

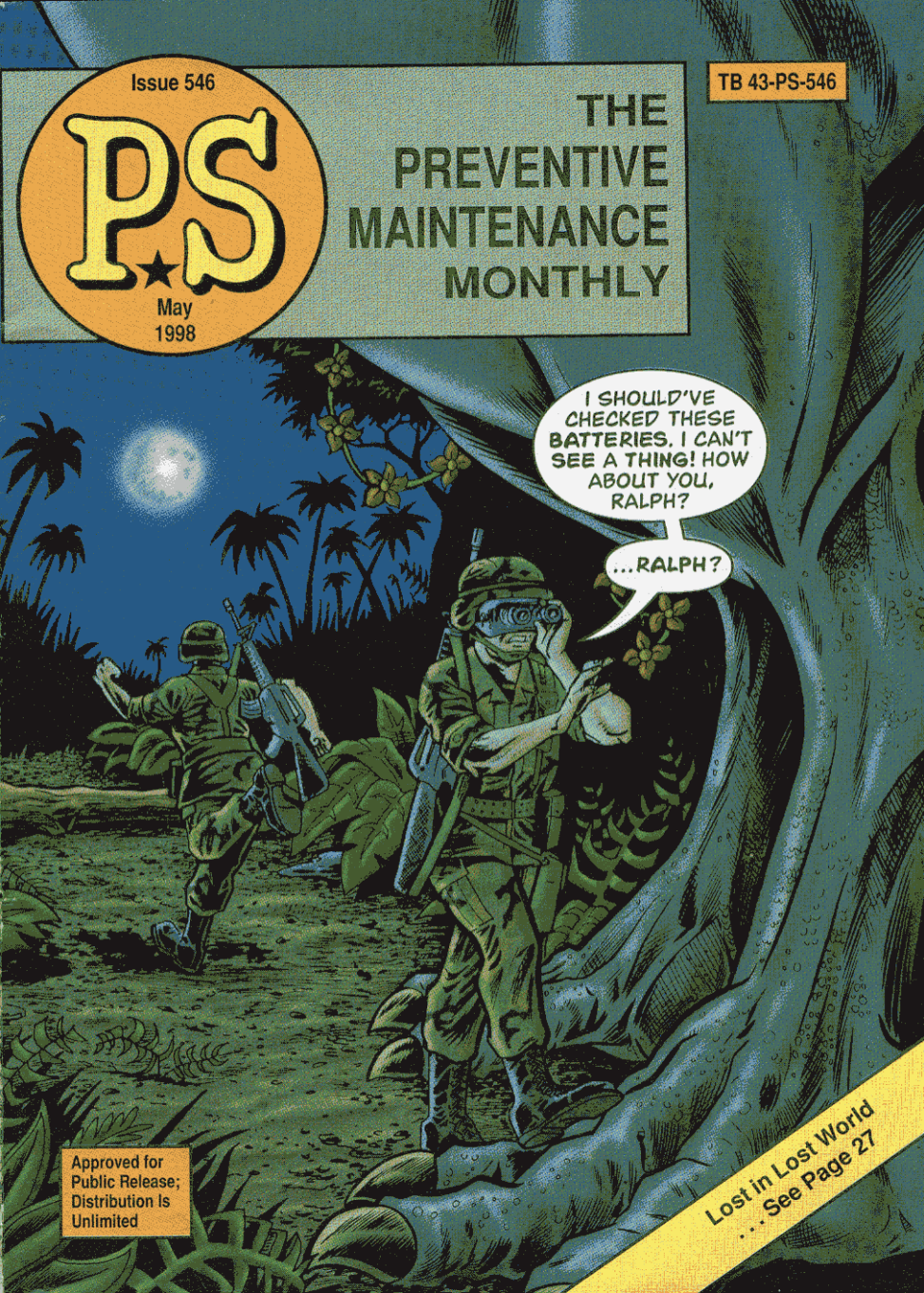
Issue 546

PS

May
1998

THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-546



I SHOULD'VE
CHECKED THESE
BATTERIES. I CAN'T
SEE A THING! HOW
ABOUT YOU,
RALPH?

...RALPH?

Approved for
Public Release;
Distribution Is
Unlimited

Lost in Lost World
... See Page 27

Verification

Slacker Joe had a problem.

If he did the minimal lead-acid battery PM required of him as an operator, he'd actually have to work at removing the corrosion that appears on the batteries and battery box.

That's because making the visual checks of battery caps, cables and posts would mean he'd have to look at the batteries. If he saw corrosion, he'd have to report it—and then help clean it off.

So Slacker Joe made a decision: What he didn't see, he couldn't report. He'd never do any battery PM. Nobody ever checked what he did in PMCS anyway, so he could avoid removing corrosion until the electrical system failed.

There are thousands of batteries and battery boxes junked every year because of Joes like this one.

How do you NCOs counter Slacker Joe's bad judgment? You make sure he does his PMCS by the book—even if it means he cleans away corrosion every week.

It's what he's supposed to be doing anyway.

Are you verifying the work?





THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-546, 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. Masculine pronouns may refer to both genders.

ISSUE 546 MAY 1998



WHEELED VEHICLES

2

Tow Pintle Checks	2-3
Wiring ID Tags	3
HMMWV Neutral Start Switch	4-5
HMMWV Hardshell Headliner	5
M101-, M116-Series Trailer Brakes	6-7
M1000 HET Semitrailer Pressure Gauges	7
M1000 HET Semitrailer Batteries	8
FMTV Hydraulic Manifold Knobs	9
M35A3 Truck CTIS Air Dryer Kit	9
M900-Series Tanker Hose Trough Covers	9



COMBAT VEHICLES

10

M1 Tank Air Induction Cover	10-11
M1 Tank Fuel Transfers	12-13
M1 Tank CVC Helmet Stowage	13
M1 Tank Roadwheel Hub Covers	14
M1 Tank Exhaust Duct Seals	15
MLRS TEC Fault Light	16
MLRS Fire Extinguisher Cover	17
M2/M3 Bradley Air Cleaner Door	17
M2/M3 Bradley T1571 Track Pad	18
M992 Ammo Carrier AFES	19
M577 CP Carrier Computer Unit	20-21
M113 FOV Radiator Cap Decal	21



COMBAT ENGINEERING

22

M9 ACE General PM	22-23
M9 ACE Transmission Filter	24
SEE Fuel Prefilter	25
Construction Equipment Gear Shifting	26



SMALL ARMS

35

Lubricant Use	35
MK19 Machine Gun Lube, Cleaning	36-39
M16 Rifle, M4A1 Carbine BFA	39



AVIATION

40

Hellfire Launcher Connectors	40-41
AH-64A Apache Pitch Housing	41
Hellfire Missile Storage	42
CH-47D Chinook Fuel Boost Pump	43
SPH-4B To NVG Connection	44
Aviator Gloves	45



COMMUNICATIONS

46

PLGR Batteries	46-50
3-KW GED Generator Care	51-53



SOLDIER SUPPORT

54

Polyester Tent Seam Sealing	54-55
600-GPH ROWPU Connectors	55
Kevlar Helmet Parts	56
ALICE Pack Frame Parts	57



LOGISTICS MANAGEMENT

58

Computer Operator Tips	58-59
Packaging Correspondence Courses	59
Supply Catalog CD-ROM	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:

MSG Half-Mast
The Preventive Maintenance Monthly
LOGSA, Bldg. 5307
Redstone Arsenal, AL 35898-7466

Or E-mail to:

psmag@logsa.army.mil

Internet Address:

<http://www.logsa.army.mil/psmag/pshome.html>

By Order of the Secretary of the Army:

DENNIS J. REIMER

General, United States Army Chief of Staff

Official:

Joel B. Hudson

JOEL B. HUDSON

Administrative Assistant to the Secretary of the Army
04515

PS, The Preventive Maintenance Monthly (ISSN 0475-2953) is published monthly by the Department of the Army, Redstone Arsenal, AL 35898-7466. Periodical Postage is paid at the Huntsville, AL post office and at additional mailing offices.

Postmaster: Send address changes to PS, The Preventive Maintenance Monthly, LOGSA, Redstone Arsenal, AL 35898-7466.

Never Overlook Tow Pintle



If you rarely or never tow anything with your truck, it's hard to get excited about keeping the tow pintle in good working order.

Other people will get excited, though, after a load has been dumped or someone's been injured or killed.

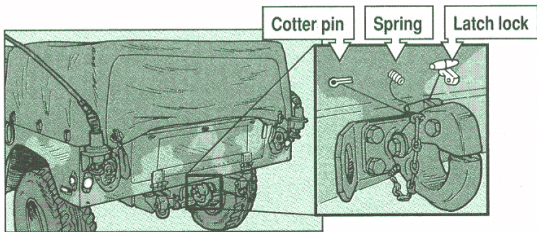
If your truck's tow pintle has rarely or never had any maintenance pulled on it, you're asking for trouble any time you tow.

Check your truck's -10 TM for weekly tow pintle PMCS. It should tell you to check for looseness, a damaged locking mechanism and a damaged or missing cotter or locking pin.

Some trucks are NMC if the tow pintle doesn't pass muster; others are not. But it's a must that the pintle work as designed. That takes some effort.

© Do the PMCS weekly. Find out what condition the pintle's in. Report any shortcomings to your mechanic. The pintle must lock when the latch is closed. If it doesn't, have your mechanic check for a bum latch spring.

© Be extra sure the locking pin is in place and in good condition. If your truck has anything as a locking pin other than a cotter pin, don't use the truck for towing. The right pin keeps the latch locked. Anything else may break.



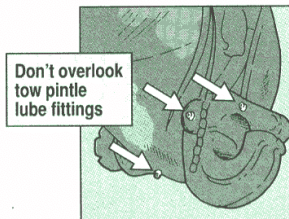
Mark Those Wires First

Maintenance or repair of wiring harnesses, contact boards and junction boxes is tough enough without having to remember which wire goes where, and how it was connected.

Manufacturers offer some help when they tag wires with metal bands that identify circuits or other information, but those bands don't always last.

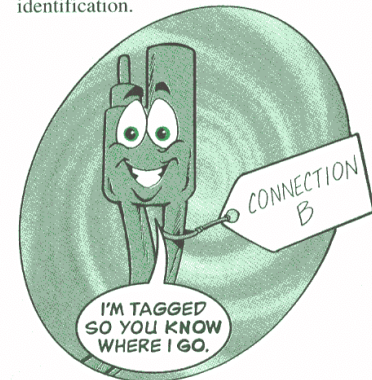
Next time you have a wiring job, get some marker tags, NSN 9905-00-537-8954, for wire identification.

© Follow the lube order completely. Some tow pintles have three grease fittings and some have four. Two fittings generally get overlooked. They are in front of and behind the bumper mount. Lube them quarterly as called for. Lubricating these fittings ensures the pintle will rotate when needed to keep a trailer upright.



Lubricating the hook latch shaft and the hook screw lets the latch work correctly and secures the load. If the latch only looks like it's locked, your load won't stay in tow for very long.

© If the tow pintle on your truck is covered in mud, corrosion or too much paint, clean it or report it to your mechanic.



Write down on the tag all the information you need to make sure every wire is matched and reinstalled correctly. Attach the tag with its wire tie so it won't come off until you remove it after the job's done.

STARTING IN NEUTRAL

Does the neutral start safety switch work on your HMMVV? How would you find out if it works without trying to start the truck in DRIVE or REVERSE?

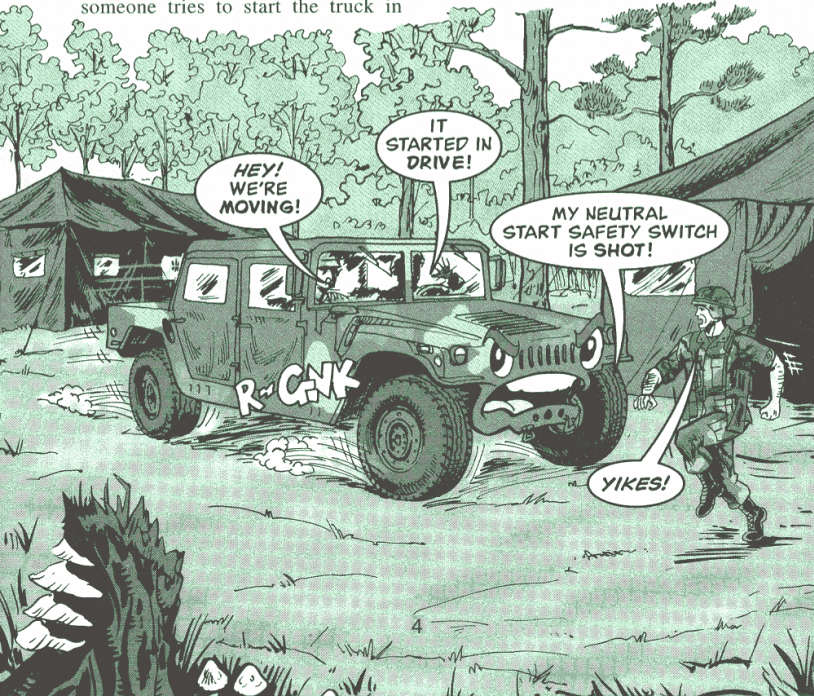
Since TM 9-2320-280-10 tells you point-blank to always start the HMMVV in NEUTRAL, most folks don't concern themselves with whether or not the safety switch prevents starts with the transmission in any position other than NEUTRAL.

But, if the switch doesn't work and someone tries to start the truck in

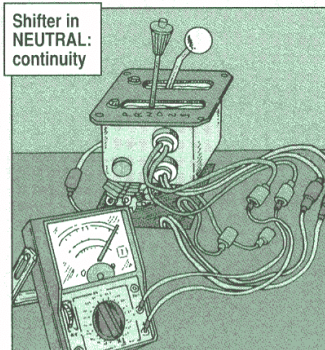
DRIVE or REVERSE, the truck will move—and somebody could get hurt. If nothing else, this makes the case for having the parking brake applied.

Here's what mechanics need to do at each semiannual service to make sure the neutral start safety switch works:

1. Set the parking brake and put chock blocks in place.
2. Make sure the starter switch is in the ENG STOP position.
3. Disconnect wires 14A and 14B from the neutral start safety switch wires.

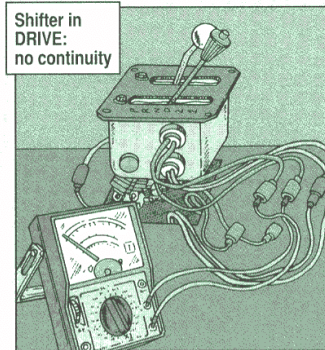


4. Do a continuity check with the multimeter from the Common shop sets. With the transmission selector in NEUTRAL (or PARK for A2-series and Up-Armor models only), you should get continuity between the switch wires.



With the transmission selector in DRIVE, there should be no continuity between the switch wires. If there is, replace the switch.

5. Reconnect wires 14A and 14B to the switch wires.



Put 'em Up, Keep 'em Up

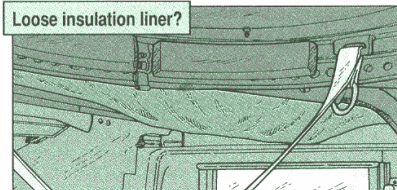
That's the insulation liner in armored HMMVVs we're talking about here.

The self-stick backing on the headliner doesn't always do its job. It turns loose and lets the liner droop.

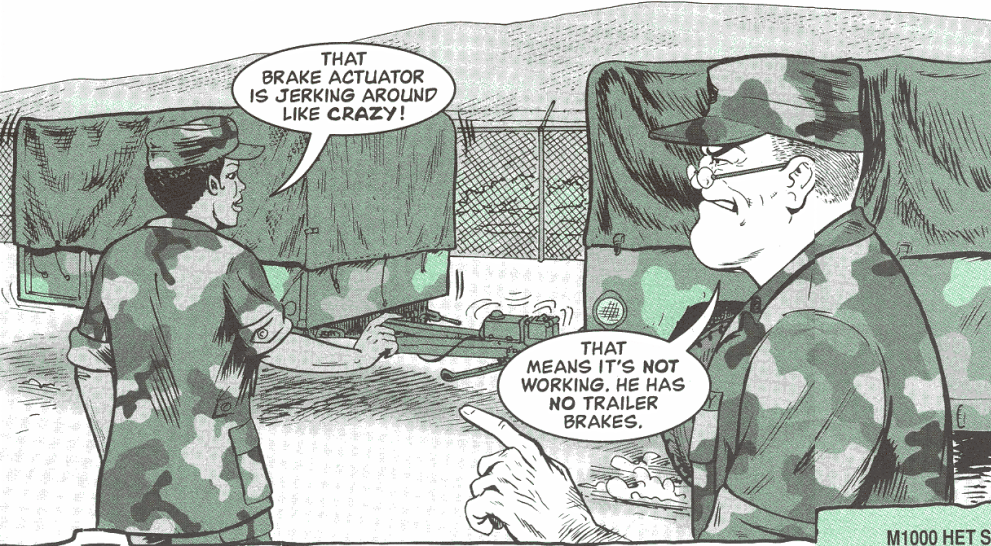
Eyeball the inside roof of your hard-shell HMMVV to see if the liner has any loose spots.

Glue any loose spots back in place with primer adhesive, NSN 8010-01-040-0947. Hold the liner against the roof for about three minutes while the primer dries.

When you have to replace entire liner pieces, spray primer adhesive on the roof to make sure the liner stays put.



How Good Are Your Brakes?



The 3/4-ton and 1-ton trailers and chassis that make up the M101- and M116-series trailers have unique brakes—they work by motion and weight.

The hydraulic brake actuator assembly is much like a shock absorber. In fact, a shock absorber is part of the assembly. When the towing vehicle brakes, the assembly is forced forward, causing the master cylinder to pressurize the brake wheel cylinders, slowing the trailer down. The more weight in the trailer, the greater the braking force.

When you drive away, the assembly slides rearward, releasing the brakes.

You have to keep an eye on this assembly to be sure it works smoothly and as designed. If it doesn't, the trailer and its contents can be damaged.

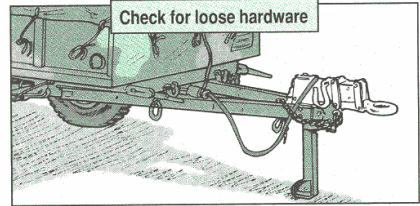
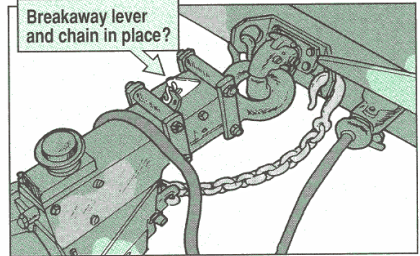
Once you hook up the trailer to its prime mover, have someone watch as you slowly move forward and then apply the brakes. There should be no jerks or noise at the brake assembly.

If there is jerking or rapid movement, tell your mechanic to check out the shock absorber for loose connections, leaks or damage.

If the brakes are OK, keep them that way by following these tips:

- ✓ Avoid sudden and fast acceleration.

- ✓ Make sure the breakaway chain and lever are in place and released before any operation. Check TM 9-2330-202-14&P for the details.
- ✓ Check for loose hardware in the actuator assembly before each operation.



M1000 HET Semitrailer . . .

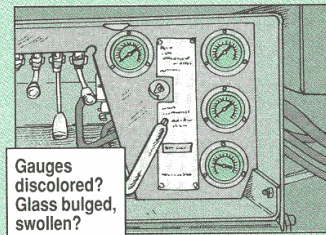
If Gauges Discolor, Replace 'em

Some of the original hydraulic pressure gauges on M1000 HET semitrailers have discolored or the glass has bulged or swelled because of internal fluid leaks and pressure.

These gauges can explode. They need to be replaced with a new and improved gauge.

Have your supply order the same NSN. 6685-01-334-5058, that's shown in TM 9-2330-381-24P. Then have them add PN AFC-6M-25RC-FF, CAGE 4K739 in the Remarks block of the requisition.

That way you'll be sure to get the new gauge.



Set APU Battery Right

Even though the replacement battery you get from supply may not look like the standard one that came with your M1000's auxiliary power unit, the holddown bracket will hold it in place.

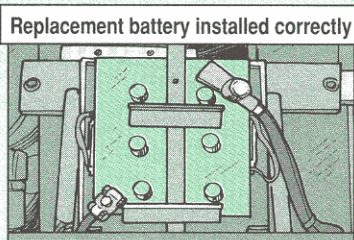
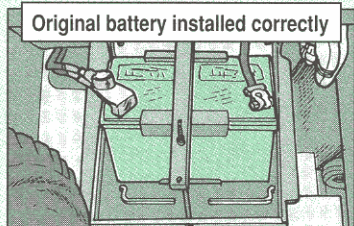
The standard battery has a couple of gang-type cell caps, like batteries used in commercial vehicles. The holddown bracket goes across the narrow part of this battery, using the front and rear J-hook holes.

Some replacement batteries have six individual cell caps, and the batteries are more or less square. The holddown bracket must be installed differently to hold these batteries.

Turn the bracket upside down and place it longways of the battery, between the cell caps. The J-hooks will mount in the side holes in the battery frame.

Don't try to turn the battery sideways and put the holddown bracket across the cell caps. All you'll do is crack the caps and maybe the battery casing, too.

Eyeball Pages 4-122 and 4-123 of TM 9-2330-381-14 for the whole story.



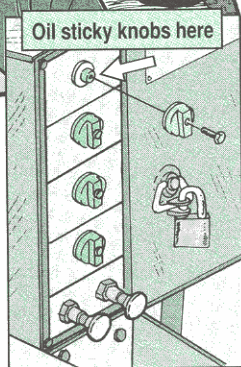
HYDRAULIC CONTROLS GET OIL



Operators, if the hydraulic manifold knobs on your FMTV are hard to turn, don't get out the persuaders (pliers, wrenches). Instead, get your mechanic.

The persuaders will only damage the knob, maybe even break it.

Your mechanic can remove the knob and lube the control with OE/HDO-30 as shown on Page 19-15 in TM 9-2320-365-20-3 (2½-ton models) and in TM 9-2320-366-20-3 (5-ton models).



M35A3 CTIS Air Dryer Kit

Use NSN 2530-01-442-4606 to get the CTIS air dryer parts kit for the M35A3 2½-ton truck. This kit—DQ6026—contains Items 2, 3, 4, 5 and 6 from Fig 168 of TM 9-2320-386-24P. The -24P's reference to parts kit DQ6022 is wrong.

Fuel Tanker Access Covers

The TMs for both M900-series 5,000-gal fuel tankers are short on hose trough access cover information. Make a note until TMs 9-2330-356-24P and 9-2330-398-24P are updated:

Curbside, front, NSN 5340-01-179-9844
Roadside, front, NSN 5340-01-179-9843

Curbside, rear, NSN 5340-01-180-4853
Roadside, rear, NSN 5340-01-167-8119

Air System Cover-Up

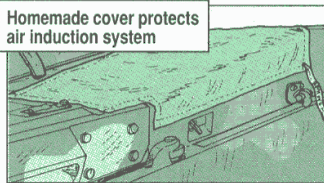
Dear Editor,

An M1-series tank that's sent to the wash rack for cleaning or parked outside during a rainstorm almost always ends up with an air induction system full of water.

No matter how much we preach, scold, yell or demand, someone always forgets to keep the water below the track line. The V-packs and NBC filters get soaked and so does our unit—it costs a lot to replace each of those filters.

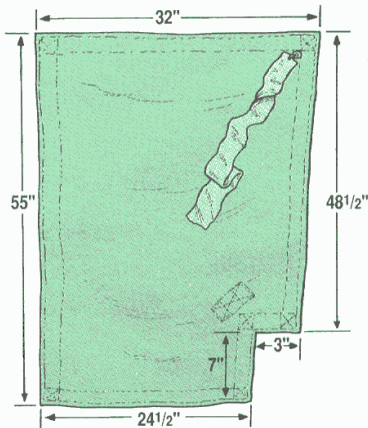
We've designed a special cover to keep water out of the

Homemade cover protects air induction system



air induction system. It is made of vinyl-coated canvas and can be fabricated in any canvas shop.

Here's how to make it:



Add an extra two inches all the way around the cover to fold under and stitch. That keeps the cover from fraying. At the same time, stitch the hook portion of some 2-in wide hook and pile strips, NSN 8315-01-172-1329, all the way around the outside of the cover.

Glue the pile portion of the strips around the air induction system. Adhesive, NSN 8040-01-040-0947, will hold the strips in place.

Finally, make sure you put a red streamer on the cover to remind operators to remove it before starting the vehicle. Use warning streamer, NSN 8345-00-995-7806.

Tankers and Mechanics
2/70th AR
Ft Riley, KS

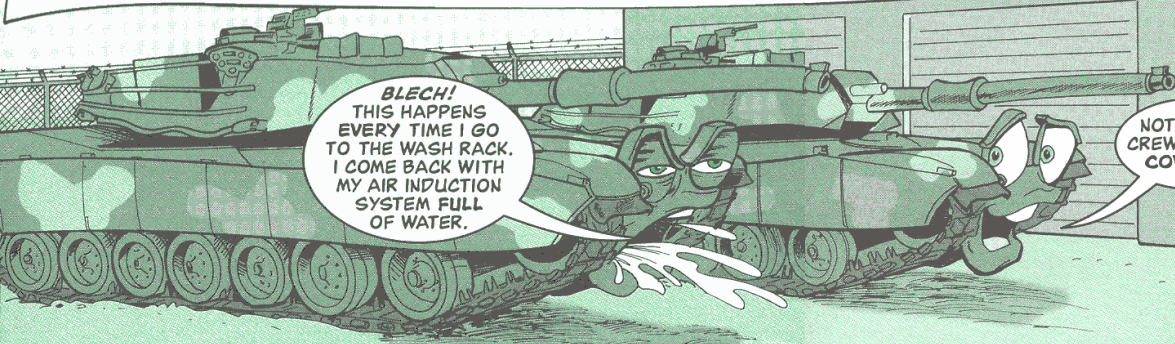
FROM THE DESK OF THE Editor 

Looks like you've "covered" most of the bases. Until you can fabricate the cover, however, there are a few things you can do to protect the air and NBC filters.

First, use the tarp, NSN 8340-00-841-6456, from your vehicle's BII to cover the air induction system as much as possible.

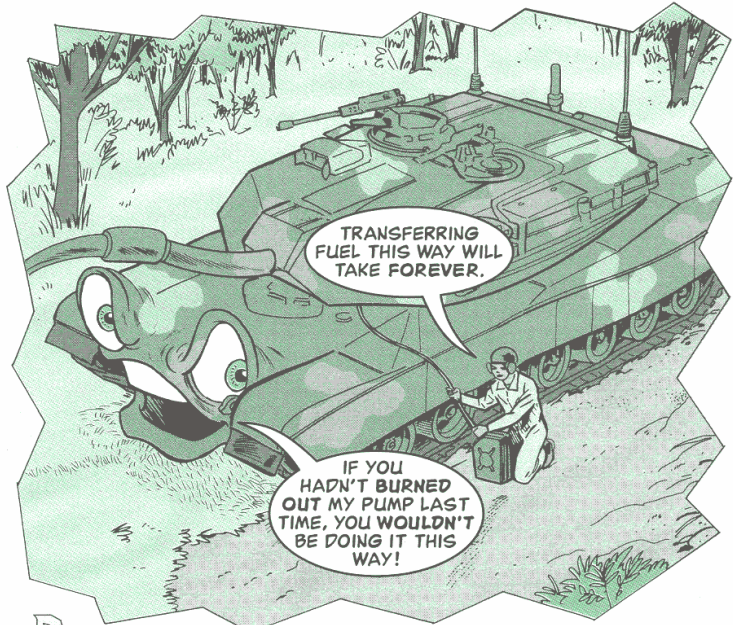
Second, make sure you run the NBC system while washing the tank and while training during a rainstorm. The NBC system will extract any water before it can reach the NBC filters.

Do not run the NBC system if your tank has been sitting uncovered in the rain or was washed with no tarp covering the air induction system. If you do, water that has collected in the sponson box will be blown into the NBC filters and make them unserviceable.

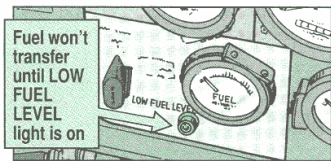


FUEL TRANSFER

IS LIGHT WORK



Drivers, no matter how hard you try, you can't transfer fuel in your M1-series tank unless the **LOW FUEL LEVEL** light comes on.



That light comes on only when the rear cell fuel-level gauge reaches $\frac{1}{8}$

full. Once that happens, you can transfer fuel from the front to the rear cell by setting the vehicle master power switch to **ON** and turning the fuel tank selector switch to **RIGHT FRONT**.

When the fuel gauge reads between $\frac{1}{4}$ full and empty, stop transferring from the right front cell or you'll end up pumping air. That can burn up the transfer pump. Either turn the selector switch to **LEFT FRONT** to continue transferring fuel, or to **REAR**, which stops the fuel transfer.

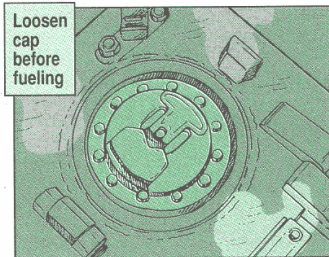
up, you get pressure buildup in the front cell that could make it collapse. Then, your tank has to go to depot for a new fuel cell.

WARNING!

If your tank has the new fuel cap, NSN 5340-01-387-4007, you could have some problems when transferring fuel.

The new cap has a small cartridge filter located on top. The check valve on the cartridge filter is supposed to pop open whenever there's a pressure imbalance between air inside and outside the fuel cells—like every time you transfer fuel.

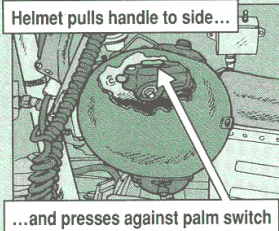
Unfortunately, the check valve doesn't always work. If it doesn't pop



To prevent this, loosen the fuel cap on the cell before you begin transferring fuel. That keeps the pressure balanced and the fuel cell intact.

Watch Where You Hang Your Hat

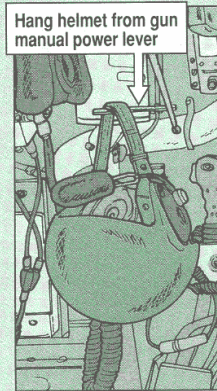
After operations, some tank commanders stow their CVC helmet on the TC override handle.



Problem is, the extra weight makes the handle fall over. Then the helmet depresses the palm

switch. If the turret power is on and the hydraulics are pressurized, the turret moves. Someone could get hurt.

Hang your CVC helmets from the .50-cal machine gun's manual power lever. That keeps the helmet out of the way and you out of danger.



Cap Crackers

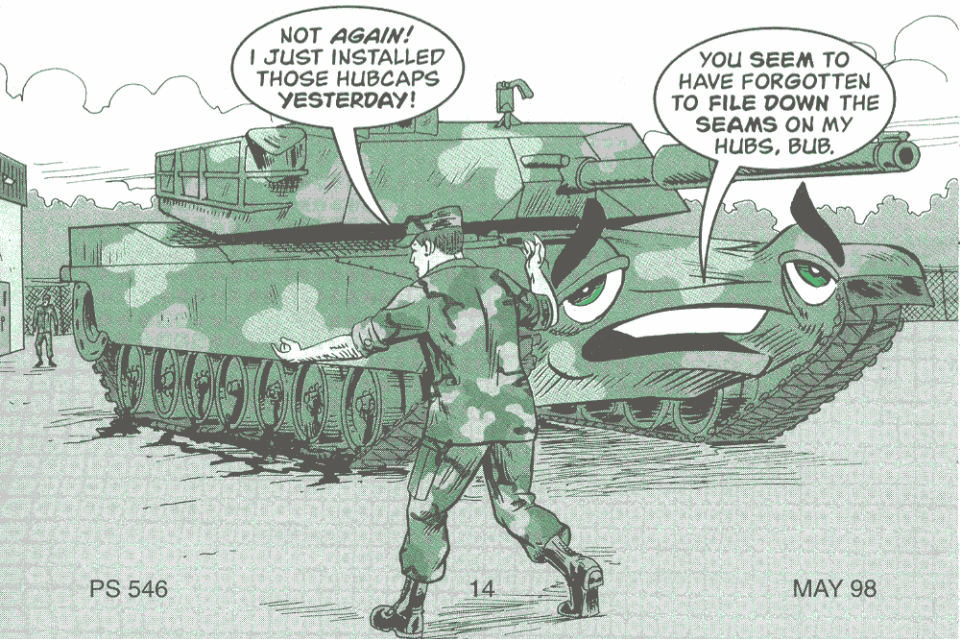
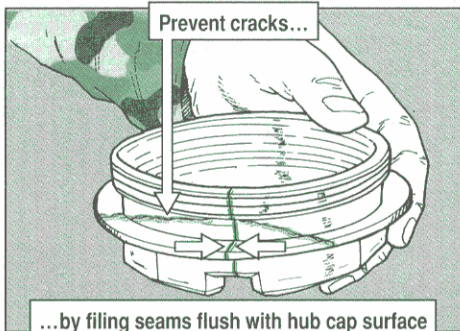
Mechanics, chances are you've been replacing a lot of cracked hub caps on M1-series tanks lately. And you're probably wondering why.

You torque the hubs to 40-60 ft-lbs, just like it says in the -20-1-4 TMs, but the hubs still crack and leak oil.

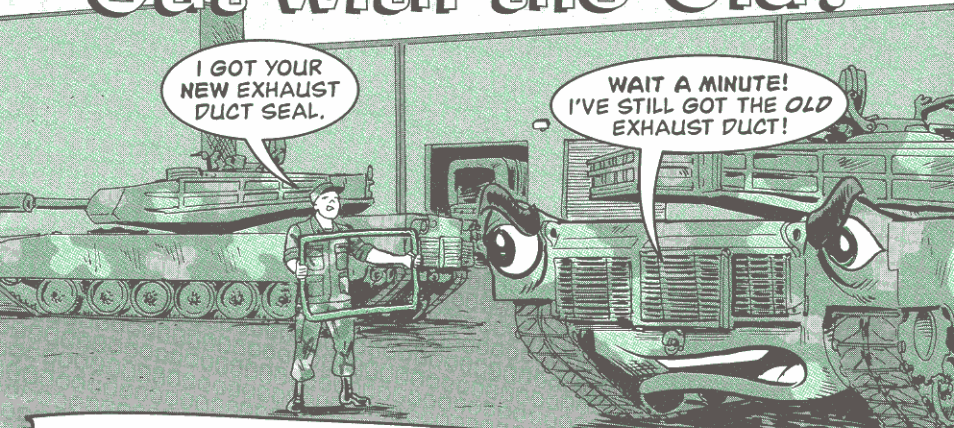
The real problem is the raised seams on the underside of the flange on both sides of the cap. The seams are part of the mold flash parting line from the injection molding process used to create the cap.

When the cap is screwed in place, the raised seams press against the hub and o-ring. The concentrated pressure on the seams make the cap crack.

You can prevent this problem by filing off the raised portion of each seam before installing new caps. With the raised portion of the seam gone, the pressure disappears—and so do cracked hub caps.



Out with the Old?



Dear Half-Mast,

The -24P-1 TMs now list a new exhaust duct, NSN 2990-01-317-3927, and seal, NSN 5330-01-320-3692, for M1-series tanks.

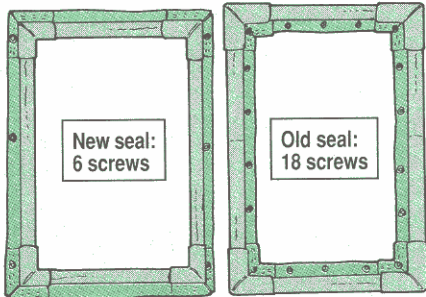
Unfortunately, most of our tanks still have the old exhaust duct. The new seal won't fit, and the old seal is no longer listed in the parts TMs.

Can we still get the old seal or do we have to replace the exhaust ducts on all of our vehicles?

SFC J.J.S.

Dear Sergeant J.J.S.,

You can still get the old exhaust seal, NSN 5330-01-099-6331. The NSN wasn't supposed to be dropped. Pencil that stock number in your parts TM until it's updated.



Mechanics, if you're unsure which exhaust duct you have, here's a quick check: Count the number of screws holding the exhaust seal in place. The old seal uses 18. The new seal takes only six.

Half-Mast

MLRS...

Check the TEC

Drivers, the TEC fault light on your MLRS warns you of possible transmission problems.

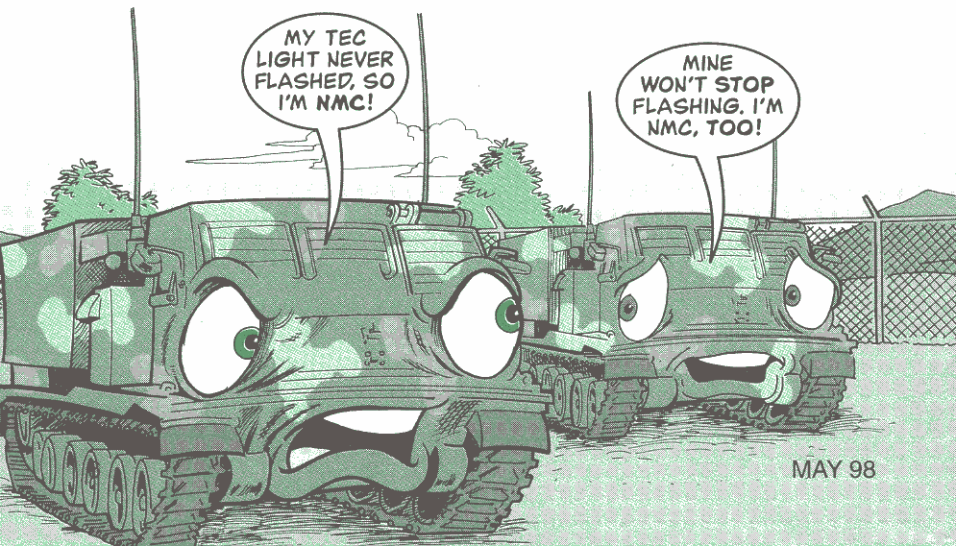
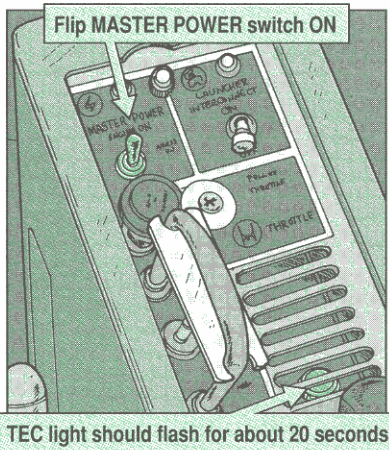
That's an important bit of info, because if the transmission goes out during operation, you could lose control of the vehicle—**CRASH!**

Don't miss out on that advance warning. Check the TEC fault light before every operation like this:

1. Turn the MASTER POWER switch to ON.
2. Eyeball the TEC fault light. It should flash on and off for about 20 seconds and then go out.

If the light comes on but doesn't flash, or if it continues to flash long after 20 seconds, there's a problem with the transmission. Your vehicle is NMC.

If the light doesn't come on at all, it could be a burned-out bulb. Get your mechanic to check it out before you drive the vehicle. A burned-out TEC light can't tell you if the transmission is OK or not.



KICK THE

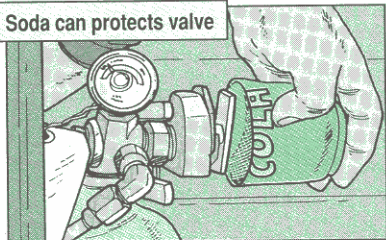


Dear Editor,

Drivers are always kicking the valve on top of the Halon fire extinguisher when getting in and out of their MLRS. That sometimes sets off the extinguisher.

Since Halon is so hard to replace, we made a homemade shield to protect the valve. We cut a 12-oz soda can in half and slide the bottom end over the valve.

Soda can protects valve



The can protects the valve from big feet, but it can be slipped off in a flash if necessary.

SGT Jon Cox
1/14th FA
Ft Sill, OK

FROM THE DESK OF THE Editor



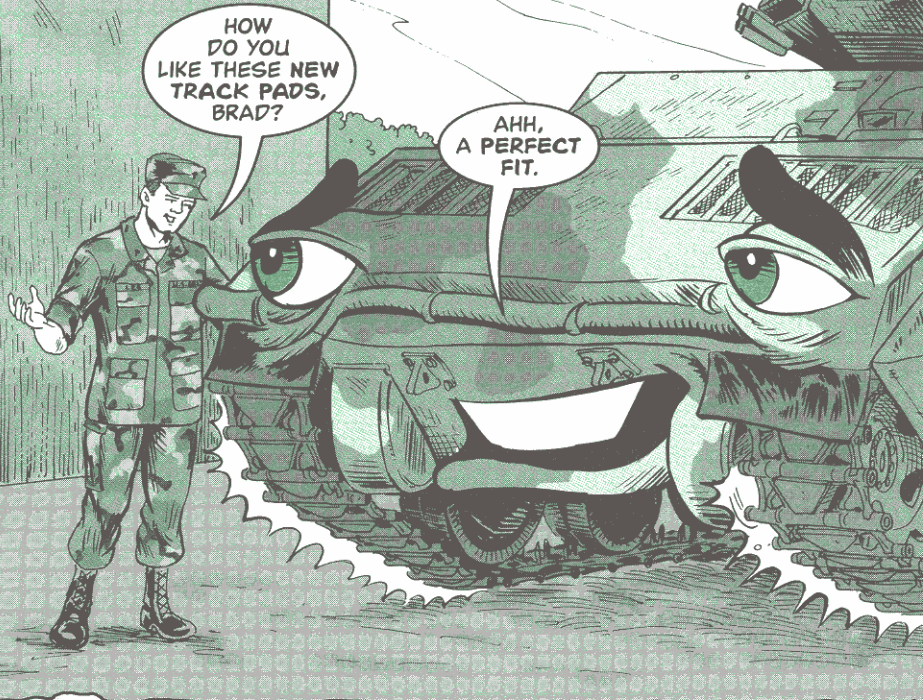
That's a real "can do" idea.
Good job!



Bradley Air Cleaner Door

Get a replacement door for your M2A2/M3A2 Bradley's air cleaner with NSN 5340-01-439-5897. The NSN was left out of Fig 130 in TM 9-2350-284-24P-1.

Bigfoot Gets New Sole



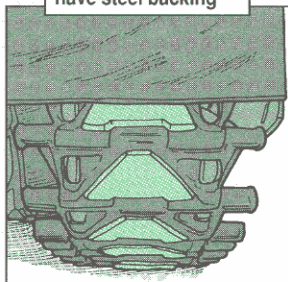
Mechanics, there are now two different kinds of T157I Bigfoot track pads available for the M2/M3-series Bradley.

The new pads have a steel backing instead of the aluminum backing that comes with the old pads. A steel backing means longer pad life and fewer loose pads.

Get the new pads with NSN 2530-01-440-7615. NSN 2530-01-442-9686 gets a track shoe that has the new pad. It's OK to mix aluminum- and steel-backed pads on the same track.

Aluminum-backed pads, NSN 2530-01-300-1681, and shoes, NSN 2530-01-288-2719, will still be used on the MLRS.

New T157I track pads have steel backing

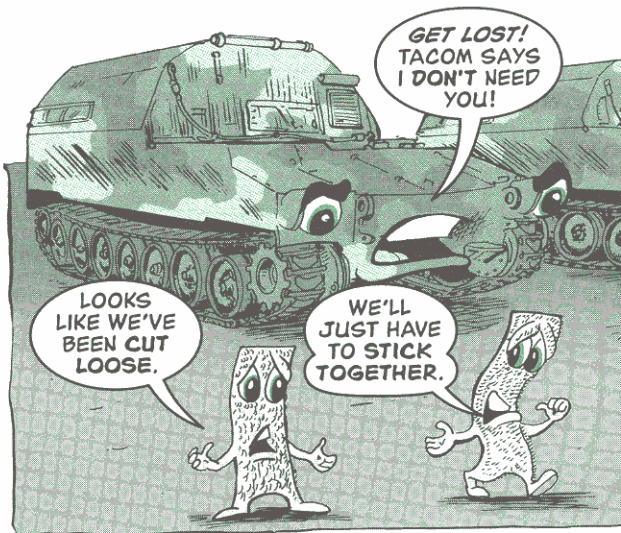


M Cut Hook and Pile Loose

Mechanics, the hook and pile strap wrapped around the AFES manual pull handle is extra insurance for the M992-series ammo carrier. The strap keeps the handle from accidentally slipping out of its retaining clip and setting off the engine fire extinguisher.

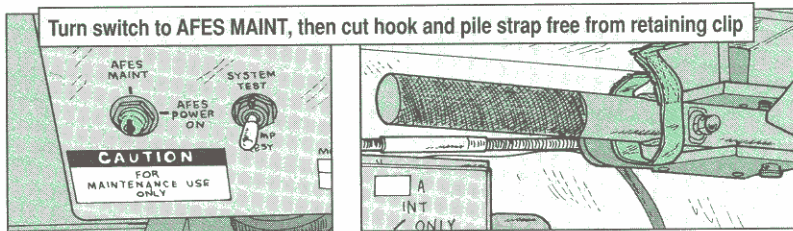
Unfortunately, the strap does its job a little too well.

In an emergency, the extra seconds needed to open the strap before pulling the handle can be disastrous.



That's why TACOM now says to get rid of the strap. Here's how:

1. Deactivate the AFES by turning the alarm panel maintenance switch to AFES MAINT. Then, put a locking pin in the valve actuator of the engine fire extinguisher bottle.



2. Open the hook and pile strap on the manual pull handle and cut it loose from the retaining clip.
3. Double-check the manual pull handle to make sure it is still firmly secured by the retaining clip.
4. Remove the locking pin from the engine fire extinguisher bottle and return the AFES alarm panel switch to AFES POWER ON.

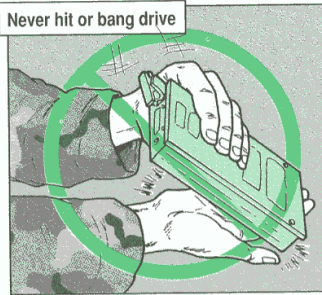
Give LCU Some TLC



Backup data as often as possible. That keeps data losses to a minimum in case of a hard disk failure.

Never bang or drop a hard disk drive. Inside the drive, the **read and record** heads float just above the disks. The distance between the two can be less than the thickness of a single human hair, so any bumps can destroy stored data.

Never hit or bang drive



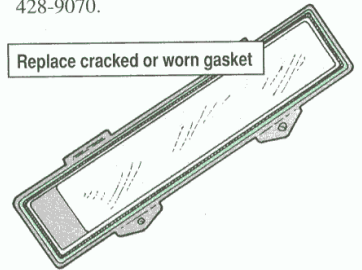
Keep the hard disk away from magnetic or electrical fields—like magnets

and radios. Either one can erase data from the hard disk.

Keep liquids and dirt away from the LCU, especially high pressure water and steam when cleaning the vehicle. The gaskets on the LCU's back cover and battery cover can dry out and crack, so one good squirt will short out the unit.

Replace torn, cracked or missing gaskets with gasket, NSN 5999-01-428-9070.

Replace cracked or worn gasket



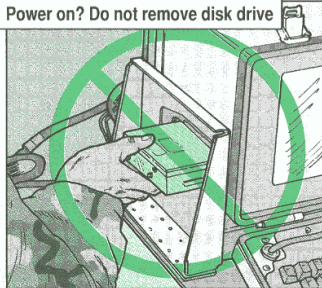
Glue it in place with adhesive, NSN 8040-00-664-4318.

Crewmen, the CP-2112 light-weight computer unit (LCU) on your M577 command post carrier was designed for rugged use, but it's still a computer.

That means the LCU needs proper care on your part to keep it up and running.

Never remove the hard disk drive from the LCU while the computer is turned on. That creates a power surge that can damage or destroy the drive.

Power on? Do not remove disk drive



Radiator Cap Marker

Mechanics, to help avoid burns and scalds from hot coolant, put a warning marker, NSN 9905-01-374-5177, on every M113-series carrier's radiator cap. To get the free markers, call TACOM at DSN 786-7352 or (810) 574-7352. Or send a self-addressed, stamped envelope to:

USA TACOM
ATTN: AMSTA-IM-ACA, Bldg 229
Warren, MI 48397-5000

Adhesive, NSN 8040-01-068-2423, holds markers in place.

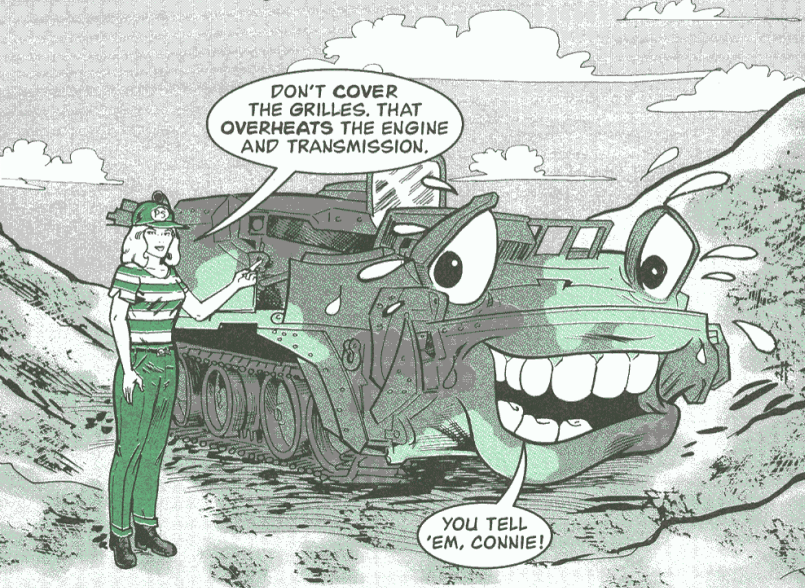


KEEP ACE OUT OF PM HOLE

To help keep your M9 ACE moving earth, here are some things you can do in addition to your everyday PMCS.

Keep Vents Open

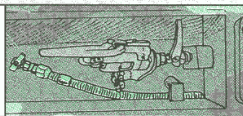
The engine and radiator need lots of air to keep things running cool. Never lay cargo nets, duffle bags or ALICE packs on the engine intake grilles. A covered screen overheats the engine and transmission.



Keep Moisture Out

Condensation forms in the fuel tank during hot days and cool nights. To let that water out, open the fuel shutoff valve and drain the fuel/water separator. Drain the water through the hose and into a clear container. Drain until clear fuel comes out.

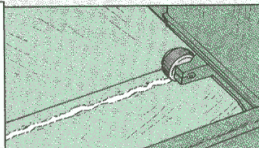
Drain fuel-water separator after operation



Keep Rollers Lubed

On each bottom side of the ACE's bowl are ejector guide rollers that move back and forth when the bowl is emptied. Without lube, the rollers lock up, causing 'em to bind and drag along the roller bench. If you see a groove in the roller bench, it means the roller isn't turning freely.

Groove means guide rollers aren't getting lubed

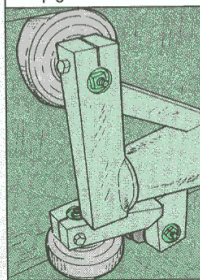


A roller that won't turn on one side of the bowl causes the ejector to bind or drag on the other side of the bowl. The end result is a lot of wear and tear on the ejector and bowl.

During scheduled services, give the roller's grease fitting several pumps of grease. While you're at it, do the same for the grease fitting on the ejector's cylinder rod.

For safety's sake, make sure the ejector is pushed completely forward and the lock is engaged before you go into the bowl.

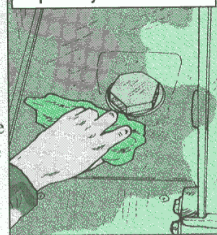
Keep guide rollers lubed



Hydraulic Tank Reminder

Keep the hydraulic tank's filler cap on tight. Always wipe sand and dirt away from the opening before adding hydraulic fluid. Any crud that goes in the tank will end up clogging the filters in the hydraulic system.

Wipe away sand and dust

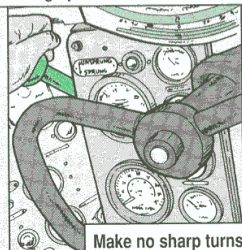


Drive Like an ACE

Read and heed the words on Page 2-69 of the -10 TM. That is, do not steer the ACE during dozing operations! Turning the vehicle while dozing will crack road wheels, bend road-arms, and rip actuators from the hull.

While dozing in UNSPRUNG mode, stay out of reverse unless you're back-blading. That's the word in Para 2-4 of your -10 TM. Forget sharp turns, too, or you'll throw track.

Backing up in UNSPRUNG mode?

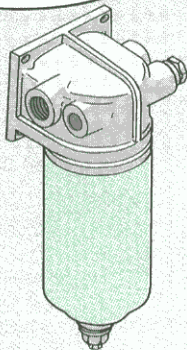


Make no sharp turns

Get the Right Filter



MECHANICS,
MAKE SURE YOUR
ACE'S TRANSMISSION
FILTER LOOKS LIKE
THIS...



The filter, NSN 4330-01-313-7825, shown above (Item 4 in Fig 151 of TM 5-2350-262-24P) is the right one. But you need to give it the once-over before using it.

It should have PN 5575208 on its side and come with a four-hole mounting base.

If you get an assembly with a three-hole mounting base, return it and submit an SF 364 Report of Discrepancy (ROD) to the supply folks. Then order a new filter. The three-hole mounting base will **not** fit on the ACE—it belongs to the M939-series truck vehicle system.

If you need just the filter element shown as Item 12 in Fig 151 of the -24P, get it with NSN 4330-01-182-9043. That also brings you the gasket (Item 11) and the flat washer (Item 19).

SEE ...

Prefilter Stays Put

Operators, that little strainer inside the SEE's fuel prefilter is there to catch any crud from dirty fuel in the SEE's fuel tank. Let it do its job.



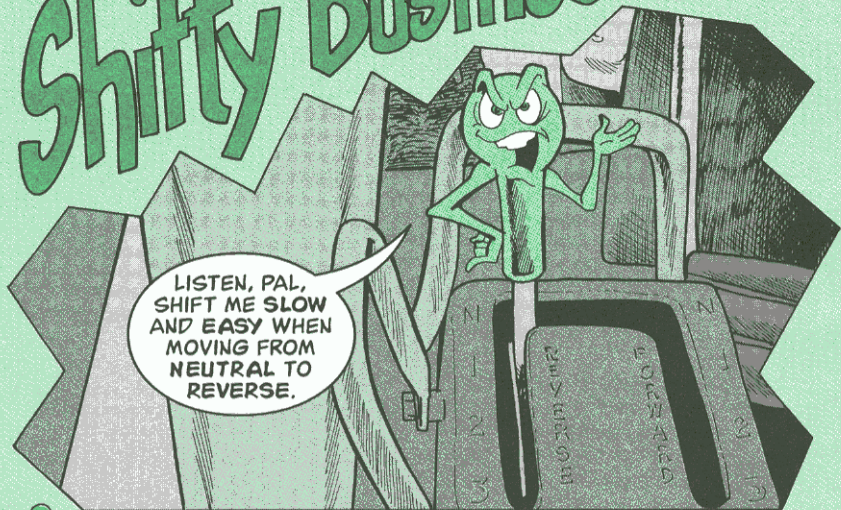
Never, ever, run the vehicle without its fuel prefilter strainer in place. Without the strainer, crud stays in the fuel system. It'll clog fuel injectors and make the engine run roughly, or not at all.

To keep things running smoothly, clean the prefilter once a week. Here's how:

1. Close the fuel shut-off cock. Then, loosen the wing nut and push the clip aside.
2. Unscrew the bowl and then the strainer.
3. Take a clean rag and wipe any crud out of the bowl.
4. Wash the strainer in clean diesel fuel.
5. Screw the strainer and bowl back into place.
6. Push the clip back in place and tighten the wing nut.



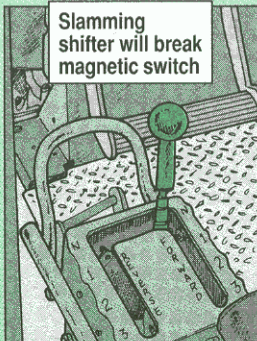
Shifty Business



Operators, getting into a slam-bam type of shifting mode causes lots of unnecessary wear and tear on construction equipment.

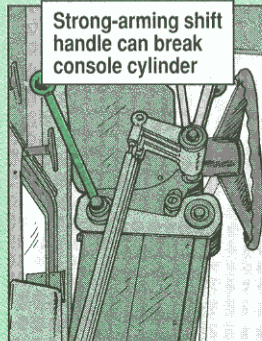
D7/D8 Tractors

Slow and easy is the best way to shift the dozer from neutral to reverse. Slamming the shifter sideways from neutral, then down into reverse, will break the backup alarm's magnetic switch inside the shift console. A busted switch means the backup alarm won't sound off in reverse. Then the dozer is NMC.



130G Graders

After operation, use a little TLC when you shift the grader's console tower to the upright position. Putting a strong hold on the tower's shift handle can break the master console cylinder inside the tower. Once the cylinder is shot, the console tower is NMC and your grader is down for repairs.



Lost in Lost World



THIS PACE HAS BEEN MURDER. WE'VE GOTTEN OUT LOTS OF GOOD INFO ON PREVENTIVE MAINTENANCE...

...BUT WE'VE BEEN PUTTING IN 80-HOUR WEEKS.

I THINK WE NEED A LITTLE PERSONAL PM.

AS IN VACATION?

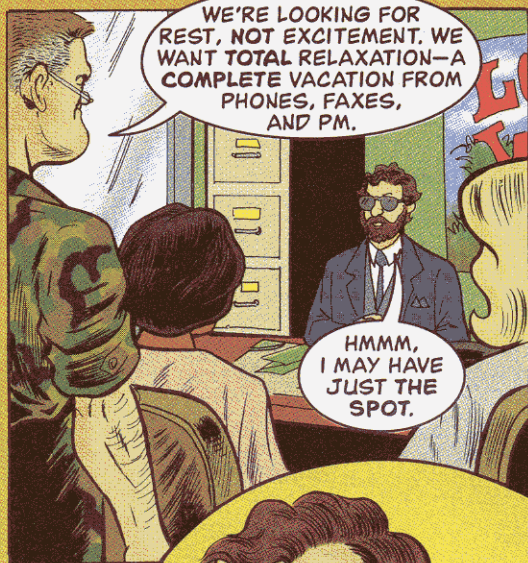
RIGHT! I'VE GOT A FRIEND WHO SHOULD BE ABLE TO STEER US TOWARD THE PERFECT VACATION SPOT.

I VOTE FOR THAT!

THE NEXT MORNING...



WELL, HERE'S THE PLACE.



WE'RE LOOKING FOR REST, NOT EXCITEMENT. WE WANT TOTAL RELAXATION—A COMPLETE VACATION FROM PHONES, FAXES, AND PM.

HMMM, I MAY HAVE JUST THE SPOT.

IT'S AN ISLAND WITH UNSPOILED BEACHES, A MILD CLIMATE, AND VERY FEW VISITORS. YOU'LL HAVE TO ROUGH IT A BIT, BUT I THINK YOU'LL FIND IT QUITE PEACEFUL.

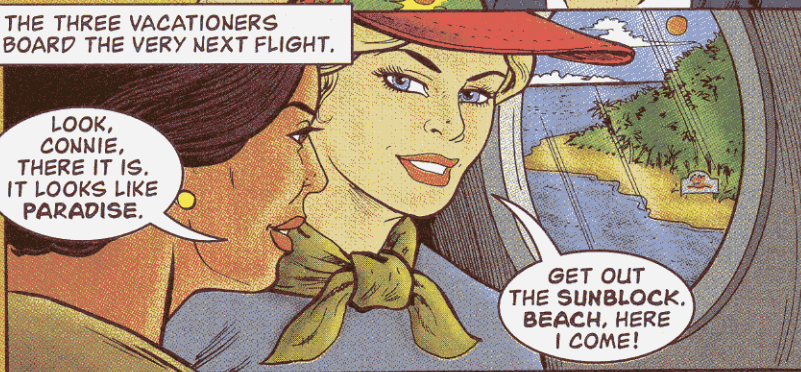


HEH-HEH!

WE'LL TAKE IT!

THE THREE VACATIONERS BOARD THE VERY NEXT FLIGHT.

LOOK, CONNIE, THERE IT IS. IT LOOKS LIKE PARADISE.



GET OUT THE SUNBLOCK. BEACH, HERE I COME!



WELL,
HE WASN'T
KIDDING.




HEY,
LITTLE
FELLA.



THIS DOES SEEM LIKE
A PEACEFUL PLACE. WE SHOULD BE
ABLE TO HAVE A NICE REST.



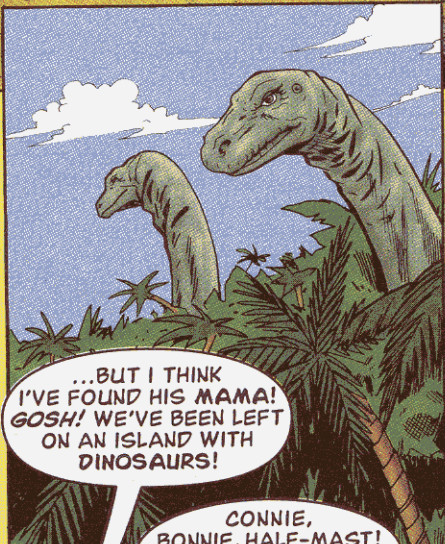
WELCOME
to
**LOST
WORLD**



HAVE YOU
EVER SEEN ANYTHING
LIKE HIM?



I
DON'T
THINK
SO...



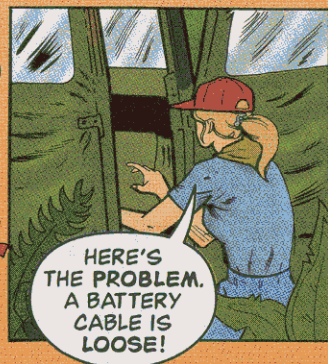
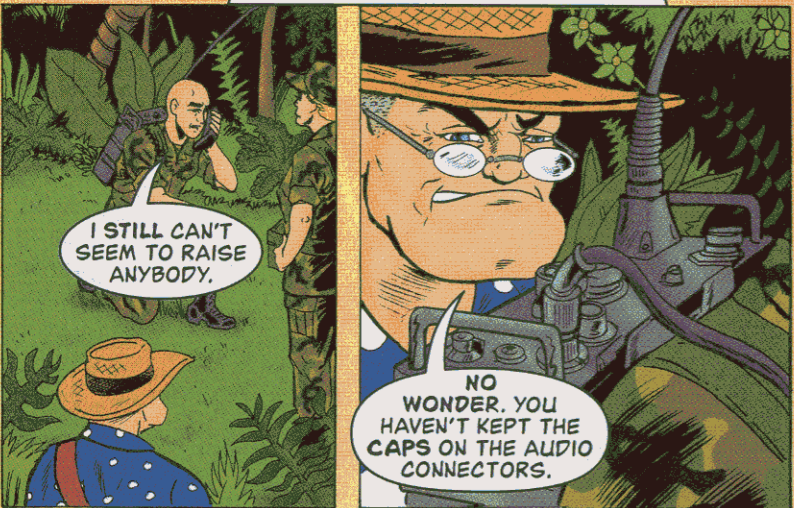
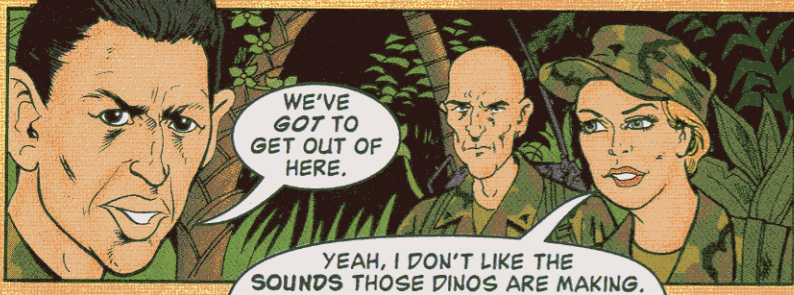
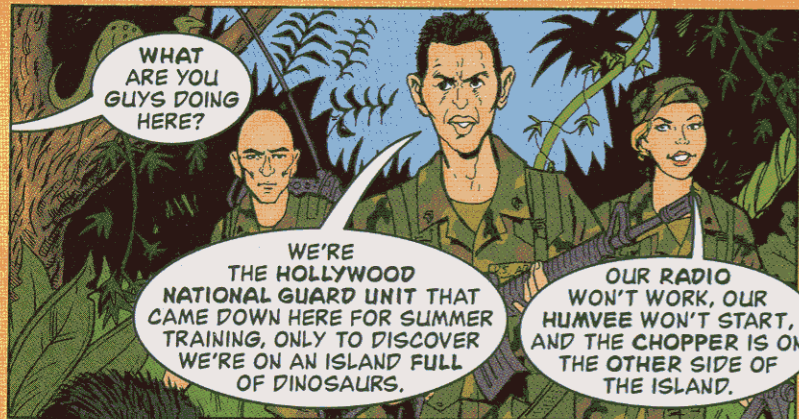
...BUT I THINK
I'VE FOUND HIS MAMA!
GOSH! WE'VE BEEN LEFT
ON AN ISLAND WITH
DINOSAURS!



CONNIE,
BONNIE, HALF-MAST!
THANK GOODNESS
YOU'RE HERE!



LOOKS LIKE
WE'VE GOT
COMPANY!



RARRR GHHH!

C'MON!
MOVE IT OUT!
LOOKS LIKE
SOMEONE RANG
THE DINNER
BELL!

I DON'T
WANT TO BE
ON THAT
MENU!

HEY, MY
HAT!

I THINK
WE OUTFRAN
HIM.

YEAH,
BUT NOW
WE'VE GOT
A PACK OF
RAPTORS
ON OUR
TAILS!

THOSE RAPTORS
ARE RIGHT BEHIND US.
WE'RE GOING TO NEED
COVERING FIRE UNTIL
TAKE OFF.

MY M249
IS FIRING
SLOWLY.

AND
MY M16 IS
JAMMED.

IT SOUNDS LIKE THE M249 NEEDS LUBE. TRY LUBING THE FEED TRAY COVER AND THE SLIDE ASSEMBLY. YOU WITH THE M16, TRY CLEANING THE CHAMBER AND BOLT.

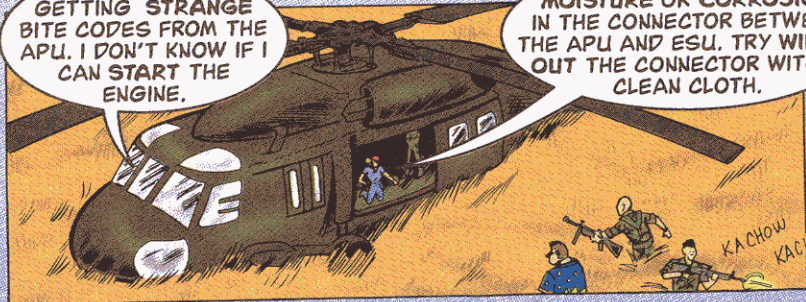


CARBON'S JAMMED EVERYTHING UP. DO YOU SEE NOW WHY PM IS IMPORTANT?



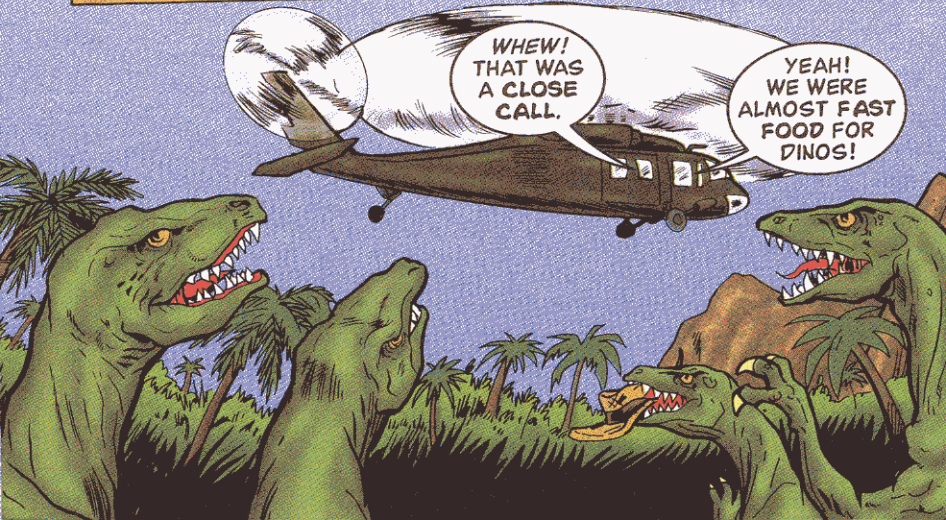
BONNIE, I'M GETTING STRANGE BITE CODES FROM THE APL. I DON'T KNOW IF I CAN START THE ENGINE.

COULD BE MOISTURE OR CORROSION IN THE CONNECTOR BETWEEN THE APL AND ESU. TRY WIPING OUT THE CONNECTOR WITH A CLEAN CLOTH.



WHEW! THAT WAS A CLOSE CALL.

YEAH! WE WERE ALMOST FAST FOOD FOR DINOS!



A FEW DAYS
LATER, BACK IN
THE PS OFFICE...

THAT VACATION
WASN'T QUITE AS
PEACEFUL AND RESTFUL
AS I HAD HOPED
FOR.

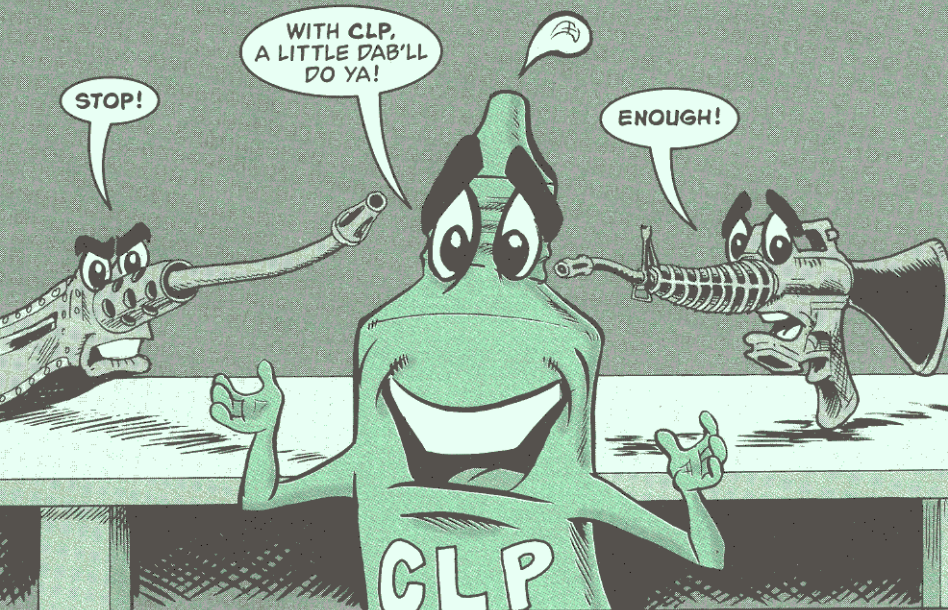
IT SEEMS
LIKE WE HAVE TROUBLE
TAKING A HOLIDAY
FROM PM.

NEXT TIME
WE USE *MY* TRAVEL
AGENT, HALF-MAST. A
TRIP TO NTC WOULD
HAVE BEEN MORE
RELAXING.

TRIP TO NTC!
THAT REMINDS ME OF
OUR NEXT MISSION. HOW
DOES THE DUST
BOWL SOUND?

OHH...
YUCK!

A Little Lube Goes a Long Way



If your rifle or machine gun could talk, it would yell "Stop! Enough!" when you smear CLP on it.

Too much lube helps carbon to build up fast. Carbon gums up moving parts. That's when moving parts stop moving.

In the desert, it's even worse. Sand mixes with lube and forms a scouring powder that grinds up moving parts.

How much lube is just right? The answer is as close as your -10 TM. It shows exactly how much to lubricate each part.

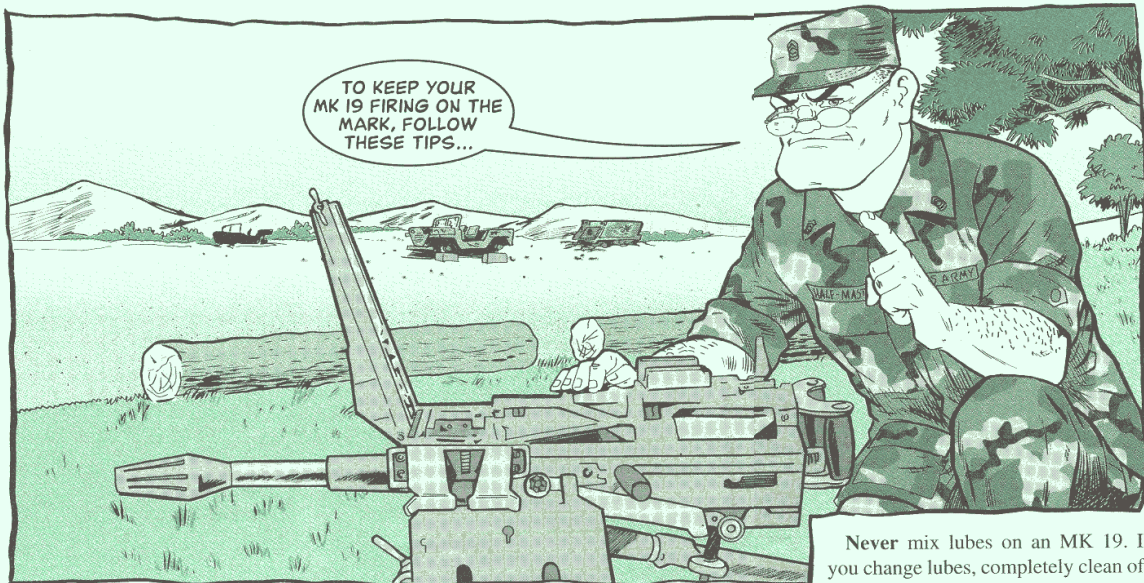
A **light lube** is barely visible.

A **generous lube** is heavy enough that you can spread it with your finger. If you spray lube on like it's deodorant, though, you've gone from generous to too much.

In sandy areas, lightly lube all internal moving parts. Don't lube the weapon's outsides. Sand is more of a threat than corrosion.

If you think you put on too much lube, wipe it off and start again. The right lubing pays dividends in the field

Good Marks for Your MK 19



TO KEEP YOUR MK 19 FIRING ON THE MARK, FOLLOW THESE TIPS...

Lubrication

Never use CLP on an MK 19. It gums up moving parts instead of lubing them.

The best thing for lubing the MK 19 is semi-fluid weapons lubricant (LSAT), NSN 9150-00-949-0323. But LSAT is hard to get.

GMD AND LSA ARE OK FOR LUBING, TOO. THEY BOTH COME IN THREE SIZES.



GMD	NSN 9150-00-
14 oz	935-4018
6 1/2 lb	223-4004
35 lb	965-2003

LSA	NSN 9150-00-
2 oz	935-6597
1 qt	687-4241
1 gal	753-4686

Never mix lubes on an MK 19. If you change lubes, completely clean off all the old lube before you use the new one.

When you lube, give extra attention to the feed pawls, the cocking lever rails, the pivot posts on the primary drive lever, and the bolt assembly. You'll have trouble firing if you forget just one of them.



Cleaning

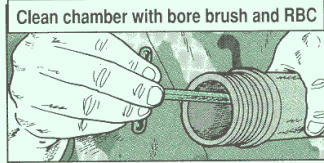
Dry cleaning solvent is authorized for cleaning the MK 19, and it works great.

But never dip the bolt, ogive plunger or sear in solvent. They have sealed components with grease inside. Solvent will dilute and eventually destroy the grease in those assemblies. That ruins them.



WHEN CLEANING THESE PARTS, USE A BRUSH OR RAG DIPPED IN A SMALL AMOUNT OF SOLVENT.

The chamber is the worst carbon build-up area, and eventually gets pitted from the carbon. To clean it, soak your bore brush in RBC and run it through the muzzle into the chamber. Repeat this until the muzzle's clean.



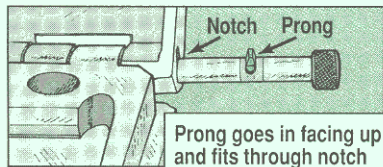
Clean chamber with bore brush and RBC

Assembly

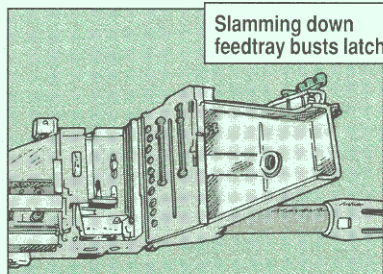
AFTER THE WEAPON'S CLEAN, PUT IT TOGETHER PROPERLY OR YOU'RE FINISHED BEFORE YOU START.



When you install the feedtray crosspin, make sure its prong is pointing straight up so it will fit inside the cover's notch. If you force the pin, you break the prong and the pin can work out.

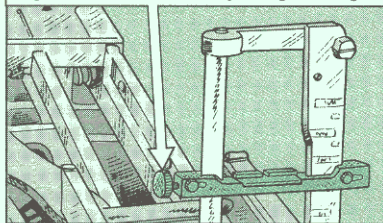


Never slam the feedtray down to lock it, or you'll break the latch springs. Lower the feedtray until it locks.



After you loosen the rear sight lock nut to adjust the sight, retighten the nut. If it's left loose, the sight flaps up and down and breaks the elevation wheel.

Tighten lock nut after adjusting rear sight



PMCS

Keep an eye out for these PM troublemakers and your MK 19 will take care of you:

✓ Bolt burred? Chrome finish coming off? If so, your MK 19 will jam.

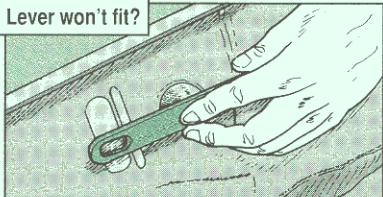
Burred? Finish peeling?



✓ Secondary drive lever won't stay or fit easily in feed tray cover?

Something may be wrong with the cover retaining ring. That causes feeding problems, and the bolt will jam during charging and firing.

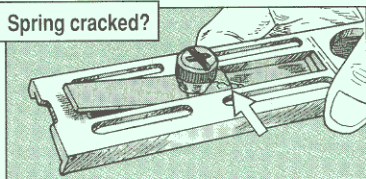
Lever won't fit?



- ✓ Cracks in springs for round alignment guide, especially at pin hole?

The spring is weak and will cause erratic firing and poor feeding.

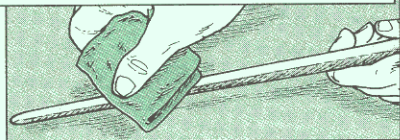
Spring cracked?



- ✓ Vertical cam assembly scratched or pitted? This also causes erratic firing and the bolt jams during firing.

- ✓ Aluminum buildup on the cam? Aluminum buildup can cause a runaway gun or stoppage.

Your armorer can remove aluminum buildup with crocus cloth or a wooden block.



Handle the cam carefully. Even one bounce on a concrete floor and it's out of action. Problems? Tell your armorer.



M16-Series Rifles, M4A1 Carbine . . .

The BFA Difference

Dear Half-Mast,

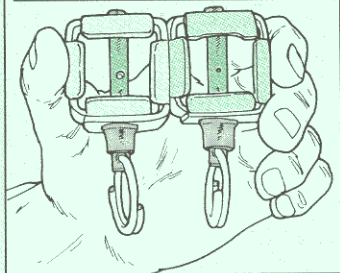
What is the difference between the blank firing attachment (BFA) for M16-series rifles and the one for the M4A1 carbine? Except for the M16's being red and the M4A1's yellow, they look the same. Does it make any difference if we switch them?

CPT M.F.

Dear Captain M.F.,

Yes, it does! The M4A1 BFA has a slightly larger hole for bleeding off gas. Switching BFAs throws off the gas systems and that causes recoil and feeding problems. So never switch BFAs.

M4A1 BFA has slightly larger hole



Half-Mast

THE CLEANING CONNECTION

Dear Editor,

If dirt and corrosion do their dirty work on the Hellfire launcher's shotgun connectors, the connection between the launcher and missile is ruined. Your Hellfires have lost their fire.

The best ways to keep the connectors clean are to flip down the connector covers when no missiles are loaded, and to store the launchers inside when you won't be firing for a while.

But you still need to clean the connectors every other week if you expect a good fire. We've found the easiest method is to use contact cleaner, NSN 6850-01-371-8048, and .002-in safety wire. Use the safety wire to gently work out any dirt in the connector holes. Then spray the contact cleaner on the connectors.

Cleaning takes only minutes and makes for clean launches.

SPC Dan Higgins
C Co, 8/101st Aviation
Ft Campbell, KY



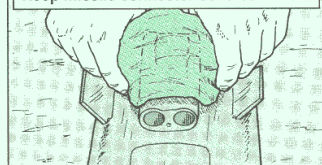
CONNECTION

FROM THE DESK OF THE Editor

There's one more step. Keep the connectors on the missiles—live and training—clean, too. If they're clogged with sand or rocks, it won't matter how clean the launcher connectors are. Keep missiles in their cases as much as possible. If you have to leave missiles on the ground, cover the connectors with a bag.

If the connectors do get plugged, clean them with contact cleaner before you load the missile.

Keep missile connector covered in field



AH-64A . . .

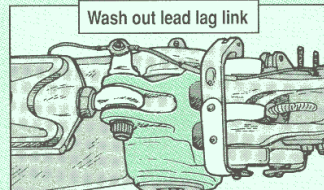
A Dirty Bird

Just come in from two weeks in the field where dust and dirt were your constant companions? Now you find them hiding in every crack and crevice.

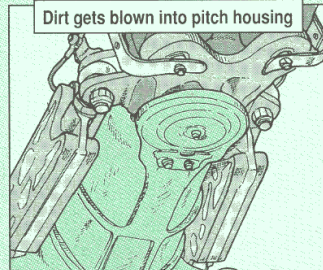
If the dirt stays put, it's probably not a problem. Unfortunately, it gets blown into the pitch housing, where it can do all kinds of harm. It can cause unbalanced blades and put extra stress on strap packs.

So, if you find dirt and dust in the lead lag links, do what you'd do for yourself. Give it a shower.

Wash out lead lag link



Dirt gets blown into pitch housing



Take your low-pressure water hose and wash out the lead lag links. Newer links have drain holes that make washing the dirt away easier. Older models without the holes take a bit more effort. Water won't hurt anything in that area, so make sure you get all the dirt out.

To Hellfire and Back

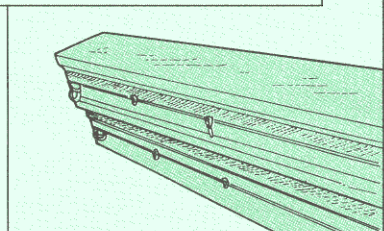
The Hellfire is a sophisticated, lethal weapon, but neglect and carelessness can turn it into a useless dud.

Keeping your Hellfires burning begins with keeping the missiles—real and training—in their storage cases as much as possible. Just a 1-in scratch

locking handles—or on its end—that breaks the end caps. Set it down on its rails.

When the launchers are installed, do not use them as steps or luggage racks. It doesn't take much weight to break the de-ice covers and connectors.

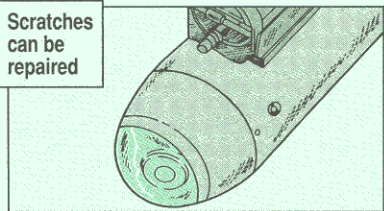
Always store Hellfires in containers



on the laser seeker scratches Hellfire accuracy. A missile connector plugged with dirt damages the launcher connector.

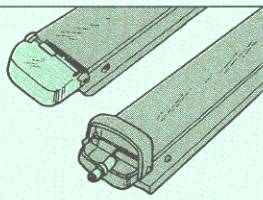
If a Hellfire is accidentally damaged, don't figure it's ruined. Keep it in its case until your repairmen can look at it. A torn fin or scratched seeker can be fixed. A new missile costs \$20,000.

Scratches can be repaired

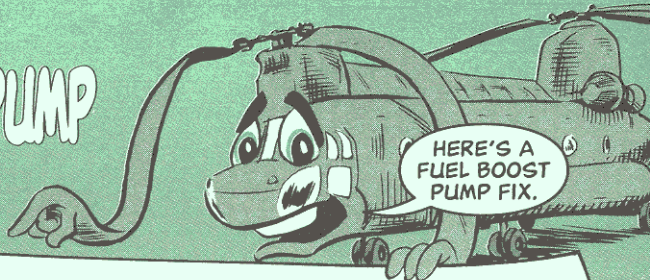


The best place to store the launchers when you're not firing is inside, away from rain and dirt. But **never** lay a launcher on its side—that breaks the

Stepping or setting stuff on launcher breaks cover and connector



PUT THE PUMP IN PLACE



Dear Windy,

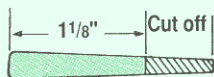
Mounting an auxiliary fuel boost pump in a forward fuel tank is a tough job. There's very little working room between the tank and the pump support bracket. It makes aligning the pump on the bracket almost impossible.

A poorly aligned pump can damage bolt and pump housing threads.

You can make the job easier by installing four guide pins to hold the pump housing to the bracket while you work.

Use pin, NSN 5315-00-198-8095. That's the same pin as Item 110 of Fig 40 in TM 55-1520-240-23P.

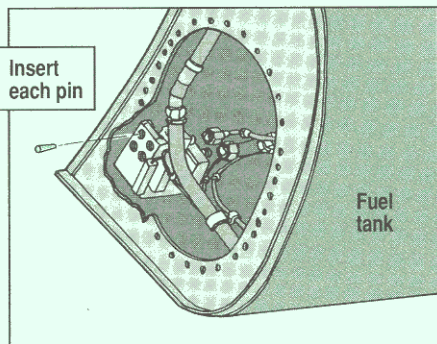
Cut off the threaded end of each pin and file the pin smooth.



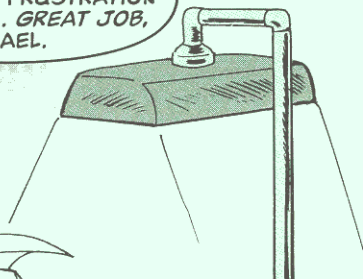
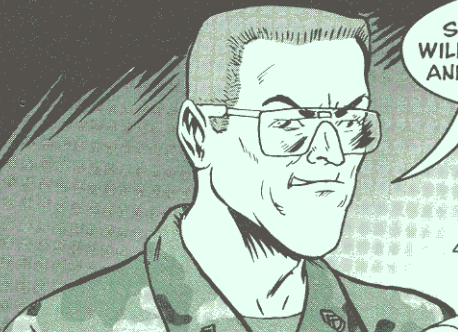
Then, holding the pump to the bracket, insert each pin. You're aligned!

As you remove each pin, install the bolt and washer to replace it.

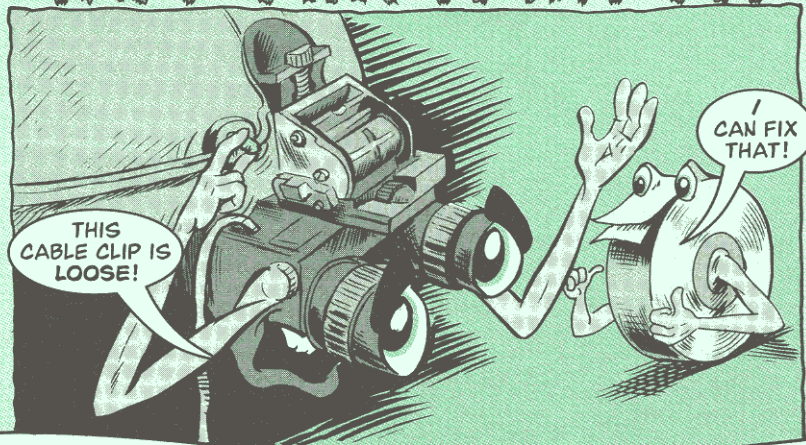
Israel Velez
ASF Lewis
Dupont, WA



A SUPER-
SIMPLE SOLUTION THAT
WILL PREVENT FRUSTRATION
AND DAMAGE. GREAT JOB,
ISRAEL.



TAPE FOR TIGHT FIT



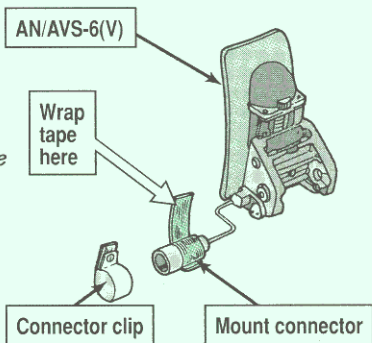
Dear Windy,

We found that after attaching the AN/AVS-6(V)1 or -6(V)2 night vision goggles to the SPH-4B helmet with the ANVIS attachment kit, the cable connector does not rest snugly in the cable clip.

This creates two problems: The pilot has a hard time attaching the cable to the battery pack and, more importantly, the cable slides out of the clip and becomes a safety hazard.

We solved these problems with double-sided pressure-sensitive tape, NSN 7510-00-634-1549. Just wrap the tape twice around the grooved section of the mount cable connector. The tape serves as a shim that keeps the connector in place.

Douglas W. Schmidt
ASF, Ft Eustis, VA



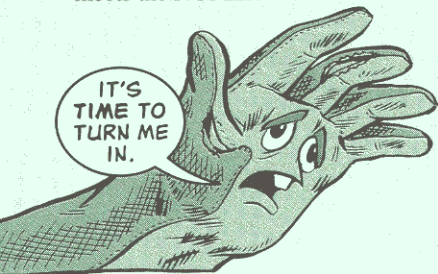
Guard and Reserve units take note. The -4B helmet is being fielded to you now and you'll need Doug's idea for tight night vision operations.

Windy

Glove Check

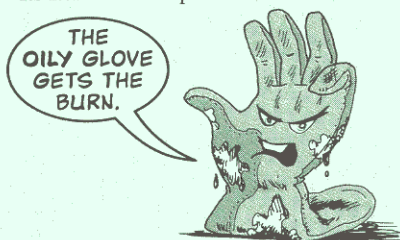
Grab your gloves from your flight bag and give them a good once-over.

Do you see any holes? Check carefully along the seam between the forefinger and the thumb. Now look at where the leather of the middle finger meets the NOMEX fabric.



Any holes in the leather, NOMEX fabric or where the leather and fabric meet? If so, turn your gloves in for new ones.

What about that fabric? Is it oil stained and soaked in spots? In a fire, your NOMEX fabric may not burn, but whatever is soaked into it will ignite at its normal flash point.



If your gloves are just dirty, put them on and wash them with soap and warm water just as if you were washing your hands. Use saddle soap, NSN 7930-

00-170-5467. This will clean and also keep the leather palms from getting hard, crusty or brittle.

Rinse with more warm water, then remove the gloves and gently squeeze the water out. Don't wring or twist the gloves. Place each glove flat on a towel and roll the towel up with the gloves in it.

Hand washing is best, but you can wash the gloves in your machine at home, too. Use warm water. You can use a dryer, but keep the setting on low heat.



If the gloves don't come clean, turn them in for new ones.

Here are the NSNs for gloves:

Size	NSN 8415-01-
5	040-2012
6	040-1453
7	029-0109
8	029-0111
9	029-0112
10	029-0113
11	029-0116

All About PLGR

Replacing batteries is the only maintenance that operators can do on the AN/PSN-11, Precision Lightweight GPS Receiver (PLGR).

Sounds simple enough, but there's more to it than meets the eye.

HERE ARE SOME THINGS YOU NEED TO KNOW TO KEEP THE PLGR'S INTERNAL POWER BATTERY AND MEMORY BATTERY SAFELY DOING THEIR JOB. YOUR PLGR CAN USE FOUR TYPES OF BATTERIES FOR INTERNAL POWER...



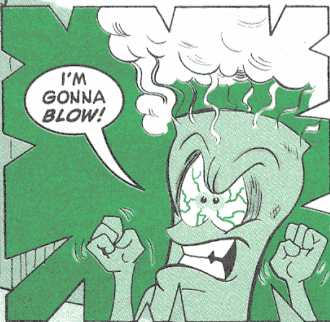
Internal Power Batteries: Lithium BA-5800/U

The primary power battery is the lithium, sulfur-dioxide, BA5800U, NSN 6665-99-760-9742. These batteries

BA-5800/U primary power battery

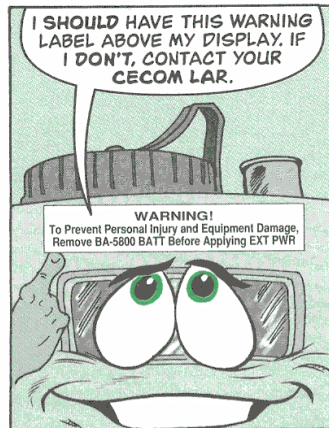


contain pressurized toxic, sulfur-dioxide gas. This gas can cause the battery to vent, sometimes violently!



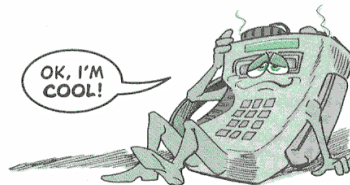
So, before you install a new lithium battery, give it the once-over. If there's any sign of damage, like leaking or an odor, don't use it.

Batteries



Applying external power **before** removing the battery can cause the battery to vent violently. If it does, here's what to do:

Turn off the PLGR and let it cool for at least an hour.



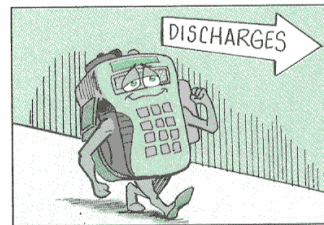
While it's cooling, fill out an SF-368, PQDR, and send it to:

US Army Communications-Electronics Command (CECOM)
ATTN: AMSEL-LC-LEO-D-CS-CFO
Ft Monmouth, NJ 07703-0700

When the PLGR's cool, remove the battery and store it in the area designated by your unit. That storage area should have a fire extinguisher, NSN 4210-01-303-3999, or its equivalent, on hand. A graphite or carbon dioxide extinguisher will work on lithium battery fires. Do not use Halon. Rapid cooling of the battery is a must and Halon does not cool the battery rapidly enough.

CECOM will respond to your PQDR about battery disposal.

Turn in the PLGR even if it still works. Support needs to check it for hidden damage.



If the lithium battery stops working, but did not vent, it still needs to be fully discharged by your unit battery maintainer. He'll press the complete discharge device (CDD) button under the removable seal at the top of the battery. That vents the remaining sulfur-dioxide and makes the battery safe for disposal. After the button is pressed, the maintainer will let the battery ventilate in a non-occupied area for five days.

Remember, the CDD is depressed **only** by the unit battery maintainer and then **only** in an assigned area. The gas in the battery is toxic and the battery must be completely discharged in a controlled environment.

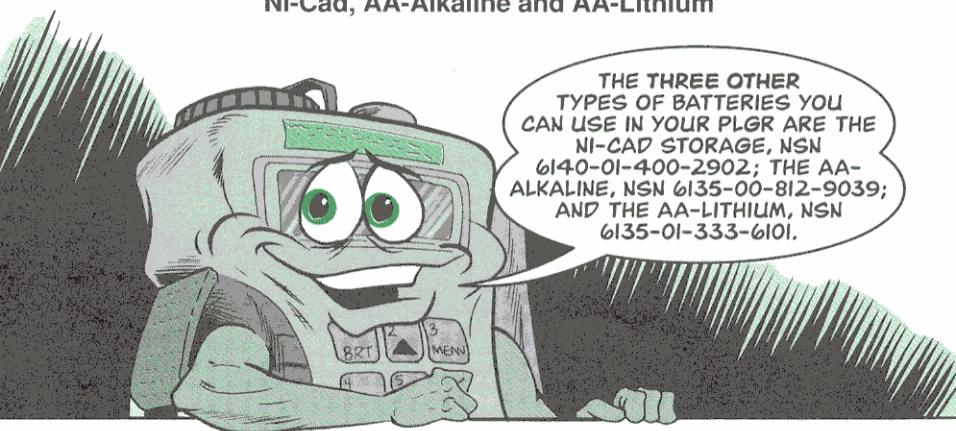
CDD should be depressed only by unit battery maintainer



Sometimes, after you install a new lithium battery that has been stored for a while, your PLGR may not turn on, or it may come on only briefly. That usually means a layer of oxide has formed under the terminals inside the battery casing, blocking any juice from getting through.

In most cases, it's easy to fix. Just push the ON button four times, pausing 30 seconds between each push. That should break down the oxide layer. If you still can't turn on the PLGR, replace the battery.

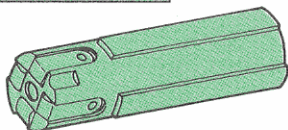
Ni-Cad, AA-Alkaline and AA-Lithium



THE THREE OTHER TYPES OF BATTERIES YOU CAN USE IN YOUR PLGR ARE THE NI-CAD STORAGE, NSN 6140-01-400-2902; THE AA-ALKALINE, NSN 6135-00-812-9039; AND THE AA-LITHIUM, NSN 6135-01-333-6101.

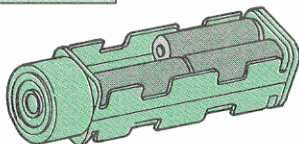
The Ni-Cad storage battery is rechargeable and should last about five hours, but it takes 16 hours to recharge. It's recharged by your unit battery maintainer.

Ni-Cad storage battery

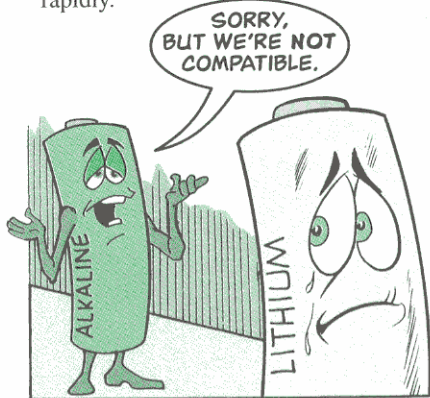


If you use AA-alkaline or AA-lithium batteries, you'll need eight of them, plus battery holder, NSN 6160-01-385-4358.

AA battery tray



If you use the AAs, don't mix lithium and alkaline. Double-As of different chemistry are not compatible. Also, if you replace one battery, replace them all. A weak battery not pulling its load will cause the others to drain more rapidly.

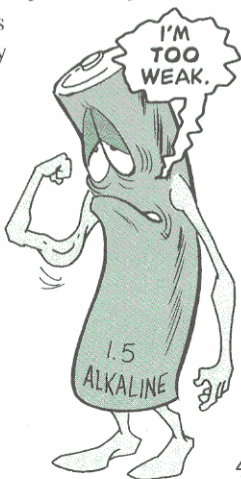


When you're changing AA batteries, inspect the gasket inside the battery cover for damage and dirt. Carefully clean it.

Memory Battery

Your PLGR's memory battery is NSN 6135-01-301-8776. It's a 3.6-volt lithium battery and it looks like a 1.5-volt, AA-alkaline power battery, but it's not! AAs lack the power to hold programmable data.

PS 546



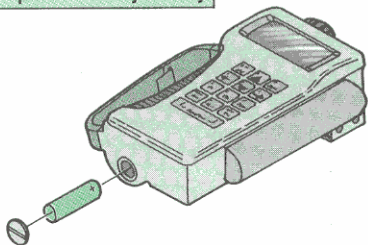
When you're changing the memory battery, don't forget to connect your PLGR to a live, external power source or you'll lose all the PLGR's stored memory.



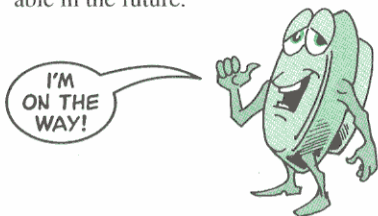
Some PLGRs used to fail their start-up self test when the memory battery was installed **before** the power battery. This problem has been solved, but it's still a good idea when you have to install both memory and main power batteries, to put the main power battery in **before** you put in the memory battery.

Here's another memory battery precaution: take care when you screw the battery cover back on. Make sure the cover's coiled spring does not catch on the raised edge of the lithium battery. If it does, the battery will overheat and cause a failed memory battery warning.

Replace memory battery



If this happens, turn the PLGR off, remove the battery and let it cool. If the cover's coiled spring is bent, try to bend it back to its original shape. If that doesn't work, turn in your PLGR for a new one. There are no replacement covers for the memory battery compartment. However, replacement covers and GPS knobs will be available in the future.



Battery Monitoring

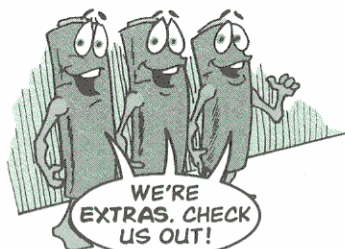
The PLGR tracks how many hours its batteries (power and memory) have been used and how much life they have left. Tracking starts when you enter the number of hours of use that are labeled on the battery into TIME USED on your PLGR. If the battery is new, enter zeros. The PLGR will take over from there and give you a warning when the batteries are low.

Before you start a mission, check the battery strength by going to STATUS in the MENU. If the status time is shorter than your upcoming mission, replace the battery.

But keep in mind that both the BATTERY LOW warning and the BATTERY TIME LEFT are not entirely accurate. Readouts are affected by the type of battery being used, how the battery is being used, and the air temperature. So, use the warning and time left as indicators, but just

PS 546

in case, take extra batteries on your mission. Check them in the PLGR before you leave.



PLGR Help

TM 11-5825-291-10-2 covers the PLGR. To stay up-to-date, get **Pathfinder**, the GPS quarterly newsletter. To get on distribution, call DSN 992-8406 or (732) 532-8406. Or write to:

Project Manager
Global Positioning System
ATTN: SFAE-CM-GPS-RMD
Ft Monmouth, NJ 07703-5502

e-mail:

laschi@doim6.monmouth.army.mil

IF YOU HAVE QUESTIONS,
CALL THE GPS HELP
LINE AT DSN 992-4729 OR
(732) 532-4729.

50

Generating Solutions



The 3-KW GED generator has been around for a lot of years. You can keep it around even longer by using these solutions to some common problems:

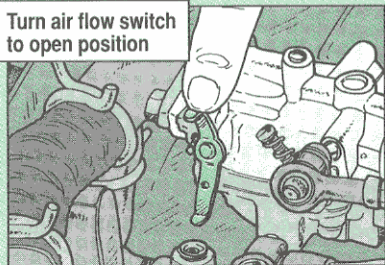
Air Flow Switch

Before you start the generator, always turn the air flow switch to the full open position. That lets air mix with fuel for combustion.

A closed switch cuts off air flow. The engine just cranks and cranks.

Once the engine starts, the air flow switch regulates itself, opening and closing as necessary.

Turn air flow switch to open position

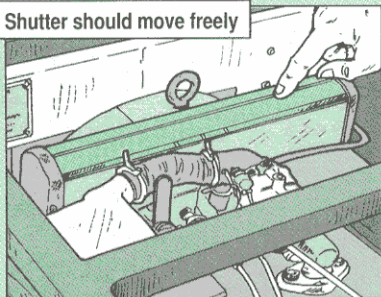


Engine Shroud

Make sure the engine shroud is in place during operation. The shroud circulates cool air to critical areas and prevents overheating.

But the shroud won't do much good if its shutter is jammed. Check the shutter before every operation. It should move freely.

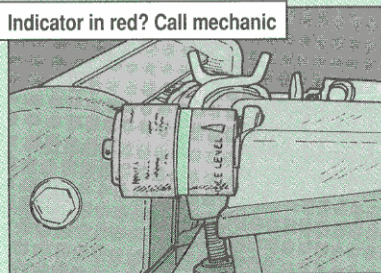
Shutter should move freely



Air Filter Clogged Indicator

Keep a close eye on the **air filter clogged** indicator. If it's in the red, get your mechanic to change the filter immediately. It won't take long for a clogged air filter to overheat a generator.

Indicator in red? Call mechanic

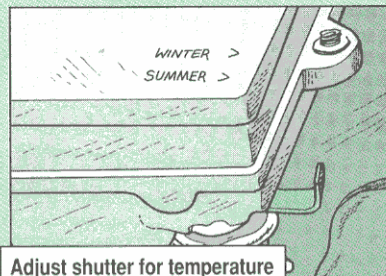


Air Intake Shutter

Make sure the air intake shutter is in the **WINTER** position for temperatures at or below 32°F. That sends preheated

air from the manifold into the combustion chamber.

Use the **SUMMER** position when temperatures are above freezing. That sends cooler outside air into the combustion chamber.



Adjust shutter for temperature

Fuel Tank

Never let your generator's fuel tank run completely dry. If you do, you're out of luck because:

➤ The generator is very hard to start without priming the carburetor. Unfortunately, that solution just creates another problem.

Priming the carburetor may help start the engine, but the excess gas also makes its way past the pistons and into the crankcase. Diluted engine oil means less lubrication and a better chance of ruining your generator.

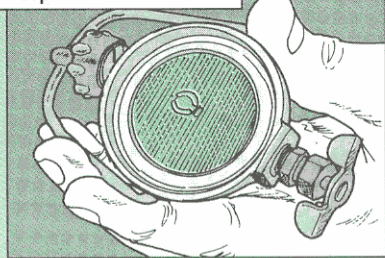
➤ Condensation forms on the inside walls of a tank with little or no fuel. That promotes the growth of microbes and fungus that jam the fuel filter and ruin the engine.

➤ With no fuel, the rubber grommet in the fuel pump dries out and cracks. The fuel pump can't maintain the pressure needed to allow the engine to run smoothly. The fuel pump has to be replaced.

Fuel Bowl Filter

When you remove the fuel bowl to dump out water and particles that have collected there, remember to clean out the fuel bowl filter with dry cleaning solvent.

Keep fuel bowl filter clean



The dirtier the filter gets, the better the chance that something will get past it. When that happens, *so long, carburetor!*

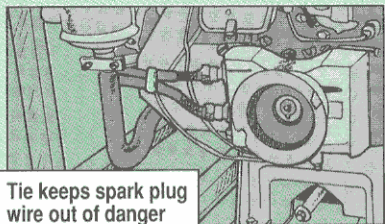
Spark Plug Wires

The bottom spark plug wire is at risk where it hangs down near the muffler.

That muffler gets red-hot after the generator's been running awhile. It can melt the wire's insulation and cause a short.

Prevent that by tying the upper and lower wires together with a plastic wire tie. That pulls the bottom wire up and out of danger.

NSN 5975-00-074-2072 brings 100 6-in ties.



Tie keeps spark plug wire out of danger



DID I SAY
ANCIENT RELIC? I
MEANT SEASONED
CLASSIC.

YOU
KEEP DOING PM—
I'LL KEEP PLUGGING
ALONG!

When the rain starts to fall, it's nice to know your vinyl-coated polyester tent will keep you good and dry.

Or will it?

Those tents have been known to leak through the stitch holes in the seams.

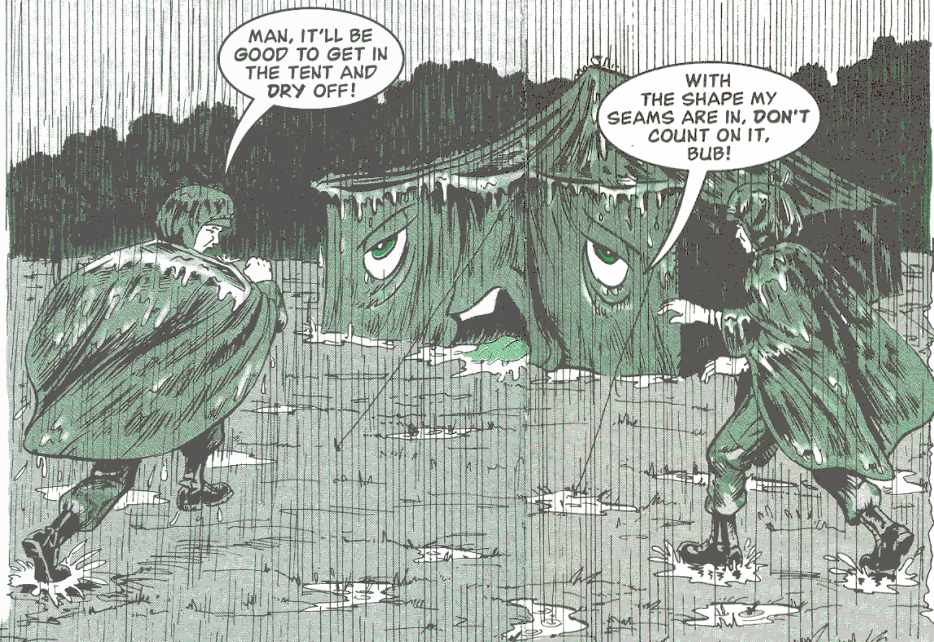
Seal those seams now, before they have a chance to leak. NSN 8030-01-350-4984 gets a gallon of sealant. That's enough to cover the seams on two medium-size tents.

In addition to the sealant, you'll need a 1-in wide paint brush (like NSN 8020-00-263-3866), rags, and some small, disposable containers with lids.

Seal the seams like this:

1. After the tent is cleaned and air dried, spread it on a flat surface in a well-ventilated area (outdoors if possible).
2. Pour equal amounts of sealant into the small containers and keep them closed until ready to use so that the sealant does not thicken.
3. Apply a light coat with the brush to the stitching areas of the seams, flaps, and webbing on the outside of the tent. Give it about 30 minutes to dry.
4. Apply a second coat the same way. Two light coats work much better than one heavy coat.

Seams Like a Leak



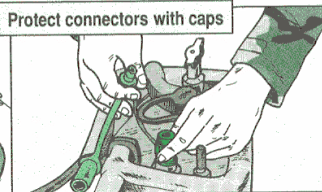
Never use the seam sealant on the whole tent, or on cotton duck. FM 10-16 tells you how to treat cotton duck tent leaks.

If the seams on your tent have started to tear, get 'em re-stitched with polyester thread, NSN 8310-00-988-1301, **before** using the seam sealant. Polyester thread is weather resistant and lasts longer than cotton thread.

Keep Connectors Covered

Don't forget the dust caps when you disconnect the chemical feed lines from the cans on your 600-GPH reverse osmosis water purification unit. Leave those lines uncovered and dust, dirt and all kinds of gritty stuff will get inside the chemical connectors.

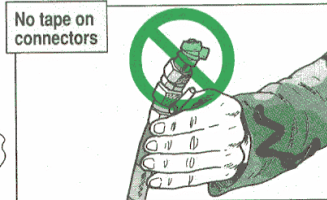
Protect connectors with caps



Don't be fooled by the dust caps, either. At first glance, they may seem too large to fit snugly over the connectors. Give 'em a try, though. They'll snap right in place if you'll work them down over the groove on the connectors.

Tape is no substitute for a missing connector cap, either. It leaves behind a sticky residue that attracts even more dust and dirt.

No tape on connectors



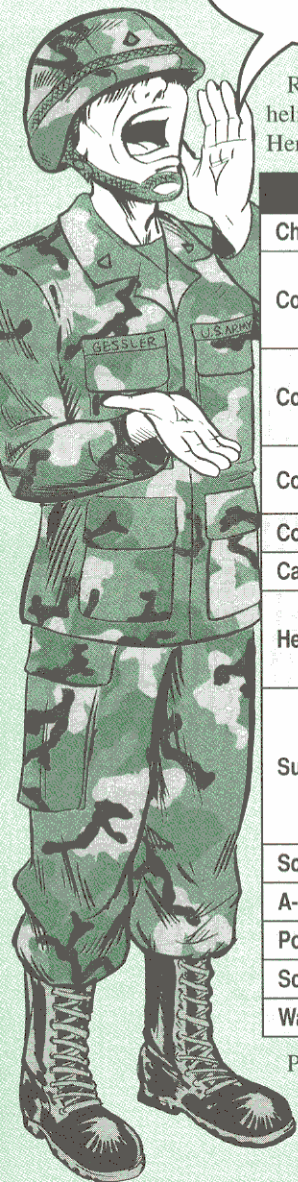
Kevlar
Helmet ...

GET YOUR HELMET PARTS HERE!

Repair parts and maintenance procedures for your Kevlar helmet are in Chap 19 of the hard-to-find TM 10-8400-203-23. Here are the parts you'll need:

Item	NSN
Chin strap assembly	8470-01-092-7534
Cover, woodland pattern	X-Sm/Sm: 8415-01-092-7514 Med/Lg: 8415-01-092-7515 XL: 8415-01-303-8945
Cover, desert pattern	X-Sm/Sm: 8415-01-327-4824 Med/Lg: 8415-01-327-4825 XL: 8415-01-327-4826
Cover, white	X-Sm/Sm: 8415-01-144-1860 Med/Lg: 8415-01-144-1861
Cover, chemical protective	8415-01-111-9028
Camouflage band	8415-01-110-9981
Headband assembly	X-Sm: 8470-01-442-1434 Sm/Med/Lg: 8470-01-442-1429 XL: 8470-01-442-1430
Suspension assembly	X-Sm: 8470-01-442-2969 Sm: 8470-01-442-2990 Med: 8470-01-442-2995 Lg: 8470-01-442-3001 XL: 8470-01-442-3021
Screw, suspension mounting	8470-01-144-2813
A-nut, suspension mounting	8470-01-144-5368
Post, chin strap	8470-01-144-5367
Screw, chin strap	8470-01-144-2811
Washer, chin strap	8470-01-144-2812

Parachutists can get the foam impact pad with NSN 8470-01-092-8494, the retention strap with NSN 8470-01-092-7524, the impact liner with NSN 8465-01-420-4920, and the comfort pad with NSN 8470-01-364-7074.



FRAME PARTS

NEED A LIST OF REPLACEMENT PARTS FOR THE ALICE LC-2 FIELD PACK FRAME? LOOK NO FURTHER.



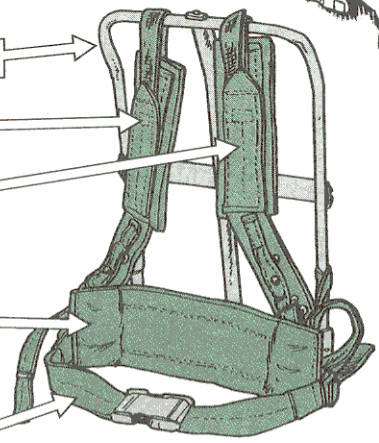
Pack frame w/straps, NSN 8465-01-073-8326

Right quick-release shoulder strap, NSN 8465-01-078-9282

Left quick-release shoulder strap, NSN 8465-00-269-0482

Waist strap w/lower back pad, NSN 8465-01-075-8164

1 1/2-ft lower back strap w/clamp, NSN 8465-01-151-2891



All LC-2 parts can be used with LC-1 gear.

Better Computing

Dear Editor,

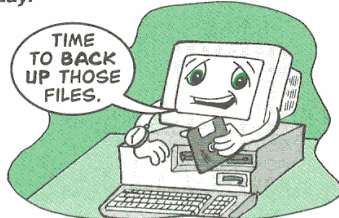
As an Army computer troubleshooter, I have come up with a few basic rules that will save any computer operator lots of headaches:

KEEP ANTI-VIRUS SOFTWARE UP-TO-DATE. The more systems your computer is hooked into, the more chances it'll pick up a virus that can destroy files. As computer programs become more and more sophisticated, so do viruses. Your local Information Management Office

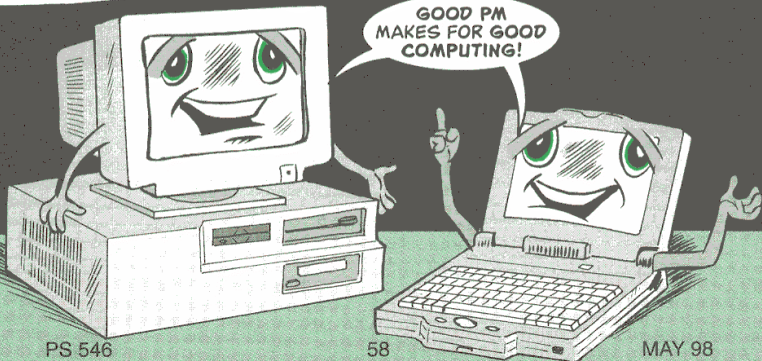


(IMO) can normally provide the latest anti-virus programs. You can also find anti-virus programs on the Internet. Do a search for VIRUS PROTECTION.

BACK UP FILES. ULLS operators are required to do this periodically, but it's a good idea for everyone. If you don't copy files to a tape or diskettes from your hard drive, you're left with nothing if the hard drive crashes. Back up files every day.

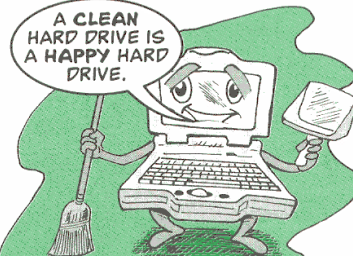


GOOD PM
MAKES FOR GOOD
COMPUTING!

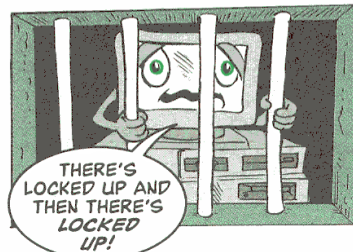


CLEAN UP HARD DRIVES.

Several software programs are available that eliminate gaps in hard drive data and push files to the front of the hard drive. Result: Your computer works faster. Most computers come equipped with these programs, but get guidance the first time you clean up the hard drive. Your IMO can help. Clean up the hard drive monthly.



DON'T DOWNLOAD UNAUTHORIZED SOFTWARE OR SHAREWARE. Besides being the source of viruses, the software can cause compatibility problems. That means your computer will lock up more often. Plus it's illegal.



Dana McCutcheon
169th Signal Co
Camp Walker, Korea



Home School for Packaging

The Army Institute for Professional Development at Ft Eustis offers packaging correspondence courses. DA Pam 351-20, the Army Correspondence Course Program Catalog, lists available courses. For more info call DSN 927-5715/2079 or (757) 878-5175/2079. Ask for Team B. On-site training is still done by the School of Military Packaging Technology at Aberdeen Proving Ground. Call DSN 298-4451 or (410) 278-4451 for details.

Updated SCs Now on CD

Anyone who has suffered the frustration of inventorying tool kits with out-of-date supply catalogs (SC) should find relief with the new Army CD-ROM, "Consolidated Publication of Components List."

The CD contains 146 SCs, including revised SCs for the Common No. 2 shop set (SC 4910-95-CL-A72) and the Full-Track Vehicle tool kit (SC 4940-95-CL-A08). Seventy-three of the SCs have been revised or updated—some for the first time in more than a decade.

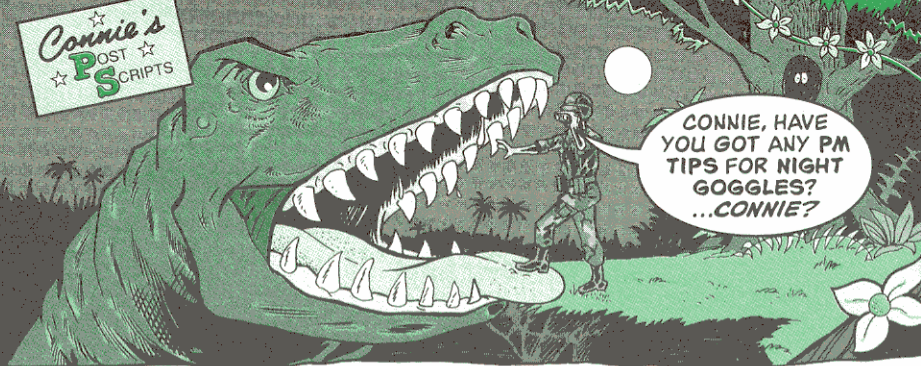
Because these SCs now more accurately reflect what's in the tool kits, inventorying those kits will be much easier.

The CD also includes 10 SCs for tool kits that have been coded obsolete. These tool kits can be turned in and taken off your books.

The CD was sent to the field last November. If you are on the distribution list for any of the SCs, you should have received it.

If you didn't get one or if you need extra copies, tell your pubs clerk to order EM0074, PIN 075815000. To make sure you get revisions, change your subscription for IDN 212093.





LOGSA Area Code Change

The telephone area code for the USAMC Logistics Support Activity (LOGSA) has changed from 205 to 256. This change also covers the Aviation and Missile Command (AMCOM), and all other offices located at Redstone Arsenal, AL.

M1000 Brake Chamber Plug

Get the dust and moisture seal plug for the M1000 HET semitrailer's brake air chamber with NSN 5340-01-367-6668. Make a note for Item 24 in Fig 22 of TM 9-2330-381-24P until the NSN is added to the manual.

M915A1 Brake Dust Plugs

Use NSN 2530-01-084-6975 to get dust plugs for the air brake chambers on M915A1 tractor trucks. The NSN is missing from Figs 89, 90 and 91 of TM 9-2320-283-24P.

FMTV Wiper Refills

Until the supply system gives wiper blade refills an NSN, you can get the correct refill for your FMTVs by local purchasing ANCO part number 11-20. You'll need two packages, since there are three blades per truck.

Winch Shear Pins

Never replace the shear pins on your truck's front or rear winch with nails, bolts, pins or rivets. They won't shear. Use this list to get the real thing:


Truck	Front winch NSN 5315-	Rear winch NSN 5315-
2 1/2 ton TM-361-series	00-736-8685	01-044-8362
5-ton TM-211-, -260-series	00-209-7979	00-282-2583
5-ton TM-272-, -358-series	01-109-6846	00-282-2583

DISTRIBUTION: To be distributed in accordance with the initial distribution number (IDN) 340312, requirements for TB 43-PS-Series.

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

★ U.S. GOVERNMENT PRINTING OFFICE: 1998 — 650-065/20041

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



OH, NO YOU DON'T!
YOU'RE NOT DRIVING THIS
VEHICLE WITHOUT A VALID
OPERATOR'S I.D. CARD!

FM 21-305
MANUAL FOR
THE WHEELED
VEHICLE DRIVER

See your motor sergeant for details