

Issue 514

PS

September
1995

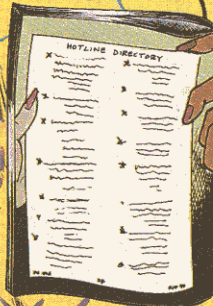
THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-514

Has your
buddy read
this issue?
Pass it along!

NEED HELP?
HERE'S HOW TO
GET IT!

Approved for Public Release
Distribution is Unlimited



Equipment Hotlines
... See Page 27

NCOs...

Put the 'T' Back in OJT

Get with the Program

OJT doesn't just happen. It must be planned. Get your top-notch mechanics together for their input. Then assign a rookie mechanic a mentor. You and the mentors can boost know-how with these tips:

Use Training Aids



Provide training aids. Copy and hand out material from EIR Digests and other pubs to help mechanics. Make sure your pubs clerk stays up on the latest training courses and videos that become available for your mechanics.

Keep PS Handy



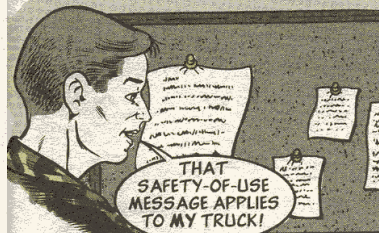
Keep PS handy. Make sure PS gets out on the floor, not just in the front office. Copy special interest articles to hand out at weekly meetings.

Keep TMs Up-to-date



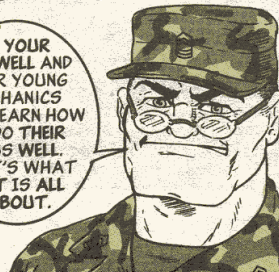
Use TMs...and keep 'em up-to-date. New mechanics need to know troubleshooting procedures. They'll also need to know how to use the parts manual.

Establish a Bulletin Board



Use a PM bulletin board. Set up a bulletin board that has the current SOU messages, safety tips and maintenance info.

DO YOUR JOB WELL AND YOUR YOUNG MECHANICS WILL LEARN HOW TO DO THEIR JOBS WELL. THAT'S WHAT OJT IS ALL ABOUT.



WELCOME TO OUR MAINTENANCE TEAM, PRIVATE.

YOU RARELY SEE A MECHANIC STRAIGHT OUT OF SCHOOL WHO KNOWS HOW TO DO EVERYTHING, WHO RECOGNIZES ALL THE TOOLS AND WHO KNOWS EXACTLY WHAT'S WRONG WITHOUT ASKING QUESTIONS.

Mostly we see eager men and women who want to be part of the team, but who don't quite know enough to work on their own.

That's where you come in.

Soldiers will learn from others. What you must do is make sure that the "others" are providing training, not just make-work.

The idea behind on-the-job training is that those who lack skill and experience will have mentors—experienced soldiers—looking over their work to offer advice and answer questions.

PS

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-514. 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 514 SEPTEMBER 1995

FIREPOWER	
M1-Series Tank	2-3,4-5
M2/M3-Series Bradley	2-3
M113-Series FOV	6,7
M728 Combat Engineer Vehicle	8
M992 Ammo Carrier	2-3,9
M119A1 Howitzer	10
M578 Recovery Vehicle	10
M109-Series SP Howitzer	12-14
Heifire Missile System	12-14
M2/M240/M249	15
M60 Machine Gun	15,16-17

GROUND MOBILITY	
HMMVV	18-20
M398 Wrecker	21
M44-Series Trucks	22
M939-Series Tractor	23
Tactical Trucks	23,25
M348-/M373-Series	24
Semitrailer Vans	26
Trailers	26

AIR MOBILITY	
All Aircraft	35
UH-1	39
OH-58	39
AH-64	40

COMMUNICATIONS	
AN/TYG-30-.31 Commo System	42-44
AN/GRA-39 Radio Set	45
SINGCARS	46-47
Trailer-Mounted 5/10KW Generators	48-49
MSE Installation Kits	49-49

LOGISTICS MANAGEMENT	
Usage Reports	31-34
AMDR Price Challenge Publications	51,52
Forms	53
TACCS	54

TROOP SUPPORT	
Hotline Numbers	27-30
Small Parts Storage	55
Soldier Crew Tent	56-57
M1 Canteen	58
Personal Items	59
M17-Series Mask	60

You are invited to send PS your ideas for improving maintenance procedures, suggestions for articles, or comments on material published in PS. Just write to:

MSG Half-Mast
The Preventive Maintenance Monthly
Bldg. 3325

Redstone Arsenal, AL 35898-7466

Or E-mail to: psmag@logsa-emh2.army.mil

By Order of the Secretary of the Army:

DENNIS J. REIMER
General, United States Army Chief of Staff

Official:

Joel B. Hudson
JOEL B. HUDSON

Acting Administrative Assistant to the Secretary of the Army
00488

PS, The Preventive Maintenance Monthly (ISSN 0475-2663) is published monthly by the Department of the Army, Redstone Arsenal, AL 35898-7466. Second Class Postage is paid at the Huntsville, AL post office and at additional mailing offices. Postmaster: Send address changes to PS, The Preventive Maintenance Monthly, Redstone Arsenal, AL 35898-7466.

M1-Series Tanks,
M2/M3-Series Bradleys,
M992 Ammo Carriers ...

Maintain with

Extreme Care

◆ Never handle, move or store the valve and bottle assembly unless the safety pin and plug are installed.

The pin and plug together prevent the accidental discharge of the halon extinguisher.

Install safety pin like this:



The extinguishers on M1-series tanks come equipped with two different types of guards over the valve assembly. Low-rise guards are no problem. The safety pin is easy to install.

High-rise guards are another matter, though. With that guard in place, it's impossible to install the safety pin. That means the activation lever is not locked to the bracket. If you accidentally move the lever, the extinguisher will discharge.

Take your time and carefully follow the procedures in your TM for installing the pin on extinguishers with high-rise guards.

Be sensitive with these extinguishers or their sensitivity will ruin your day.

M2/M3-Series Bradleys ...

DON'T FORGET THE CHUTES!



So you've just finished servicing that Bradley's 25mm gun. Now all you've got to do is reattach the ammo feed chutes. If you forget, the ammo chutes get banged up the next time you raise or lower the cannon.

Loose ammo chutes also snag and rip cables and wires. They can even lock up the turret while it's traversing.

If you've already damaged the ammo chute exit end fittings, hang on to them after you've installed the new ones. Those fittings are repairable.

Order the fitting repair kit with NSN 2320-01-268-7915.

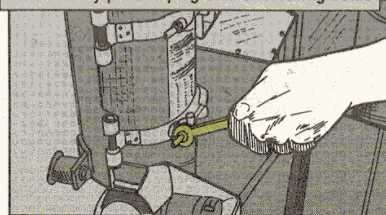
Maintaining the halon fire extinguisher valves and bottles on your combat vehicles is something best done with kid gloves.

You can be seriously injured or even killed if the extinguishers discharge unexpectedly during maintenance.

To keep the operation as safe as possible, stick to the good words in your vehicle's TM when pulling fire extinguisher maintenance. Then make sure you follow these tips:

◆ Never remove the valve and bottle assembly from its mount until you have installed the safety pin and anti-recoil plug.

Install safety pin and plug before removing bottle





IT'S
ABOUT
TIME!

A PENNY SAVED

Money's tight, mechanics. Whenever you can fix equipment instead of sending it off to support, you can feel good about the money you've saved.

Now you can fix the M1A1/M1A2 tank's NBC prioritization valve, NSN 4820-01-389-0648, and pressure regulating valve, NSN 4810-01-205-2986. A lot of those valves are being sent off for repair when the only

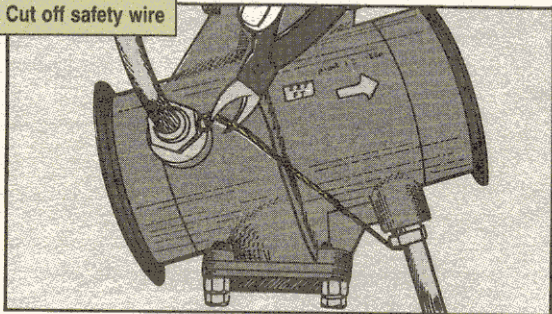
problem is a clogged filter.

Since the faulty valve has to be removed anyway, try replacing the filter before you turn in the valve. That new, \$12 filter might just save you unit a big-time repair bill.

Here's how to replace the filter:

1. Cut the safety wire from the tube nut and remove the tube assembly.

Cut off safety wire

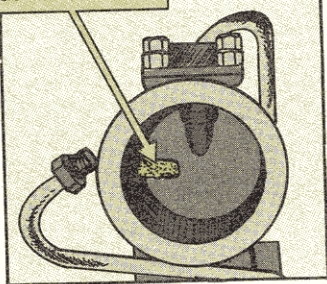


WAIT! LET'S TRY
CHANGING THE FILTER BEFORE
SENDING THAT VALVE
TO SUPPORT!

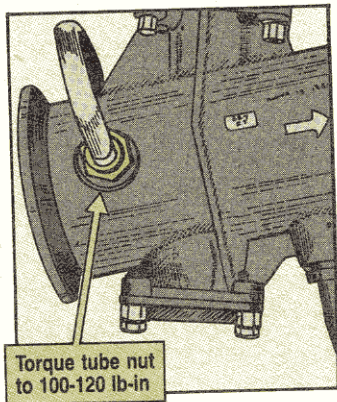


2. Remove the old filter from the valve body and toss it. Install a new filter, NSN 4810-01-014-1896.

Get rid of old filter



3. Reinstall the tube assembly and torque the tube nut to 100-120 lb-in using torque wrench, NSN 5120-00-853-4538, and crowfoot attachment, NSN 5120-00-238-8266.
4. Safety wire both tube nuts.



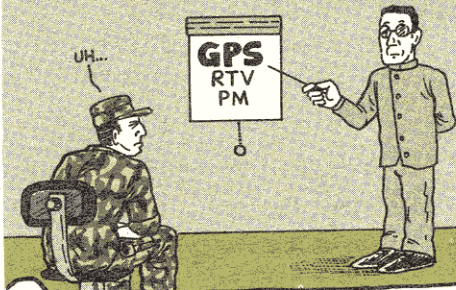
Torque tube nut to 100-120 lb-in

In addition, the valve filters should now be changed as part of the tank's annual service. Make a note until this new requirement can be added to the TMs.

PS 514

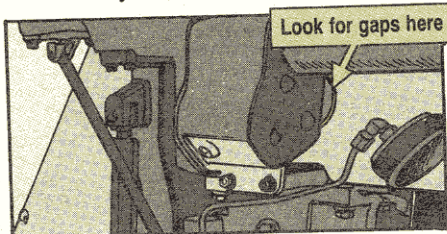
M1-Series Tanks ...

Seeing Is Believing



Seeing fuzzy spots and white streaks while looking through the commander's sight extension on your M1-series tank? Chances are you need to see a mechanic instead of the eye doctor.

Just a tiny slip during installation of the sight extension makes it bump against and chip the mounting flange on the gunner's primary sight (GPS) body. That small chip can create gaps where the sight extension and GPS body make contact.



Look for gaps here

Even the tiniest gap can let in enough dust and light to cause vision problems. If you can't see, you can't hit the target.

Keep your aim straight and true by taking a close look at the GPS right now. If you see a chipped flange where the extension and body seal meet, tell your mechanic. He'll cover 'em with RTV-1473, NSN 8030-01-202-3962.

Beware of Bad Bearings

When a driver reports a thrown outer fan belt on his M113A2 carrier, some mechanics automatically write it off to a stretched belt.

They remove the old belts, install a new set, adjust the belt tension to the proper operating range and send the driver happily on his way.

Then they scratch their heads in puzzlement when the driver returns a day or two later with the same problem.

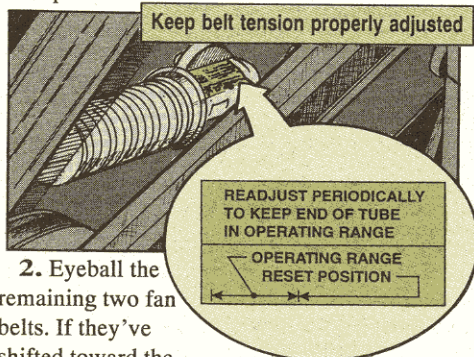
That's exactly what will happen if there's a bad outer bearing in the fan drive idler pulley. The pulley has two bearings — one on the inside and one on the outside. Though both bearings, NSN 3110-00-436-7329, are the same, the outer bearing tends to fail more often than the inner one.

When that happens, the fan drive idler pulley tilts slightly and throws off the outer belt.

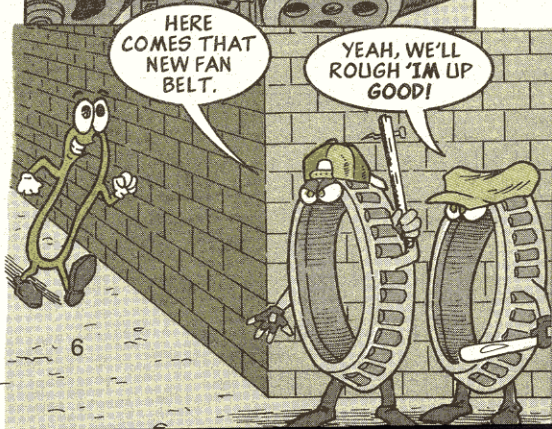
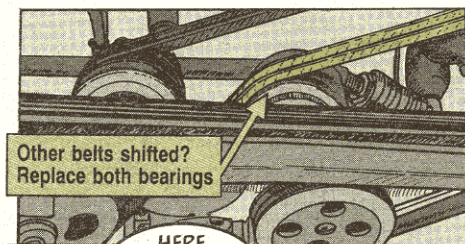
It's tough to catch because the bad bearing doesn't squeal, the inner bearing keeps the idler pulley turning and the tilt is so slight that it's nearly impossible to see.

Save yourself some frustration — not to mention the cost of a new set of fan belts — by knowing exactly what to look for the first time a belt pops loose:

1. Look at the fan idler pulley arm adjusting rod. Make sure the tension is within operating range. If it's not, make it right. Otherwise, go to step 2.



2. Eyeball the remaining two fan belts. If they've shifted toward the outside of the idler pulley, the problem is a bad bearing. Go ahead and replace both bearings at the same time.



Don't Make Problems, Solve'em



Crewmen, when was the last time you drained the fuel filters on your M113-series carrier? If it's been a while, you've probably set yourself up for a big problem — a loss of fuel flow.

It's caused when:

Sediment buildup creates a plug in the bottom of the fuel filter.

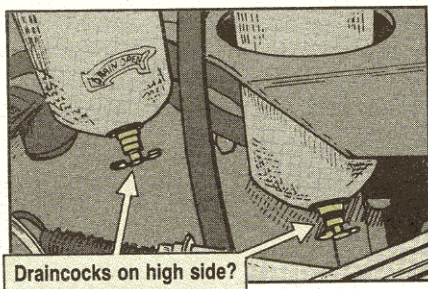
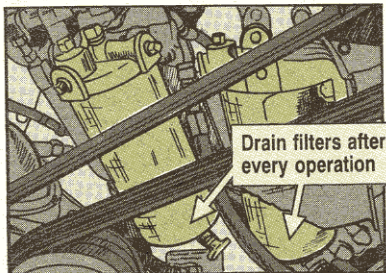
Water buildup leads to rust inside the filter canister. Rust is just another form of sediment that puts a stop to fuel flow.

Cold weather freezes the water. As the ice plug expands and contracts, it can also crack the canister.

You can still run into trouble even if you drain the primary and secondary fuel filters every time, like it says in the after-operation PMCS.

Since the filters sit at an angle, a draincock that sits on the high side of the canister's bottom will not allow all of the water and sediment to drain.

If that's the case, have your mechanic turn the canister so that the draincock is at the lowest point.



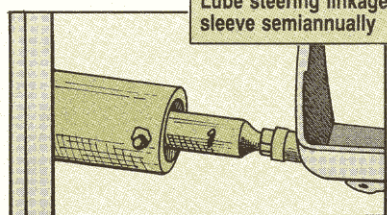
OUT OF SIGHT, OUT OF MIND



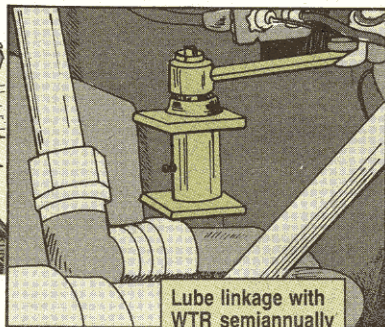
With more than 40 different lube and oil can points, you can't rely on memory when lubing your M728 CEV.

Following the LO is your best bet. But even so, there are still three spots that are sometimes skipped because they're hidden and hard to reach:

1. Steering linkage sleeve. If left unlubed, the steering linkage sleeve binds and causes difficulty with steering. If it gets dry enough, you could lose control of the vehicle. Lube the steering linkage sleeve semiannually with WTR.

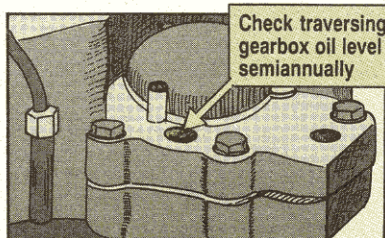


2. Steering control linkage. The steering control linkage is also critical to maintaining control of the vehicle's steering. Lube the steering control linkage with WTR when the fire extinguisher bottles are removed for semi-annual service.



3. Traversing gearbox. The traversing gearbox has a series of gears that mesh with the turret race ring and allow the turret to traverse. Without oil, the gears seize up.

Remove the level plug and check the oil level in the gearbox semiannually. If it's low, fill the gearbox with OE/HDO-10 or O-237, depending on the temperature, until the oil level reaches the bottom of the plug hole.



Use the Right Light

It only takes a little flash or glimmer during blackout conditions to make you and your M992 ammo carrier a battlefield statistic, crewmen.

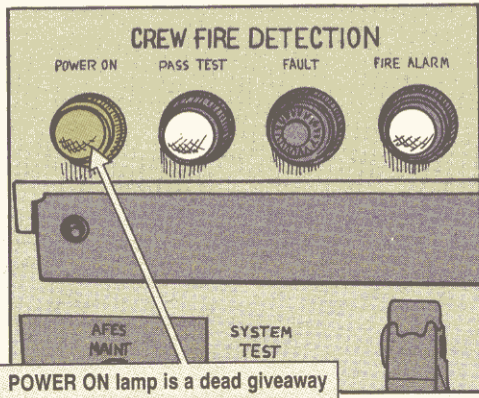
Take care of those light sources now, and they won't give you away later.

One sure place to start is with the POWER ON light on the automatic fire extinguisher system (AFES) control panel. On vehicles with serial number 1 through 675, that bright light stays on whenever the MASTER POWER switch is on.

Although you can't completely fix that problem, you can dim it somewhat. Unscrew the green lens and swap the bulb with LED bulb, NSN 5980-01-296-2793.

The LED bulb is much dimmer than the old bulb, although it can still be easily seen by the crew. The new bulb lasts a lot longer, too.

Hang on to the old bulb, though. It's the same one used in the PASS TEST and FAULT lamps. Since those bulbs only come on when the AFES is being tested or detects a fire, you won't need to replace them with an LED bulb.

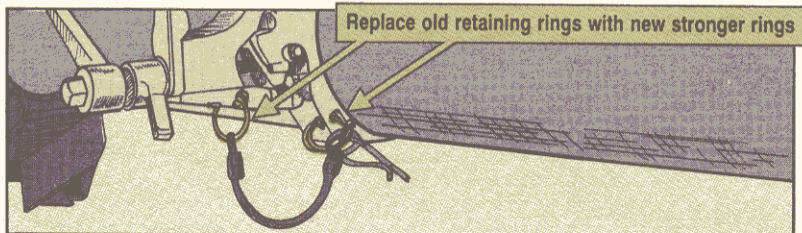


HEY! THIS
ISN'T BROADWAY! DIM
THAT BULB!

A Better Ring

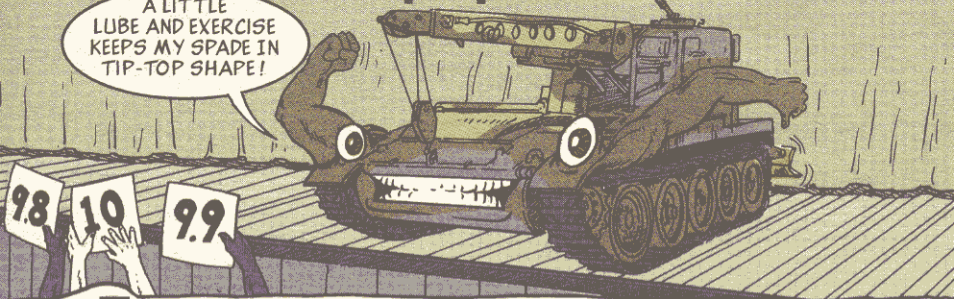
The M119A1's hand spike firing platform clamps have retaining rings that often break off. Then the clamps disappear.

No problem. Order the new, improved retaining ring, NSN 5365-01-369-4710. It's being added to TM 9-1015-252-20&P.



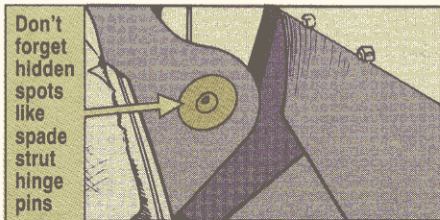
Keep Spade Fit

A LITTLE
LUBE AND EXERCISE
KEEPS MY SPADE IN
TIP-TOP SHAPE!



The spade on your M578 recovery vehicle needs a little exercise every once in a while, or it'll get rusty.

Hit all the lube points—hinges, pins, threads and fittings—with GAA or oil—semiannually. Follow your LO step-by-step, too. There are lots of lube and oil can points on the spade and it's easy to forget one.



Your job's not over when the lubing's finished, though. Go ahead and exercise the spade to make sure the lube gets worked in right. That'll keep the spade ready to go at a moment's notice.

Give Recuperator Some Space



Dear Editor,

We've had problems inspecting the buffer assembly on the M109-series howitzer's recuperator.

TM 9-2350-311-20-2 tells you to hold on to the shaft collar with a pipe wrench while removing the slotted nut and cotter pin from the recuperator's shouldered shaft.

But since the shaft is under pressure, the nut has a tendency to fly off suddenly when it's being loosened. That can be dangerous if you're in the way.

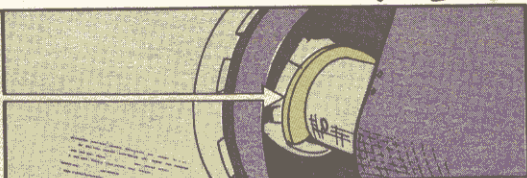
After you finally get the nut off, the pressure causes the shaft to retract slightly. That leaves too few threads to install a new slotted nut later.

We've fabricated a simple spacer that prevents those problems. Here's how it works:

1. Make spacer by cutting flat washer, NSN 5310-00-117-4740, in half



2. Place spacer between shaft collar and recuperator housing



3. Loosen slotted nut. Shaft will move back against spacer, then stop

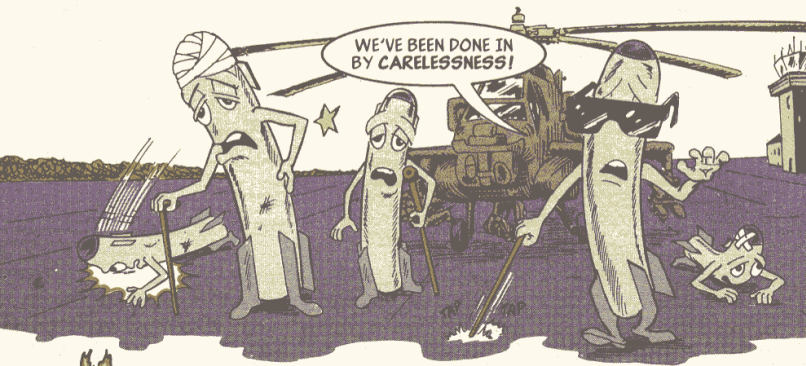
Pressure on the nut is relieved so it won't fly off. And once the nut's off, there are plenty of threads left to install the new nut.

Peter Kohler & Robert Falkenstein
100th ASG
Vilseck, Germany

FROM THE DESK OF THE Editor

That's one way to give recuperator problems the shaft! Thanks for your idea!

KEEP HELLFIRE'S BURNING



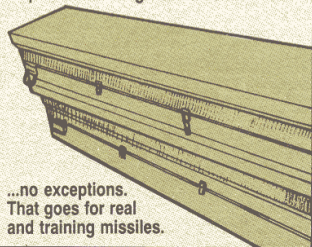
Hellfires can destroy a target with precision and swiftness...if they've been cared for. But just a bit of carelessness can blind Hellfires and leave your Apache without its most powerful weapon. Keep the fire in your Hellfires like this:



**RULE 1:
PROTECT
US!**

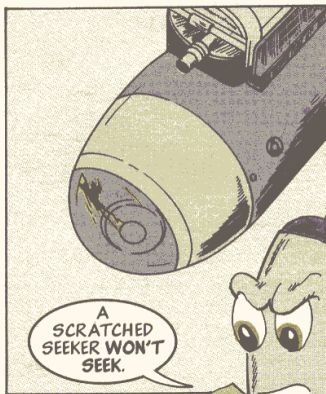
Lots of Hellfire parts are easily damaged.

When a Hellfire's not mounted, keep it in its storage container...

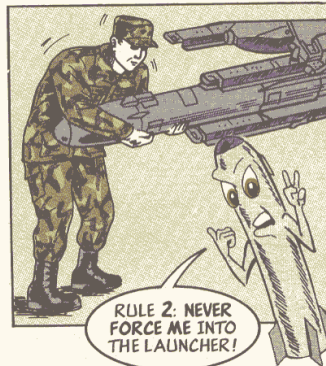


...no exceptions. That goes for real and training missiles.

Just a 1-in scratch on the laser seeker can ruin a Hellfire's accuracy. A dirty laser seeker isn't accurate, either. A missile umbilical connector plugged with dirt can't be loaded.



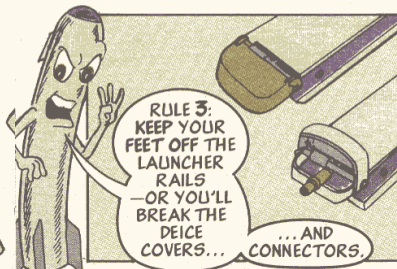
**A
SCRATCHED
SEEKER WON'T
SEEK.**



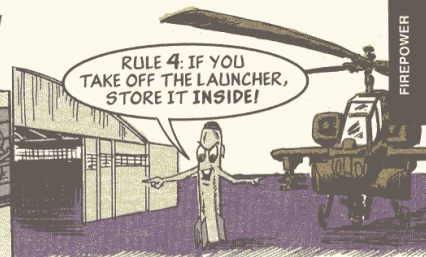
**RULE 2: NEVER
FORCE ME INTO
THE LAUNCHER!**

If a missile won't slide easily in the launcher, there's probably trouble with the connectors. Get your repairman to take a look.

If a Hellfire is accidentally damaged, don't give up on it. It may still be saved...if you put it in its container to prevent more damage. Things like a torn fin or scratched laser seeker can be fixed. But a whole new missile costs more than \$20,000.



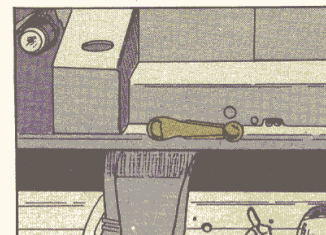
PS 514



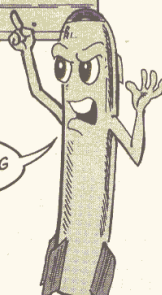
If the launcher's left outside, corrosion destroys parts. Never lay the launcher on its side. That breaks the locking handles.

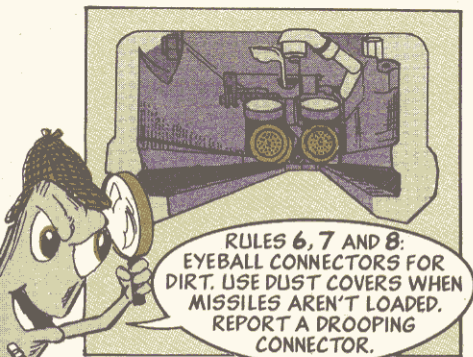
PMCS

Eyeball the launcher and umbilical connectors for dirt. Clean dirty connectors with soap and water and a swab brush. Rinse the connectors with the swab brush and clean water. Brush isopropyl alcohol on the connectors. Let the connectors air dry.



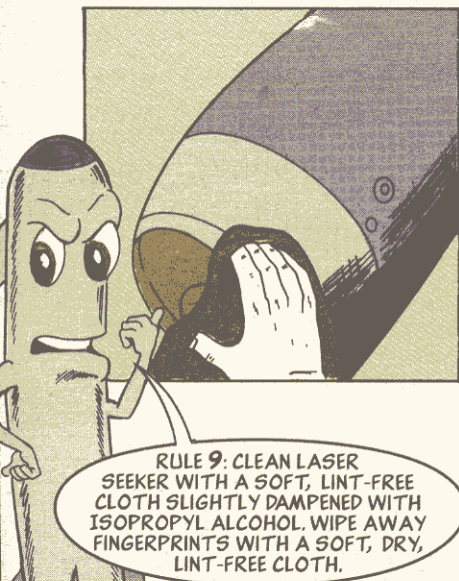
**RULE 5: LOOK
FOR BROKEN OR MISSING
LOCKING HANDLES.**





When you download missiles, put the dust covers on the connectors. That will save cleaning time later.

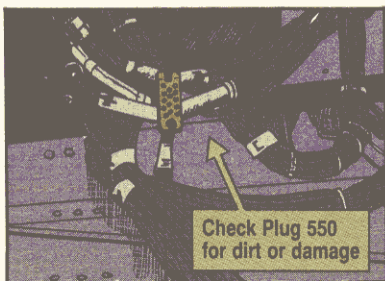
Eyeball the launcher connectors for correct alignment. If one connector is drooping, you'll bend connector pins when you load Hellfires. Report drooping connectors.



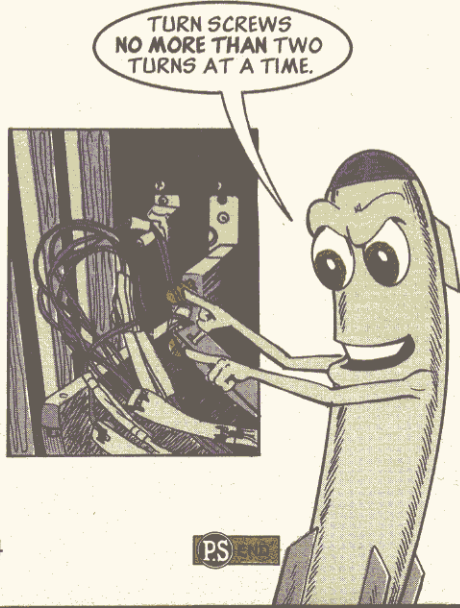
PS 514

Troubleshooting

If you're having trouble with the remote Hellfire electronics (RHE), check plug 550 to the J5 connector. It's usually the culprit. If the plug's dirty, clean it. If it's damaged, get it replaced.



One caution: Be very careful removing and installing the plug. Turn each screw the same amount so plug pins are not bent. Turn one screw two turns, then the other two turns, etc. Do this until both screws are completely loose or tight.

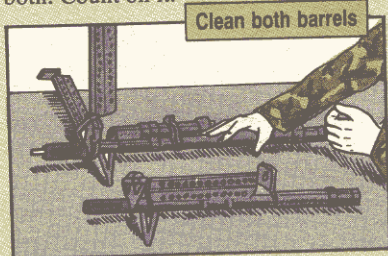


DON'T FORGET EXTRAS

If you forget to clean your machine gun's extras—spare barrel, traversing and elevating mechanism (T&E), blank firing attachment (BFA)—you can forget about firing your weapon.

The spare barrel is just as vital as the barrel on the machine gun. You must change barrels after so many fired rounds, unless you want a ruined barrel or maybe a ruined machine gun. But if you put on a dirty spare barrel, your machine gun soon quits firing.

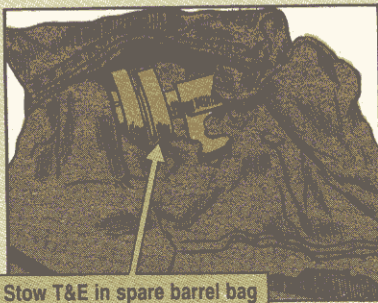
Solution: Whenever you clean one barrel, clean the other. You'll need them both. Count on it.



If the T&Es for the M2 or M60 get dirty, gunky, or corroded, you'll have trouble adjusting the T&Es and a moving target will leave you behind. If a T&E is banged up, it probably is banged

out of calibration. That shoots your machine gun's accuracy.

Solution: When you clean your machine gun, clean the T&E with a rag and CLP. Then wrap it in a rag and store it in the spare barrel bag to keep it clean and protected.



If the BFA becomes coated with carbon, your machine gun has a hard time chambering and extracting.

Solution: Use CLP to clean BFAs for all machine guns after every firing.

In addition, clean the M60's BFA after 500 rounds, the M2's after 800, and the M240's after 200. See the operator's TMs for cleaning instructions.

WE BFAs
NEED CLEANING AFTER
EVERY FIRING.

TUNE UP YOUR BOLT

The bolt is the engine that drives the M60 machine gun. If it becomes dirty, corroded, or worn, it's like when your car's engine gets in bad shape...your M60 just doesn't want to go. Here's how to keep the bolt tuned up and your M60 firing on all cylinders:

★ Take the bolt apart and clean it with CLP until all carbon is gone. Do this after every firing or the carbon will become so hard you can't get it off.

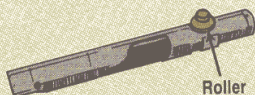
Be very careful to put the bolt back together correctly. It's easy to get things backwards. Assembly goes like this:

- ★ The long end of the firing pin goes in the bolt first.
- ★ The small hole in the guide fits on the short end of the firing pin.
- ★ The spring goes in the guide.
- ★ The cam actuator's roller end goes on the bolt first.

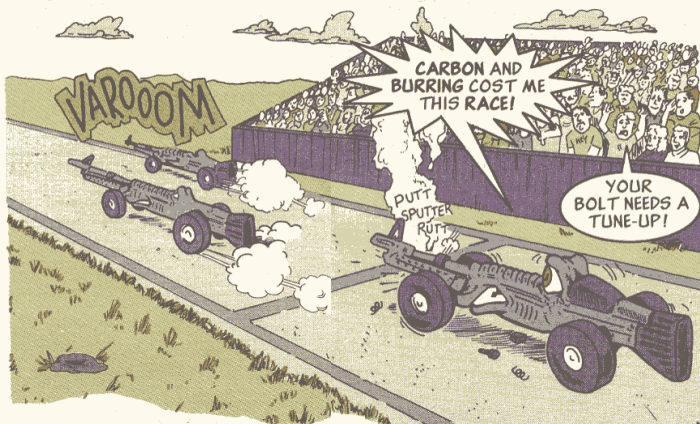
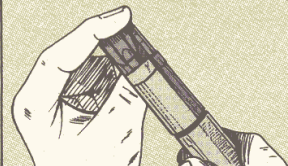
Once you have the bolt assembled, give it a shake. If the bolt plug pin falls out, tell your armorer. He needs to replace the bolt plug.



Turn the cam actuator roller. As long as it moves, it's OK. But if it's frozen, your M60 will fire sluggishly and the feed cam in the cover will wear out fast. Report any problems to your armorer.



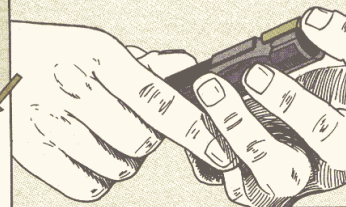
Eyeball the bolt for cracks and burrs, especially around the locking lugs. A cracked bolt can fly apart during firing. Burrs cause the bolt to hang up. Worn or chipped locking lugs can ruin the barrel socket locking surfaces. The barrel's expensive to replace.



Give the bolt face a look. An out-of-round firing pin hole or one with pitted edges means you will have firing problems.



Test the strength of the extractor and ejector springs. If either is weak, you get jamming. Use your thumb to press up and in on the extractor. It should not depress easily and it should spring back smoothly.



Use a punch or anything with a blunt point to press in the ejector. It also should not depress easily, but spring back instantly. If either spring is weak, your armorer can replace it.

While you're at it, give the operating rod a quick once-over, too. If the yoke and tube assembly is burred, it causes the bolt to catch on the op rod. That can crack the yoke and tube.



Eyeball op rod sear notches. If they're heavily worn, you could get a runaway gun. Help notches last by pulling the trigger all the way back when firing. Pulling the trigger only half-way wears out notches fast.



If you spot any problems, tell your armorer. He can stone away most burrs and, if necessary, get you a new bolt or op rod.

PM LETS You

DRIVE ON

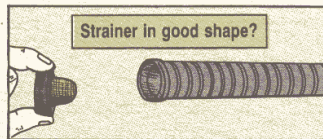
Old hand or new troop, you HMMWV drivers can use all the PM information you can get on your truck.

Some of the info you need is not in the operator's manual, so here's a roundup of PM tips you can use to keep truckin':

Keep It Clean

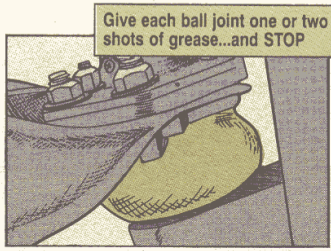
Your HMMWV needs clean fuel to run. When you refuel your vehicle — especially out of a 5-gal can — go easy with the nozzle. Slamming it into the filler pipe damages the strainer inside. That lets dirty fuel clog up filters down the line.

Make sure the strainer in the fuel can is in good shape, too.



Hold the Grease

Too much grease is as bad as too little in the ball joints. If you pump in too much grease, the joint's rubber boot pops open. The whole ball joint has to be replaced.

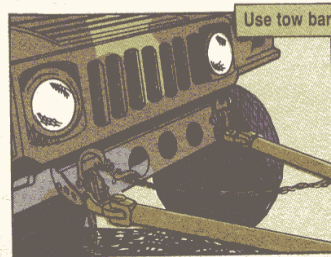


Purple Only

When you add brake fluid, make sure the can is labeled silicone brake fluid and the fluid's purple. Any other fluid gums up the equalizer valve and master cylinder, and jells in the system. That makes for a big job to take the brake system apart and clean it.

Tow Bar Only

Always use a tow bar to tow a Humvee. Using a chain lets the truck bang into the towing vehicle and smash its front end.



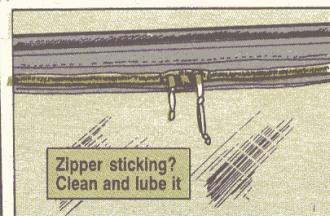
Brake Light Test

There's only one way to be sure the brake lights will light up on the road. Get a buddy to watch while you drive the truck forward in the motor pool. Push down on the brake pedal about 1/4 inch (that's the free travel). The brake lights should come on. If not, report it.



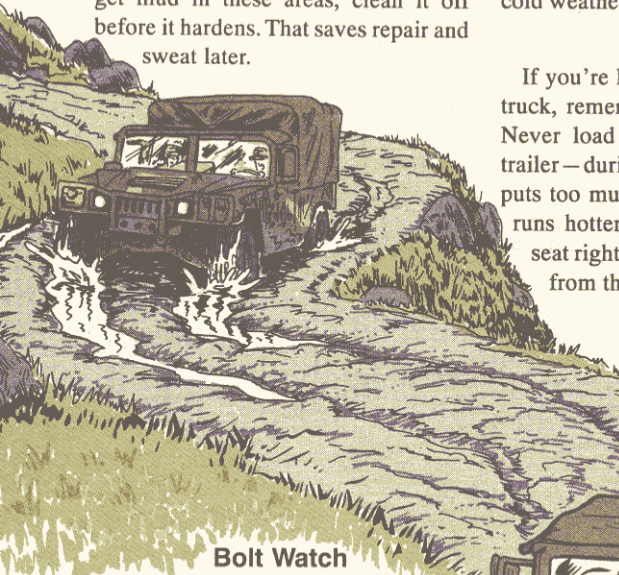
Zipper Lube

When the zipper is sticking on a soft-top HMMWV's plastic window, use zipper lube to grease the skids. First, though, clean out any grit or dust in the zipper teeth with an old toothbrush. Then rub the zipper generously with zipper lube, NSN 9150-00-999-7548.



Throwing Mud?

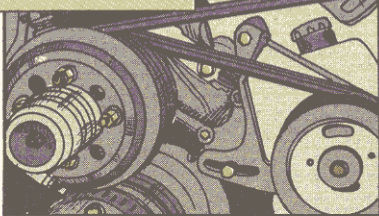
Constant 4-wheel drive makes going through mud a breeze. Keep some distance between you and the vehicle in front, though. Mud thrown by the lead truck clogs the radiator and oil coolers, causing the engine to overheat. If you get mud in these areas, clean it off before it hardens. That saves repair and sweat later.



Bolt Watch

Always be on the lookout for loose or missing bolts on radiator mounts, water pump and fan, etc. Look for shiny spots around the head. That can be a tipoff to loosening bolts.

Watch for loose bolts



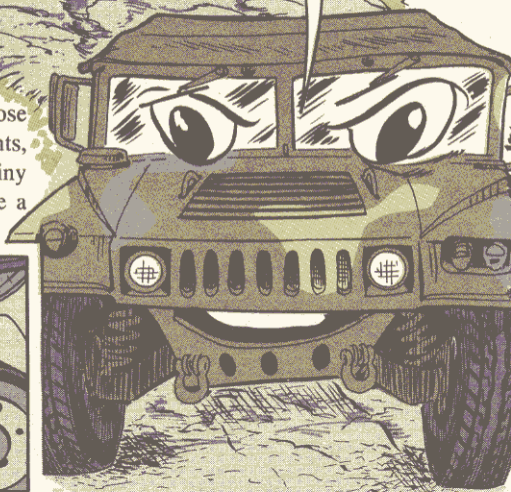
Throttle Only

The hand throttle is not a cruise control. You might not be able to stop when you hit the brakes if the throttle is pulled. Use it only to boost RPM to power electronic equipment, to operate a winch, to ford or to start the truck in cold weather.

Break It In

If you're lucky enough to get a new truck, remember to break it in easily. Never load it down—like hauling a trailer—during the first 500 miles. That puts too much strain on the engine. It runs hotter than normal, rings don't seat right and piston walls can crack from the heat.

TAKE CARE OF
THESE SMALL PM ITEMS
FOR ME AND I'LL TAKE
CARE OF YOU.



STOP OIL SPILLS

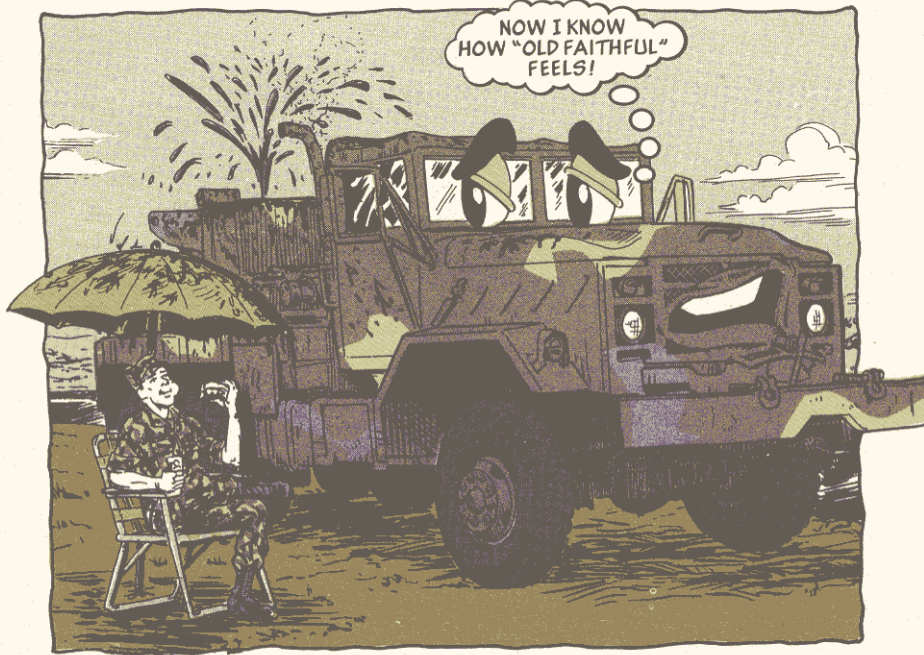
If the hydraulic tank on your 5-ton wrecker gushes oil when you retract the boom, lower the tank's oil level.

A bad design put the vent on the return side of the tank. That means only so much oil can return before it starts pouring out the top of the tank. You can stop that mess by removing some oil. When the oil is hot, it only needs to reach the bottom of the filler neck. That's about five less gallons of oil than usual, which should reduce spills. Be sure you check the level when the oil is hot, of course. Cold fluid will expand when heated, and make a bigger mess.

Here are two more suggestions for slowing down the return of oil to the tank:

- ◆ Lower the boom halfway, then wait before bringing it the rest of the way down.
- ◆ Do only one operation at a time. Lower the boom and then retract it, for instance.

The tank design has been changed, but the only tanks available are the old ones. An MWO is in the works, too, but until it comes out, only you can stop oil spills.



Primary Comes First

When your 2 1/2-ton truck starts running rough, drivers, check the fuel filters. Dirty fuel or clogged filters could be the culprit.

Are you regularly draining all **three** fuel filters? If not, you're looking at even bigger problems, like plugged fuel injectors.

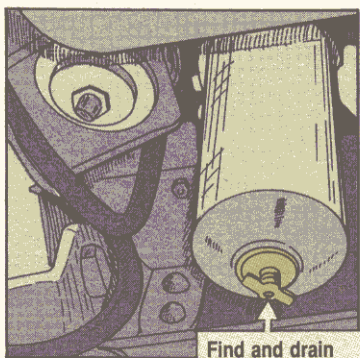
Most drivers remember to drain the secondary and final fuel filters. They sit next to each other on the side of the engine. Drain them weekly, per the PMCS.

The primary fuel filter gets forgotten because it's out of sight under the engine.

Find it. Drain it. Do it after each operation.

Fuel hits the primary filter first. Once it gets clogged, less fuel and more gunk is going to the final two filters.

The result is rough running and clogged injectors.



Find and drain
primary fuel filter

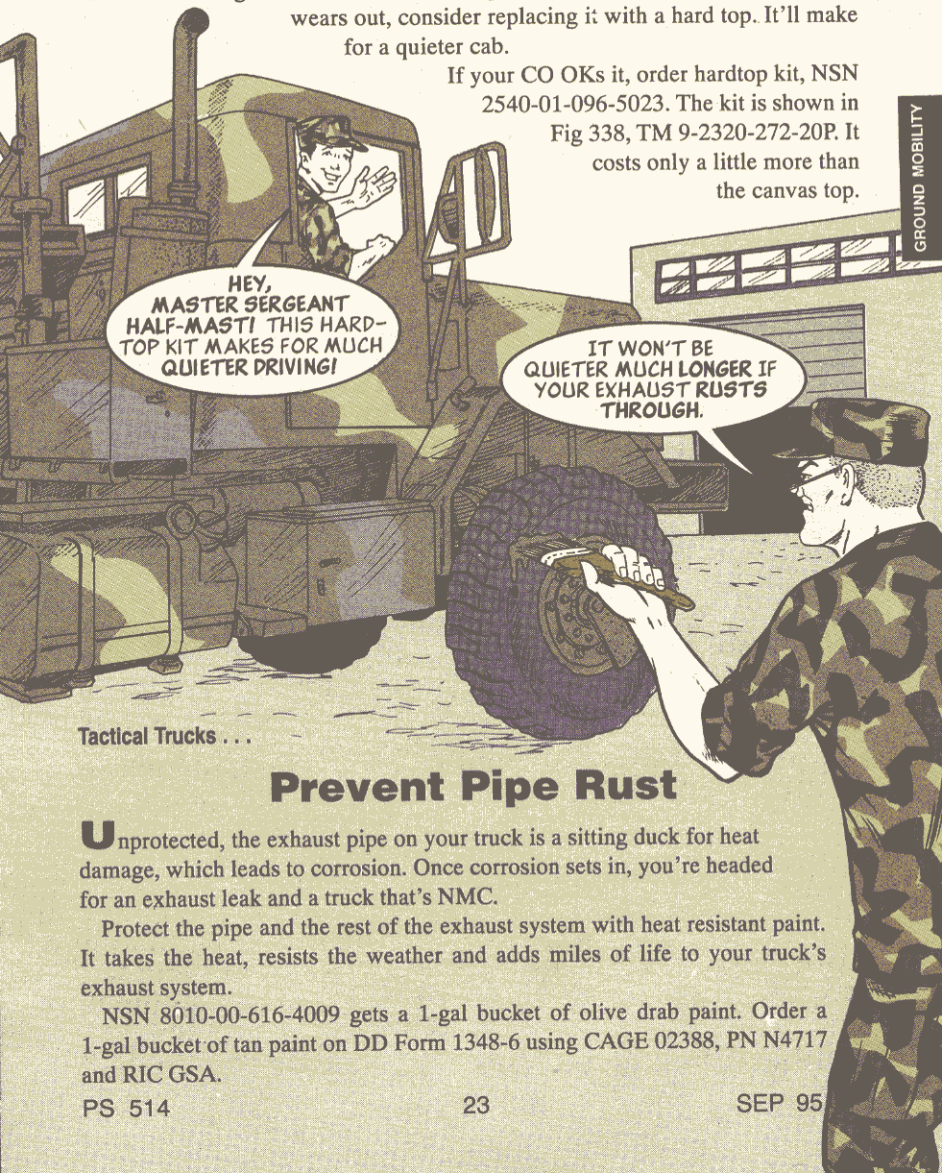
WE FOUND IT!
THE PRIMARY FILTER
IS RIGHT HERE!

Get a Hardtop Kit

When the original insulated canvas top for your M939-series tractor truck wears out, consider replacing it with a hard top. It'll make for a quieter cab.

If your CO OKs it, order hardtop kit, NSN 2540-01-096-5023. The kit is shown in Fig 338, TM 9-2320-272-20P. It costs only a little more than the canvas top.

GROUND MOBILITY



Tactical Trucks . . .

Prevent Pipe Rust

Unprotected, the exhaust pipe on your truck is a sitting duck for heat damage, which leads to corrosion. Once corrosion sets in, you're headed for an exhaust leak and a truck that's NMC.

Protect the pipe and the rest of the exhaust system with heat resistant paint. It takes the heat, resists the weather and adds miles of life to your truck's exhaust system.

NSN 8010-00-616-4009 gets a 1-gal bucket of olive drab paint. Order a 1-gal bucket of tan paint on DD Form 1348-6 using CAGE 02388, PN N4717 and RIC GSA.

Protect Flex Brake Hoses

If a vehicle has flexible brake hoses—like the CUCV, M44-, M809- and M39-series trucks—you mechanics need to look them over during semi-annual services.

Trouble is, the TMs don't tell you what to look for. So here's the scoop:

eyeball and feel all flexible hoses for leaks, bulges, and any damage—like wear, chafing, cracking, crimping or abrasion—that goes through the outer casing to the first ply of fabric.

Pay close attention to hoses that run along or cross over the vehicle's frame. If you find wear, pinching or hoses that are near moving parts, look again for leaks, bulges or damage.

Replace any damaged hoses using the info in your truck's TM. If the hoses are OK, just move them where no more damage can occur.



Remember the U-joints

When it's lubing time, mechanics, remember the grease fittings on a truck's U-joints.

The fittings are easy to forget because they're usually hard to find. Fittings are on the cross of the U-joints, inside the forks. It's dark, greasy, and often dirty or muddy around the fittings.

Forget to lube the U-joints, though, and bearings can freeze up and damage the drive train.

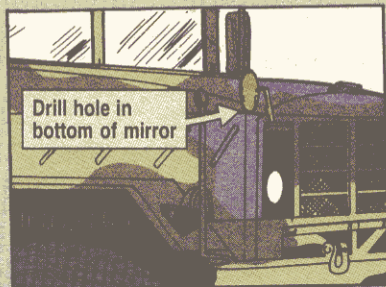
Make yourself a mental note that the fittings are there, then find them and grease them.



Drill for Water

Water inside your vehicle's spotter mirror is trouble. During warm weather it rusts the metal case. When temperatures drop, the water freezes and cracks the glass.

Since you can't keep water from getting in, let it out. Drill a $5/64$ -in diameter hole in the bottom of the mirror. That lets the water drain out and dries up your mirror problems.



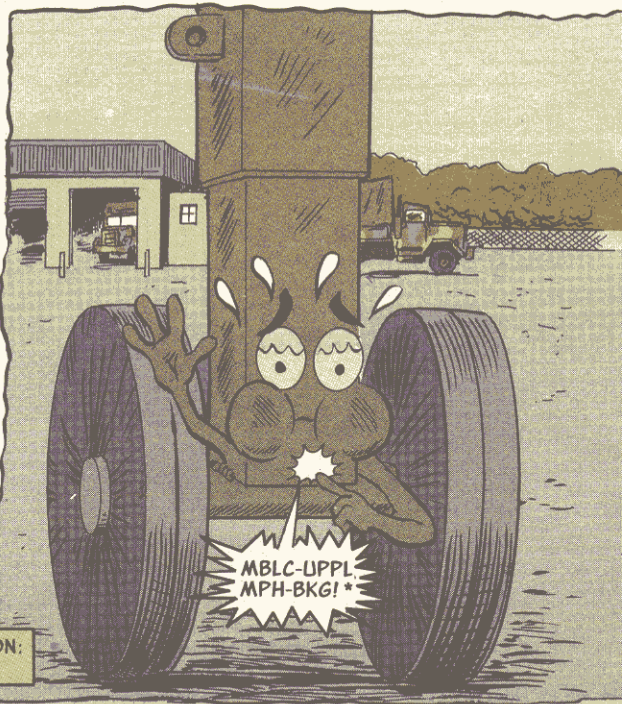
Landing Gear Drain Holes

Water inside the landing gear housing of late model trailers means trouble. In warm weather it causes the housing to rust. When temperatures drop, the water freezes and cracks the housing.

Since you can't keep water from getting in, let it out. Drill a 7/16-in diameter hole in the housing, above the weld line.

Use green CARC paint, NSN 8010-01-229-7546, for touchup.

***TRANSLATION:
DRILL HERE!**



Trailers . . .

Drain Air Tanks and Filters

When you drain the water from your prime mover's air tanks, drivers, do the same for the trailer.

Moisture is just as hard on a trailer's air brake system as it is on the truck's.

Water rusts valves open or closed, leaving you with locked-up brakes...or no brakes at all.

All trailers with air brakes have air tanks. Find the petcock on the tank that lets you drain the moisture. Drain the tanks after each operation.

Smaller trailers also have filters. Open the filter housing and let moisture drain from it after each operation.

Finding an air tank is pretty easy. It's big enough to see. Eyeball the trailer TM to find out where the filter is. The brakes will thank you—by operating properly.

IF YOU CALL, THEY WILL ANSWER...

ANOTHER
STRIKE OUT!
I WONDER WHO
CAN HELP ME
NOW.

IF YOU
CALL, THEY WILL
ANSWER.



WHO-O-O
SAID THAT?

I DID, SERGEANT FIELDS.

WE HEARD
YOU'RE HAVING
TROUBLE SOLVING
A MAINTENANCE
PROBLEM.

I SURE AM! I JUST CAN'T FIND
THE ANSWERS TO MY QUESTIONS.
WHERE DO I GO FROM HERE?

HELP IS AS
CLOSE AS YOUR
TELEPHONE.

USE THESE
HOTLINE NUMBERS
WHEN YOUR USUAL
SOURCES CAN'T
ANSWER YOUR
QUESTIONS.

HOTLINE
DIRECTORY

HOTLINE DIRECTORY

★ Tanks, AVLBs, M88A1s, Sheridan, Land combat missile systems (incl LANCE launcher/loader transporter), M728 CEV, small arms, mortars, recoilless rifles (Anniston)

DSN 571-6582
Commercial (205) 235-6582

★ Aircraft engines (Corpus Christi)

DSN 861-2651
Commercial (512) 939-2651

★ Cat 1 EIR (ATCOM-Air)

DUTY HOURS

DSN 693-1629
Commercial (314) 263-1629

AFTER DUTY HOURS

DSN 693-2066
Commercial (314) 263-2066

★ M113 FOV (incl Vulcan, Chaparral), M2/M3-series Bradley, MLRS, M9 ACE, (Red River)

DSN 829-3100
Commercial (903) 334-3100

★ All howitzers, FAASV, M578 recovery vehicle, ground guidance and shop/test equipment for I-HAWK and PATRIOT (Letterkenny)

DSN 570-9693
Commercial (717) 267-9693

★ Commo/Electronics (Tobyhanna)

DSN 795-7900
Commercial (717) 895-7900

★ Commo/Electronics (Ft Monmouth-CECOM)

DSN 992-3266
Commercial (908) 532-3266

★ Computer software (Ft Monmouth-CECOM)

DSN 995-2980
Commercial (908) 544-2980

★ Global Positioning System (Ft Monmouth-CECOM)

DSN 992-4729
Commercial (908) 532-4729

★ Fuels/lubes (Ft Belvoir)

DSN 654-1817
Commercial (703) 704-1817

★ Ammo

DSN 793-2666
Commercial (309) 782-2666

★ STE/ICE-R and STE-M1/FVS

1-800-229-3458

★ NBC School, training and equipment

DSN 865-5592
Commercial (205) 848-5592

★ NBC (Chemical and Biological Defense Command)

DSN 584-3681
Commercial (410) 671-3681
1-800-831-4408
Germany 0130810280
Korea 0078-14-800-0335

★ Stock Funding of Depot Level Repairable (SFDLR)

1-800-343-4994

★ Supply, maintenance policy guidance for ARs 750-1, 710-2 and 735-5; TB 710-5 (Logistics Evaluation Agency)

DSN 977-6842
Commercial (717) 770-6842

★ Defense Construction Supply Center (S9C)—for RODs and PQDRs

DSN 850-2089
Commercial (614) 692-2089

★ Food service equipment, individual equipment (clothing), tentage and shelters (Natick)

DSN 256-5341
Commercial (508) 651-5341

★ CARC (Chemical Agent Resistant Coating)

Ft Belvoir (general)
DSN 654-2799
Commercial (703) 704-1990
ATCOM (proponent)
DSN 693-3936
Commercial (314) 263-3936

★ Standard Army Maintenance System(SAMS), Unit Level Logistics System (ULLS), Standard Property Book System-Redesign (SPBS-R); Customer Assistance (Ft Lee)

DSN 687-1051
Commercial (804) 734-1051

★ GSA-managed items complaints (National Customer Service Center)

DSN 465-7447
Commercial (816) 926-7447

★ Armament and Chemical Acquisition and Logistics Activity (ACALA)

Nuclear weapons

DSN 880-3619
Commercial (201) 724-3619

Combat vehicles

DSN 793-2185
Commercial (309) 782-2185

Artillery

DSN 793-1525
Commercial (309) 782-1525

Individual/crew-served weapons

DSN 793-1695
Commercial (309) 782-1695

Remoted target systems

DSN 793-1065
Commercial (309) 782-1065

Air defense gun systems

DSN 793-1789
Commercial (309) 782-1789

Mortars

DSN 793-1525
Commercial (309) 782-1525

EOD/test equipment/test programs

DSN 793-2509
Commercial (309) 782-2509



THE USAMC LOGISTICS SUPPORT ACTIVITY—LOGSA—OPERATES A HOTLINE FOR ITS FIELD ASSISTANCE PROGRAMS. CALL ...

DSN 645-0499
Commercial (205) 955-0499
1-800-878-2869

During duty hours, you can call the individual offices for help. Get answers to your questions on these programs from 0730-1600 CT:

★ AMDF discrepancy reporting

DSN 645-0793
Commercial (205) 955-0793

★ AMDF price challenge

DSN 779-6029
Commercial (205) 313-6029

★ Army Oil Analysis Program (AOAP)

DSN 645-0864
Commercial (205) 955-0864

★ Army vehicle registration program

DSN 645-9729
Commercial (205) 955-9729

★ ARMYLOG

DSN 645-0782
Commercial (205) 955-0782

★ Reverse Support List Allowance Computation (R-SLAC)

DSN 645-9797/9798
Commercial (205) 955-9797/9798

★ End item codes (EIC)

DSN 645-9780
Commercial (205) 955-9780

★ Equipment Oriented Publication Data Base (EOPDB)

DSN 645-9845
Commercial (205) 955-9845

★ Logistics Intelligence File (LIF)

DSN 645-9810/9762
Commercial (205) 955-9810/9762

★ Readiness reporting help

DSN 645-9713
Commercial (205) 955-9713

★ Recommended peacetime ASL/PLL

DSN 645-9780/9742
Commercial (205) 955-9780/9742

★ Remote Terminal AMDF Inquiry System (RTAIS)

DSN 645-0778
Commercial (205) 955-0778

★ Spare/repair part to end item (SB 38-101)

DSN 645-9778
Commercial (205) 955-9778

★ Work Order Logistics File (WOLF)

DSN 645-9711
Commercial (205) 955-9711

★ The Army Maintenance Management System (TAMMS)

DSN 645-9715/9729/9695
Commercial (205) 955-9715/9729/9695

DUTY HOURS FOR
THESE LOGSA PSCC OFFICES
ARE 0730-1600 ET.

★ Packaging/storage problems, hazardous materials packaging (LOGSA PSCC)

DSN 795-7682
Commercial (717) 895-7682

★ Report of Discrepancy (ROD)—SF 364—assistance program

DSN 795-7263
Commercial (717) 895-7263

★ Hazardous materials data system (HMDS)

DSN 795-6622
Commercial (717) 895-6622

THAT HOTLINE DIRECTORY
SHOULD PUT YOU ON THE RIGHT
TRACK TO PROBLEM SOLVING.

YOU'D BETTER
ANSWER THAT CALL,
SERGEANT. IT MIGHT
BE IMPORTANT!

YOU BET!
AND THANKS
A LOT!

RING



Usage Reports Are Vital!

I DON'T GET IT. THESE EQUIPMENT USAGE REPORTS ARE A BIG WASTE OF TIME.

YEAH, I KNOW WHAT YOU MEAN.

HEY, I HEARD THAT REMARK, AND NOTHING COULD BE FARTHER FROM THE TRUTH!

STEP INSIDE AND WE CAN DISCUSS IT.

PROVIDING THE CORRECT USAGE INFORMATION ON TIME IS CRUCIAL!

WHY?

BECAUSE THE HEADSHED USES THAT INFORMATION TO ASK FOR MONEY TO BUY REPLACEMENT EQUIPMENT AND POL.

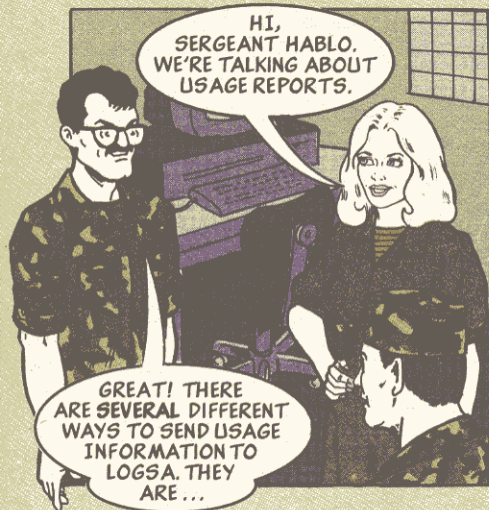
It also tells how well your equipment is holding up.

Usage reports tell the headshed the number of kilometers or miles on your equipment.

So, if your reports go in late and wrong, you might lose out on new equipment.

Now that you know why the information's so valuable, do you know which equipment must be reported?


If your answer is *no*, check the 2408-9 usage and DD 2026 usage columns in Appendix E of DA Pam 738-750 in the Maintenance Management Update. Usage information is required on all equipment with an X under those columns.



Units Without ULLS-G

AOAP— Usage for combat and selected tactical vehicles is collected through the Army AOAP. Appendix E of DA Pam 738-750 tells what vehicles are in this program. Figure 4-1 of DA Pam 738-750 shows how to record usage data on DD Form 2026.

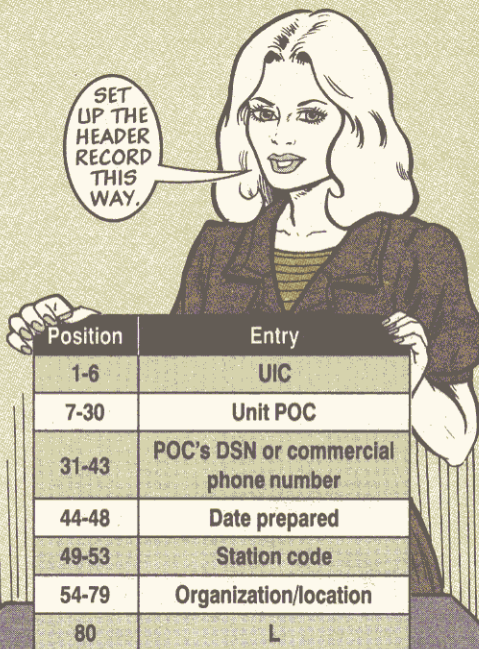
If your equipment is not in AOAP, send in your usage information in one of these ways:

 **Floppy diskette**— You can submit your usage information on a 2S/2D/HD/LD, MS/PC DOS compatible floppy diskette. Record the information using an 80 character per record, ASCII Standard Data Format (SDF) under file name "DA2408-9.SDF".


Units with ULLS-G

Interim Change Package 03 to ULLS-G System Change Package 04 allows units with ULLS-G to report their usage data automatically to LOGSA. Units with ULLS-G that are supported by SAMS send their data to the SAMS site. The data is then sent to LOGSA through the Army Materiel Status System (AMSS).


Units that are not supported by SAMS will send their usage data directly to LOGSA on a floppy diskette, by electronic mail or on hard copy (DA Form 2408-9).




Then, follow the input format in Fig 5-19 of DA Pam 738-750.

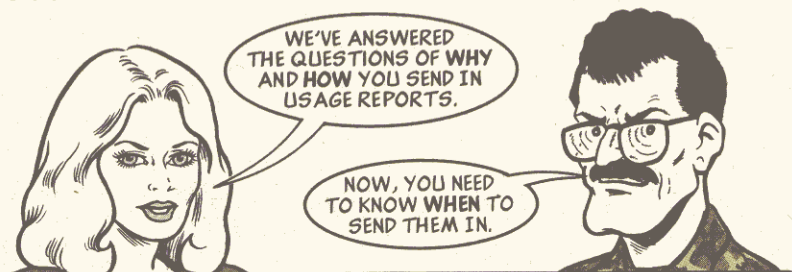
 **DDN E-MAIL** — Use the same setup as with the floppy diskette and send the report using:

tammsmgr@logsa-emh2.army.mil.


 **Printout** — When you have an automated system, such as LOGSA's Readiness Reporting System (RRS), you may use a printout which lists all equipment needing a usage report. Just follow the input format instructions in Fig 5-19 of DA Pam 738-750.


Then print the current usage on the printout and send one copy of the printout to your local data reduction center. The data reduction center folks will process the usage data and forward it to LOGSA in DA Form 2408-9 format. Be sure to keep a copy of the printout at unit level until the next annual usage report.

 **Hard copy DA Form 2408-9** — If none of the above methods are available, complete a hard copy 2408-9. Instructions on how to fill out this form is in Fig 5-8 of DA Pam 738-750.



 **ULLS-G** — Usage is reported the end of every month.

 **AOAP** — Usage is reported for combat vehicles every 60 days and tactical vehicles every 90 days. National Guard and Reserve units report usage under AOAP every 180 days.

 **Equipment not in AOAP or ULLS-G** — Usage is sent in 1 October for non-tactical vehicles, 1 November for tactical vehicles, and 1 February and 1 August for floating craft.

Send floating craft usage directly to:

**USA ATCOM (Troop)
ATTN: AMSAT-I-MMW
4300 Goodfellow Blvd
St Louis, MO 63120-1798**

Usage reports are needed on equipment both in use and in storage. This includes prepositioned materiel configured to unit sets (POMCUS) and war reserve stocks that have been used for a major exercise during the reporting period.



IF YOU NEED ADDITIONAL
INFORMATION ON EQUIPMENT
OR SERIAL NUMBERS,
OWNERSHIP, LOCATION,
OR EQUIPMENT AGE—

HOLD ONE,
CONNIE, I HAVE
THAT INFO ON
THE SCREEN
NOW.

Call:

DSN 645-9715/9695/9729
Commercial (205) 955-9715/9695/9729

Or contact the LOGSA folks
by E-mail using:

tammsmgr@logsa-emh2.army.mil

Or write:

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

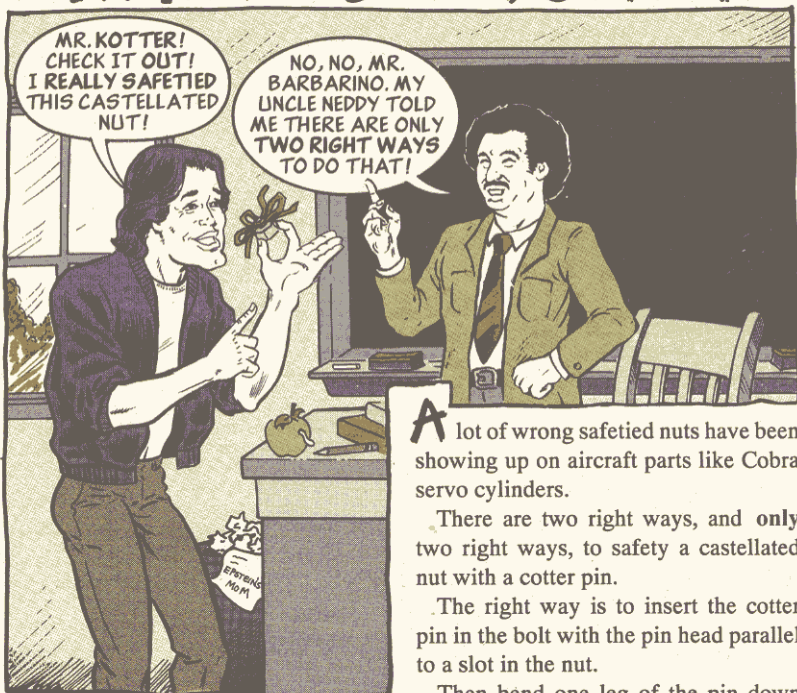
THANKS, CONNIE, HABLO,
FOR STRAIGHTENING ME OUT ON
THE IMPORTANCE OF THE
USAGE REPORTS.

NO PROBLEM.

GLAD
TO HELP.

HEY!
I'D BETTER
HURRY IF
I WANT TO GET
MY REPORTS
IN ON TIME.

WELCOME BACK, COTTER



A lot of wrong safetied nuts have been showing up on aircraft parts like Cobra servo cylinders.

There are two right ways, and **only** two right ways, to safety a castellated nut with a cotter pin.

The right way is to insert the cotter pin in the bolt with the pin head parallel to a slot in the nut.

Then bend one leg of the pin down over the nut and bend the other leg over the bolt.

An alternate method, is to install the pin horizontal to a slot in the nut and wrap the legs of the pin around the castles of the nut.

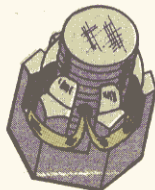
There is no other way to safety a castellated nut with a cotter pin.

Find the complete word on safetying castellated nuts with cotter pins in Para 2-17 of TM 1-1500-204-23-6.

Preferred
cotter pin
installation



Alternate
cotter pin
installation



Cyclic Rigging Tool

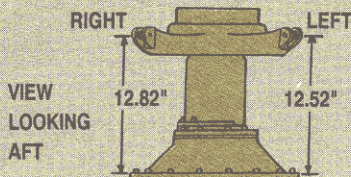
Dear Windy,

We've had a problem with Cobras that will not come into rig on some rebuilt transmissions, the top case has been machined down to remove corrosion. If you do a cyclic rigging like Para 11-29.1. in TM 55-1520-236-23-2 says, the swashplate bottoms out on the swashplate support. We did three things to solve this:

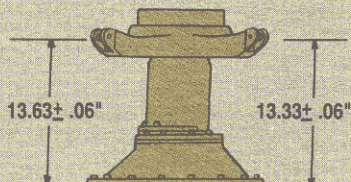
First, we changed the lower point of measurement from the flange of the transmission top case to the bottom edge.

Second, since we changed the lower measurement point, we had to change the measured dimensions.

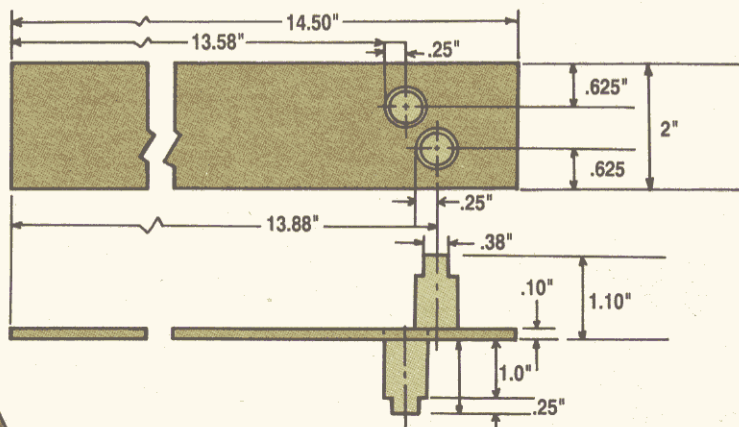
The old measurement, Fig 11-15 in the TM, looks like this:



Here's where you take the new measurement:



Finally, we made a new work aid like the one in Fig 11-14, but corrected the numbers and added a few refinements:





MAKE YOUR TOOL
FROM A CARPENTER'S SQUARE,
NSN 5210-00-273-1948. CUT ONE LEG
FOR THE LEFT MEASUREMENT AND
THE OTHER FOR THE RIGHT
MEASUREMENT.

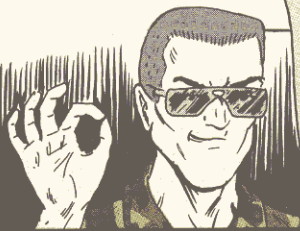
For the four
aligning pins, two
on each leg, we used
the bolt, NSN 5306-00-
839-0828, that secures the
servo to the swashplate horn.



To hold the aligning pins to the device, we used machine screws, NSN 5305-00-043-2680. The TM says to weld the aligning pins, but we found it easier to tap and bolt on the pins.



We also turned the outside dimensions of the aligning pins down 0.120 inch, rather than the 0.50 inch of the original pins.



This acts as a GO/NO-GO gauge for the allowed 0.06-in tolerance. If either portion of the pin fits into the swashplate horn hole, the rigging is good. If neither portion of the pin goes in, more adjustment is needed.



Since your measuring device no longer sits on the transmission case, you need to make a support that mounts to the bottom side of the transmission top case.

We used seven inches of $\frac{3}{8}$ x 1-in iron stock, NSN 9510-00-554-4922.



Drill a $\frac{3}{8}$ -in hole in one end as close as possible and round off the corners so the support will bolt up to the under side of the transmission and not interfere with the transmission case.

1SG Andy Bolinger
Columbus, OH

First Sergeant Bolinger's idea has been blessed by ATCOM and his work aid works. As always, a good job, Andy.

Windy

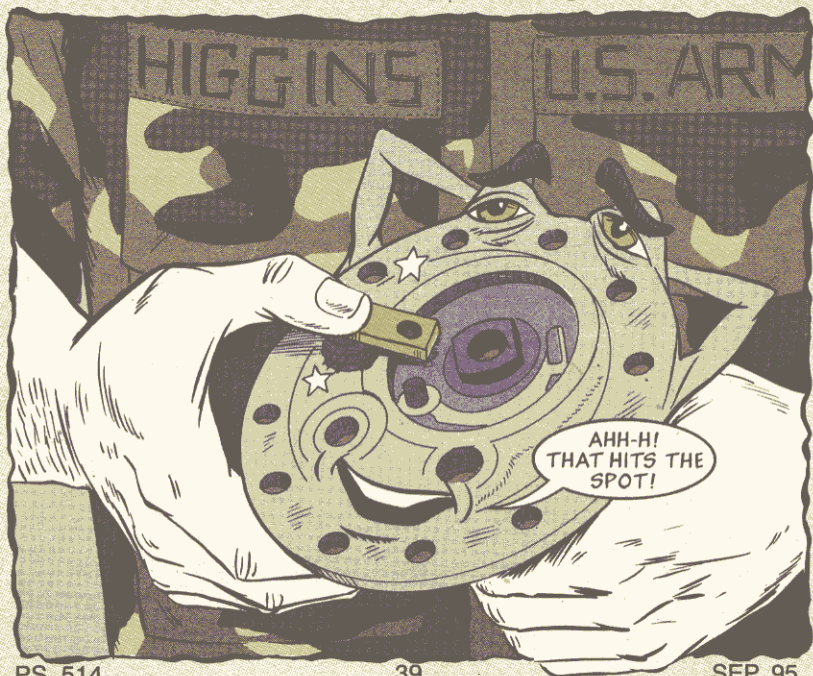
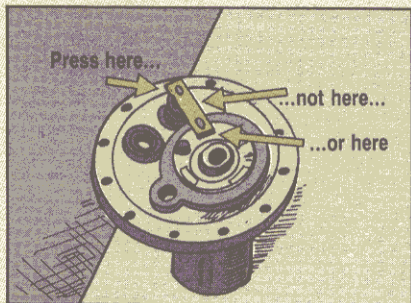
Make a Good Depression

It's not new news. We've told you before. Now UH-1-95-ASAM-01 has told you, too. It is critical to depress the shutoff valve arm on the fuel boost pump just right when you move or install the pump's shoulder screw.

Depressed wrong, the arm bends. That means the shutoff valve might not completely open or close. Fuel will flow when you **don't** want it to, or not enough will flow when you **do**. A restricted fuel flow could mean power loss or flameout.

To do it right, apply pressure directly over the valve spring when opening or closing the valve spring assembly. Never press the arm in the middle or at the end near the screw. That will bend the arm!

While depressing the arm over the spring, insert and tighten the screw.



The REEL Story

Dear Windy,

The CAUTION in Para 2-167 of TM 55-1520-236-23-1 states that if the inertia reel on the shoulder harness is inadvertently released while the strap is removed, you must replace the entire reel assembly.

This happens all too often. A replacement reel costs \$347!

How can we keep the reel from being inadvertently released?

PFC R. W.



Handling Harness Hardware

It seems that most Apache W-10 wiring harnesses are turned in for repair or replacement without mounting screws for the J3 connector.

A J3 connector without mounting screws is a connector headed for the scrap heap. A new connector must be added to the harness at \$300 a pop.

So, when you must turn in the W-10 wiring harness for the Apache's PNVs, turn it in with a complete J3 connector, hardware and all.

Dear Private R. W.,

Here's how to solve that common problem:

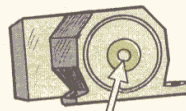
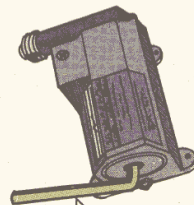
1. Set the inertia reel control in auto-lock (to the rear).
2. Remove nuts and washers. Remove the inertia reel.

CAUTION — To prevent damage to the inertia reel due to uncontrolled release of spring tension, do not allow the hex wrench to become disengaged from the reel shaft until the spring has been unwound.

3. Hold the inertia reel and pull the shoulder harness belt fully out. Place a 7/32-in hex wrench in the hex hole on the end of the reel housing to keep the reel shaft from turning.
4. Disconnect the knurled nut from the inertia reel.
5. Set the inertia reel control handle in manual lock (to the front).
6. Remove the control cable from the inertia reel.
7. Push the belt retaining insert and belt out of the slot in the reel shaft. Remove the insert and pull the belt from the slot.
8. Reinstall the belt retaining insert 90 degrees from normal position in the slot and slowly back off the hex wrench until the spring holds tension against the retaining insert and reel body.

CAUTION — The replacement reel spring is prewound by the manufacturer. The belt retaining insert is installed 90 degrees from normal installation for shipping and storage purposes only.

9. Install the hex wrench in the hole on the end of the replacement reel. Rotate wrench counter-clockwise just enough to remove belt insert.
10. While holding the reel, slip the end of the strap through the slot in the shaft of the reel.



Windy

CHARGE BATTERIES FOR BACKUP POWER

The uninterruptible power source (UPS) in your AN/TYO-30, -31 communications system control element has 24 batteries.

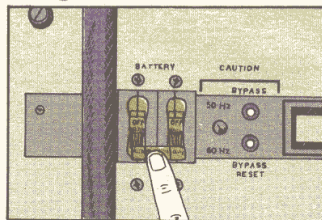
THOSE BATTERIES SUPPLY DC POWER FOR SHELTER TELEPHONES AND OTHER DC OPERATED EQUIPMENT. MORE IMPORTANT, THEY PROVIDE TEMPORARY EMERGENCY POWER IF PRIMARY POWER GOES DOWN.

DON'T COUNT ON US BATTERIES FOR BACKUP. YOU DIDN'T CHARGE US!

2. Set all circuit breakers to OFF.

These include the breakers on the:

- power entry panel
- power distribution unit
- UPS

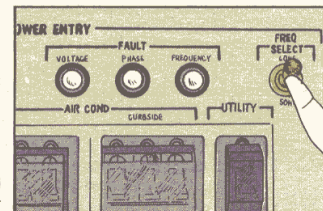


You can't afford to be without emergency power.

That's why it's important to charge the batteries for 24 hours before operating shelter equipment. Here's how to charge them, step by step:

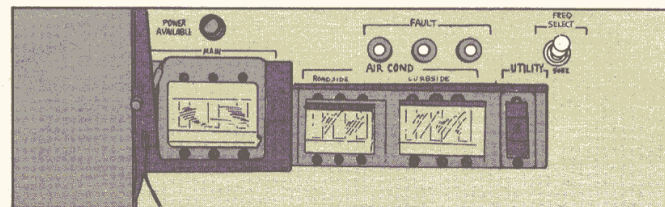
1. Ground your shelter. Run a wire from the ground stud on the power entry panel to earth ground.

3. At the rear of the battery drawers, set the BATTERY switches to ON.
4. Set FREQ SELECT switch on power entry panel to match the primary power frequency.



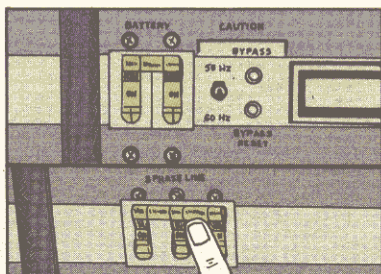
5. Hook up the primary power cable to the PRIMARY INPUT receptacle in the power entry panel.
6. Set UPS NORMAL/BYPASS switch to NORMAL.
7. Set the 50Hz/60Hz toggle switch on UPS control panel to match the primary power frequency.
8. Roll up the covers on the environmental control units (ECUs).

9. Turn on primary power. At the power entry panel, the POWER AVAILABLE lamp should light. The FAULT lamps (VOLTAGE, PHASE and FREQUENCY) should be off.



10. At the power entry panel, set MAIN, and AIR COND, CURBSIDE circuit breakers to ON.

11. At each ECU module, set COMPR CIRCUIT BKR to ON.
12. Set the fresh air damper control to let air into the shelter.
13. Before you turn on the UPS to charge the batteries, the shelter's inside temperature must be between 35 degrees F and 85 degrees F. Its humidity must be between 10% and 90% noncondensing.
You can damage the UPS if you operate it when the temperature and humidity are outside these ranges.
Adjust the shelter's temperature and humidity. At the ECU module, set the MODE SELECTOR and TEMPERATURE SELECTOR to heat, cool or ventilate.
14. Run the ECUs for at least two hours to bring the temperature and humidity to acceptable levels. You may need to run the ECUs longer than two hours to reach these levels.
15. When the temperature and humidity are in the right range, set the UPS BATTERY and 3 PHASE LINE circuit breakers to ON to begin charging the batteries. On the UPS panel, the SYSTEM POWER lamp goes on. On the

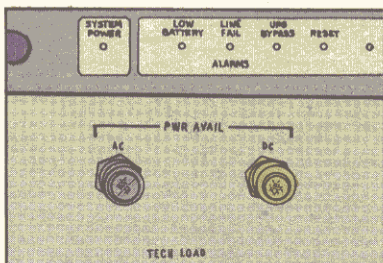


power distribution unit, the AC PWR AVAIL lamp goes on.

16. Press the RESET button and the BYPASS RESET button on the UPS panel.

Let the batteries charge for 24 hours.

When the batteries are fully charged, the LOW BATTERY lamp on the UPS will go out and the DC PWR AVAIL



lamp on the PDU will go on. If they don't, it means you have one of the following problems:

- ⚡ A fuse in one of the battery drawers has blown.
- ⚡ A battery is so weak that it can't take a charge.

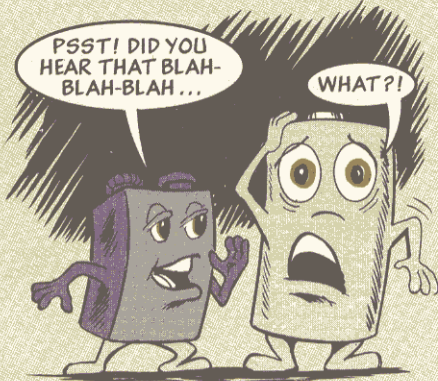
Either way, report the problem to DS.

REMEMBER, YOUR COMMO SYSTEM IS ONLY AS GOOD AS ITS POWER SOURCE. KEEP YOUR AN/TYQ-30, -31 CHARGED AND READY.

PS END



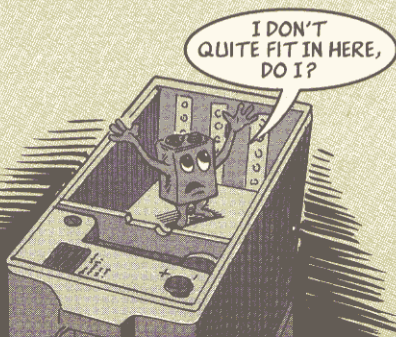
A Better Battery Deal



There's a nasty rumor making the rounds. It's about replacing the six D-cell batteries in your AN/GRA-39 radio with a single 9-volt battery.

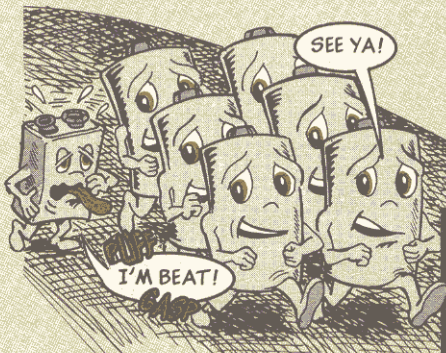
Let's set the record straight. The C-2328 remote and C-2329 local control units take only D-cell batteries, NSN 6135-00-835-7210. The control units are NOT made to use 9-volt batteries. Here's why:

➡ First of all, the 9-volt is the wrong size and shape for the battery case. It's simply a bad fit. You'd have to modify the case to allow the 9-volt to make electrical contact. That modification has not been authorized.



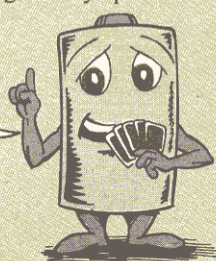
➡ The 9-volt battery doesn't last as long as the D-cells. A 9-volt in the local unit provides 9.6 hours of power. In the remote unit, it provides only 3.3 hours. Six D-cells last 144 hours in the local unit and 48 hours in the remote unit.

You'd have to replace the 9-volt about 15 times to equal the D-cells' lifespan. Imagine what that will mean in downtime, not to mention travel to a distant location to service your remote unit.



➡ Using a 9-volt battery might cost less money up front, but it's more expensive in the long run. When you consider the 9-volt's shorter lifespan and the number of fresh batteries you'll need — 15 — the cost goes way up.

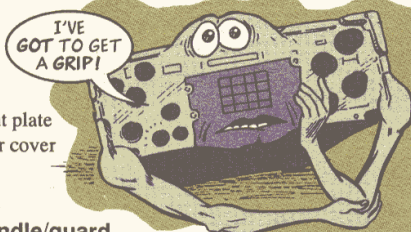
BOTTOM LINE—STICK WITH THE SIX D-CELLS. THEY'RE A BETTER DEAL ALL AROUND.



MAKING THE RT EVEN BETTER

Several new items are now available to improve and protect your SINGGARS RT-1439 receiver-transmitter. They are:

- ✕ Handles/guards
- ✕ Alignment plate
- ✕ Locking bar
- ✕ Connector cover
- ✕ W2 cable



Handle/guard

Some RTs out there still have the old handles/guards on them. You know the kind: One handle has a small finger hole in it, while the other is a solid metal plate.

Even though these old handles protect the front panel's controls and connectors, they make it hard to carry the RT. And carrying it by the antenna or the COMSEC cable practically guarantees damage.

Get replacement handles with openings that make it easier to carry the RT-1439 while still protecting the front panel. The replacement handles also take the chore out of removing the RT from the vehicular amplifier-adaptor. Here's what you need to order:

Item	NSN
Left handle*	5340-01-361-3802
Right handle	5935-01-318-5709
Machine screws	5305-01-315-4647

**The left-side handle is labeled ANT. It fits beside the antenna connector.*

Locking Bar

You'll need a locking bar, NSN 5340-01-352-3053, that fits over the replacement handles and locks both the top and bottom RTs to the amplifier-adaptor. This bar fits all versions of the RT-1439 and the RT-1523.

And don't forget a padlock for your RTs. NSN 5340-00-158-3807 brings an A-200 series high security lock with a 5/16-in diameter hardened steel shank.



EVEN BETTER

WE'RE HERE...

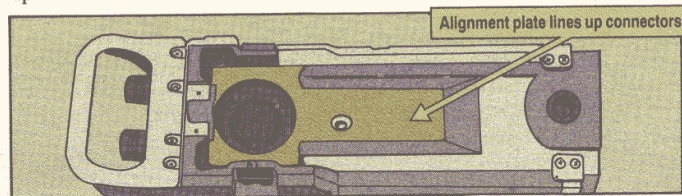
...TO MAKE YOU...

...FEEL BETTER!



Alignment Plate

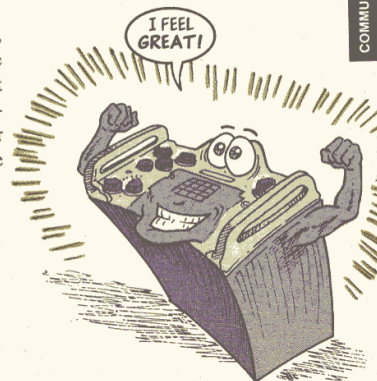
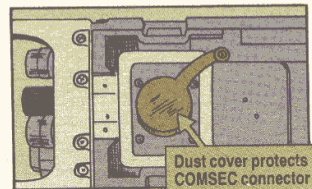
The alignment plate, NSN 5935-01-316-8720, protects connector pins by lining up the COMSEC connector on the RT with the connector on the KY-57 cable.

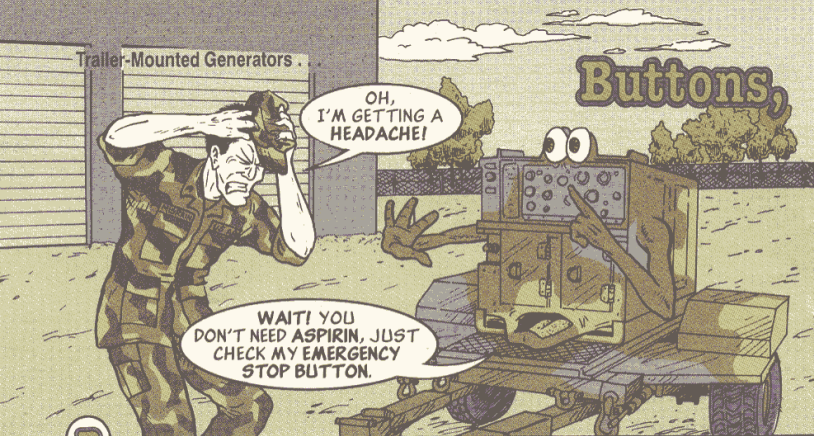


Odds and Ends

A rubber cover, NSN 5340-01-318-5708, protects the COMSEC connector from grease, dirt and moisture.

There's also a replacement W2 cable, NSN 5995-01-304-2026, that goes from the antenna connector on the RT to the input connector on the power amplifier. The replacement cable is longer than the earlier version of the W2 cable. It hangs below the RT handle, where it's out of the way.

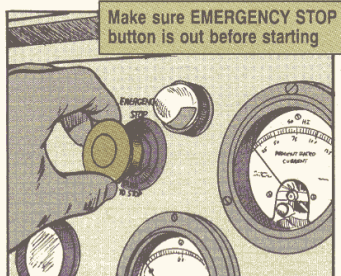




Both the 5- and 10-KW DED generators and their trailers have quirks that'll give you mechanics a real headache unless you follow these PM tips:

★ If the generator won't start, check out the EMERGENCY STOP button before you pull out the troubleshooting manual.

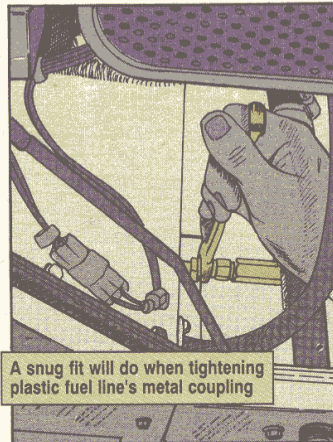
Make sure the button is pulled out. Sounds simple, but the stop button on these generators is real touchy. An accidental bump can push it in.



Buttons,

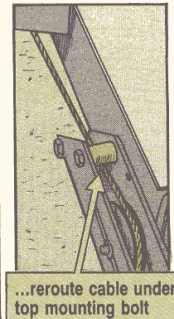
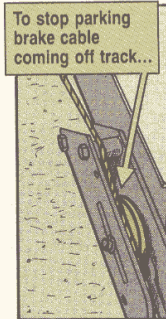
Couplings and Cables

★ Easy does it when tightening the metal coupling that attaches the plastic fuel line. Too much muscle on the wrench will cause the coupling to crack the fuel line. Then you're stuck with a fuel leak.



★ Take a look at the trailer's parking brake cable where it rides on the adjuster wheel. The cable has a bad habit of coming off the wheel's track groove. Then the cable can bind up and snap.

Keep the cable on track. Reroute the cable under the (top) bolt that mounts the parking brake assembly to the generator's trailer frame. Just remove the bolt and put it back in place, above the cable.



MSE . . .

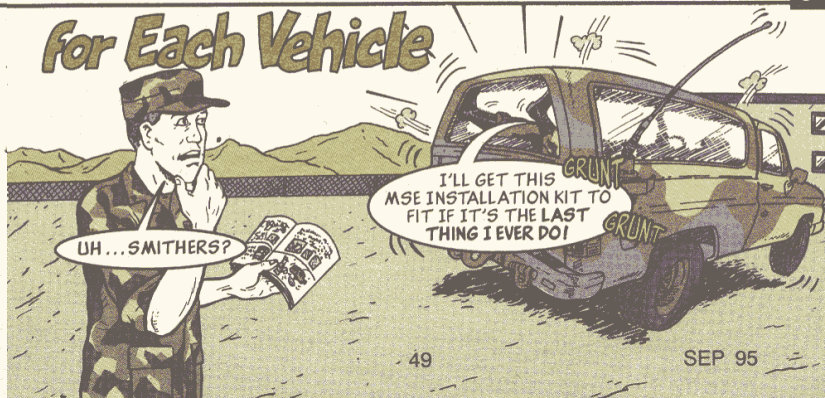
Kits Are Different for Each Vehicle

Here are some of the NSNs:

Vehicle	NSN 5895-01-
M1008A1	261-2894
M1009	261-2899
M577A2	261-2898
M113A2	261-2897
M998	368-6230
M1025	261-2901

Before you order an installation kit for your mobile subscriber equipment (MSE), eyeball TB 11-2300-480-12 to make sure you order the correct kit.

The kits aren't interchangeable, so if you order the wrong kit, it won't fit your vehicle. For instance, the HMMWV kit won't fit the CUCV.



Challenge HIGH Prices\$



If you find an AMDF item you think is overpriced, let the Logistics Support Activity (LOGSA) know through its price challenge program.

Here's how to get in touch with LOGSA:

CALL — During duty-hours (0730-1600 CT) call: DSN 779-6029/6515 or commercial (205) 313-6029/6515.

After duty hours, dial the 24-hour hotline at DSN 645-0499 or 1-800-878-2869. Leave your name, military address, telephone number, the NSN and why you think it's overpriced. They will get back to you as soon as possible.

WRITE — Drop a memo to:

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

E-MAIL — Send your challenge over DDN using:

price-ch@logsa-emh3.army.mil

FAX — Send your price challenge to:

DSN 645-6880 or commercial (205) 955-6880.

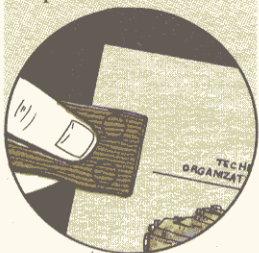
KEEP MANUALS TOGETHER



Take your TMs when you go to the field, but be sure the pages of those loose leaf pubs don't get scattered over the countryside.

You can keep TM pages together this way:

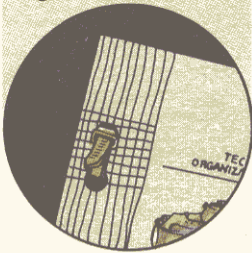
☞ Run a piece of fiber reinforced tape over the binding holes and up and down on both covers of the pub.



☞ Poke a hole through the tape so the binding holes are open.



☞ Thread electrical ties through the binding holes. NSN 5975-00-074-2072 gets 100 ties 6 1/2 inches long.



Of course, you can use binders to store your TMs. The 2-in, three-ring binder comes with NSN 7510-00-149-0604. Get the binder with posts for 2 to 3 1/2-in pubs with NSN 7510-00-889-3519 and binders for pubs 3 to 5 1/2-inches thick with NSN 7510-00-889-3520.

Carry pubs in a footlocker, NSN 8460-00-243-3234, or a one-drawer file cabinet, NSN 7110-00-823-7218.

No More AUTODIN Requests

You can no longer send publications resupply requisitions and subscription changes over AUTODIN.

But, there's a software package that allows you to send them over E-mail. This package contains four disks, an installation manual, and a guide on how to use the system.

Check with your local information management people before you install this software on your computer. Then just follow the instructions in Section 3, Para 3.1.3 of the manual.

AN ADDED PLUS TO THIS PACKAGE IS THAT YOU'LL GET BACK SUPPLY NOTICES AND STATUS REPORTS DIRECTLY TO YOUR E-MAIL ADDRESS!



If you order publications and haven't received this software package, call the publications folks on DSN 221-6238 or commercial (703) 325-6238.

Maintenance Pubs Guide

HERE'S THE KEY TO KEEPING YOUR TECH LIBRARY UP-TO-DATE.



Need help in getting your technical publications library up-to-snuff? If so, get LOGSA Pam 25-35, Maintenance Publications Guide.

It has information on how to:

- ✓ Find the basic pubs for your equipment on DA Pam 25-30.
- ✓ Request a computer list from LOGSA that has the pubs you need to maintain your equipment.
- ✓ Order publications from Baltimore Pubs Center.
- ✓ Read the Army technical publication numbering system.

To request your copy, write:

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

GET THE GOOFS OUT!

It's only natural. Humans make errors, so you're bound to mess up forms from time-to-time.

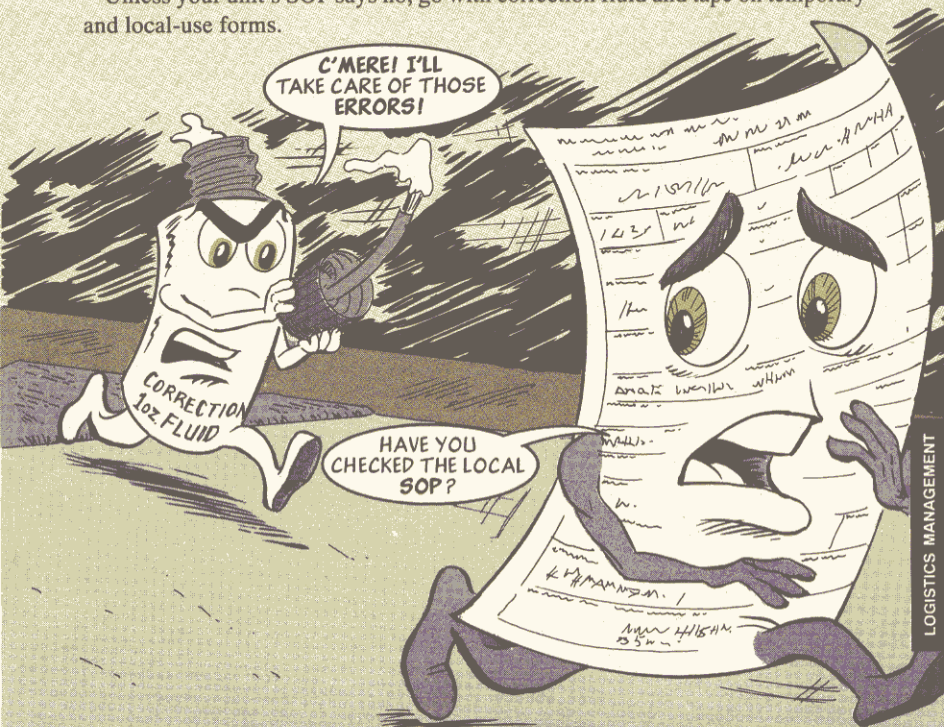
The easiest way to correct the mistake is to use correction fluid or tape. But not all forms allow that. So how can you tell when to use fix-it juice and tape?

First, read the form's instructions. Some tell you exactly when and how to fix a goof. Property books, document registers and aircraft forms are picky about that. Usually no correction fluid or tape is allowed!

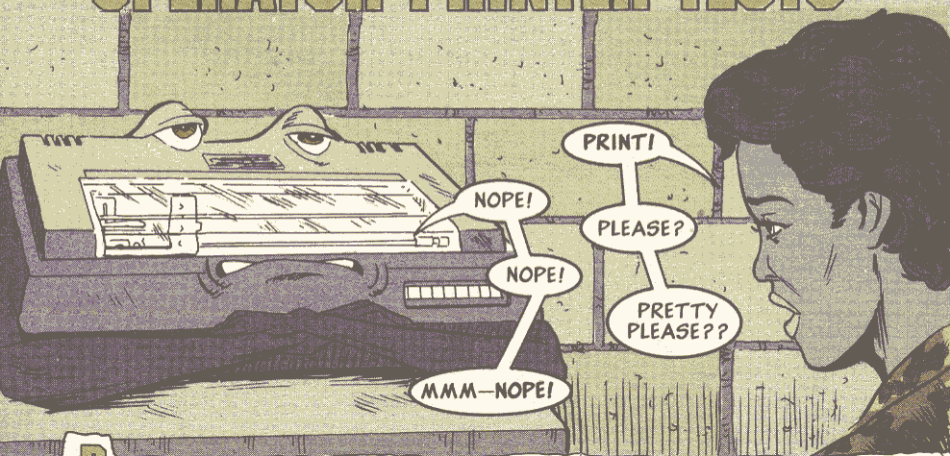
Permanent and historical records also tend to limit correction fluid and tape. They're too important to "cover up" information.

Your best bet on those forms is to line out the bum entry and initial it. Put the good information above the line or on the next open space.

Unless your unit's SOP says no, go with correction fluid and tape on temporary and local-use forms.



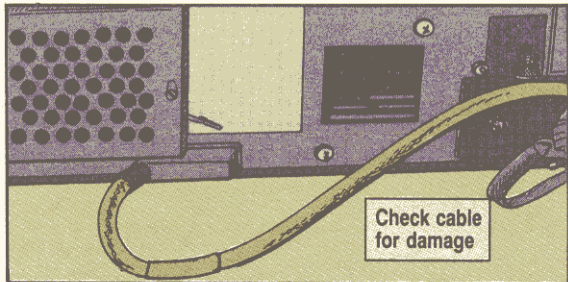
OPERATOR PRINTER TESTS



Baffled by a problem with your Tactical Army Combat Computer System (TACCS) printer at either a master or a remote workstation? If so, be sure you do all the operator tests — and then some — before sending the printer to DS for repair.

Here are the steps to follow:

1. Troubleshoot the printer using the check list in Table 3-3 of TM 11-7010-213-12. If you find a fault try to correct it with one of the solutions given in the table.
2. If you don't find a fault do the printer self-test in Table 3-4. The printer is bad if the fault appears when you do the printer self-test. Stop there and turn the printer in for repair.
3. If the fault **does not** appear during the self-test, look at the data cable for damage. This cable is located between the logic module or remote logic module and the printer. Check that the cable connections are tight at both ends. Replace the cable if cracks or breaks are found or if the connector pins are bent, loose or corroded.
4. Cable not damaged? Do the options switch settings procedures given in Para 3-8.1.1 of the TM.



If these steps don't fix the problem, then turn in the printer for repair.

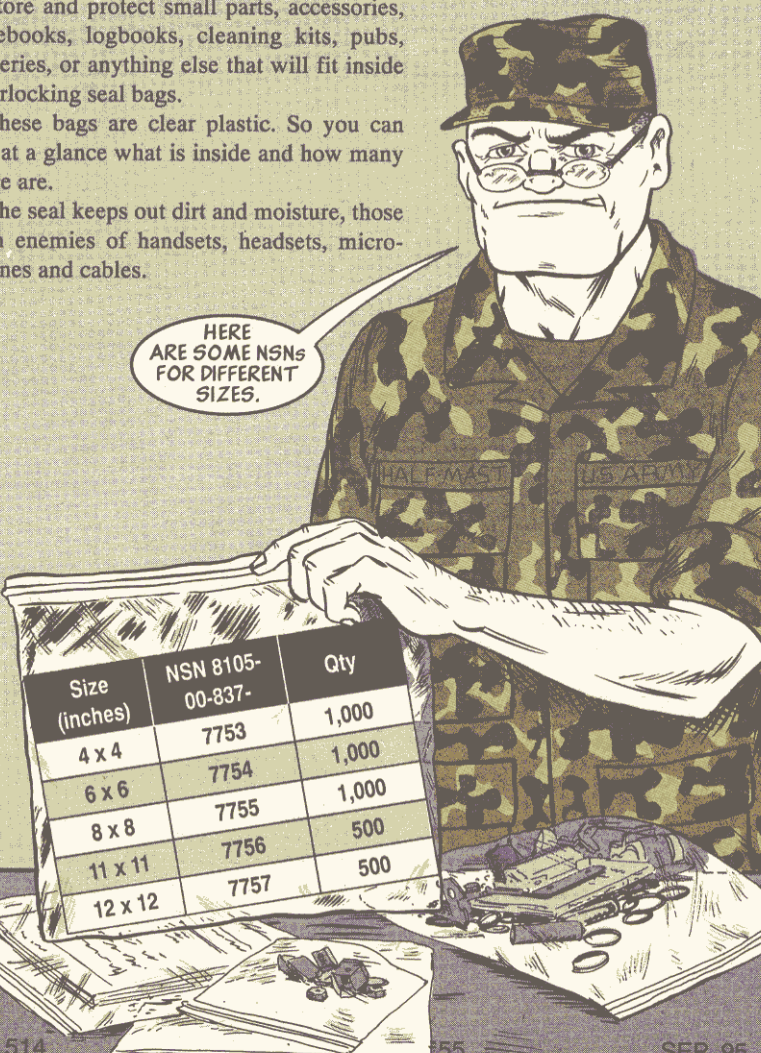
IT'S IN THE BAG

Store and protect small parts, accessories, notebooks, logbooks, cleaning kits, pubs, batteries, or anything else that will fit inside interlocking seal bags.

These bags are clear plastic. So you can tell at a glance what is inside and how many there are.

The seal keeps out dirt and moisture, those arch enemies of handsets, headsets, microphones and cables.

HERE
ARE SOME NSNs
FOR DIFFERENT
SIZES.



Size (inches)	NSN 8105- 00-837-	Qty
4 x 4	7753	1,000
6 x 6	7754	1,000
8 x 8	7755	1,000
11 x 11	7756	500
12 x 12	7757	500

Tips for Use and Care

Soldier crew tents, Type I, NSN 8340-01-359-0084, and Type II, NSN 8340-01-359-1481, can be great friends as long as you treat them right.

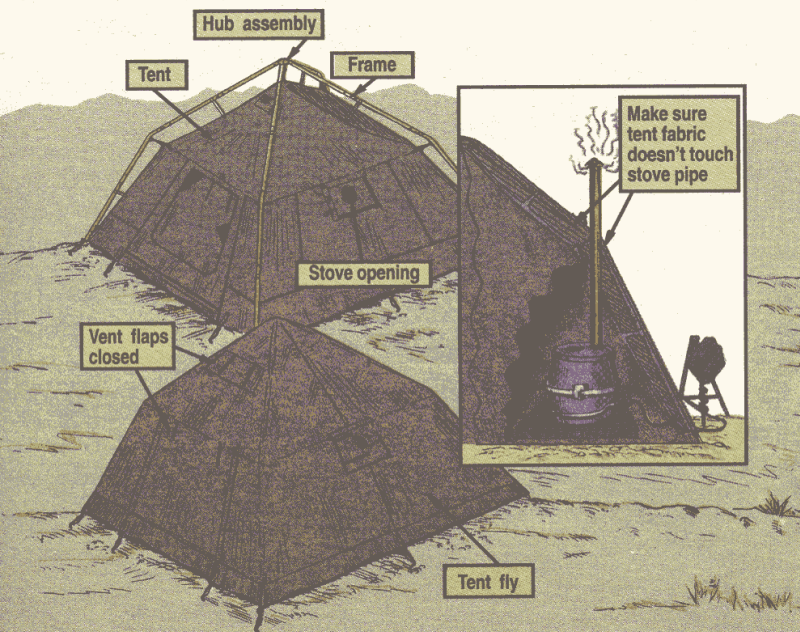
The two tents are alike except for the fly or cover color. Type I has a reversible green and tan fly. Type II's fly is green and white.

To get the max benefit from your tent, here are some tips to remember:

Unlike most tent fabric, the soldier crew tent fabric **does not breathe**. Open the windows and flaps to make sure you don't use up all the air in your tent.

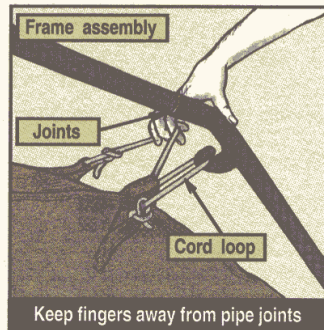
When you use an M1941 or an M1950 stove in the SCT, put a metal sheet under it or set it in a sandbox to keep fuel off the tent floor. A fuel spill will damage the tent's fabric.

Fasten the tent liner to the tent wall so that it doesn't touch the stove pipe because that, too, can cause a fire.



When you put together the tent frame and place it over the tent, remember the frame is spring-loaded. Keep your hands and fingers clear of the pole joints, to avoid getting pinched.

The frame assembly is under tension when you insert the pins. Stand to the side of the poles when you put in the pins because if the frame slips, you could get hit by a pole.



Never put your weight on the frame or the frame could get damaged.

If you drop or drag the frame over the tent, it will damage the fabric. Hold onto the frame.

Use the same care when it's time to go home.

When you get back to garrison, clean the tent with brush, NSN 7920-00-240-7174, soap, NSN 7390-00-965-4868, and water.

Set up the tent and let it air dry.

You can pack the tent without removing the liner, as long as the liner is dry.

Before putting it away, perform any PMCS needed.

Pack up the fabric and frame assemblies. Then, as with all tents, place it on a wooden pallet or a shelf and store it in a dry place.

Dunnage is very important because tents packed close together without it can dry rot or catch on fire.

Dunnage gives room for air circulation

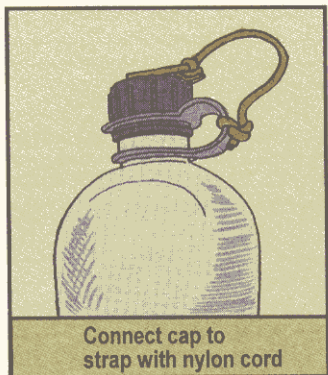
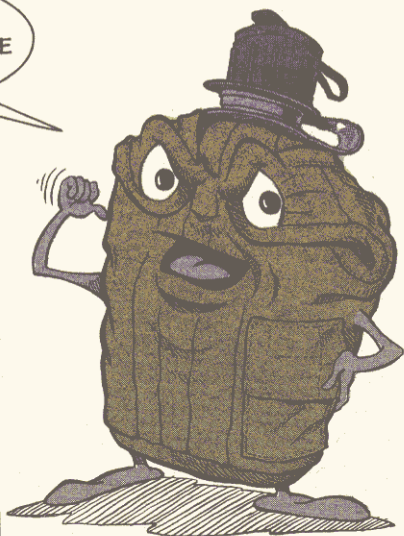


DON'T PART WITH CANTEEN

DON'T PART WITH ME
BEFORE YOU HAVE A
CHANCE TO LOOK AT THESE
REPAIR PARTS !

Just because you can't find a TM that lists parts for the 1-qt plastic canteen is no reason to toss it.

Here's what is available:



If the drinking cap breaks off, you can make a quick fix using 10 inches of nylon cord, NSN 4020-00-262-2019.

Begin by cutting off the broken strap. Drill a 1/8-in hole about 1/4-in in from the cap edge.

Run the cord through the hole and knot it. Tie the other end around the cap strap.

Melt both knots with a match or lighter so the cord doesn't unravel.

If all else fails, you can get a new canteen with the M1 chemical protective cap with NSN 8465-01-115-0026.

Little Things Mean a Lot

When you're in the field, here are some things to make life easier for you:

Item	NSN	Item	NSN
Toothbrush, adult pkg of 120	8530-00-080-6341	Sunglasses	8465-01-114-1488
Ear plugs and case pkg of 20	6515-01-100-1674	Goggles, sun, wind, dust	8465-01-328-8268
Insect repellent, 12 tubes per box	6840-01-284-3982	Goggles, safety	4240-00-052-3776
Sunscreen, 4-oz bottle	6505-01-121-2336	Face paint, desert camouflage	6850-01-262-0635
Hydrogen peroxide	6505-00-153-8480	Respirator mask	4240-01-152-3555
Saddle soap, 1-lb	7930-00-170-5467	Flashlight	
Talcum powder, 9-oz can	8510-00-817-0295	MX-991	6230-00-264-8261
Neat's foot oil, 1-qt	8030-00-244-1031	MX-212	6230-00-161-6422
Lip balm, pkg of 100	6508-01-265-0079	Flashlight filters	
		Red	6230-00-111-0190
		Opaque (blackout)	6230-00-128-2464
		Diffusion	6230-00-356-4825
		Green	6230-00-504-8341

TO GET A VACUUM BOTTLE TO
KEEP YOUR COFFEE HOT OR
YOUR TEA COLD, ORDER ONE
OF THESE NSNs!



Type	Size	NSN 7330-
Stainless steel	2 qt	00-285-4299
Steel, glass inside	1 qt	00-462-7250
Stainless steel	1 qt	00-634-6555
Steel	1 pint	00-946-6121
Steel, glass inside	1 pint	00-973-9748
Steel	1 qt	01-351-0221

Tag It!

YOU'RE JUST MY
RIGHT TYPE OF MASK
CARRIER!!

Dear MSG Half-Mast,
For years, NBC NCOs have been marking M17 mask carriers with green duct tape and felt tip markers. The tape got messy and made the carriers sticky and the marker ink rubbed off or smeared on the carriers.

I have a better way. I ordered dog tags, NSN 8465-00-242-4804, and dog tag covers NSN 8465-00-999-7905. To hold the dog tags to the carrier ring, I use loose leaf binder rings, NSN 7510-00-286-5787.

To mark the tags, I use black embossing tape, NSN 7510-00-995-4893.

On one side of the tag, I put the mask's assigned number. On the other, I put the size and type of mask. For instance, MA2 means the mask is size medium and an M17A2.



SPC Delontee' Spencer
Ft Gordon, GA

That solution is one to
tag onto. Half-Mast

YOU NEED
THE HOTLINE !

CONNIE, I GOT
A PROBLEM !

Update on CD-ROM TMs!

In PS 510, we gave you advance notice that unit maintenance TMs were being converted to CD-ROMs. That's true, but, you can't order the CD-ROMs yet. We'll let you know when TM CD-ROMs can be ordered through normal channels.

Check ULLS Usage Disk

ULLS clerks, before you send the monthly usage disk to your SAMS site, run the check disk (CHKDSK) program to be sure the disk is good. If the disk has bad sectors, the SAMS computer may not be able to read it.

Cheaper Oil Sample Valve

M915A2 and M916A1 truck owners can save big bucks by using hydraulic bleeder valve, NSN 4820-01-120-4532, as the oil sampler valve. It costs about \$330 less than the current valve.

H-250 Handset O-ring

NSN 5330-00-905-6032 brings you the replacement O-ring for the connector on your H-250 handset.

Vinyl Canvas Repair

If the vinyl canvas on your HMMWV gets a tear or hole less than 4 3/4 inches long, it can be repaired by unit maintenance. Use repair kit, NSN 8340-00-262-5767, and follow the directions in FM 10-16. Tears larger than 4 3/4 inches must be repaired by your DS/GS shop.

AOAP Mailing Kit

Protect mailed oil samples by using the leakproof mailer kit, NSN 8125-01-193-3440. The kit comes with 24 non-aeronautical sampling bottles, plastic shipping sacks and mailing cartons. Always screw the caps on tight before you package and ship your samples.

Mount Tires Easier

Use premixed tire lube to make tire mounting easier. It's slick stuff, plus it doesn't deteriorate rubber like oil and grease. Here's what's available:

- 1 qt—NSN 2640-00-256-5526
- 1 gal—NSN 2640-00-256-5527
- 5 gal—NSN 2640-00-256-5529
(five 1-gal cans).

Distribution: To be distributed in accordance with DA Form 12-34-E, Block 0312, for TB-43-Series

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

PRESSURE!

TOO LITTLE
OR
TOO MUCH
RUINS TIRES!



CHECK
BEFORE
EACH OPERATION