.633
514-4456	0.932	1.370	0.684



Bushing, rubber: flanged

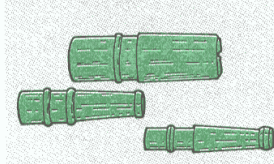
NSN	# holes	OD (inch)
5365-00-772-2343	1	0.375
5340-00-752-7630	1	0.625
5365-00-559-0283	3	0.625
5365-00-752-7628	4	0.625
5365-00-772-2323	6	0.625
5325-00-338-1274	3	1.000
5365-00-772-2322	8	1.000
5365-00-090-5426	12	1.240



SAVE
BIG BUCKS
BY ORDERING
ONLY WHAT
YOU NEED.

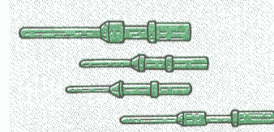
Connector, electrical: solder, female

NSN 5999-00-	Size	Length (inch)
771-6523	0	1.750
771-6525	4	1.438
771-6527	8	1.438



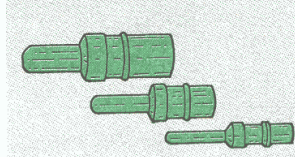
Connector, electrical: solderless, male

NSN 5999-00-	Size	Length (inch)
752-7655	12	1.438
752-7651	16	1.047
752-7649	16	1.047
491-8194	16	1.250



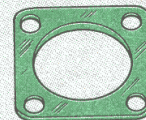
Connector, electrical: solder, male

NSN 5999-00-	Size	Length (inch)
368-4852	0	1.750
771-6524	4	1.438
771-6526	8	1.438



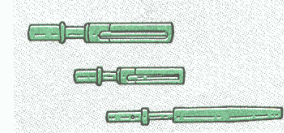
Gasket: square, 1/32-in rubber

NSN 5330-00-	ID (inch)	OD (inch)
593-6442	3/4	1 3/32
641-4338	7/8	1 3/16
543-6849	1	1 9/32
641-4336	1 3/8	1 5/8



Connector, electrical: solderless, female

NSN 5999-00-	Size	Length (inch)
636-6876	12	1.438
752-7648	16	1.047
259-3143	16	1.438



Retainer, packing: 30° countersink

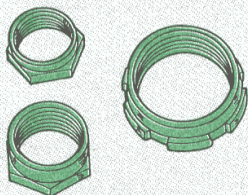
NSN	ID (inch)	OD (inch)
5330-00-514-4461	0.516	0.710
5330-00-514-4460	0.614	1.052
5310-00-771-6716	0.703	1.052
5330-00-514-4459	0.766	1.052
5330-00-514-4458	0.953	1.365



Nut, bushing, retainer	
NSN	Description
5935-00-333-3088	5/8-24 NEF- 2 x 15/16
5935-00-772-3307	7/8-20 NEF- 2 x 15/16
5935-00-333-9414	1 1/4-18 NEF- 2 x 1
5310-00-393-6685	1 5/8-18 NEF- 2 x 1



Nut, coupling, electrical conduit: hex	
NSN 5975-00-	Description
522-7125	3/4-20 NEF- 2 x 45/64-in thick
752-7644	7/8-20 NEF- 2 x 1/2-in thick
697-7769	1-20 NEF- 2 x 45/64-in thick
697-7860	1 3/8-18 NEF- 2 x 45/64-in thick
771-6634	1 3/4-18 NEF- 2 x 25/32-in thick



Washer, spring tension: curved	
NSN 5310-00-	Description
752-7639	1/4-in screw size (17/64-in ID, 7/16-in OD), 4 leaves
752-7640	1/2-in screw size (33/64-in ID, 21/32-in OD), 2 leaves
595-7486	3/4-in screw size (49/64-in ID, 1-in OD)
771-6722	7/8-in screw size (15/16-in ID, 1 5/16-in OD)



Silicone compound, 2-oz
tube, NSN 5970-00-177-5094

Methyl ethyl ketone, 3-oz bottle,
NSN 6810-00-264-8983

REMEMBER,
ORDER ONLY
WHAT YOU
NEED!



Douglas kit,
NSN 5999-00-570-1060

Bushing	
NSN	Description
5975-00-614-9460	1/2-in long, 5/16-in wide (for two 16 AWG wires)
5365-00-629-7273	1/2-in long, 5/16-in wide (for one 14 AWG wire)
5975-00-614-9458	1/2-in long, 5/16-in wide (for two 14 AWG wires)



Cutting oil, 2-oz bottle,
NSN 9150-00-234-5198

Splice, connector: Y-type,
NSN 5935-00-501-7177



Contact, electrical	
NSN 5999-00-	For AWG wire
925-6495	12
057-2929	14
926-3144	16



Shell, electrical: male	
NSN 5935-00-	Description
030-1563	For male, water- proof, Y-type, 3-conductor assembly (mates with shell, NSN 5935- 00-201-8143)
300-9909	For male, water- proof, straight, 2-conductor assembly (mates with shell, NSN 5935- 00-768-7042)



Shell, electrical: female	
NSN 5935-00-	Description
201-8143	For female, water- proof, Y-type, 3-conductor assembly (mates with shell, NSN 5935- 00-030-1563)
768-7042	For female, water- proof, straight, 2-conductor assembly (mates with shell, NSN 5935- 00-300-9909)



Make Your Warranty Claim

The Army is losing money because operators and mechanics aren't using the warranties on their equipment.

Warranties are not free. The manufacturer includes the cost of possible claims in the price. If you don't make a warranty claim when you should, you're the one who gets short-changed.

This is a **big** problem with tanks, trucks, trailers/semitrailers, engines, transmissions and other items covered by warranties.

Paying \$30,000 for a truck engine, instead of getting it free under warranty, costs your unit dollars that could be spent on other parts.

So how do you tell what warranty, if any, comes with your equipment?

✓ Check the operator's or parts manual for a copy of the warranty protection,

or to see if it references a warranty TB.

✓ Look for a warranty decal or plate on the equipment.

✓ Eyeball the DA Form 2408-9 that came with the equipment. Block 15 gives the warranty period.

DA Pam 738-750 in the Maintenance Management Update tells how to file warranty claims, explains individual responsibilities, and tells how to follow up on warranty claims.

Appendix C lists Warranty Control Offices (WARCOs) and Logistic Assistance Offices (LAOs). WARCOs and LAOs are there to assist you in submitting warranty claim actions.

Don't lose out when it comes to claiming warranties. They're like money in the bank.

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Total	106,731	105,361
Percent Paid and/or Requested	99.16%	99.14%



WAIT Light Label

NSN 7690-01-267-7370 gets a warning label for the dashboard on a CUCV or HMMWV. It says *Warning: Do not start engine until WAIT light goes out.*

M1070 HET Towing Shackle

NSN 4030-01-408-2774 gets the towing shackle for the new HET. The NSN is missing from Page B-11 of TM 9-2320-360-10, and the part number is wrong.

FED LOG Hotline

There are new phone numbers for customer support for FED LOG. Call toll-free worldwide 1-800-351-4381 at any time. It will be physically manned from 0700-1700 Mountain Standard Time (0500-1500 Eastern), Monday through Friday (except holidays), with voice mail for other times. Or fax to (970) 226-0734. Or send e-mail to fedlog@optimus-corp.com.

PLGR Pub

Need more copies of TB 11-5825-291-10-2, the soldier's guide for your precision lightweight GPS receiver (PLGR)? Until now, all you got was one guide for each fielded PLGR. Now you can order extra copies for training or to replace missing ones. Order them through your unit pubs office.

5-Ton Heater Seal

Use NSN 5330-01-108-9119 to get the seal for the air heater elbow on M939- and A1-series trucks. The seal is not shown separately with Item 4, Fig 314 of TM 9-2320-272-20P.

M871A1 Brake Shoe Kit

Mechanics, a brake shoe kit is now available for the M871A1 semitrailer. It includes all the parts separately shown in Fig 14 of TM 9-2330-358-14&P. Order the kit on a DD Form 1348-6 from RIC S9I. Use CAGE code 62707 and PN M16KBH00.

ROWPU Fire Extinguisher

The portable Halon fire extinguisher for your ROWPU is no longer available. Replace it with NSN 4210-01-442-9695. That gets a 5-lb CO₂ extinguisher and its mounting bracket.

Contact Pin Straightener

Bent contact pins make cable hookup a bear. Straighten those pins with a contact pin removal tool kit, NSN 5120-00-765-3688. The kit comes with four tips to straighten different pin sizes. Appendix A of CTA 50-970 is your ordering authority.

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

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