

Issue 499

PS

June
1994

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-499



Approved for Public Release;
Distribution is Unlimited

...See page 27
**Custer's
Last Stand**

Striving for Perfection

Top-notch equipment—excellent training—well-motivated and educated soldiers. Sounds like a perfect combination for success, doesn't it?

The trouble is, there's no such thing as perfection. You've heard of all the problems:

The wrong repair parts come in—or the correct parts are defective—the TM gives incorrect or incomplete information...



... or there's just a better way of doing something than what's called for in the TM.



Your soldiers work with Army equipment every day. They know what works right and what doesn't. But all too often, they let problems go unsolved.



1 Make sure they know the avenues available to them for solving problems. DA Forms 2028 and 2028-1 help correct publication problems. The SF 368, Quality Deficiency Report, is used for reporting quality and design problems. DA Form 1045 is used for any type of suggestion, as is the DA Form 5533, SMART.



Perfection

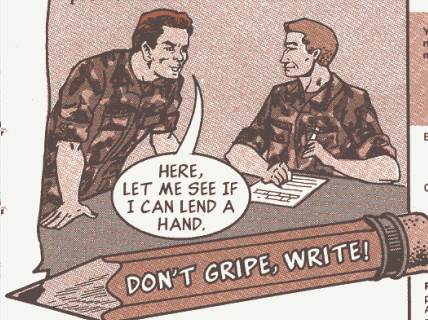
2 Make those avenues accessible.

Knowing about the forms won't do much good if they can't get one. Get several boxes made—one for each form—and place them on the wall under the bulletin board, or on a table. Fill each box with plenty of blank copies of each form.



3 Help your soldiers use the forms.

Let them know you'll help fill them out. Take an active interest and you'll emphasize the importance of getting those problems solved.



THE
PREVENTIVE
MAINTENANCE
MONTHLY

TM 43-PS-499, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user.

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

MSG Hall-Mess
The Preventive Maintenance Monthly
Bldg. 3325
Redstone Arsenal, AL 35898-7466

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army Chief of Staff

Official:

Milton H. Hamilton

MILTON H. HAMILTON

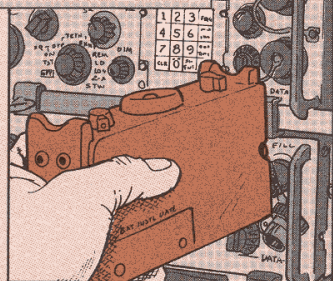
Administrative Assistant to the Secretary of the Army
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Always use the W4 ECCM fill cable, NSN 5995-01-310-0335, whenever you connect the ECCM fill device to your SINCARS receiver-transmitter (RT). It makes hookup easier and also prevents damage to connector pins.

Trying a direct hookup between the fill device and the RT's AUD/FILL connector spells double trouble.

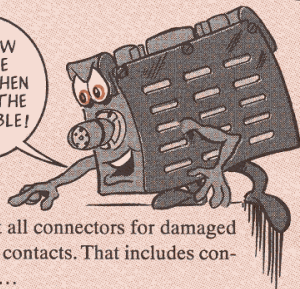
Never hook up fill cable to RT's AUD/FILL connector



For one thing, it's hard to connect the fill device to the lower RT in a vehicle. The thumbscrew on the mount gets in the way.

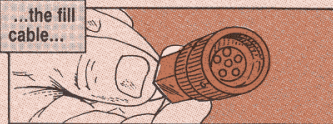
For another, you risk bending or breaking connector pins on the RT and the fill device with a direct hookup. Then you won't be able to load frequency hopping data into the RT.

FOLLOW THESE TIPS WHEN USING THE FILL CABLE!

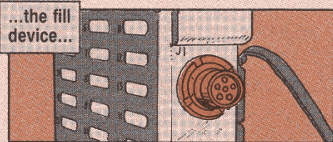


■ Look at all connectors for damaged or missing contacts. That includes connectors on...

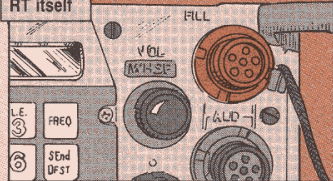
...the fill cable...



...the fill device...

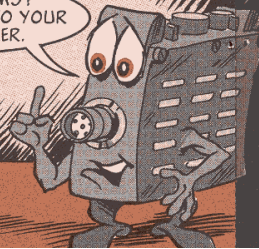


...and the RT itself



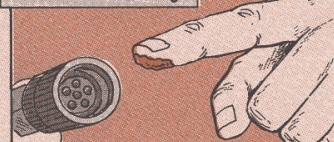
ANY PROBLEMS? REPORT THEM TO YOUR UNIT REPAIRER.

YOU'RE JUST FULL OF ADVICE!



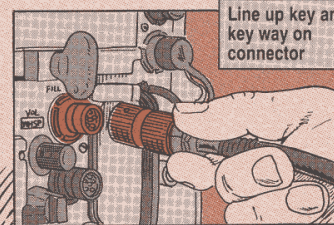
■ For an easier hookup, put a light coat of silicone, NSN 6850-00-880-7616, on the fill cable's O-rings.

Dab silicone on O-rings



■ When it comes time to connect the fill cable to the RT, line up the keys and key ways on the connectors. Do that by making sure the flat surface of the cable connector is facing up. Newer fill cables have a raised area with a red line. That red line should face up also.

Line up key and key way on connector

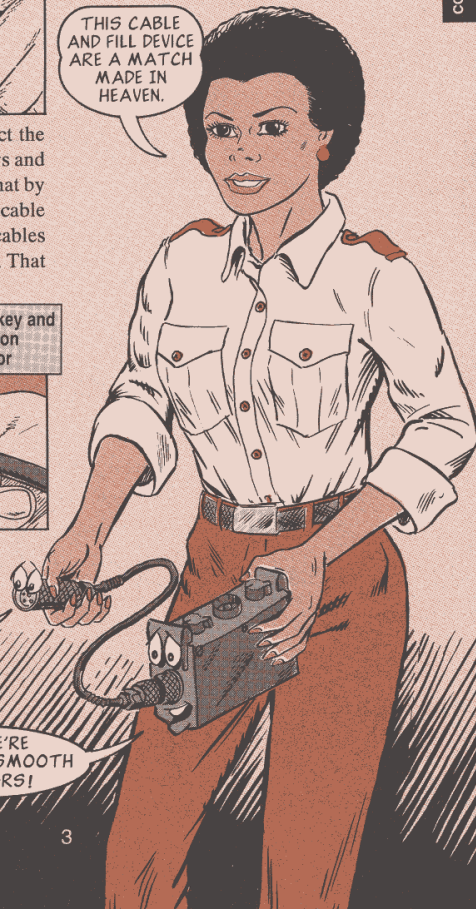


DON'T WE WORK WELL TOGETHER, PHIL?

YEAH, WE'RE A COUPLE OF SMOOTH OPERATORS!

Push the cable connector all the way in on the AUD/FILL connector. Then turn it clockwise until it snaps into place. Pull lightly outward on the connector to make sure it's locked in place.

THIS CABLE AND FILL DEVICE ARE A MATCH MADE IN HEAVEN.



Switch Setting



If you're not communicating, turn off the CB1 switch on your SINCARS radio when you shut down your engine. Leaving the switch on draws power from the vehicle's batteries.



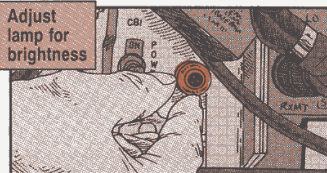
Setting just the RT's function switch to OFF won't stop battery drain. The batteries will still drain if the CB1 switch is left on.

Look at the indicator lamp beside the CB1 switch. A lighted lamp tells you

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main power is on. The light's easy to spot at night, but it's harder to see in bright daylight.

You can adjust the indicator lamp for brightness. Turn it left to make the lamp brighter. Turn it right to decrease the light for blackout conditions. A full turn to the right puts out the light altogether.



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Saves Batteries



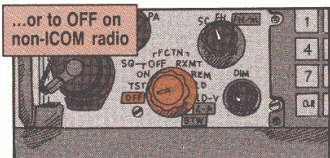
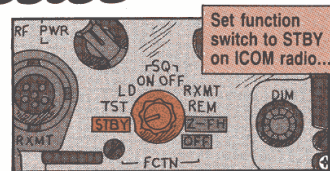
When blackout is lifted, reset the lamp to make it brighter. That way it will alert you when the CB1 switch is left on.

Resetting the Function Switch

Before you turn off the CB1 switch, remember to reset the RT's function switch.

If you need to save the data in your RT's memory, follow these shutdown procedures:

- ◆ Set the RT's function switch to STBY on your ICOM radio. If you have a Non-ICOM radio, set the function switch to OFF.



- ◆ Turn off the CB1 switch.
- ◆ Shut down the engine.

If you don't need to save the data, shut down like this:

- ◆ Set the RT's function switch to OFF on your ICOM radio or to STW on your Non-ICOM radio.
- ◆ Set the CB1 switch to OFF.
- ◆ Shut down the engine.

AN/VRC-12 Series ...

Radio Alignment

What's going on out there, unit repairers? Many radios being turned in to support for loss of range, poor voice quality or retransmitting trouble need nothing more than a frequency alignment.

That's where you unit repairmen come in. You're supposed to schedule an annual alignment of receiver-transmitters and aux receivers. Eyeball Para 3-5 of TM 11-5820-401-20-1.

Record the service alignment date on a sticker attached to each radio. If there is a sticker, list the last time the radio was aligned, who aligned it, and when the radio's due for its next alignment.

If there's no sticker, assume it's been a year since the last frequency alignment. Schedule the radio to support — NOW.

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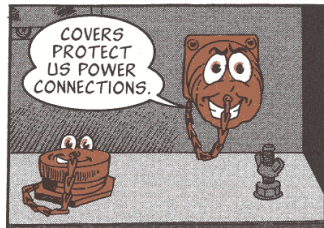
BACK TO BASICS

Stay on the MSE network by practicing a few PM basics on your AN/TRC-190 Line-of-Sight Multichannel Radio Terminal and AN/TRC-191 Radio Access Unit. Here's how:

Power Entrance Panel

Over time, dirt and moisture can foul the contacts of the AC and DC power connectors in the power entrance panel. Bad contacts translate into loss of power.

Protect connectors with metal covers when you're not using them. Get the cover for the AC power connector with



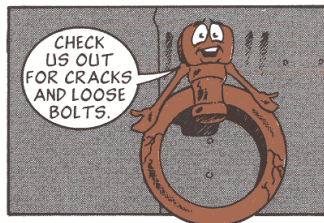
NSN 5935-00-114-5781. NSN 5935-00-926-7423 brings the DC connector cover.

Look at the ground lug for dirt, grease, corrosion or paint. They can kill a good grounding connection. Remove dirt and grease with solvent, NSN 6850-00-281-1985. Use sandpaper or a wire brush to get rid of corrosion or paint.



Lifting Eyes

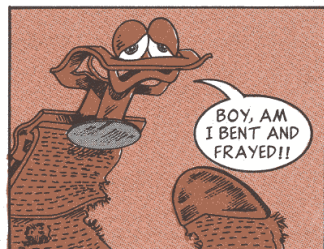
Always inspect the lifting eyes before hoisting a shelter. Look for cracks and loose eyebolts. If you find damage, ask your unit repairer to replace the hardware.



Tiedown Straps

When it's time to move out, tie down antennas, antenna cables, ground rods and camouflage netting with the tiedown straps inside the shelter. Your operator's TM shows you how. Gear that's stored or tied down securely stands a better chance of finishing the trip in one piece.

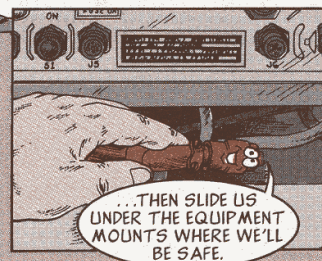
Eye the tiedown straps regularly. If the webbing is frayed or the buckles are bent, replace the strap.



Cable Care

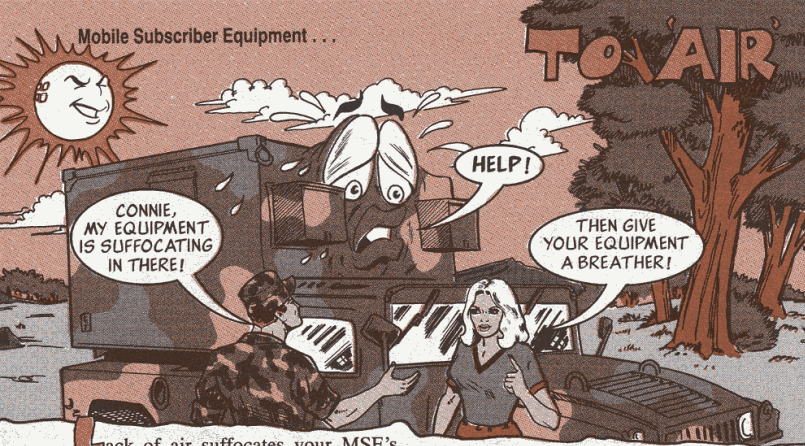
Often you have no choice but to pack extra gear on the floor of the shelter. All that gear piled high can bang up cables connected to equipment front panels, cutting insulation and breaking connectors.

So, before you stow your gear, disconnect all cables from the front panels. Slide disconnected cables under the equipment mounts and out of harm's way. Or stow them in the storage cabinets at the front of the shelter.



ALL IT TAKES IS A FEW PM BASICS TO KEEP YOU ON THE MSE NETWORK.



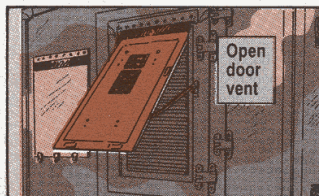


Lack of air suffocates your MSE's AN/TRC-190 Line-of-Sight Multichannel Radio Terminal and AN/TRC-191 Radio Access Unit. Without a cooling airflow inside the shelter, temperatures climb and equipment overheats and shuts down.

Here's how to keep your shelter breathing:

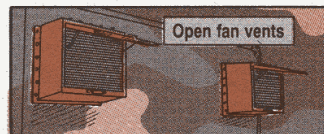
Door Vent

Hold down the heat by opening the vent cover in the shelter door to let in fresh air. Open the cover wider in the hot season. Hanging a water-soaked burlap cloth over the vent helps cool the air. Soak the cloth often.



Fan Vents

Likewise, open the fan vent covers at the front of the shelter. Set BLOWER 1 and BLOWER 2 circuit breakers to ON to get the ventilation fans working.



The fans not only draw warm air out of the shelter, they also help get rid of dust. Never pile gear in front of the fans. That blocks airflow.

Inspect the door and fan vent filters for dirt, bugs and debris. Clogged filters block airflow. Remove dirty filters

IS HUMAN

and rinse them in clean water. Let them air dry.

If your shelter has air conditioning and you're running it, close the door and fan vents.

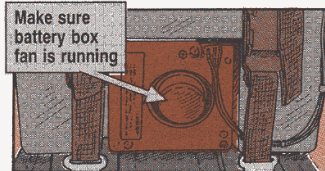
Battery Box Vent

Make sure you open the exhaust vent for the lead-acid battery box. Also look



at the battery box fan to see that it's running. If it's not, report it. The exhaust vent and the fan work together to draw

Make sure battery box fan is running



hydrogen fumes away from the batteries to the outside of the shelter. Trapped inside, those deadly fumes need only a spark to ignite them.

ESD ...

Training Videos Available

Here are some videos that will help with your electrostatic discharge (ESD) training:

PIN	Title
24901	Discharge of Static Electricity from Aircraft
505252	Electrostatic Discharge Packaging
502803	Electrostatic Discharges—The Hidden Threat
803784	ESD—The Invisible Threat
35407	ZAP Static Awareness

I'M GETTING OUT OF HERE!

These videos on other related subjects will also help:

PIN	Title
803360	Flammable Liquid
700838	The Grinding Wheel of Safety
71354	Petroleum Safety Hazards
603823	Static Safety System

DO IT RIGHT THE FIRST TIME!

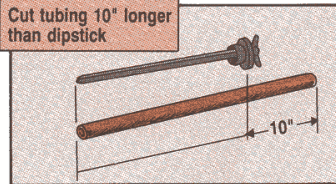
Good samples are the lifeblood of the Army Oil Analysis Program (AOAP). If the lab doesn't get good samples, you wind up doing the job a second time.

HERE'S WHAT YOU NEED TO GET IT RIGHT THE FIRST TIME.

Then take the sample like this:

① Rest the tubing on the dipstick. Put a mark on the tubing where the dipstick ends. Measure about 10 more inches above the mark before cutting the tubing.

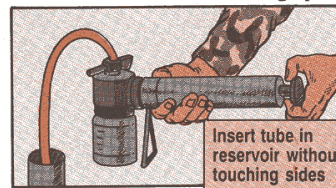
Cut tubing 10" longer than dipstick



② Loosen the T-handle on the pump. Insert the tubing about two inches into the bottle. Make sure the tubing falls about 1/4 inch below the pump head threads before tightening the handle. Tighten the handle just enough to grip the tubing firmly.

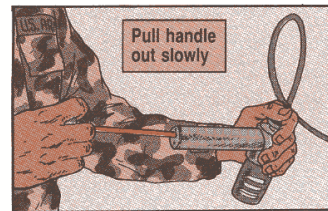
③ Attach the bottle to the sampling pump.

④ Insert the tubing into the reservoir. Go slow so you won't hit the sides of the reservoir. Be careful not to go past



the mark on the tubing. That way you won't hit the bottom of the reservoir either. If the tube touches the bottom or sides, sludge will be picked up and the lab will request another sample.

⑤ Hold the pump horizontally and pull the pump handle out slowly. Oil should enter the bottle. Fill the bottle to the bottom of the neck or about 1/2 inch from the top of the bottle. Push the



Fill to here



vacuum relief valve (on top of pump) to stop the flow. Be careful not to get

oil into the pump. If you do, the pump will be contaminated. Then you'll need to clean the pump thoroughly before taking another sample.

⑥ Unscrew the bottle from the pump and replace the bottle cap. Wipe off any oil with a clean rag or tissue.

⑦ Remove the tubing from the reservoir. Loosen the T-handle and pull the tubing from the pump. Discard the tubing. If used oil is considered hazardous waste in your area, be sure to put the used tubing in an approved hazardous waste container.

⑧ Replace the reservoir cover.

⑨ On the sample bottle label, fill in your equipment's bumper number, component serial number, and hours and miles. Put the same information on the oil analysis request.

⑩ Complete the ULLS oil analysis request or DD Form 2026.

Sampling bottle
NSN 8125-01-082-9697

Oil sampling pump
NSN 4930-01-119-4030

Tubing, 1/4-in O.D.
NSN 4720-00-964-1433

If new oil has just been added, run the equipment to normal operating temperature before taking the sample.

Clean the Pump

KEEP ME CLEAN AND I'LL GIVE YOU GOOD OIL SAMPLES!

If there's oil in your oil sampling pump, clean it before you use it. Leftover oil from the last sample will ruin the one you're taking. Then the oil lab will probably want another sample.

When the pump becomes contaminated, clean it piece-by-piece with drycleaning solvent. Let the parts air dry before putting the pump back together.

NSN 6850-00-664-5685 brings a quart of P-D-680 drycleaning solvent and NSN 6850-00-281-1985 gets a gallon.

NATICK HOTLINE



Got a problem or question about Army food, clothing, organizational equipment, shelters or airdrop systems? Have any ideas on how to improve them?

Then call the Natick Research, Development & Engineering (RD&E) Center hotline at DSN 256-5341 or Commercial (508) 651-5341.

The hotline's answered from 0700-1530 hours (ET) and recorded after duty hours. Be prepared to give your name, rank, address, phone number, the name and NSN of the item, and your problem, question or suggestion.

PS WANTS TO HEAR FROM YOU!

There are four ways you can get a suggestion or contribution to PS Magazine:

1. **WRITE**—Drop a line to:
MSG Half-Mast
PS Magazine
Bldg 3325
Redstone Arsenal, AL 35898-7466
2. **CALL**—Our 24-hour hotline:
Toll-free 1-800-878-2869
DSN 645-0499
Comm (205) 955-0499
3. **FAX**—Send your letter using:
DSN 645-0961 or
Comm (205) 955-0961
4. **E-MAIL**—Send the information by electronic mail:
psmag@logsa-emh2.army.mil

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Refresher Training Available

BEEN A WHILE
SINCE YOU HAD YOUR
ADVANCED INDIVIDUAL
TRAINING?

FORGOTTEN SOME
STEPS TO REPAIRING
YOUR EQUIPMENT?

DON'T DESPAIR!

NOW YOU CAN BRUSH UP ON REPAIR
PROCEDURES AT TOBYHANNA ARMY DEPOT.
THEY OFFER REFRESHER
TRAINING FOR
THESE SKILLS...

MOS	Title
29E	Radio repairer
29J	Telecommunications terminal device repairer
29N	Switching central repairer
29V	Microwave systems operator/repairer
33T	Tactical systems repairer
35G	Medical equipment repairer
43M	Fabric repair specialist
44B	Metal worker
44E	Machinist
52C	Utilities equipment repairer
52D	Power generation equipment repairer
68L	Avionics communications repairer
92A	Automated logistics specialist

TROOP SUPPORT

HERE'S
HOW TO GET
MORE INFO!

Call:

DSN 795-7712
Commercial (717) 894-7712

Or write:

Tobyhanna Army Depot
ATTN: SDSTO-ZA
11 Midway Rd
Tobyhanna, PA 18466-5041

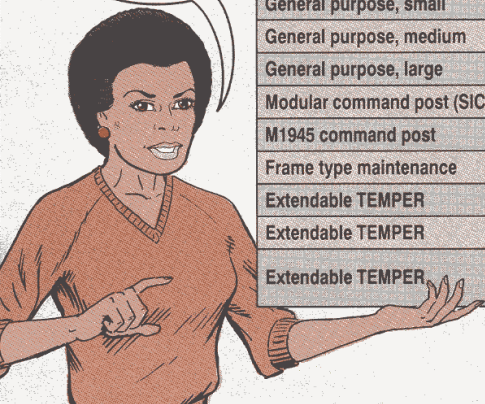
The Seams—They Are a 'Leakin'



Do your tents seem to leak at the seams like Niagara Falls when it rains? If they do and they're made from the newer vinyl-coated polyester instead of the old cotton duck, here's what you need to plug those waterfalls:

Use seam sealant, NSN 8030-01-350-4984. That'll get one gallon, enough to cover two medium-size tents' seams.

HERE ARE THE
POLYESTER TENTS
THAT CAN USE
THIS FIX ...



Tent	NSN
Expandable 16x16	8340-00-782-3425
General purpose, small	8340-00-753-6570
General purpose, medium	8340-00-543-7787
General purpose, large	8340-00-285-5596
Modular command post (SICPS)	5410-01-323-2454
M1945 command post	8340-00-254-5358
Frame type maintenance	8340-00-257-2558
Extendable TEMPER	8340-01-185-2613
Extendable TEMPER	8340-01-185-2615
Extendable TEMPER	8340-01-185-2628 (& numerous others)

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In addition to the sealant, you'll need a 1 inch wide paint brush, rags, and small disposable containers with lids.

Seal the seams like this:

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

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.

Without Niagara Falls in your face, you'll spend your nights snoozin' rather than snorkelin'!

Food Sanitation Center ...

Tough, but Fragile, Thermometers



The food sanitation center's three thermometers can take the heat but not the bumps when the equipment's being moved.

Operators, take the heat off thermometers, NSN 6685-00-444-6500, during transport like this:

- ✓ Tuck each thermometer into its pocket-size carrying case.
- ✓ Wrap each case and bracket separately in barrier material, NSN 8135-00-226-3124, and put them into their shipping cartons, or something similar.
- ✓ Place packaged thermometers and brackets on top of the M2 burner units.

Give your thermometers a little TLC, and they'll take the heat.

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PM Foresight

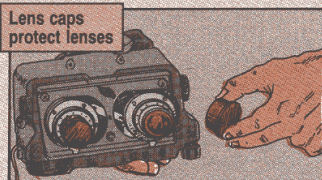


Leaking batteries, mildewed face cushions and scratched lenses are just a few of the hazards facing your AN/PVS-5A, -5B and -5C night vision goggles.

You can avoid these NVG dangers if you have the foresight to practice regular PM. Here's how:

Lens Caps

Keep the lens caps on the eyepiece and objective lenses when you're not using the goggles. They protect the lenses from scratches and the image intensifier tube from damaging sunlight. If you need a cap for the eyepiece lens, order it with NSN 5340-00-132-4227.



Here are the NSNs for the objective lens caps:

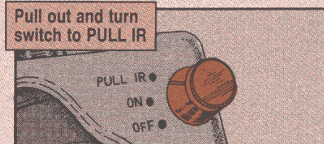
Item	Lens Cap NSN
AN/PVS-5A	5340-00-132-4264
AN/PVS-5B	5855-01-250-2420
AN/PVS-5C	5340-00-558-4692

Cover the exposed lenses with lens tissue, NSN 6640-00-240-5851, and rubber bands until you can get a cap.

Rotary Switch

Turn the OFF-ON-PULL IR rotary switch OFF when you're not using the goggles. Leaving the switch in ON or PULL IR drains battery power.

Never force the switch when turning it to the PULL IR (infrared) setting. You must first pull out the spring-loaded switch, then turn it to PULL IR.



The rotary switch knob can work loose and fall off. Tighten the knob's set screw with the wrench stored in the goggles' carrying case. If the wrench is missing, you'll find a substitute in key set, NSN 5120-00-729-6392, in the TK-101 tool kit.

Never leave your infrared illuminator ON during normal use. Your enemy can detect the infrared light (and your position) with night vision devices. Use the IR illuminator only for close work, like map reading.

Batteries

Pay attention to battery polarity. Unlike most small batteries, the raised end of the BA-5567/U lithium battery is negative (-). Put the flat, positive (+) end into the battery compartment first.

Before you stow your goggles, remove the batteries and put them in the



carrying case. Left in the goggles too long, the batteries can leak and corrode the compartment.

Face Cushion

If the face cushion gets wet, take it off the face mask, wipe it with a clean cloth and let it air dry. Never store a wet cushion inside a closed carrying case. It'll start to mildew within a few days.

If mildew starts to form, take the cushion off the face mask. Clean the cushion in warm water and mild detergent, NSN 7930-00-926-5280. Rinse it in clean water and let it air dry.



Easier Filling

HOW'S THIS
FOR A FILL UP
FIX?

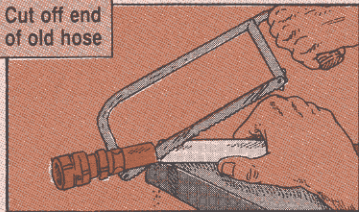
MOST
FULFILLING!

Dear Editor,

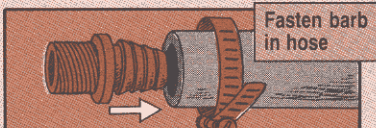
Filling the M13 decon's plastic practice container is a pain. Even if you use a funnel, it's tough and messy to get water through the opening for the quick disconnect coupling.

We've connected to a better way—using an old M13 hose. Cut the hose in half. Get a hose barb with a $\frac{5}{8}$ -in male connector. If your SSSC doesn't have one, you can get one cheap at your local hardware store.

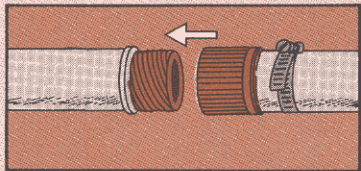
Cut off end
of old hose



Put the barb in the cut end of the hose. Fasten the barb in the hose with a metal clamp.



To the barb connector, screw in a female coupling (also available at your local hardware store). Connect the coupling to a water hose, open the M13's air inlet hole, and turn on the water. Your M13 will be quickly filled.



SSG Aaron Canez
Angels Camp, CA

FROM THE DESK OF THE



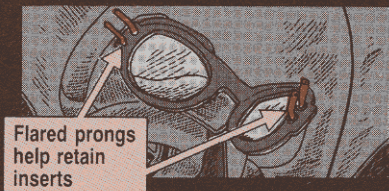
Your suggestion fills the bill!
Thanks.

Inserts with a Flare

To survive on the battlefield, soldiers must be able to see through the lenses of their M17 masks.

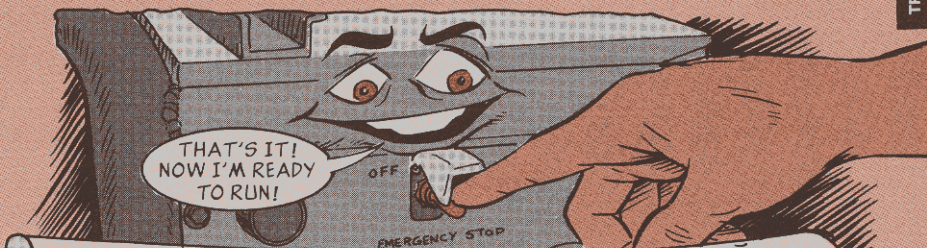
Soldiers who use optical inserts with the two prongs on each side have had problems keeping the prongs in place. No insert means they can't see.

Solution: Use a pair of needle-nose pliers to slightly and carefully flare up the two top prongs of the insert. Flare the bottom prongs slightly down. Push each set of the prongs together to fit them in the mask holes. The insert should not fall out.



M17 Decon . . .

It's the Switch, Mitch!



Dear Editor,

If your M17 just won't start and you've done all the troubleshooting in the TMs, it might be the **EMERGENCY STOP** switch.

If the **EMERGENCY STOP** switch is turned to the **OFF** position, the M17 won't start. With the switch's cover down, you can't see what position the switch is in. And even when you look you can't tell if you don't know the switch's **OFF** position—it's not marked.

So, one, mark the **OFF** position. It's when the switch is **UP**.

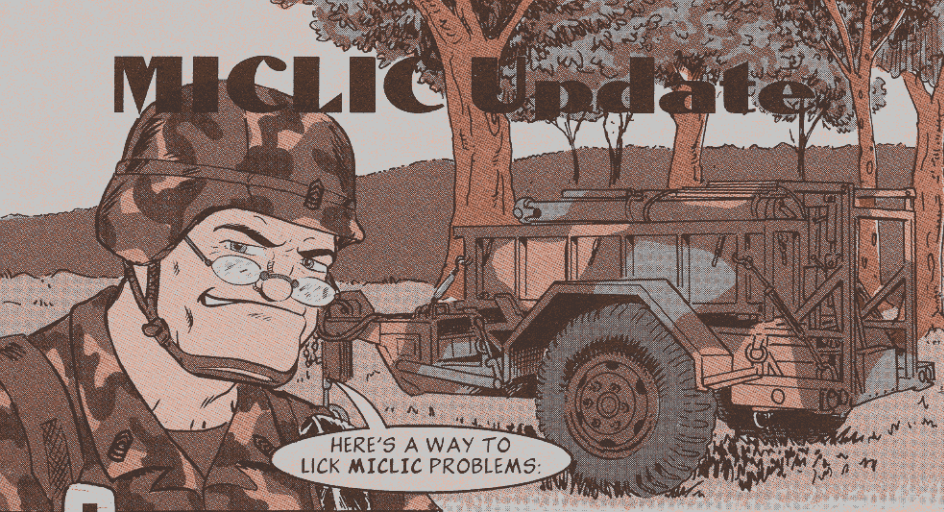
You can just write **OFF** next to the switch setting with a laundry marker. And next time your M17 won't start, make the **EMERGENCY STOP** switch your first check.

SGT Daryl T. Roots
Ft Campbell, KY

FROM THE DESK OF THE Editor 

Your suggestion is certainly something to switch to. Thanks.

MICLIC Update



HERE'S A WAY TO
SOLVE MICLIC PROBLEMS:

If your support is having trouble getting your mine clearing line charge (MICLIC) launcher up and going, here's good news. Tell them the following parts can now be repaired or inspected at DS:

ITEM	NSN
Safety switch	1055-01-218-4673
Switch cable	6150-01-221-5866
No. 3 electrical cable	1055-01-218-2417
M34 blasting machine	1375-00-567-0223
M51 test set	4925-00-999-3454

The repair and inspection procedures are in TB 43-0001-36-3 (Oct 93). Tell your support they can get a copy from the local AMCCOM LAR.

SCIT Address Change

HERE'S A
NEW ADDRESS FOR
ORDERING THE JUNE '93
STANDARDIZATION
AND CONTROL OF
INDUSTRIAL-QUALITY
TOOLS CATALOG:

Centralized Mailing List Service
PO Box 6477
Ft. Worth, TX 76115-6477

... AND HERE
ARE THE PHONE AND
FAX NUMBERS...

Commercial (817) 334-5215
Fax (817) 334-5227

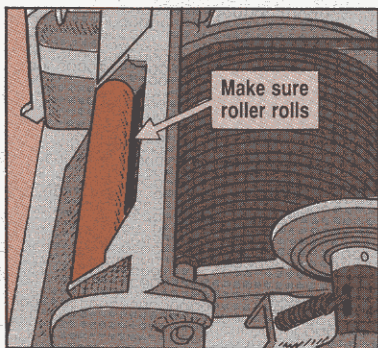
Use Cable Rollers

When using the hoists on your 25-ton crane, operators, make sure the cable rollers are in place and in shape.

Without a working roller, cable winds on a drum unevenly, pinching and breaking strands.

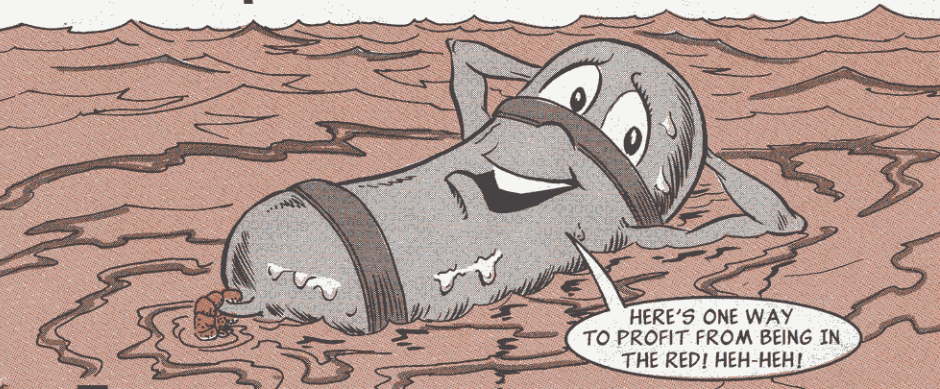
Number one, that's a safety hazard. Number two, the cable will have to be replaced — an expensive and time-consuming job.

So, before a mission, eyeball the hoists. If a roller is missing, or broken, report it to your mechanic.



600 GPH ROWPU . . .

Keep Valve Float in the Red



The valve float, NSN 4820-00-066-2478, in the 600 GPH Reverse Osmosis Water Purification Unit (ROWPU) should not be painted to blend with the water. If you've already painted the float, return the float to its original fire-engine red with red paint, NSN 8010-01-286-7050.

The float's bright color helps keep boat operators from running over the hose and cutting it. In some cases, commanders may, at their discretion, have the floats painted black, brown or another less detectable color. Never paint a float with CARC paint.

The More You Know

Some operators are sharp and some are sharper. But the sharpest operator knows where he's going — and plans to arrive in style!

The sharpest operator realizes that **know-how** is power! You can become one of the sharpest operators around by getting in the **KNOW**.

Sure, you know your operator's TM by heart. And, when your gear needs lubing you know where to find the LO and how to use it. But you may not know that there are other pubs you need to perform your best and advance in rank!

The other pubs are:

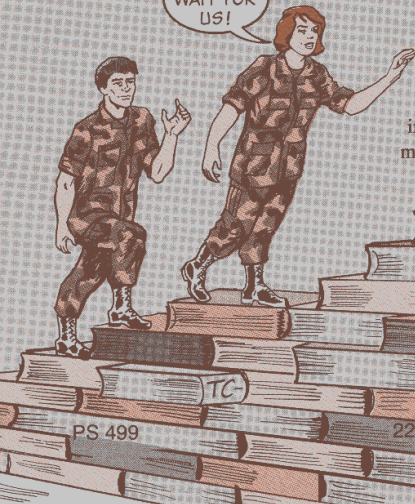
Field Manuals (FMs)—Discuss military doctrine, tactics and techniques, training and operations. A special series of how-to-fight FMs tell you how your gear or your unit works in combat. FM 90-3 (HTF), Desert Operations, for example, explains how the desert affects you, your gear and mission.

DA Pamphlets (DA Pams)—Generally give information or guidance needed to carry out policies and procedures established by an Army Regulation. For example, DA Pam 738-750 gives help on The Army Maintenance Management System (TAMMS).

Technical Bulletins (TBs)—Key in on specific subjects rather than a whole piece of gear. TB 9-2300-405-14, for example, covers the mandatory brake hose inspection and replacement for tactical vehicles. TB 43-0239, Maintenance in the Desert, tells you about the special problems of running your gear in sand and arid areas.

Training Circulars (TCs)—Explain how to do a particular job or train you on your gear. For instance, TC 11-6, Grounding Techniques, gives instructions for grounding your equipment.

HEY!
WAIT FOR
US!



the Higher You Go!



C' MON,
THIS IS THE
BEST ROUTE
TO TAKE FOR
SUCCESS!

What's Available?

So how do you find out what other pubs are available on your gear? Look at DA Pam 25-30, Consolidated Index of Army Pubs and Forms. That index is on microfiche or CD-ROM, so you'll need to check with your pubs clerk.

You may find some other training items on your gear or job, too. Your training NCO, battalion or post learning center or Training and Audio-Visual Support Center (TASC) can steer you to Graphic Training Aids (GTAs), Training Extension Course (TEC) lessons, films and tapes.

The DA Pam 350-series lists all approved training material for specific Army Training and Evaluation Programs (ARTEP) and Military Occupational Specialties (MOS).

These pams are called Extension Training Materials (ETM) catalogs. They list all kinds of training materials — TECs, GTAs and more.

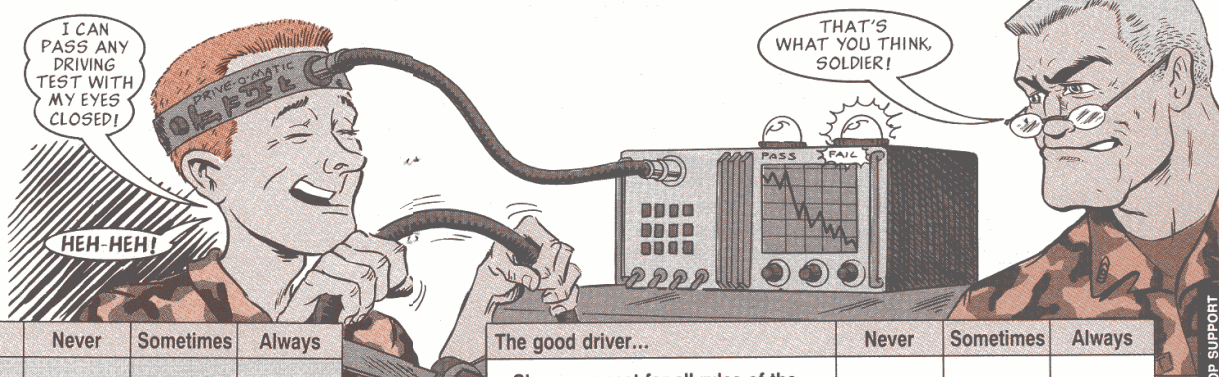
Your unit should have the catalog that supports your ARTEP, or DA Pam 350-100, Consolidated MOS Catalog.

Need a catalog? Tell your pubs clerk to order it on DA Form 4569 from the Baltimore Pubs Center. The clerk will also need to add it to your 12-series forms so you'll get future changes to the catalog.





ARE YOU A GOOD DRIVER OR NOT?

If you think you're a good driver, go down the following list, mark the column and see how you make out.

If you've got all your check marks in the ALWAYS column, you're on your way to the Army Motor Vehicle Driver Safety Award. But if you've got several check marks in the SOMETIMES column, you've got one foot in a 6-foot hole. And if you have a couple in the NEVER column — fall over, you must be dead by now.



The good driver...	Never	Sometimes	Always
...Looks over vehicle before starting. Tries horn, lights, and windshield wipers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Makes sure the oil and water are at proper levels and that the battery has enough water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Keeps vehicle clean and lubed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Warms up engine at fast idle before moving.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Is sure that all this is aboard: road map, trip ticket, spare tire, tools, necessary blank forms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Shifts gears in time to keep vehicle from losing speed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Keeps foot off the clutch except when shifting gears or stopping.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Answers all statements truthfully.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Gives clear signals when turning or stopping.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The good driver...	Never	Sometimes	Always
...Shows respect for all rules of the highway. This includes: Traffic lights, traffic police, military police, signs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Heeds the following traffic signs:			
a.  b. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.  d. 			
...Keeps eyes on the road.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Keeps speed within speed limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Drives slower in bad weather.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Drives only vehicles listed on his/her motor vehicle license.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Does necessary "After Operations" maintenance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Always uses the PMCS chart in the operator's manual.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Dial CSC for Logistics Support

THE TELEPHONE
CAN BE A USEFUL TOOL WHEN
YOU NEED LOGISTICS INFO.



The Logistics Support Activity (LOGSA) headquartered at Redstone Arsenal in Huntsville, Alabama has a Customer Support Center (CSC) ready to help you. The support center is a focal point for the collection and exchange of logistic data and puts a wealth of logistic knowledge at your fingertips.

Just dial the 24-hour, 7-day-a-week hotline:

1-800-878-2869

Commercial 205-955-0499

DSN 645-0499

After the recorded message and tone, leave your name, DSN or commercial phone number, duty station and ask your question.

Someone from LOGSA will get back to you within five working days.

LOGSA can answer questions on:

- ☎ product distribution
- ☎ parts
- ☎ logistic data bases
- ☎ micro-publishing products
- ☎ publications
- ☎ AMDF discrepancies & price challenges
- ☎ remote terminal access
- ☎ government contracts
- ☎ sample data collection
- ☎ Army oil analysis
- ☎ equipment deficiency reporting
- ☎ warranty claims
- ☎ vehicle registration
- ☎ lessons learned

If you're not sure whether a question falls in the support center arena, it never hurts to ask. Remember, if it's important to you, it's important to the CSC !

PS 499

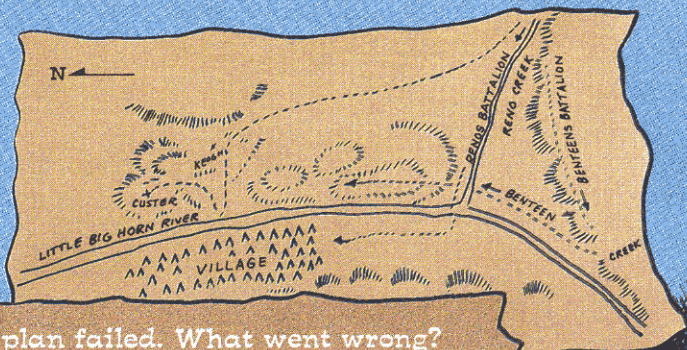
LET THE CSC
BE YOUR LOGISTICS
DATA SOURCE.



Custer's Last Stand

June 25, 1876. LTC George Armstrong Custer and the men of the "Fighting Seventh" Cavalry prepared to battle nearly 5,000 Sioux Indians at Little Big Horn.

The battle plan called for splitting his force three ways, with Custer leading the main force in a frontal assault from the east. MAJ Reno was assigned to protect his left flank while CPT Benteen circled south of the Sioux encampment to attack from the rear.

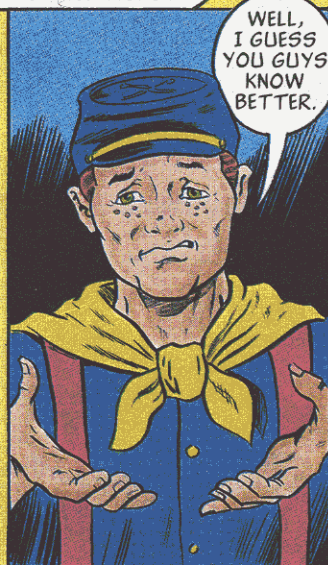
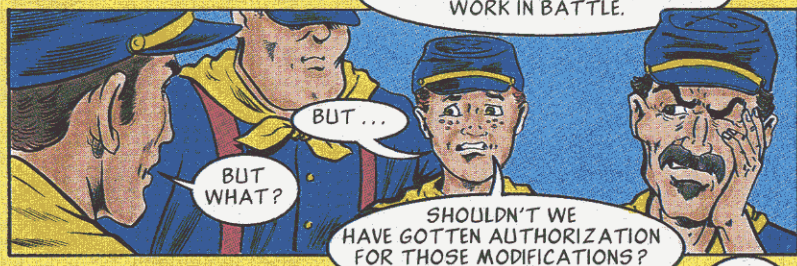
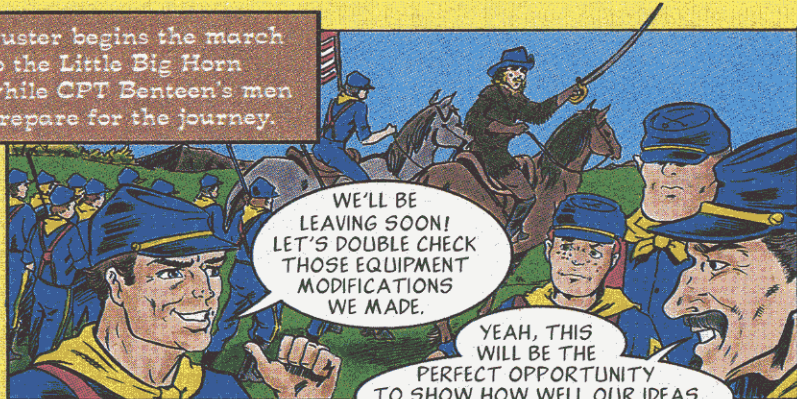


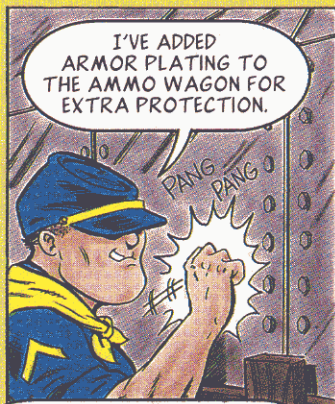
The plan failed. What went wrong?
Let's turn back the pages of history to
find out what might have happened . . .

MAJOR RENO AND I WILL BE TRAVELING THROUGH
ROUGH TERRITORY, SO YOU WILL BE CARRYING MOST OF OUR
EQUIPMENT AND SUPPLIES. CAPTAIN BENTEN, TIMING WILL BE
CRITICAL. YOU MUST GET THAT ARTILLERY AND AMMUNITION
IN PLACE AND BE READY TO REINFORCE MY COMMAND!



Custer begins the march to the Little Big Horn while CPT Benteen's men prepare for the journey.





I'VE ADDED
ARMOR PLATING TO
THE AMMO WAGON FOR
EXTRA PROTECTION.

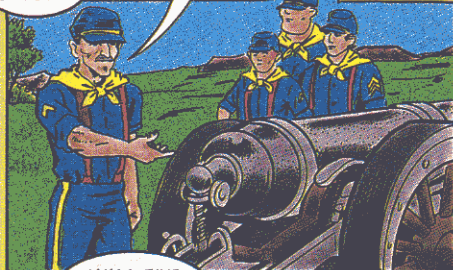
I'VE REPLACED THOSE OLD
HEAVY SPOKES WITH LIGHTER
ONES.



EXCELLENT!

THANKS.

THAT'S
OKAY, BUT
CHECK THIS
OUT.

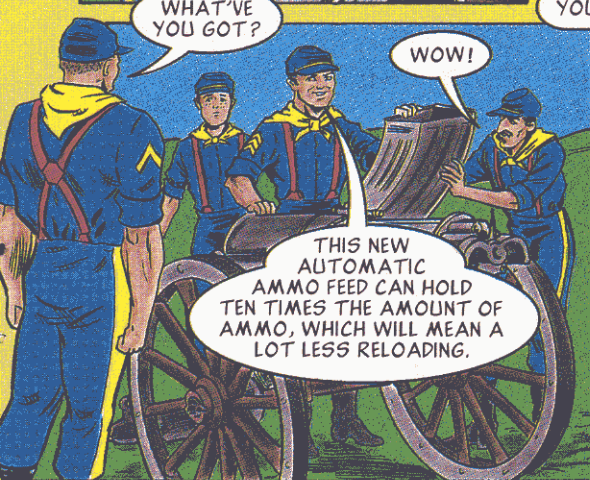


WHAT'VE
YOU GOT?



THAT OUGHT TO
SPEED UP THE
TRIP.

GREAT! BUT,
NOW I'LL SHOW
YOU GUYS SOMETHING.



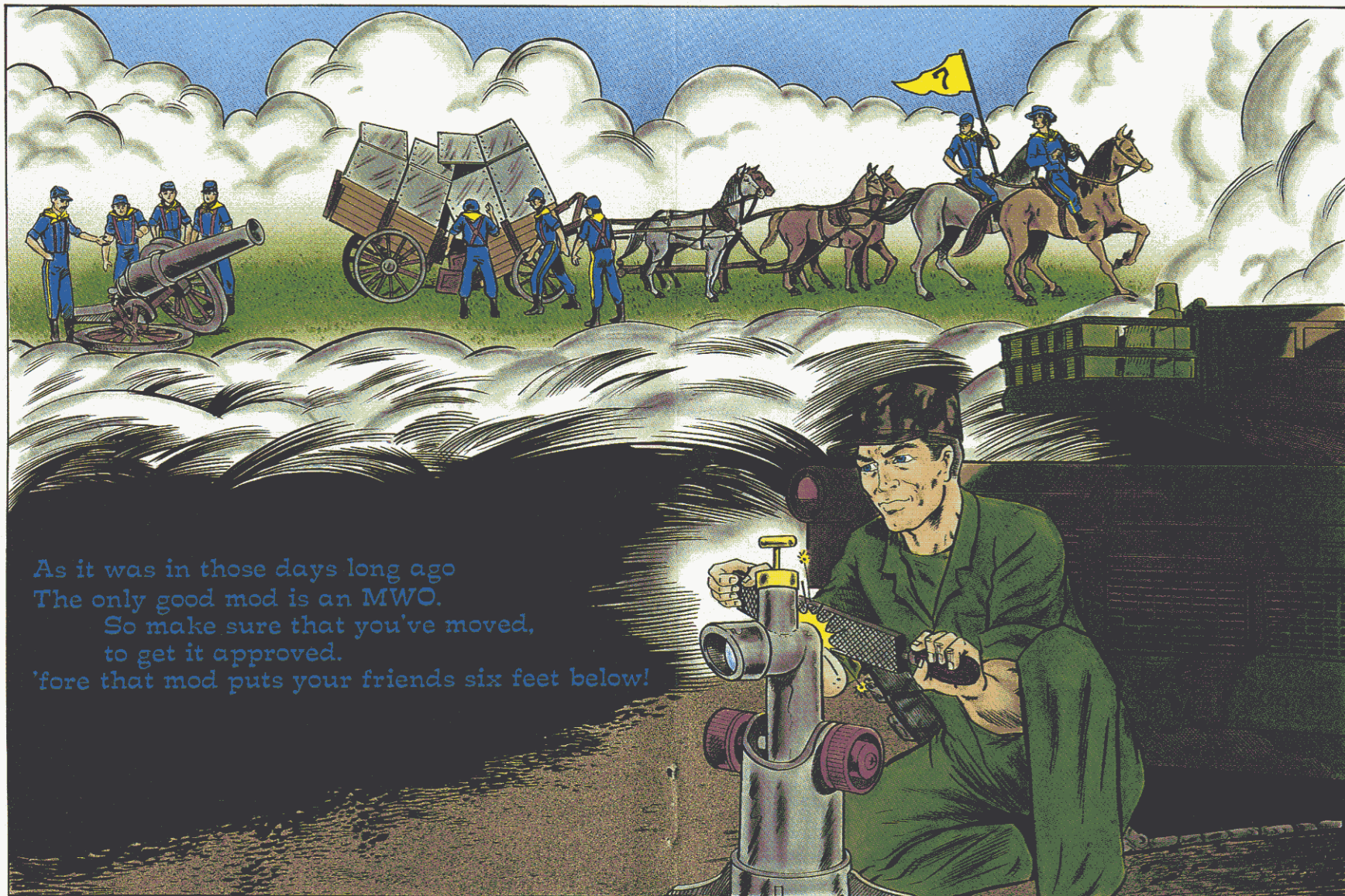
WOW!

THIS NEW
AUTOMATIC
AMMO FEED CAN HOLD
TEN TIMES THE AMOUNT OF
AMMO, WHICH WILL MEAN A
LOT LESS RELOADING.



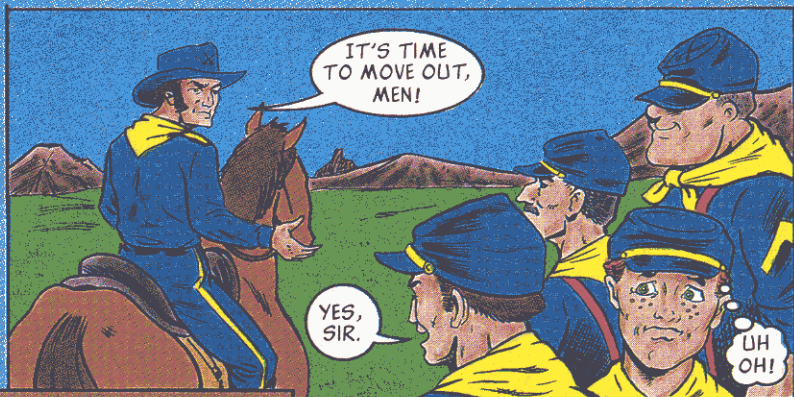
CAPTAIN
BENTEEN!

MORN'
CAPTAIN,
FINE DAY
TO DO BATTLE,
SIR.



As it was in those days long ago
The only good mod is an MWO.
So make sure that you've moved,
to get it approved.
'fore that mod puts your friends six feet below!

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



IT'S TIME
TO MOVE OUT,
MEN!

YES,
SIR.

UH
OH!

A short time later ...

SOME FOOL BOLTED ARMOR
PLATING TO THE AMMO WAGON
AND THE WOODEN FRAME COULDN'T
HOLD THE WEIGHT, SIR.

WHAT'S
THE HOLD-UP,
SOLDIER?

CAPTAIN,
WE'VE GOT A PROBLEM
WITH THE CAISSON.

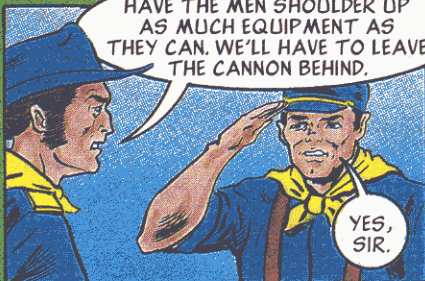
THE SPOKES JUST SPLINTERED AND
COLLAPSED AFTER A FEW BUMPS.
THOSE LIGHT SPOKES WOULDN'T
HOLD UP ON THE ROUGH TERRAIN.



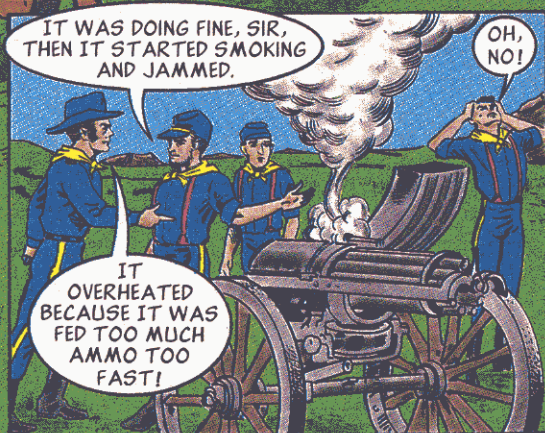
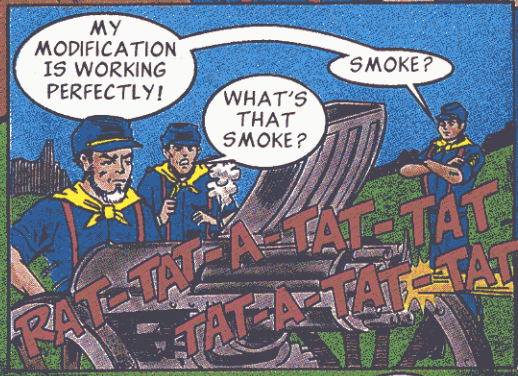
THIS
IS WHAT
HAPPENS WHEN
UNAUTHORIZED
MODIFICATIONS
ARE MADE!



HAVE THE MEN SHOULDER UP
AS MUCH EQUIPMENT AS
THEY CAN. WE'LL HAVE TO LEAVE
THE CANNON BEHIND.



YES,
SIR.



And now you know what
might have caused
the massacre at
Little Big Horn.

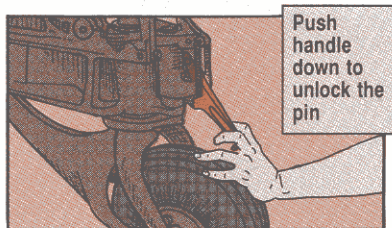


Moral of the story:
An unauthorized modification to your equip-
ment might be the first step to an early grave!

Lockpin Lowdown

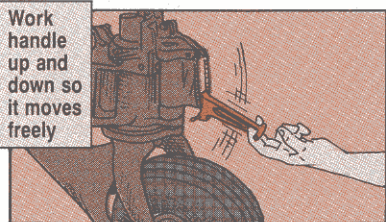
Crew chiefs, if you forget to disengage the tail wheel lock pin before you tow an Apache, you'll shear the pin.

So, after you hook up the tow bar to the tail wheel axle, unlock the tail wheel actuator lock pin. Just push the handle down.



Then use the tow bar to slowly move the tail wheel from side to side to make sure it moves freely.

If it doesn't move freely, work the actuator handle up and down. If the pin won't move, soak it with penetrating oil and let it sit for a few minutes.



If that doesn't unstick it, realign the actuator lock pin in the lock holes of the socket.

If you do shear the lock pin, removing it is a tough task. You have to remove the hydraulic lock actuator.

But before you do that, try using a stubby screwdriver.

SO YOU'VE BROKEN THE LOCK PIN ON YOUR TAIL WHEEL, EH? YOU'VE GOT YOUR WORK CUT OUT FOR YOU!

WAIT! I CAN HELP GET THAT SHEARED PIN OUT!

Raise the actuator handle and slip the screwdriver up into the actuator.

Unscrew the bolt that holds the pin in place. The bolt and both pieces of the sheared lock pin should fall out.

If they don't, you'll have to remove the actuator.

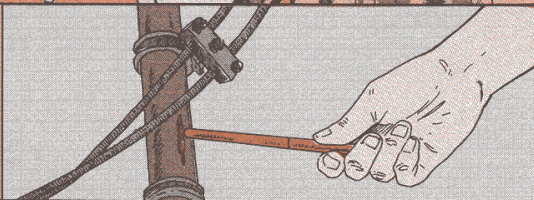
There's the Rub!



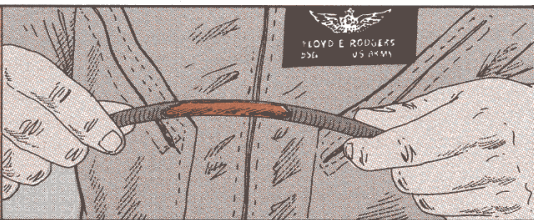
HEY, WINDY,
MY CABLES ARE CHAFING!
WHAT'S THE CURE?

HERE'S A
SIMPLE SOLUTION TO
THAT PROBLEM!

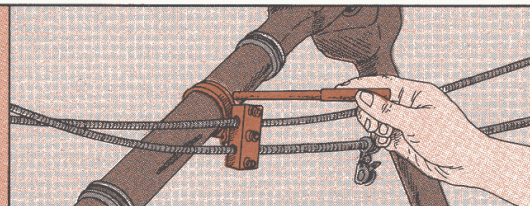
If your Apache
has a trans-
mission support
strut with a
rubbed place
like this...



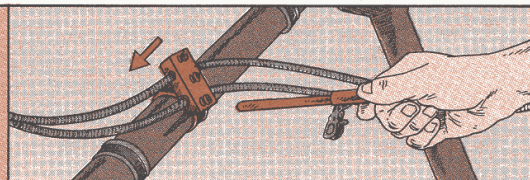
... it won't be
long until you
have a power
available or load
demand spindle
cable that looks
like this:



So, if you have a
rubbed place,
take the cable
clamp and move
it...



...to here.
Moving the
clamp just a
couple of inches
down will keep
the two cables
from rubbing on
the strut.



That Covers It!

Preventive maintenance of your Hellfire launcher starts by keeping your feet off the wiring harness connector cover.

Stepping on the cover mashes it down and takes away the clearance the missile umbilical connector needs.

When you load a missile, the connector and the cover bang together.

A mashed cover also grinds into the harness connector.

So, keep those boots off the cover, and lift and hold the cover up when you load a missile.



Stepping on cover
reduces critical clearance



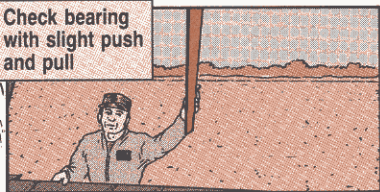
Hold cover up when
loading missile

Bustin' Those Bearings!

Back off on the muscle, crew chiefs and pilots, when you check for elastomeric bearing play on the fork assembly on your Apache's tail rotor.

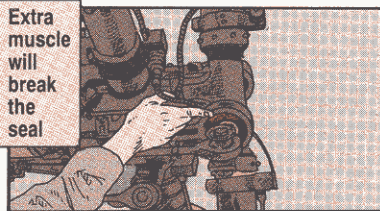
When you're doing your dailies or preflight on the tail rotor, just a slight pull and a small push on the blade is all you need. If you get any movement at

Check bearing with slight push and pull



all, get your mechanic to inspect the bearings like it says in Task 5-3-1 in TM 55-1520-238-23.

Extra muscle will break the seal



Muscle up on it and you'll break the bearing seal! Then you're grounded until the rotor hub is replaced.



Aircraft Deicing/Defrosting Fluid

Use NSN 6850-01-039-3842 for a 5-gal can of aircraft deicing/defrosting fluid and NSN 6850-01-039-3841 for a 55-gal drum. Use these NSNs in place of terminal NSNs 6850-00-558-1248 and 6850-00-901-0591 and you'll be ready for next winter.

AH-1 ...

Helmet Sight TB



If your Cobra has SINCGARS, your M97 turret may get the jitters when the radio is transmitting. This is called electromagnetic incompatibility and it's caused by the electronic amplifier within the helmet sight system buffer module.

Stop the jitters with the info in TB 9-1270-212-20-1, Instructions for On-Aircraft Screening of M97A3/A4 Cobra Helmet Sight Subsystem Buffer Amplifier Assemblies.

Order a copy on DA Form 4569 from:

Commander
US Army Publications Distribution Center
2800 Eastern Blvd
Baltimore, MD 21220-2896

TO GET FUTURE
CHANGES TO THIS TB, GET
YOUR PUBS CLERK TO ADD
IT TO YOUR UNIT'S
12-SERIES FORMS.



NO BAD

Bad vibes from your aircraft's avionics compartment turn into costly repairs for some high-powered and high-priced gear.

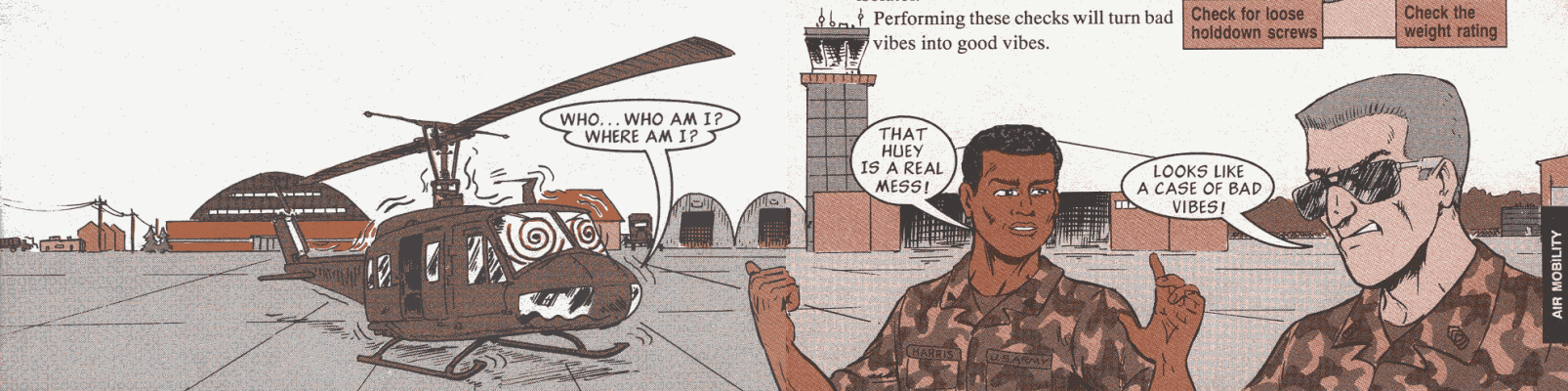
Bad vibes are caused by bum vibration isolators. These isolators are nothing more than shock absorbers. They cushion your bird's sensitive electronics gear much the same as your car's shock absorbers cushion against road vibration.

Worn out isolators can't do the job. Neither can isolators carrying a load that's too heavy for them.

So, eyeball your bird's isolators often, not just during inspections.

Make sure they're matched to their loads. Compare the rated weight of each isolator to the weight of the equipment it's supporting.

The rated weight for each isolator is usually printed on the casing.

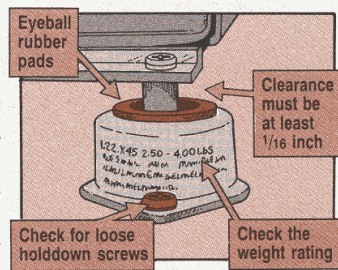


If you can't find the rated weight of an isolator or the weight of its supported equipment, use a thickness gauge or ruler to measure the clearance between the isolator and the equipment. The clearance must be at least 1/16 inch.


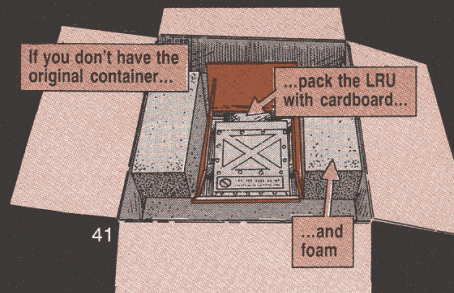
Also, check for sagging or loose retaining rivets or holddown screws by moving the equipment or mounted panel to extreme positions in every direction.

While you're moving it, look at the sponge rubber or metal mesh pads for deterioration or separation of rubber from the metal. If you find any, replace the isolator.

Performing these checks will turn bad vibes into good vibes.



Now, ask yourself if an egg would survive the trip packed in the container. If you're not sure, then re-pack the LRU.



Just Like Eggs

S 499

The next time you ship a line replaceable unit (LRU) for repair, pack it like an egg.

Too many LRUs that start out needing minor repair, end up needing major repair by the time they arrive.

If possible, save and use the original shipping container. If you don't have the original container, pack the LRU with cardboard and foam.

Recharge Your Batteries



The MLRS hull and launcher/loader module (LLM) are only as effective as the batteries and charging systems onboard.

Even with perfect batteries and a charging system that's working right, you can operate on battery power alone for only 20 minutes.

If the 10 batteries and the charging system are not given a chance to recover after use, you'll come up short — maybe at a critical time.

That's because engine starting and LLM cycling together use up more juice than the charging system can replace immediately.

For Operators

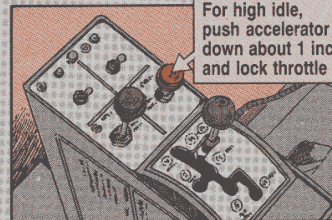
Allow about 15–20 minutes of engine operation at high idle — 1,200 to 1,400 RPM — to recharge the LLM batteries following each cycle of LLM operation. Several cycles may be made, one after another, but battery charging time must be increased by 15–20 minutes per cycle, or you'll wind up with batteries that don't have any power left.

Once batteries are drained, you'll have to turn off everything electrical and run the engine at high idle until the batteries recharge.

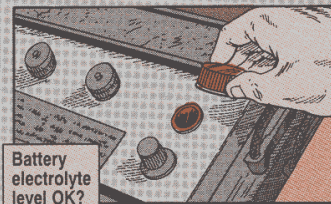
Normal engine operation will recharge the hull batteries for engine starting.

Operate the LLM with the engine **running at high idle**. Only then will you generate enough power to operate the LLM and recharge the batteries.

For high idle, push accelerator down about 1 inch and lock throttle



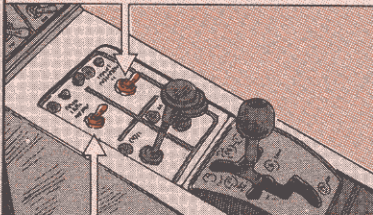
Check the battery electrolyte level often. If it's low, get your mechanic to add water. Then run the engine at high idle long enough to recharge the batteries.



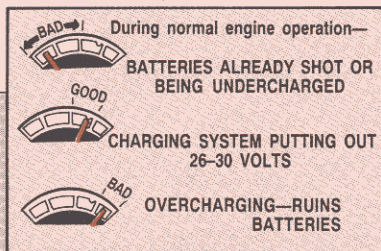


For a rough idea of the condition of the batteries, watch the instrument panel voltage indicator.

With the engine off, turn ON only the LLM interconnect switch. The voltage indicator will show the state of charge in the yellow zone. Note the position of the indicator. Turn OFF the interconnect switch.



Turn ON only the vehicle master switch. The indicator will show the state of the charge of the batteries in the hull. Turn OFF the switch.



If there's a big difference between the LLM and hull batteries as shown on the voltage indicator, report it. Your mechanic will use the battery tester, NSN 6630-00-105-1418, from the No. 1 Common shop set to check the batteries.

For Mechanics

When you get new batteries at DS, never assume they are fully charged. Measure the specific gravity in each one using the antifreeze-battery tester before you take it.

When you install a battery, make sure the post clamps and connections are clean, tight, and positioned correctly. Use two wrenches to tighten loose hardware.



Twisting tells the story

If batteries check out OK and you still have charging problems, check the charging voltage of the alternator.

Catch the Drift

CATCH
MY DRIFT,
BUD?

MY GYRO-
COMPASS DRIFT,
THAT IS!

When it comes to the M981's north seeking gyrocompass (NSG), there is drifting . . . and there is drifting.

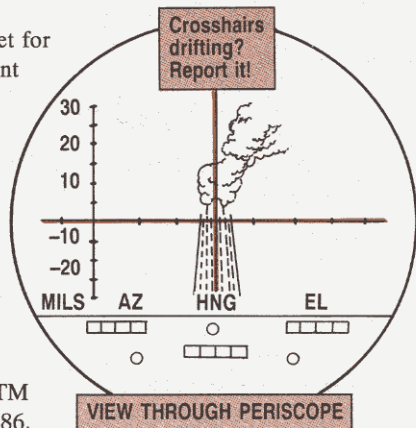
NSGs can drift up to 8 mils per hour and be OK. Here's how to catch your NSG's drift after you do the NSG confidence check:

Look through the tank periscope eyepiece. Position the targeting head with the hand controls so that the crosshairs of the laser designator/rangefinder (LD\R) reticle are centered on a target with a known azimuth. The azimuth displayed on the targeting station control and display (TSCD) should be roughly the same as the target's. Record the TSCD azimuth.

Leave the targeting head on the target for one hour. Make sure there is no movement of the crosshairs on the target and that the azimuth number does not change more than 8 mils.

If the crosshairs moved, something may be wrong with the turret hydraulics. If the crosshairs stayed on target and the change in azimuth was more than 8 mils, the NSG is drifting too much. Report either problem to your mechanic.

This procedure has been added to TM 9-2350-266-10 on Pages 2-285 and 2-286.



WHICH CHECK'S CORRECT?

Not sure whether to use the STE-M1/FVS (1571) engine power test or the engine health check for that M1-series tank, mechanics?

Here's how to cut through the fog:

⚡ The STE-M1/FVS engine power test should be run only as directed by the TM to troubleshoot engine power problems.

⚡ The engine health check procedure should be run to check engine power as part of your PMCS.

TM 9-2350-255-20-1-2 covers the engine health procedure on Page 3-928.2 for the electronic control unit (ECU) and Page 3-928.63 for the digital electronic control unit (DECU).

TM 9-2350-264-20-1-2 covers the procedure on Page 3-1159 (ECU) and Page 3-1164.59 (DECU).

M1A1 Tank . . .

Missing in Action

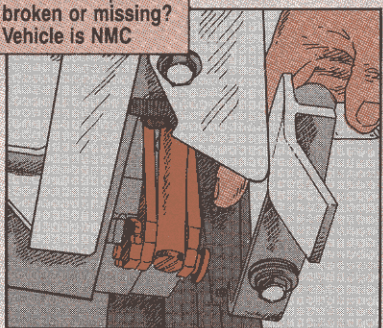


BREECH COMPONENTS MAY NOT LOOK IMPORTANT, BUT YOUR TANK IS NMC WITHOUT THEM!

ing breech mechanism components make the vehicle NMC.

The components referred to are the 54 parts listed in Fig 94 of TM 9-2350-264-24P-2.

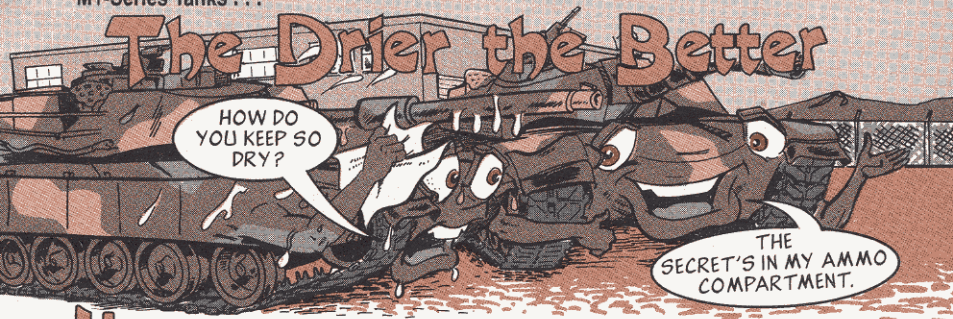
If you don't yet have Change 6 to the 10-1, contact your local AMCCOM Logistics Assistance Representative.



Breech components broken or missing? Vehicle is NMC

The PMCS table in your M1A1 tank's 10-1 manual is pretty specific about what makes your tank NMC. That's especially true when it comes to the breech mechanism crank assembly.

Change 6 to TM 9-2350-264-10-1 specifically says that any broken or miss-



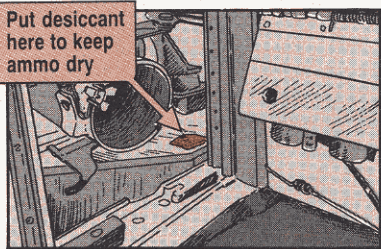
Humidity in the ammo compartment means rust and corrosion for on-board ammo, whether your M1 stays uploaded all the time or only during exercises.

You can help stop rust and corrosion by cleaning and drying the ammo compartment, then adding a couple of bags of desiccant. NSN 6850-00-935-9794 gets a drum of 240 bags.

Open the right ammo door and put one bag of desiccant on the floor between the ammo tube and the compartment wall.

Then open the left ammo door and put another bag between the ammo tube and compartment wall.

When you pull the ammo compartment before-operation PMCS, check the desiccant bags. If they're moist to the touch or the compartment walls are wet, replace the bags.



Put desiccant here to keep ammo dry

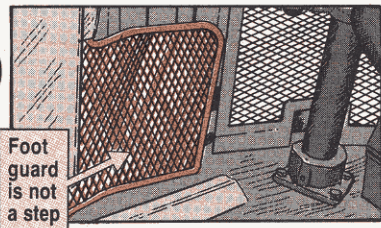
Guard Screen Not for Feet



Hey, tankers, keep your feet off the loader's safety guard screen.

It may seem like a good step for getting into or out of the vehicle — until you slip. Then your foot gets jammed and injured between the screen and the turret wall.

A jammed foot would be kind compared to what could happen if the turret traverses at the same time.

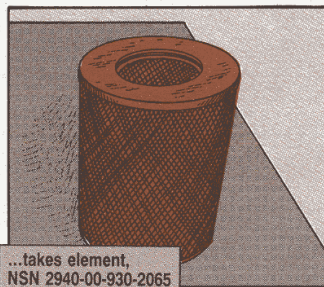
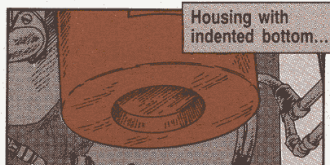


Let Carrier

Mechanics, there are two different air cleaner elements and housings used on M113A2-series carriers. Get the combination wrong and the engine won't run. It'll spit and sputter and die because it can't get enough air.

To make sure the engine purrs like a kitten, get the correct filter element and housing matched up. Here's how:

A housing with one circle indented on the bottom is NSN 2940-00-999-2119. The only filter element that works with that housing is NSN 2940-00-930-2065. It has no fins and both ends are open.



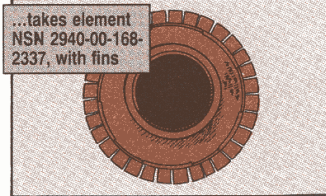
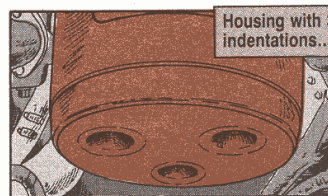
CHOKES **GASP** **WHEEZE**

I CAN'T BREATHE!
YOU GAVE ME THE WRONG
FILTER!

HEY,
WHAT'S WRONG?

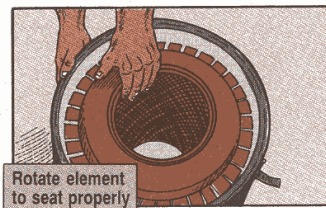
B-r-e-a-t-h-e Easy

If you've got a housing with three small circles indented on the bottom, its NSN is 2940-00-103-5797. The element for it is NSN 2940-00-168-2337. It has fins at the top and is closed at the bottom.



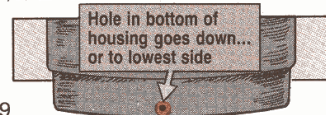
These elements are not interchangeable. They won't work right unless they're used with their matching housings.

When installing the finned filter element, rotate the element to the left or right after dropping it into the housing. That lets the element drop snugly over the three indented circles at the bottom.



Forget and the filter element won't fit right. When you close the clamps, the pressure cracks the housing. That lets dirty air get through — a sure engine killer.

No matter which housing you have, make sure you install it with the drain hole in the lowest side so that water will drain out. No hole? Drill one with a 3/16-in bit.



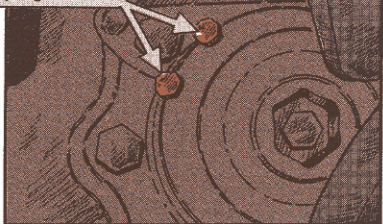
ROAD ARM CATCH-22



Mechanics, installing a new road wheel arm on an M113-series carrier can be a Catch-22 unless you give crewmen a way to lube it.

New arms come with pipe plugs installed to keep out dirt. If you don't take out the plugs and put in a relief valve and grease fitting, you'll have to replace the road arm again real soon.

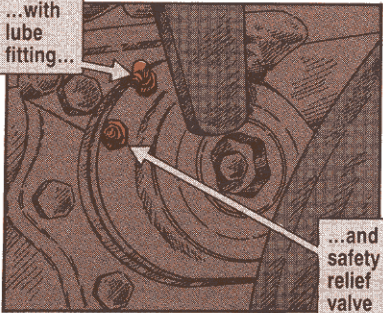
Replace pipe plugs...



Crewmen can't lube the arms because there's no grease fitting. With no grease, the bearings burn out.

Remember, pull the plugs and put in a safety relief valve, NSN 4820-01-070-7670, and lube fitting, NSN 4730-00-050-4208, whenever you put on a new road wheel arm.

...with lube fitting...



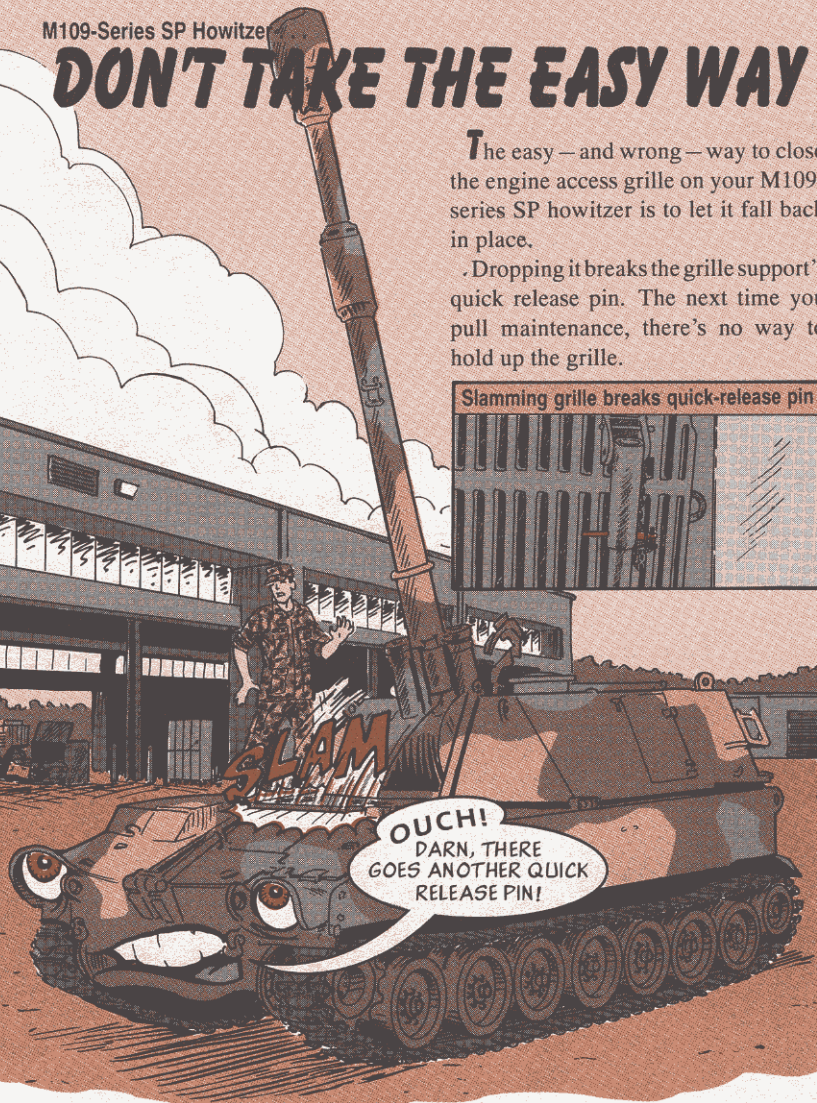
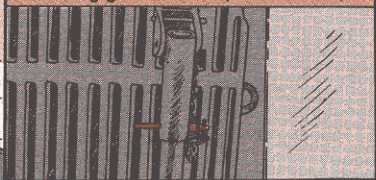
...and safety relief valve

DON'T TAKE THE EASY WAY

The easy — and wrong — way to close the engine access grille on your M109-series SP howitzer is to let it fall back in place.

Dropping it breaks the grille support's quick release pin. The next time you pull maintenance, there's no way to hold up the grille.

Slamming grille breaks quick-release pin



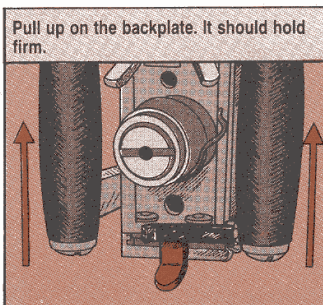
Never lean the grille back against the turret, either. It may seem like a good idea — at least until the grille comes crashing down while you're working.

Order a new quick release pin, NSN 5315-00-419-0758, to fix the support and slowly lower the grille in place next time.

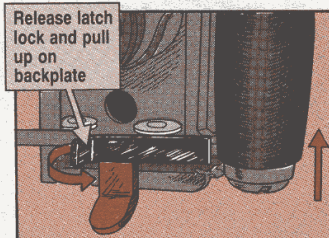
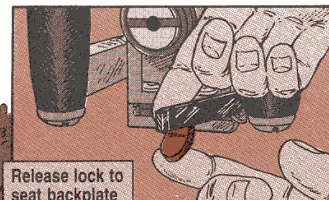
KEEP BACKPLATE IN ITS PLACE

A backplate that's not latched tight is a backplate that will slide right off during firing. Keep the backplate in its place like this:

- ✕ Slide the backplate partly on the receiver.
- ✕ Pull out the latch lock with one hand and pull up on the bottom latch with the other. Push the backplate into place and lock in the latch and latch lock.



- ✕ Release the latch lock and pull the backplate up with only the latch in place. The backplate should hold.



If the backplate fails to hold either time, reset and lock the backplate and do the two checks again. If the backplate fails either check, tell your armorer.

Your M2's backplate should have a latch lock that's black and square-sided. If it has a latch that's rounded on the sides and gray, you need a new latch. That latch lock bends and warps and lets the backplate come off. Your support can replace it with a good latch with NSN 1005-00-927-7273.

HEY,
WHAT'S THE BIG
IDEA?!



MAYBE YOU'LL
CHECK MY BACKPLATE
BEFORE FIRING NEXT
TIME!

Use Your Thinking Cap

Dear Editor,

When soldiers clean their rifles or machine guns in the field, they usually put parts on the ground. Small parts like springs and pins disappear, and then the weapon is out of business.

Or if soldiers are cleaning their weapons together, bolts and barrels can get mixed up. If the wrong bolt is put with the wrong barrel, bad headspace can result, which results in exploding weapons.

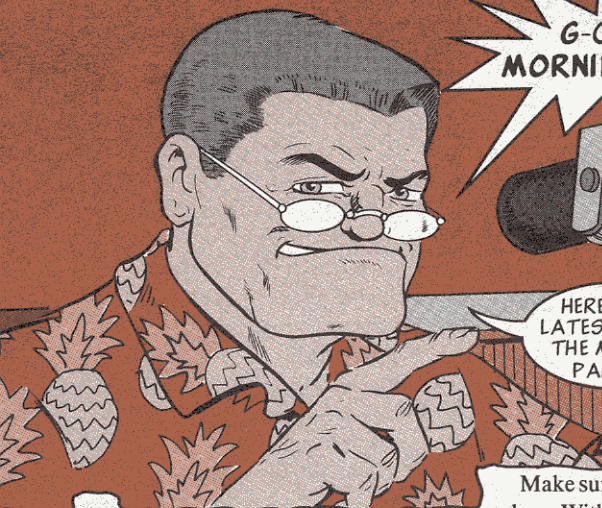
The solution to this problem is on every soldier's head. During cleaning, put small parts in your cap or helmet where they won't be lost. Place a clean rag in your cap or helmet to keep oil or dirt from the parts getting on your headgear.

SGT Chris McCawley
Ft Campbell, KY

FROM THE DESK OF THE Editor

Now that's using your thinking cap. Thanks.

Play This on Your Turntable

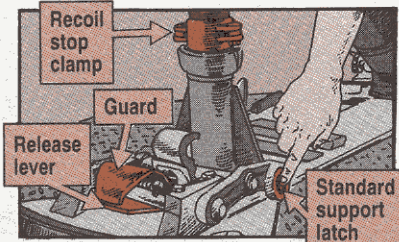


G-O-O-O-D
MORNING, P.M.'ERS!

HERE'S THE
LATEST HIT ON
THE M30 HIT
PARADE!

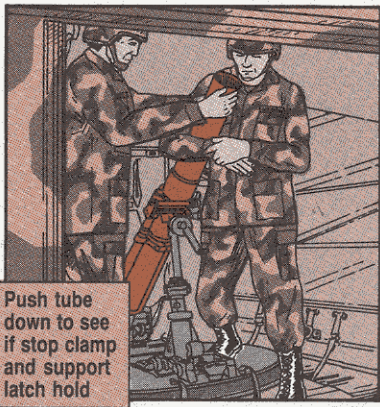
If the M106-series mortar carrier's turntable mount can't do its job, the M30 mortar can drop from the firing position to the traveling position while you're firing. That could be extremely bad news for you inside the mortar carrier.

So, before firing, eyeball the recoil stop clamp, standard support latch, and release lever. If a clamp or latch is bent or doesn't mate right, or the release lever's spring is weak, report it.



Make sure the release lever guard is in place. Without the guard, a misstep can trigger the release lever.

Even if everything looks OK, put the mortar in the firing position and tug down on the tube to see if the stop clamp and support latch hold.



ESCAPE THE PITS

The M252 mortar's tube pits beneath the Blast Attenuator Device (BAD). That's bad. And since there's no scheduled service for cleaning and lubing under the BAD, no one looks. That's even worse.

Armors, prevent pitting like this:

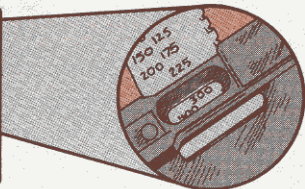
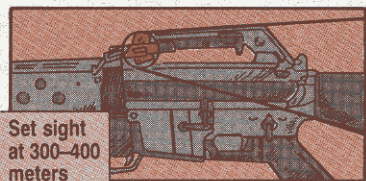
Before tightening a loose BAD, or each time you take it off for repairs, clean the tube where the BAD sits. Clean with P-D-680 dry cleaning solvent. Page 2-12 in TM 9-1015-249-20&P has the word.



M203 Grenade Launcher . . .

Racking Right

TM 9-1010-221-23&P is correct when it says to set the M203 grenade launcher sight at 300–400. But because of differences in some weapons or racks, the 300–400 meter setting will not always be correct. You may have to experiment with some M203s before they fit.



So make sure the crossbar clears the sights before you slam the M12 shut.

If you just can't get an M203 to fit in the rack, store the sight separately after tagging it with the M203's serial number.

Protecting Plugs and Ports

Dear Editor,

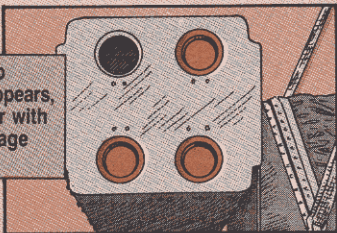
Dirt and moisture can wreck your Avenger with a vengeance if they get in the Standard Vehicle Mounted Launchers (SVML).

Dirt and moisture shoot into the missiles and cause missile malfunctions. To keep dirt and moisture out, use the protective caps that go in the ends of the SVMLs.

If you lose the caps, order new ones. The big cap comes with NSN 5340-00-855-7993 and costs 38 cents. Get the small cap with NSN 5340-01-348-6514 for 3 cents. Order extras. You'll need them.

Until the caps come, cover both ends of the SVMLs with garbage bags and tape. Put tape over the coolant ports and electrical plugs.

If cap disappears, cover with garbage bag



SSG Chris Huffman
Ft Campbell, KY

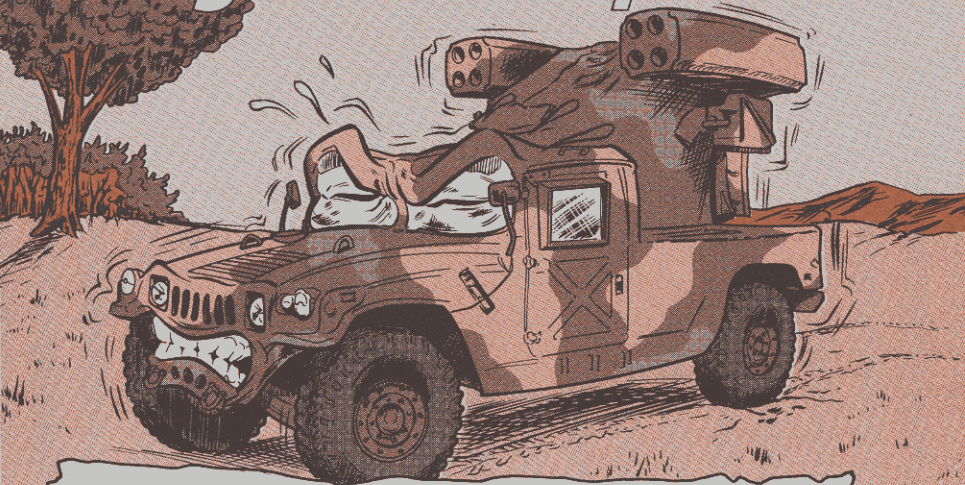


Cover gas ports and electrical ports with tape

FROM THE DESK OF THE Editor

You've covered the port and plug problem nicely. Your solution is in the bag. Thanks.

Plug the Battery Drain



Dear Editor,

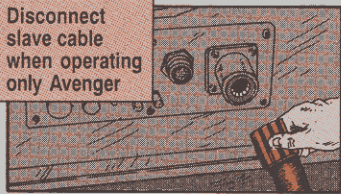
The Avenger has four batteries: two for the vehicle and two for the missile. When you're operating the Avenger with all four batteries connected and the truck engine off, all four batteries are being drained.

The problem comes when you start the truck's engine to charge the batteries. Charging all four batteries simultaneously overloads the vehicle control box and eventually burns it out.

Solution: Disconnect the slave cable to the system batteries when you're running the Avenger with the truck off. That way you're only draining the system batteries, not the vehicle's.

Once the battery indicator on the control display terminal falls below 85 percent, hook the cable back up and recharge the system batteries. That way you put no strain on the vehicle control box.

Disconnect
slave cable
when operating
only Avenger



PFC Ronald Straney
Ft Campbell, KY

FROM THE DESK OF THE *Editor*

It's no strain to see you have
a helpful idea. Thanks.



FIREPOWER

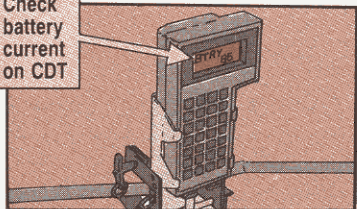
Less Troublesome Troubleshooting

Dear Editor,

If you get **ECA DRIVE MAL-FUNCTION** on your Avenger's control display terminal during system checks, check the voltage of the system batteries first. That'll cut your troubleshooting time.

The Avenger needs at least 24 volts or you get faults. Check the battery current status on the Control Display Terminal. If it doesn't show at least 85 percent, charge the batteries. Most of the time this will solve the problem.

Check battery current on CDT



**SGT Clifford March
SSG Russel Smith
SSG Chris Huffman
Ft Campbell, KY**

FROM THE DESK OF THE



Thanks for taking the trouble to help eliminate trouble for your fellow Avengers.

Don't Scratch It

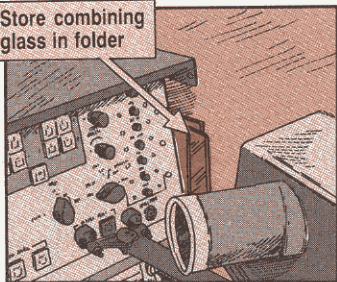
Dear Editor,

All good Avenger crewmen know to store the combining glass to the right of the control panel when they're not firing. That protects the glass from boots as soldiers climb in and out of the turret.

Trouble is, you can scratch the glass when you slide it in beside the control panel. Then you're looking through a web of scratches when you sight for firing.

Scratch scratching by going to the nearest filing cabinet and pulling out an empty file folder. When you store the glass, put it in the folder before you put it beside the control panel.

Store combining glass in folder



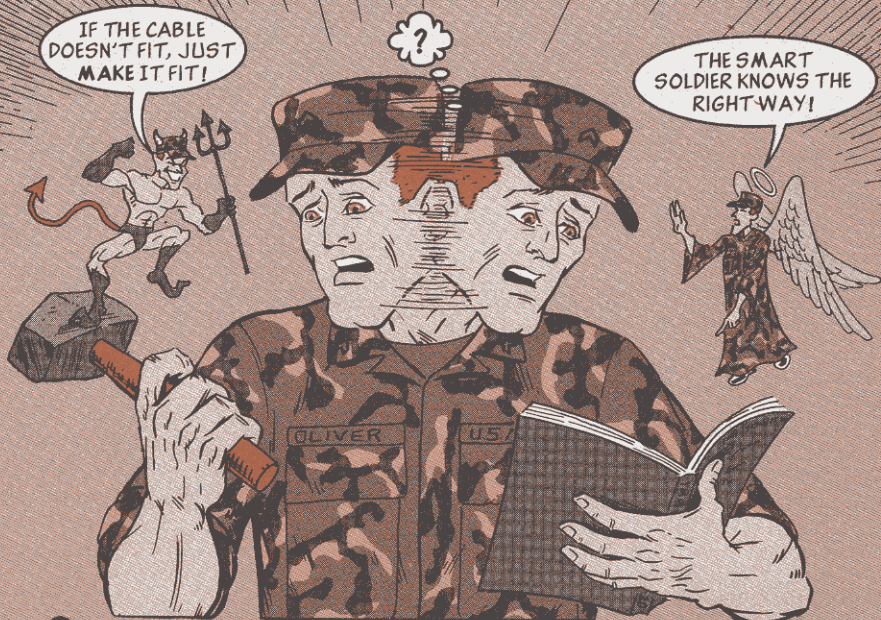
**SSG Chris Huffman
Ft Campbell, KY**

FROM THE DESK OF THE



That's definitely not an idea we would want to file away. Good show.

FOUR RIGHT, TWO WRONG

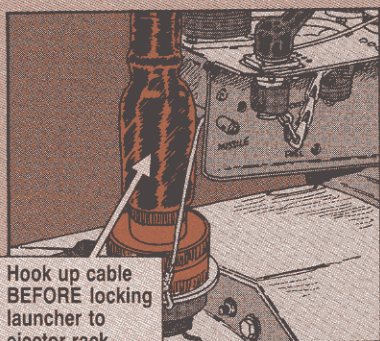


Some Hellfire crews feel that trying to hook up the P511 cable to the J511 connector on the launcher is tough as...well you know.

They even try to hammer back the rack plate so the cable has more clearance.

But the real problem is not clearance, it's crews not following Para 2-82 in TM 9-1427-475-20.

Step 2c says the P511 should be connected to the launcher *before* the launcher is locked on the ejector rack. And once the P511 is connected, it takes four people — not two — to install the launcher.



Crews are making it a less than heavenly job because they're trying to do the whole job with two people. That's two too few. Do it right with four.

Get the Latest Info

The equipment improvement report and maintenance digests have the latest equipment maintenance information. If you're not receiving these technical bulletins, you're missing out on things like:

- ☒ Minor modifications to make equipment work better or safer
- ☒ Safety issues
- ☒ NSN and PN updates
- ☒ Changes to technical manuals
- ☒ Replies to EIRs (SF 368s)
- ☒ Troubleshooting and use of test equipment

The digests come out periodically. The information in them is good for two years.

The only way to get these TB 43-0001-series digests is to have your pubs clerk add them to your unit's 12-series pinpoint publications account. These publications are not stocked and cannot be ordered through the resupply system.

HERE ARE THE DIGESTS
AVAILABLE AND THE 12-SERIES FORM
AND BLOCK NUMBER TO USE.

EIR and Maintenance Digest TB 43-0001-	Equipment	Add to DA Form 12-34-E block number
03	Aircraft equipment	2429
06	Commo security equipment	0611
11	Field support equipment	0398
36	Armament, munitions and chemical equipment	0313
39	Tank-Automotive equipment	0625
52	MLRS equipment	0628
53	Patriot missile system	0916
57	Tactical missile systems	4487
61	TMDE	0579



CONNIE'S Post Scripts

CONNIE ... I'VE GOT A
MAINTENANCE PROBLEM !



Header Correction

Oops! In PS 495 (Feb 94) on page 51, we listed the NSN for the expandable frame tent's header assembly as 8340-00-566-9697. The correct NSN is 8340-00-556-9697.

Charging System Test

SFC James Herr of Ft Knox, KY, figured out a way for one person to test charging systems on M992 ammo carriers and M109A2/A3 howitzers. Instead of messing with jumper wires and an extra mechanic to hold them in place, you can use a home-made test box. Instructions and a hardware list are on Page 3-11 in TB 43-0001-39-7 (Dec 93).

Starter Motor NSN

You can no longer get the Prestolite starter for the pump motor on the M900-series 5,000-gal fuel tanker. But you can get a starter that fits with NSN 2920-01-368-9140. Jot down the NSN.

Fire Extinguisher NSN

Use NSN 4210-01-149-1356 to get the 5-lb fire extinguisher (for all M934 and M935-series expansible vans) that's shown in the M939-series truck's BII list. The NSN shown in the operator's TM is wrong.

BDU Starching

BDUs can be starched or unstarched—it's up to you. But, starching can cause the fabric to wear out faster. Clothing allowances will not increase to cover premature wear. The scoop's in DA Msg DAPE-HR-S 201733Z Nov 92.

Field Desk Stool NSN

To get a replacement stool for your field desk, NSN 7110-00-267-1999, use NSN 7105-00-282-0684. Appendix A of CTA 50-970 is the authorization to order the stool.



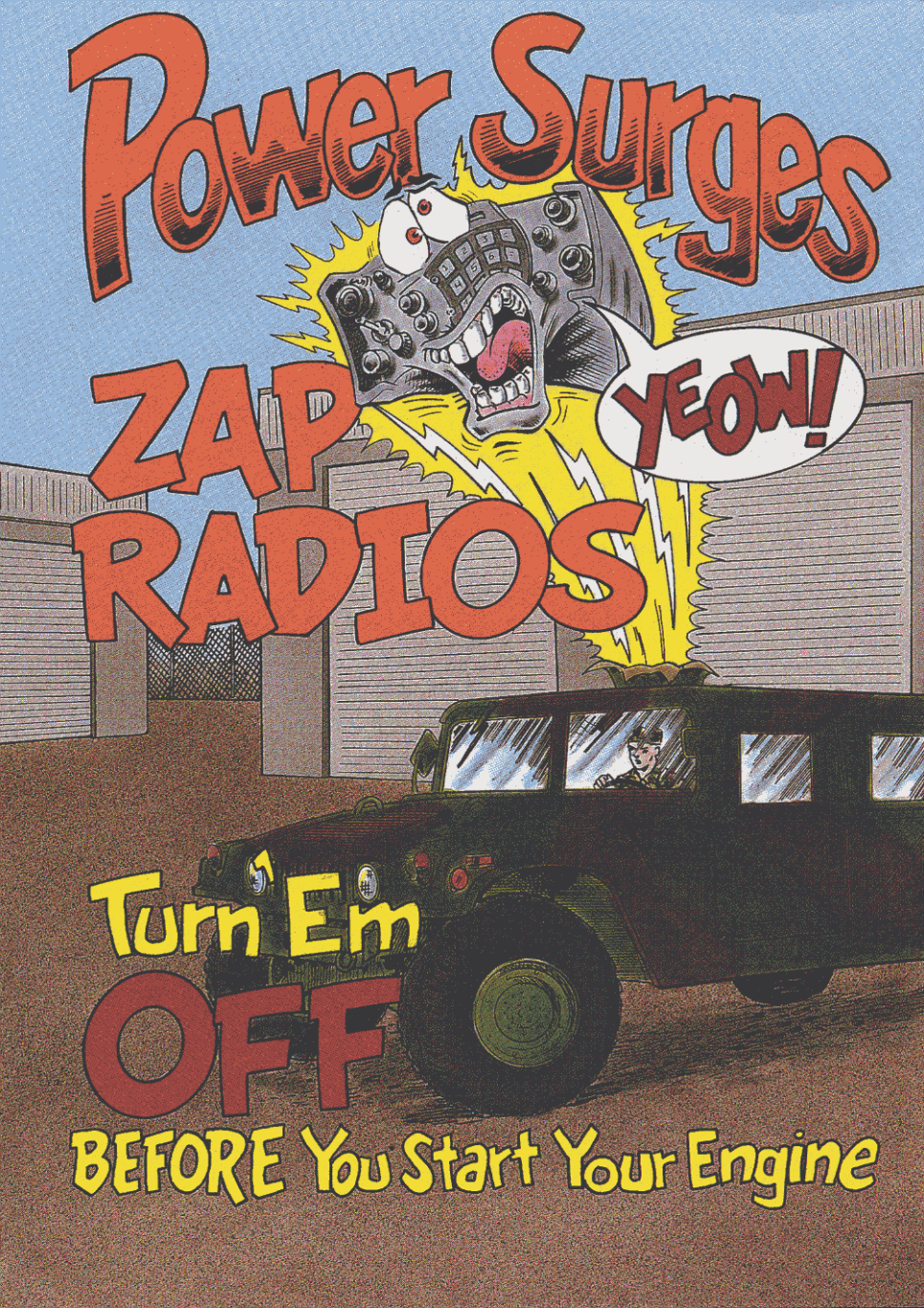
Distribution: To be distributed in accordance with DA Form 12-34-E, Block 0312, for TB-43-Series

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

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Power Surges



ZAP RADIOS

YEOW!

Turn Em OFF

BEFORE You Start Your Engine