

Issue 484

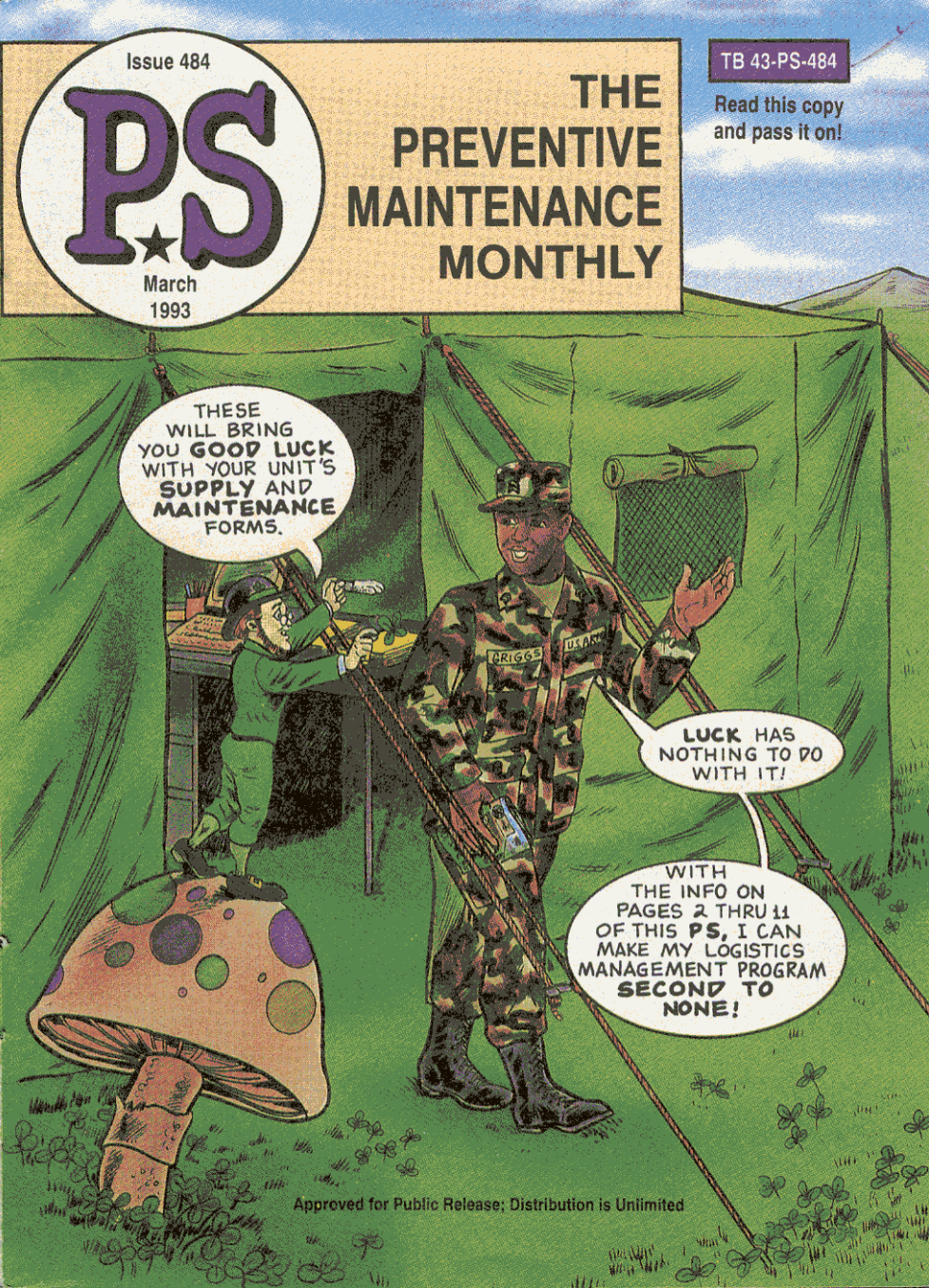
**PS**

March  
1993

# THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-484

Read this copy  
and pass it on!



THESE  
WILL BRING  
YOU GOOD LUCK  
WITH YOUR UNIT'S  
SUPPLY AND  
MAINTENANCE  
FORMS.

LUCK HAS  
NOTHING TO DO  
WITH IT!

WITH  
THE INFO ON  
PAGES 2 THRU 11  
OF THIS PS, I CAN  
MAKE MY LOGISTICS  
MANAGEMENT PROGRAM  
**SECOND TO  
NONE!**

# Secrets to a Winning Team

As any racedriver knows, the outcome of a race depends, in part, on the performance of the pit crew. The crew works together in the pit like a well-oiled machine.

Same holds true in your motorpool. To make your maintenance program a winner, mechanics have to be a well-trained, experienced team.



Older mechanics are the core of your team.

It's up to you to make sure they get the latest info.



Young mechanics are the basis for your new team.

Their real training begins when they set foot in your motorpool. Experienced mechanics help them become better mechanics.

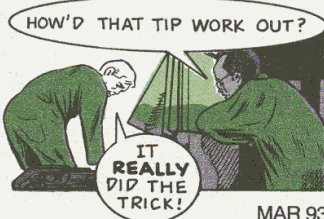
## Weekly Meetings

Schedule a weekly half-hour sitdown session in the motorpool. Tell them about TM changes, new tools, training available—anything that will help them do their job better.



## Exchange of Ideas

Let your experienced mechanics — and your new mechanics — share with each other the problems they've faced and how they've solved those problems. They'll help each do the job better and faster. These sessions — quality circles — help new mechanics learn, too.



MAR 93

## Follow up

Spend a little time each day with your new mechanics. Lend a hand once in a while, just so you can see what they've learned.



If you find one doing something wrong, show how to do the job right. The time will be well spent.

Like a good coach, work with your team every day and listen to what they have to say.

But most important of all, make your motorpool a place to learn, to train and to maintain.

Your mechanics will develop a sense of pride in getting the job done right, on time, everytime.



ONLY YOU CAN TURN YOUR MOTOR POOL INTO A WINNING MACHINE.

MAR 93



TB 43-PS-484, 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 484 MARCH 1993

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You are invited to send PS your ideas for improving maintenance procedures, questions on maintenance and supply problems, questions or comments on material published in PS. Just write to:

MSG Half-Mast  
The Preventive Maintenance Monthly  
Lexington, KY 40511-5101

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

PS, The Preventive Maintenance Monthly (ISSN 0475-2953) is published monthly by the Department of the Army, Lexington, KY 40511-5101. Second Class Postage is paid at the Lexington, KY post office and at additional mailing offices.  
Postmaster: Send address changes to PS, The Preventive Maintenance Monthly, Lexington, KY 40511-5101.



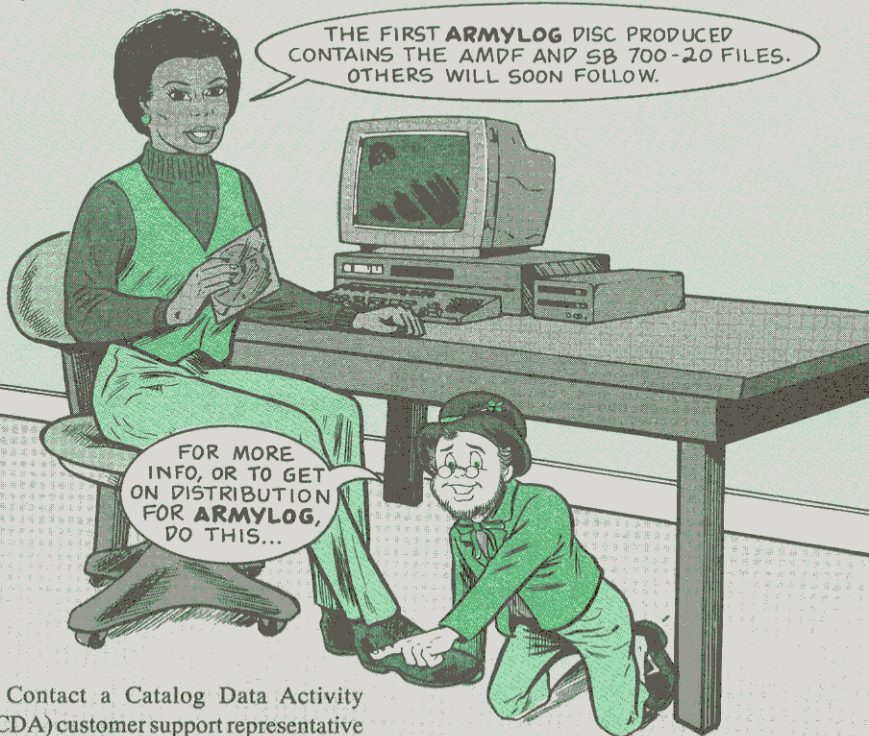


# ARMYLOG to the Rescue

Ever dig through your AMDF microfiche only to find the fiche you need is missing or too cloudy to read? It's enough to make you grind your teeth in frustration.

Relax! There's a quicker, easier system for getting that info — and it'll keep you out of the dentist's office.

The system, called ARMYLOG, puts an end to the hassle of shuffling through microfiche by loading all the data directly onto a compact disc. The info can then be accessed almost instantly using a personal computer and a Compact Disc-Read Only Memory (CD-ROM) reader.



Contact a Catalog Data Activity (CDA) customer support representative at DSN 977-7431 or Commercial (717) 770-7431. Or write:

USAMC Catalog Data Activity  
ATTN: AMXCA-PP  
New Cumberland, PA 17070-5010

Be sure to include your AMDF customer account number or have it available when you call.

# Supply Info

# Goes CD-ROM

To get on distribution for FED LOG, mail your request to:

USAMC  
Catalog Data  
Activity  
ATTN: AMXCA-PP  
New Cumberland, PA 17070-5010

Or send your request by E-mail:  
amxcapp@ncad-emh12.army.mil



☉ What type of CD-ROM equipment you have installed.

To use FED LOG CD-ROM, you'll need an IBM or compatible personal computer — such as a Zenith Z248 with 640K RAM or greater — a hard drive with at least five megabytes of available file space, MS-DOS 3.1 or higher, MS-DOS extensions 2.0 or higher and CD-ROM peripheral package, NSN 7025-01-272-5039 (non-audio) or NSN 7025-01-340-9810 (audio).

♪ WHERE, OH WHERE, DID THE MICROFICHE GO?  
♪ WHERE, OH WHERE, COULD THEY BE?  
♪ WITH ALL THE INFO THEY GAVE,  
♪ YOU'D THINK THEY'D BE SAVED,  
♪ OH WHERE, OH WHERE, COULD THEY BE? ♪

THE DEFENSE LOGISTICS AGENCY MICROFICHE YOU ONCE USED TO RESEARCH SUPPLY ITEMS ARE NO MORE.

IF YOU ONCE USED...

- ✓ ML-C (Consolidated Management Data List)
- ✓ ILs (Identification Lists)
- ✓ MCRLs (Master Cross-Reference Lists)
- ✓ FILDRs (Federal Item Logistics Data Record)
- ✓ I&S (Interchangeability and Suitability) Files
- ✓ CAGE (Commercial and Government Entity) Codes (H4/H8)
- ✓ Freight Classification Data Publications or
- ✓ Federal Supply Classifications (H2-1 and H2-2).

YOU'LL HAVE TO ORDER AND USE A CD-ROM READER, AND GET ON DISTRIBUTION FOR FED LOG



- ☉ Number of copies required.
- ☉ AMDF microfiche account number.
- ☉ Baltimore pinpoint publications account number.
- ☉ Complete mailing address, point of contact and commercial or DSN phone number.
- ☉ Brief justification statement telling why you need FED LOG.

Currently, FED LOG can only be distributed to Army wholesale level units and Army activities that support multi-service requirements or that have a heavy amount of research because the supply items do not have an Army used or managed NSN.



# Planning Ahead

Dear Half-Mast,

We've heard that the AMDF is out on compact disc. Before ordering the disc, we want to make sure we have the right kind of equipment. Do you have an NSN for a disc drive unit that we can use with our PCs ?

SGT B.Y.G.

Dear Sergeant B.Y.G.,

Either NSN 7025-01-272-5039 (non-audio) or NSN 7025-01-340-9810 (audio) will get you a CD-ROM (compact disc-read only memory) peripheral package. The package includes a dual CD-ROM drive unit, an interface card, connection cables and necessary software.

This CD-ROM drive will work for ARMYLOG and FED LOG.

The peripheral package is available from S9E and is authorized by Table 75 in CTA 50-909.

Half-Mast

CHECK WITH  
COMPUTER  
SUPPORT FIRST.  
THE **DISC DRIVE**  
UNIT MAY NOT  
BE COMPATIBLE  
WITH ALL  
PCs.

# Use the Right One

NOT EVEN THE **LUCK-O'-THE IRISH** WILL KEEP YOUR SUPPLY REQUEST ON TRACK WITHOUT THE RIGHT AUTHORIZATION DOCUMENT.



**U**se the right authorization document and the supply system will make sure your supplies reach the right corral. Here's a table to show you the most common authorization documents, their description and what they authorize.

You'll find these and more authorization documents in AR 71-13, Equipment Authorization and Usage Program.

Document	Description	Needed For:
Modification Tables of Organization and Equipment (MTOE)	MTOEs change basic Tables of Organization & Equipment (TOE) to needs of specific unit.	End item requests
Tables of Distribution & Allowances (TDA)	TDAs show organizational structure & people & equipment authorized for unit not under TOE.	End item requests
Common Tables of Allowances (CTA)	CTAs have items in common usage by individuals or units Army-wide	CTA 50-900—Clothing & individual equipment requests CTA 50-909—Field & garrison furnishings and equipment requests CTA 50-970—Expendable & durable items (except medical, Class V items & repair parts) CTA 8-100—Expendable & durable items for medical items
Technical Manuals (TM)	TMs give repair parts, special tools & test equipment (except property book items)	Requesting parts, tools and test equipment for end items authorized by MTOE, TDA or CTA
Some Army Regulations (ARs) are authorization documents	AR 700-84 authorizes special clothing required & special measurement items, etc.  AR 840-10 authorizes flags, guidons and plates	Requesting specially required clothing  Ordering heraldic items



# Available ON DDN TELNET

**Y**ou can now access the Remote Terminal AMDF Inquiry System (RTAIS) by using your DDN Telnet computer line.

First you'll need to determine if you have Telnet capabilities. If you're not sure, contact your local Directorate of Information Management or computer support personnel.

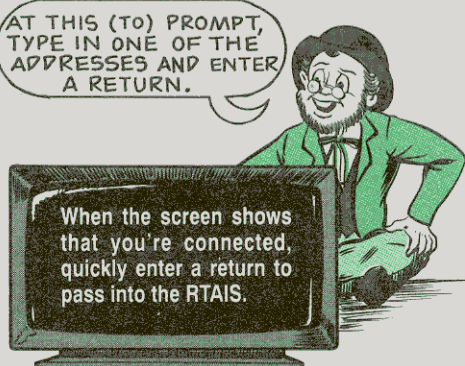
If you have DDN Telnet capabilities, you'll use the RTAIS computer address of either 192.16.173.4, 192.16.173.5 or 192.16.173.6.



HERE'S HOW  
IT WORKS...

- ◆ Sign on your system and get the prompt.
- ◆ Type "telnet", hit the space bar and type one of the addresses. Be sure to enter a return after the address.

Some computer systems require you to type "telnet" and enter a return to get a (to) prompt.



AT THIS (TO) PROMPT,  
TYPE IN ONE OF THE  
ADDRESSES AND ENTER  
A RETURN.

When the screen shows  
that you're connected,  
quickly enter a return to  
pass into the RTAIS.

After you've made contact with RTAIS, you'll receive a message that the system is ready. When you receive the @@@@ prompt, enter your RTAIS password and the type of query you need. For example:

```
XXXXXX(password) amdf b 005556185 x
```

You'll need to clear the computer line by typing "done" at the @@@@ prompt when your RTAIS session is finished. Then use the "BREAK" or "ESCAPE" key to terminate the RTAIS connection. If you're unsure what your "BREAK" key is, check with your computer folks.

# Training Videotape Available

Get the videotape called,  
"The Army Master Data  
File, Your Key to the  
Army Supply System."



THIS  
VIDEOTAPE  
CAN  
HELP YOU AND  
YOUR UNIT  
LEARN THE  
BASICS OF  
ARMY  
LOGISTICS  
AND KEEP  
UP-TO-DATE  
WITH THE  
SUPPLY  
SYSTEM.

Get the tape from your Visual  
Information Support Center or  
Training Support Center by  
asking for Production  
Identification Number (PIN)  
706177DA (TVT 38-29). Make  
sure you ask for the size tape  
that fits your VCR—either 1/2  
or 3/4 inch.

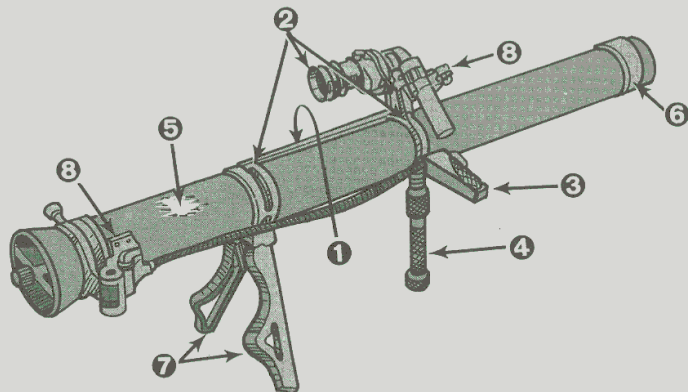
WELL,  
IT LOOKS  
LIKE MY JOB  
IS DONE.

# BE YOUR OWN

# INSPECTOR

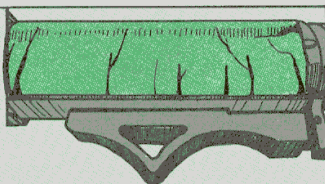
## Fault Finding

If your unit is like most units, M67 recoilless rifles sit for weeks—even months—between trips to the field. Problems develop in the meantime. That's why you need to check out an M67 thoroughly before you fire it. The PMCS in TM 9-1015-223-12 is the place to start. Here are other problems to watch for:



### 1 Protective shield assembly

Pad torn or coming loose? Plate loose or cracked, especially around its rivets? If the shield assembly is in bad shape, it can't protect you from the tube's heat. Support can replace a loose pad or rivet or replace a loose or cracked plate.



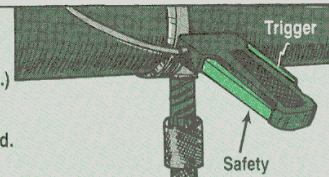
### 2 Brackets

Feel the front and rear brackets for looseness. Feel inside the sight bracket, too. If its pin has sheared off, it will be loose and the sight will be shaky.



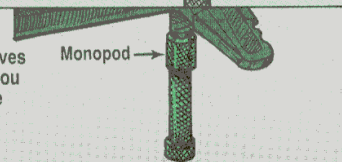
### 3 Rifle grip

Dry fire the rifle once. (But not repeatedly—that loosens the hammer bushing.) If the trigger binds, its cable has stretched. Your armorer can adjust it. Make sure the trigger safety doesn't bind. If it sticks, you won't be able to fire.



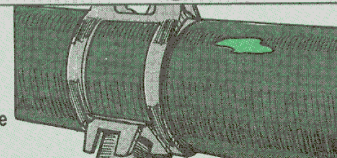
### 4 Monopod

Make sure the monopod assembly moves smoothly without binding. If it binds, you won't be able to elevate or depress the rifle for ground firing.



### 5 Shiny spots

They mean the protective coating has come off the tube. If the spots are not treated with solid film lubricant, NSN 9150-01-260-2534, the tube will become corroded and pitted.



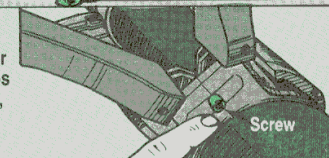
### 6 Sound suppressor ring

Eyeball it for cracks that signal dry rot is setting in. If the ring comes off, firing will be painfully loud.



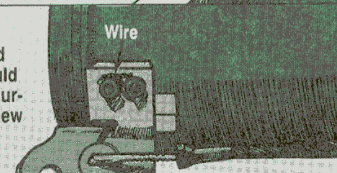
### 7 Bipod legs

Loose? Your armorer needs to tighten or replace the self-locking screw that keeps tension on the legs. If that doesn't work, support needs to tighten or replace the screws on the side of the rear bracket.



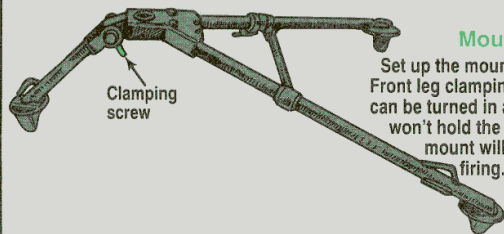
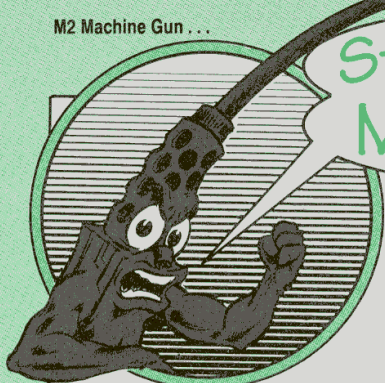
### 8 Safety wire

Screws for the breech hinge block and instrument light clamp assembly should be safety-wired or they'll work loose during firing. Get your armorer to put in new safety wires before you fire.



# Stand Up for Mount PM!

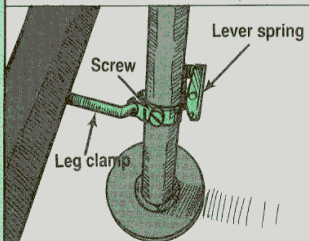
If you ignore your traversing and elevation (T&E) mechanism and tripod mount during PM, you've cut its legs right out from under it. Give your M2 a leg up in the field like this:



### Mount

Set up the mount. Front leg clamping screw hold? If it can be turned in a complete circle, it won't hold the leg in place and the mount will collapse during firing.

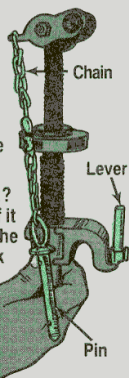
Each leg's clamp, handle and front screws tight? Indexing lever springs strong? Do the clamps clear the set screws? If a clamp can't be adjusted or a spring is weak or a screw loose, the mount's headed for collapse.



### T&E

Locking pin and chain present? If the pin's missing, the M2 can't be locked onto the T&E. If the chain's missing, the pin shortly will be too.

Locking lever weak? Push the lever down. If it doesn't pop back up, the lever's spring is weak or disconnected and the T&E won't clamp tightly to the traversing bar.

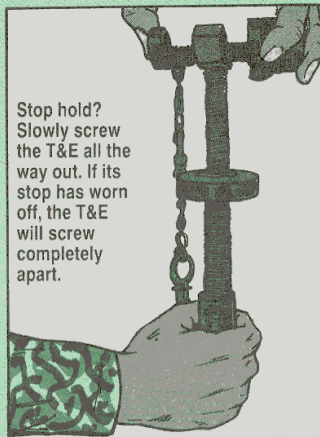


# Get Rid of Asbestos Gloves

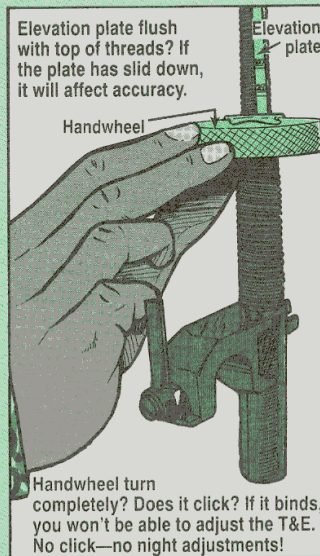
There are still some asbestos gloves out there being used to change hot machine gun barrels. They're not safe. Order new, non-asbestos gloves, NSN 8415-01-092-0039.

Not sure if your gloves are asbestos? Order new ones to be safe. Use the asbestos gloves until you get the new ones, as long as they're not torn or frayed.

When your new gloves come in, turn in asbestos gloves per your SOP for hazardous waste.



Stop hold? Slowly screw the T&E all the way out. If its stop has worn off, the T&E will screw completely apart.



Elevation plate flush with top of threads? If the plate has slid down, it will affect accuracy.

Handwheel turn completely? Does it click? If it binds, you won't be able to adjust the T&E. No click—no night adjustments!

**PROBLEMS? TELL YOUR ARMORER.**

I KNEW IT WOULD COME TO THIS!



# Fuel Seal Folly

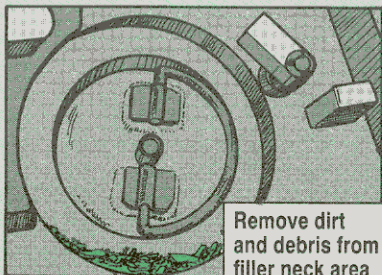
**D**rivers, water and fuel don't mix. That's why it's important to make sure the fuel cap, seal, and strainer on your M2/M3-series Bradley are in place and working.

Dirt and sand build up around the filler neck, especially on M2A2/M3A2 models with added armor. That buildup makes it difficult to close the cap properly. Forcing the cap can tear the fuel seal. That allows rain water to trickle down into the fuel system.

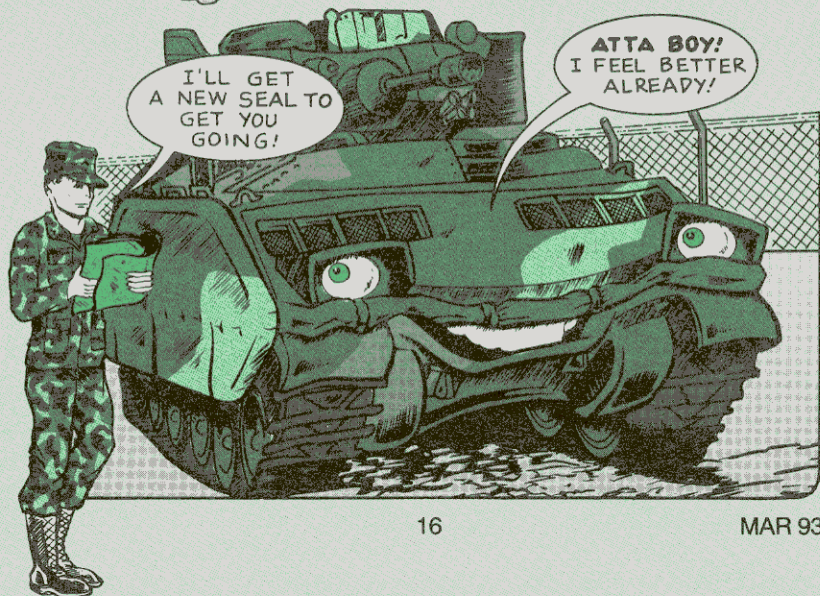
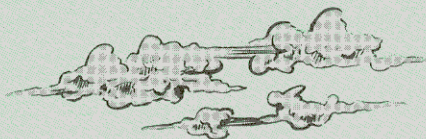
Poor engine performance is the first symptom. The condition will worsen until the fuel injection pump fails. When that happens, your vehicle is out of

of action until the pump is replaced and the injectors are cleaned.

Check the fuel cap, seal, and strainer after each shutdown and remove any dirt that has collected around the filler neck. Have your mechanic replace a missing fuel cap with NSN 5340-01-163-1429 and a bad fuel seal with NSN 5330-01-107-3315. A new fuel strainer comes with NSN 4730-01-108-5253.



Remove dirt and debris from filler neck area



# A Wrenching Repair Problem

Dear Half-Mast,

Our unit has several electric impact wrenches, NSN 5130-01-309-6589, for the M2A2/M3A2 Bradley. Most of them can't be used, though, because the brushes are worn out.

The wrenches are supposed to be reparable, but I can't find parts for them anywhere. Can you help?

SGT B.Y.W.

YOU'RE IN LUCK, SERGEANT. THERE'S A BRUSH REPAIR KIT FOR THE IMPACT WRENCH. GET IT WITH NSN 5977-01-316-0888

HERE'S WHAT'S IN THE KIT...

Item	Qty
Brush, RH red	1
Brush, LH black	1
Spring, brush	2
Brush holder assembly	2
Screw, hex socket head #6, 32 x 7/16"	2
Washer, internal star #6	2
Wrench, hex socket 7/64"	1
Instruction sheet	1

## Waterproof Bags

Need a waterproof bag for protecting small items from rain and dirt in the field? Try the M16 rifle magazine bags. One bag end seals like a freezer bag. The other end is perforated and can be torn off quickly in an emergency. NSN 1005-00-193-8306 brings 500 vinyl bags (4<sup>3</sup>/<sub>4</sub>-in x 8<sup>1</sup>/<sub>4</sub>-in x 4 mil) for about \$60.

# The NSN Shell Game

Dear Half-Mast,  
I can't find NSNs for the CVC helmet's Kevlar shells. Can you help me out?

SGT W.P.W.



YOU BET!  
YOU'LL FIND THE  
PARTS FOR THE CVC  
HELMET LISTED IN CHAPTER 4  
OF TM 10-8400-203-23. THE  
KEVLAR SHELL COMES IN TWO  
SIZES. FOR SMALL/MEDIUM, USE  
NSN 8470-01-259-1693.  
NSN 8470-01-259-1694  
WILL GET YOU A  
LARGE SHELL.

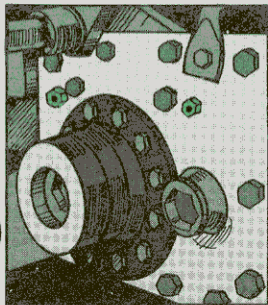
M1-Series Tanks . . .

## An Exception to Every Rule

The latest LOs for your M1-series tanks say you should use turbine engine oil, MIL-L-23699, in the rotary shock assemblies. However, that doesn't mean you have to drain the OE/HDO-30 that may still be in your tanks' rotary shocks.

Wait until a rotary shock needs repair or the vehicle is down for scheduled service before you switch to turbine oil.

If a shock assembly is low on oil, top it off with the new stuff. Mixing the two oils together won't hurt the shock assembly.



I'M THE  
RIGHT OIL  
TO USE!



BUT I'M  
STILL OK 'TIL  
YOUR NEXT  
SERVICE!



M109-Series SP Howitzers, M992 Ammo Carriers . . .

## New Seal Saves Big Bucks

**M**echanics, there's a new seal available for road wheel and idler hub assemblies on M109-series SP howitzers and M992 ammo carriers.

Before, each time you took apart a hub, you had to toss and replace \$50 seals. Now, replace them with new seals, NSN 5330-01-308-9171, and save \$12 on each one.

The seals are more corrosion-resistant and easier to install. There's no more mess from applying sealer to the inner hub bore, either. Each seal comes with the sealer already applied.

I'M CHEAPER...  
AND YOU DON'T  
NEED TO ADD  
SEALER.



Protective Masks . . .

## Filter Out Bad Elements

**T**here is a list published two to three times a year that every NBC NCO needs to get and read. The list updates SB 3-30-2, and shows which mask, canister and filter elements are no longer good.

With the lists, you can quickly weed out any bad elements you have on hand and ensure they're never used.

Where to get the list? Check first with your brigade NBC chief. No luck? Try your local AMCCOM Logistics Assistance Representative (LAR). Still no luck? Write:

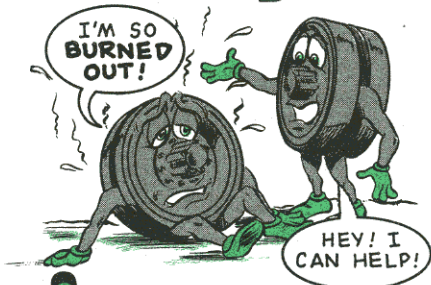
AMCCOM  
ATTN: AMSMC-QAW-C  
Rock Island, IL 61299-6000  
Or call (309) 782-7604/5951  
(DSN 793-7604/5951)

YOU'RE  
OUTTA  
HERE!



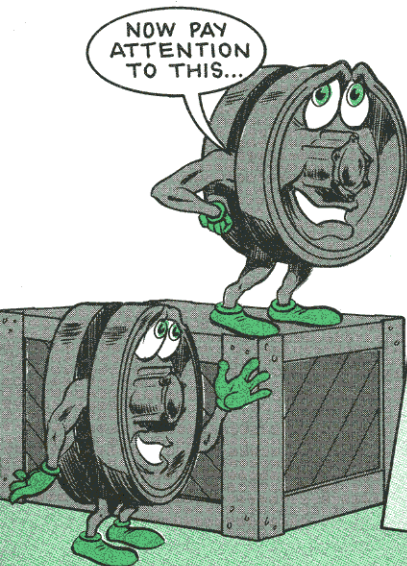


# Beating Bearing Burnout



Outer roadwheel bearings on M578 recovery vehicles and M110A2 SP howitzers will burn out, even when you pump in grease during scheduled maintenance.

That's because grease takes the easy way out. It shows up at the relief valve, so you stop pumping. But the bearings still don't have enough lube, so they run hot and eventually burn up.

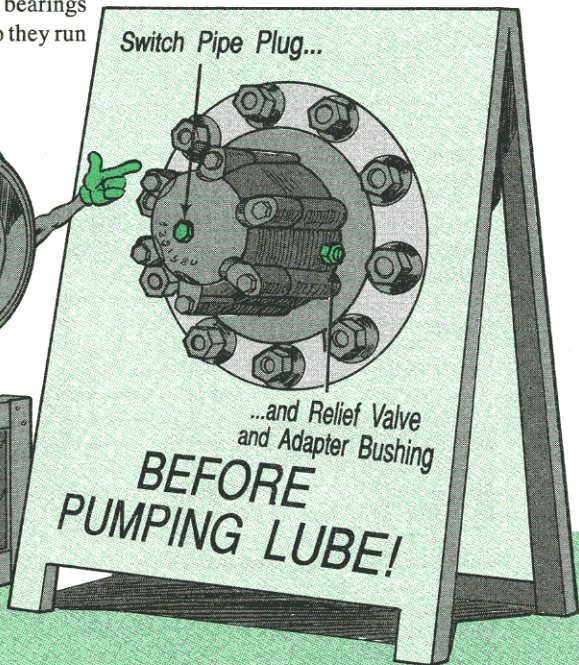


Take care of bearing burnout with this quick switcheroo:

- ☒ Remove the pipe plug in the roadwheel hubcap.
- ☒ Remove the relief valve and adapter bushing and reinstall them in the hubcap.
- ☒ Put the pipe plug in the hole where the relief valve was and pump in the lube.

When the lube comes out the relief valve in the hubcap, you'll be sure there's plenty of grease on both the outer and inner bearings.

- ☒ Then put the pipe plug and relief valve back in their original places. That way the valve doesn't get damaged.

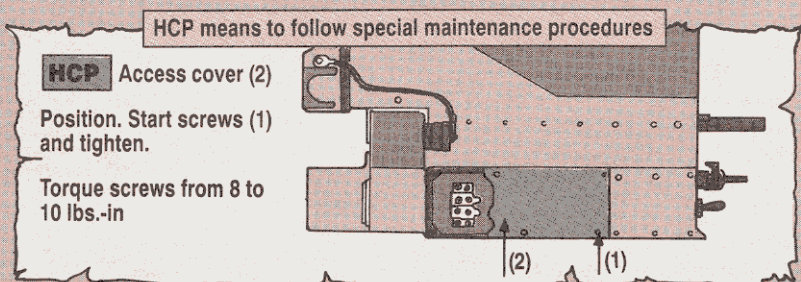


# Protect Your Protection

**HCP and HCI.** What are these strange, new symbols that are popping up in your TMs? Are they really important?

You bet they are! The symbols HCI (hardness critical item) and HCP (hardness critical procedure) are like red flags. They're there to warn you that the procedure or item is vital in protecting your equipment during a nuclear attack.

Huge electrical currents and voltages—known as an electromagnetic pulse (EMP)—are generated by a nuclear weapons burst. Unprotected components get zapped, stopping you in (or on) your tracks. You'll find HCPs in the maintenance instructions of -20 and higher level TMs. Mechanics, follow those procedures to the letter or the equipment will lose its nuclear hardness.



HCI's highlight items in your repair parts TMs. These parts provide special protection from EMP damage. Never—EVER—use a substitute item for an HCI part. That'll leave you unprotected during a nuclear attack.

**HCI items are critical to protecting your equipment**

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE	SHR CODE
3-2-	AM-7314/ARM	60050	<b>HCP</b> AMPLIFIER, ANTENNA 622-0064-001 UNIT . . . . . 13	1		PA0LD
-1	687-1108-000	13499	. PLATE, IDENT. . . . .	1		P0DZ
-2	M551957-14	96906	. SCREW, MACHINE SST, 6-40 X 5/16 . . . . .	2		PADZZ
-3	NA5620C4	80205	. WASHER, FLAT PSVT CRES, 0.115 ID X 0.209 . . . . . 343-0134-000 (AP)	2		PA0ZZ
-4	685-7886-001	13499	<b>HCP</b> COVER, TOP. . . . .	1		PB0ZZ
-5	M551957-14	96906	. SCREW, MACHINE SST, 6-40 X 5/16 . . . . . 343-0134-000 (AP)	14		PADZZ
-6	NA5620C4	80205	. WASHER, FLAT PSVT CRES, 0.115 ID X 0.209 . . . . . 343-0134-000 (AP)	14		PADZZ
-7	685-7916-001	13499	<b>HCP</b> COVER, BOTTOM . . . . .	1		PB0ZZ

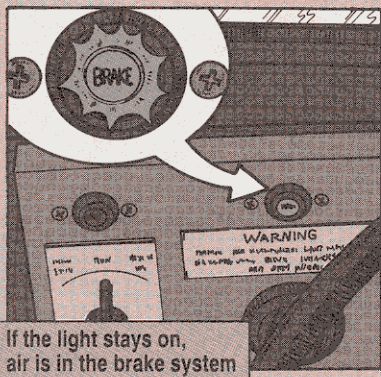
HCPs and HCIs are showing up in TMs for all kinds of Army equipment. If you've yet to see one, you probably will soon. Look for them. Take action when you see them.

HMMWV ...

## Light On? Bleed Brakes!

When the brake warning light stays on, something's wrong. Before you replace any parts, though, make sure you bleed the brake lines.

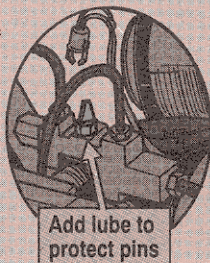
Good parts and a mechanic's time can be wasted trying to turn out that light unless the brakes have been bled first.



If the light stays on after bleeding, use the troubleshooting info starting on Page 2-261 of TM 9-2320-280-20-1. If the proportioning valve is the culprit, replace it.

Never try to "save" a bad valve by taking it apart and adjusting it. Any tampering ruins the calibration set at the factory.

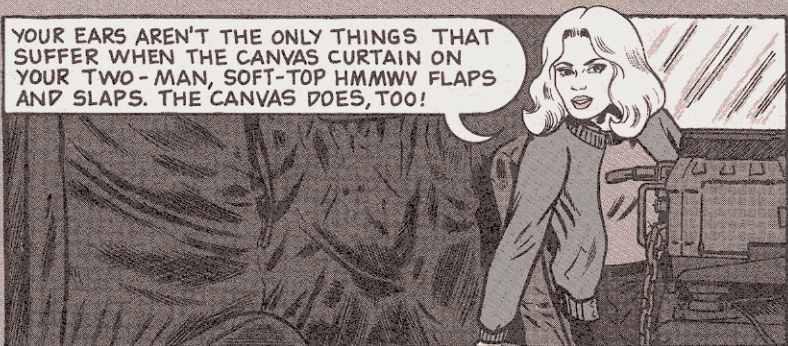
When you replace the proportioning valve, add a light coat of lube, NSN 9150-00-273-2389, to the connector pins. This heads off corrosion.



The lube replaces the one called for in Para 7-16 of TM 9-2320-280-20-2.

## Curtains for Canvas Noise


YOUR EARS AREN'T THE ONLY THINGS THAT SUFFER WHEN THE CANVAS CURTAIN ON YOUR TWO-MAN, SOFT-TOP HMMWV FLAPS AND SLAPS. THE CANVAS DOES, TOO!



To stop canvas damage and noise on your M998, M1037, M1038 or M1042, get your support shop to add tiedowns to the canvas.

Instructions are on Pages 3-40 through 3-44 of TACOM's EIR Digest, TB 43-0001-39-7 (Dec 91).

# Burned Oil Line Means No-Go!



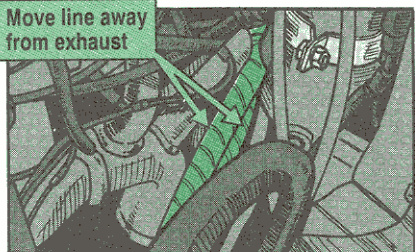
IT'S A GOOD THING WE CHECKED THAT LINE. IT COULD'VE BEEN A **BIG PROBLEM!**

YEAH, LIKE A **FIERY PROBLEM!**

**M**echanics, take a real close look at the engine oil cooler return line on all HMMWVs.

The oil line coupling next to the engine can shift. Once it's shifted enough, the line lays against the exhaust manifold. A hot manifold burns a hole through the line, which could cause an engine fire — and for sure lets the oil pump out of the engine.

Replace a damaged line with a new one, NSN 4720-01-257-3705. If the line's OK, but rubbing the exhaust manifold, loosen the coupling nuts to move the line away. Then tighten the couplings.



Move line away from exhaust

## Clamp Bolt Pokes Hole

**T**he HMMWV's air filter clamp bolt will poke a hole in the fiberglass hood when it's tightened in place on top of the filter.

The hood smacks down on the bolt. Then the fiberglass cracks, and cracks some more as the bolt head rubs against the hood.

But you operators can take care of the problem. Put the clamp bolt between 3 and 6 o'clock on the air cleaner assembly. That way it's easy to get to and keeps the bolt out of harm's way.



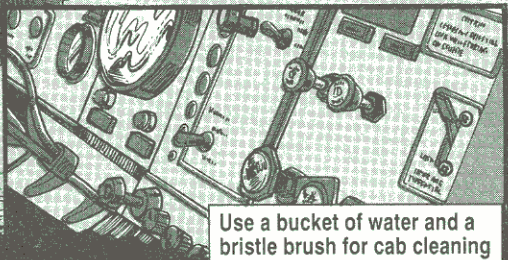
PUT MY CLAMP AT 3 O'CLOCK!

Truck Cabs ...

# No Water for Me, Thanks!



HOLD THE HOSE, **BUB**,  
WHEN YOU CLEAN MY CAB!  
HOISING LEADS TO RUSTY  
FLOORBOARDS AND  
ELECTRICAL PROBLEMS.



Use a bucket of water and a  
bristle brush for cab cleaning

If you need a reminder, get your CO's  
OK to stencil a warning on your dash.

CARC ...

## Spot Painting Info

If you've got spot painting to do, you need the instructions available in TB 43-0242, CARC (Chemical Agent Resistant Coating) Spot Painting.

The TB covers why CARC is used, how to apply it, and what safety precautions to follow when spot painting. It also has the primer and paint NSNs you'll need.

There's also a video tape available that shows how to spot paint with CARC. Get the tape, TVT 3-40, from your training and audio visual support center.

Finally, check out Para 4-41 of AR 750-1 in Maintenance Management Update 13 for more info on painting with CARC.

I'VE GOT ALL  
THE HELP I NEED  
FOR SPOT PAINTING  
WITH **CARC**.



# Braking Up Is Easy

**BRAKING IS THE GAME ON A 3/4-TON TRAILER'S HYDRAULIC BRAKE ACTUATOR ASSEMBLY!**

**YOUR MISSION?**

**STOP BREAKING UP THE GAME!**

**FM**ake sure the nuts that fasten the lunette assembly to the channel assembly are tight. If they're not, the banging and twisting put on the channel assembly can break it.

Also a loose channel assembly can make the brake actuator think the trailer has come uncoupled from the vehicle. That locks up the brakes or keeps them partially applied, burning up brake shoes.

Likewise, keep the nuts tight that hold the master cylinder in place. There should

be no play between the master cylinder and channel assembly. That can also lock up the brakes.

If the nuts are loose, replace them. Self-locking nuts won't hold if tightened a second time.

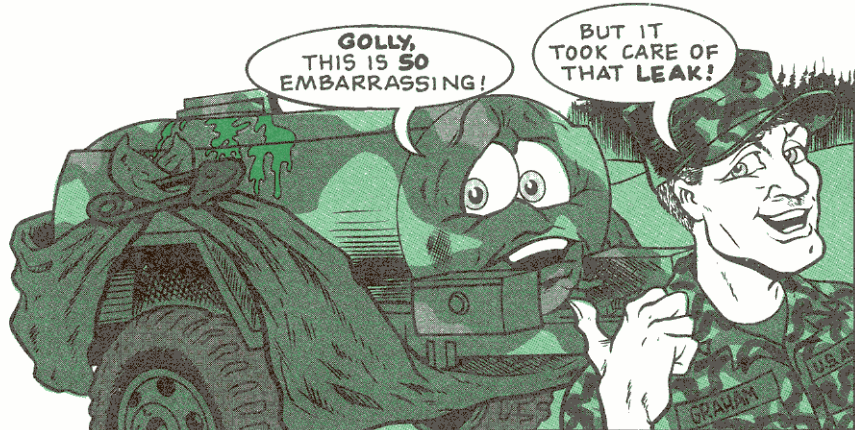
The filler cap on the master cylinder sets up high. The cap's in harm's way when you're not watching where you're stepping. You can break it. It'll leak. Lost brake fluid leads to lost brakes.

Keep nuts tight ...

... and feet off filler cap

**A FINAL WARNING. WATCH WHERE YOU STEP WHEN LOADING OR UNLOADING THE TRAILER!**

# New Cover Seal



If the manhole cover seal leaks on your 400-gal water trailer, replace the old seal with a new, better seal, NSN 5330-01-317-9640.

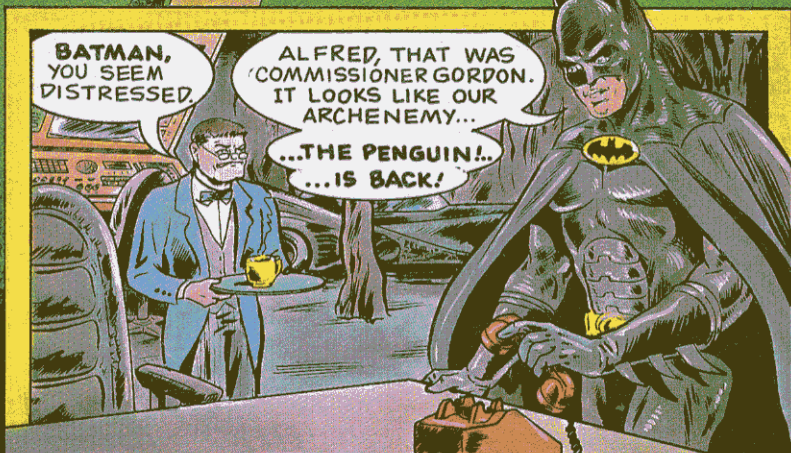
HERE'S A  
NEW AND BETTER  
WAY TO MAKE SURE THE  
GASKET STAYS PUT...



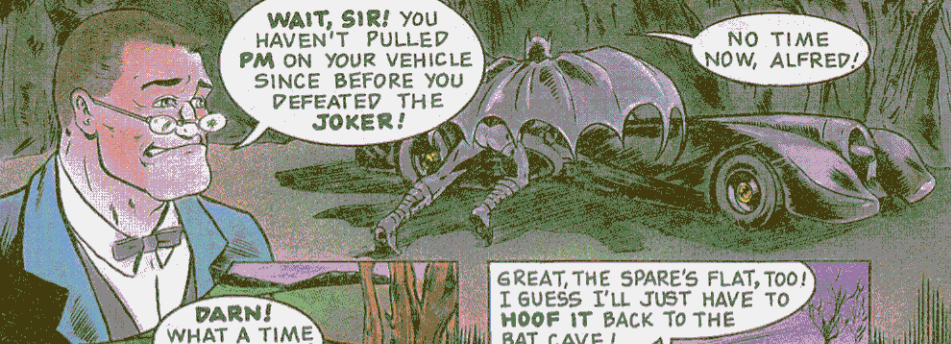
- REMOVE THE MANHOLE COVER.
- SCRAPE OFF THE OLD GASKET AND TOSS IT.
- SAND THE OUTER 1 1/2 INCH OF THE UNDERSIDE OF THE COVER WITH EMERY PAPER.
- USE DENATURATED ALCOHOL TO WASH THE SANDED AREA. CAREFUL NOT TO TOUCH THE SANDED AREA.
- LET DRY.
- PUT SILICONE SEALANT, NSN 8040-00-938-1535, FOR ABOUT 1 INCH ALL AROUND THE OUTSIDE EDGE OF THE COVER.
- SLIP THE SEAL ONTO THE COVER.
- PUT A LITTLE MORE SEALANT AROUND THE INSIDE OF THE SEAL.
- NOW LAY THE COVER WITH THE SEAL FACE DOWN ON A SMOOTH, FLAT SURFACE, SUCH AS A WORK BENCH. LET THE SEALANT CURE FOR 24 HOURS.
- RINSE THE COVER WITH WATER.
- REPLACE THE MANHOLE COVER ON THE TANK.

# Batman Returns?

The night sky lights up with a call for help as the Penguin begins a campaign of terror in Gotham City.







WAIT, SIR! YOU HAVEN'T PULLED PM ON YOUR VEHICLE SINCE BEFORE YOU DEFEATED THE JOKER!

NO TIME NOW, ALFRED!



DARN! WHAT A TIME FOR A FLAT TIRE!

KER PLOW!



GREAT, THE SPARE'S FLAT, TOO! I GUESS I'LL JUST HAVE TO HOOFF IT BACK TO THE BAT CAVE!

A SHORT TIME LATER...

SIR, THE BATWING HASN'T BEEN CHECKED OUT SINCE THE JOKER SHOT IT DOWN.



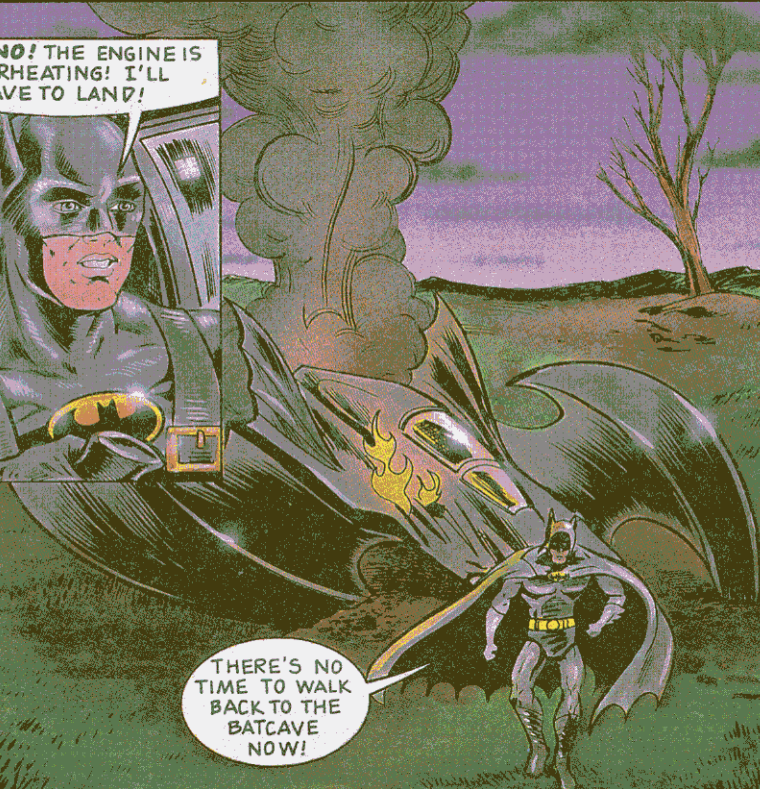
DON'T YOU THINK YOU SHOULD RUN THROUGH YOUR PMCS FIRST?

LATER, ALFRED! I'M ALREADY LATE!

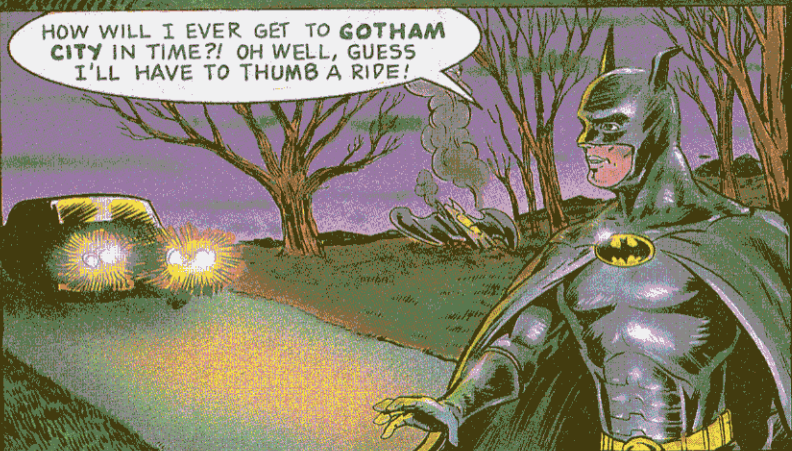


A close-up of Batman in the cockpit of the Batplane. He has a worried expression, with sweat on his forehead. The Batplane's controls and the bat symbol on his chest are visible.

OH, NO! THE ENGINE IS OVERHEATING! I'LL HAVE TO LAND!

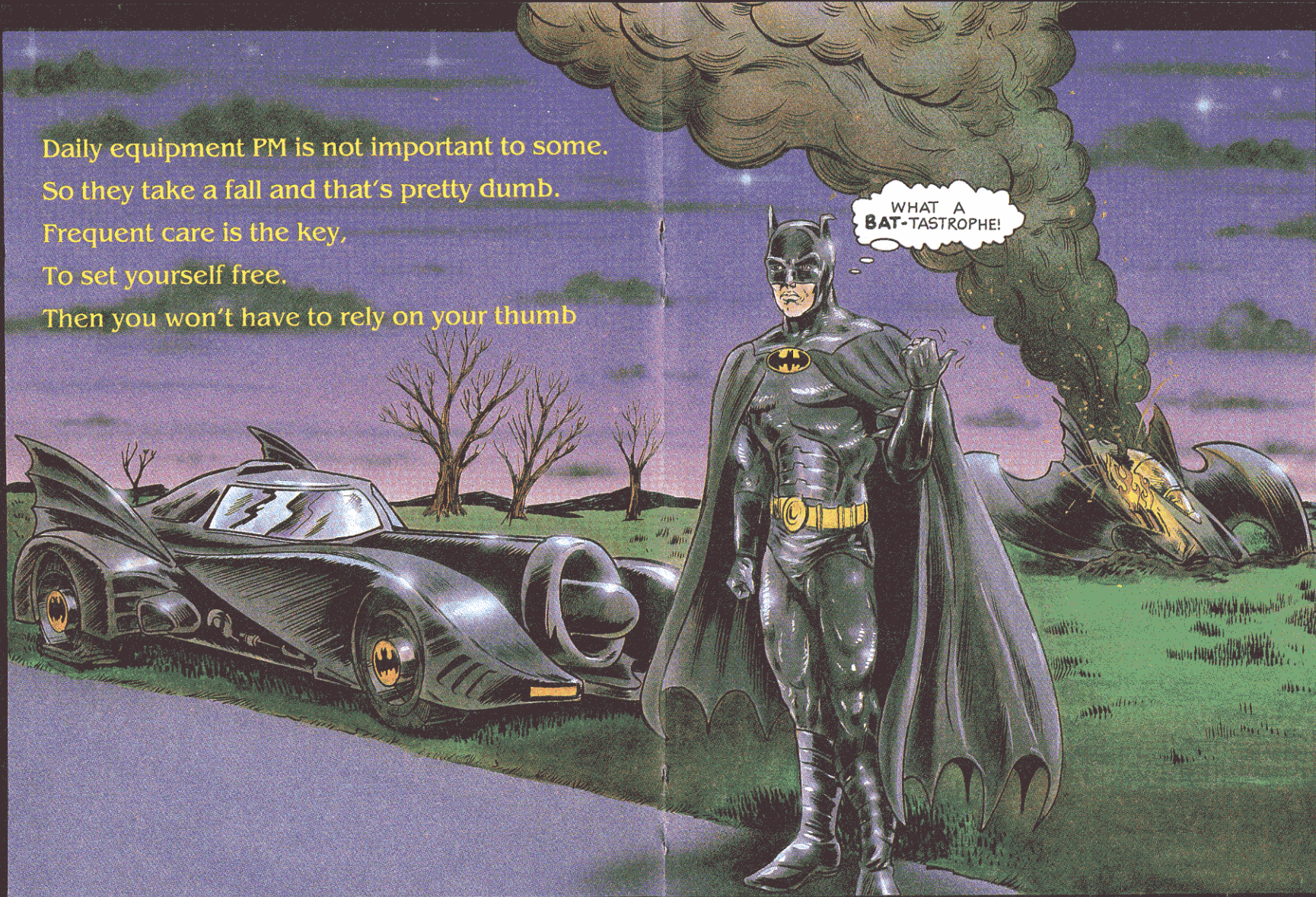
Batman stands in a desolate, hazy landscape. The Batplane is on the ground behind him, with flames and smoke rising from its engine. The sky is a mix of purple and blue, suggesting dusk or dawn.

THERE'S NO TIME TO WALK BACK TO THE BATCAVE NOW!

Batman stands in a dark, wooded area. In the background, a car with its headlights on is driving away on a road. The scene is dimly lit, with the car's lights providing the main source of illumination.

HOW WILL I EVER GET TO GOTHAM CITY IN TIME?! OH WELL, GUESS I'LL HAVE TO THUMB A RIDE!

Daily equipment PM is not important to some.  
So they take a fall and that's pretty dumb.  
Frequent care is the key,  
To set yourself free.  
Then you won't have to rely on your thumb



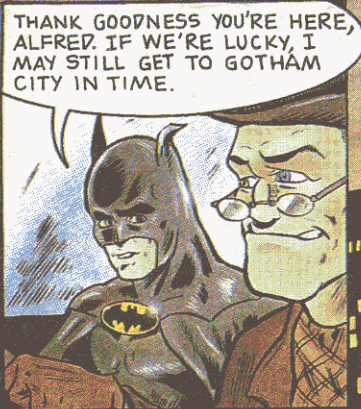
**WE HAVE THE WORLD'S BEST EQUIPMENT ...** *Take care of it*

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.



ALFRED, WHAT ARE YOU DOING HERE?! HOW DID YOU KNOW I NEEDED HELP?!

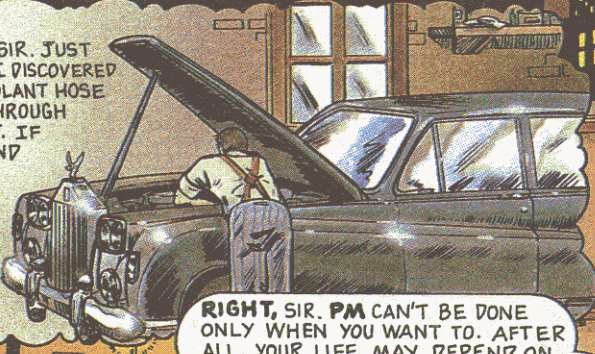
WHEN YOU LEFT WITHOUT DOING YOUR **PM**, SIR, I FEARED TROUBLE. IT APPEARS MY FEARS WERE JUSTIFIED



THANK GOODNESS YOU'RE HERE, ALFRED. IF WE'RE LUCKY, I MAY STILL GET TO GOTHAM CITY IN TIME.

YOU REALIZE, SIR, THAT A HEALTHY DOSE OF **PM** COULD HAVE PREVENTED THIS.

IS **PM** HOW YOU MANAGE TO KEEP THE LIMO IN SUCH GREAT CONDITION, ALFRED? IT **NEVER** SEEMS TO BREAK DOWN.



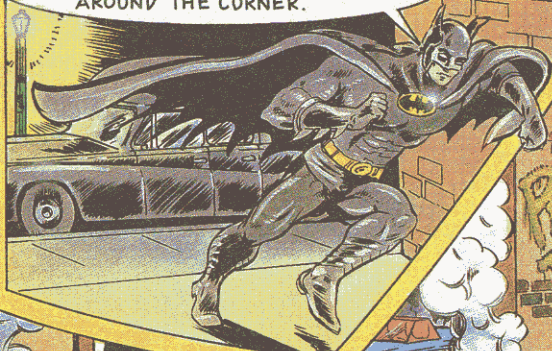
THAT'S RIGHT, SIR. JUST THIS MORNING I DISCOVERED A CRACKED COOLANT HOSE WHILE GOING THROUGH MY CHECKLIST. IF I HADN'T FOUND IT, THE HOSE MIGHT HAVE RUPTURED AND I WOULD HAVE BEEN THE ONE NEEDING HELP.

I THINK I'M STARTING TO SEE, ALFRED. **PM** MEANS **FULL-TIME** COMMITMENT.

RIGHT, SIR. **PM** CAN'T BE DONE ONLY WHEN YOU WANT TO. AFTER ALL, YOUR LIFE MAY DEPEND ON HOW WELL YOUR EQUIPMENT PERFORMS!

AH! HERE WE ARE!

THE PENGUIN SHOULD BE JUST  
AROUND THE CORNER.



PENGUIN  
RULES

KEEP YOUR CITY  
CLEAN

BAT  
WHO?

PS MORE



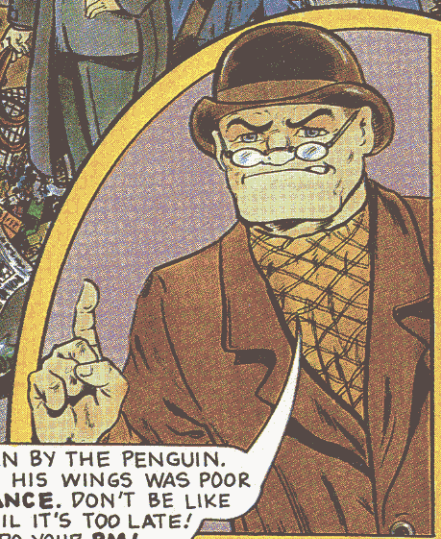
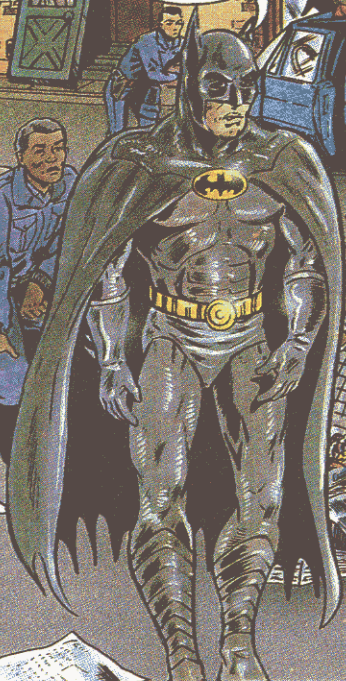


YOU  
FAILED  
US  
BATMAN.



I'M SORRY,  
COMMISSIONER.  
IT MAY NOT MEAN  
MUCH NOW, BUT  
I'VE LEARNED  
MY LESSON.

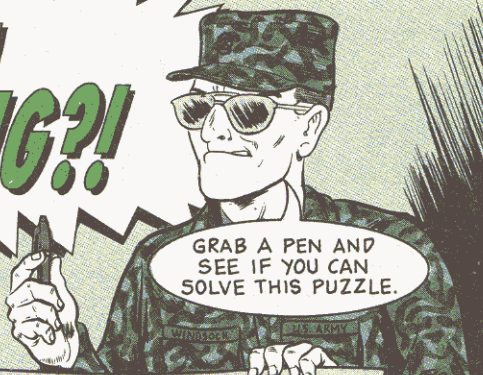
PM IS  
TOO IMPORTANT  
TO POSTPONE  
OR IGNORE!



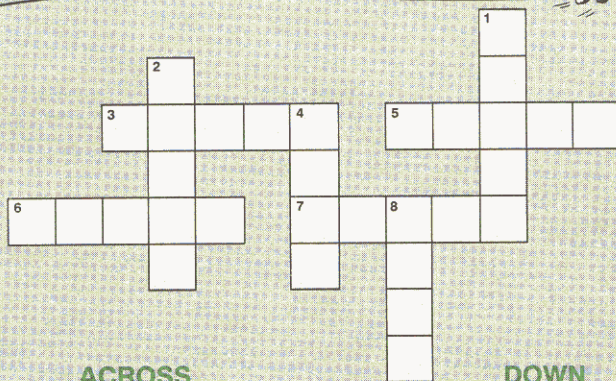
**BATMAN** WASN'T BEATEN BY THE PENGUIN.  
THE ENEMY THAT CLIPPED HIS WINGS WAS POOR  
**PREVENTIVE MAINTENANCE**. DON'T BE LIKE  
BATMAN AND WAIT UNTIL IT'S TOO LATE!  
**NOW'S** THE TIME TO DO YOUR **PM!**

**It's a Bird... It's a Plane...**

**It's a  
COWLING?!**



GRAB A PEN AND  
SEE IF YOU CAN  
SOLVE THIS PUZZLE.



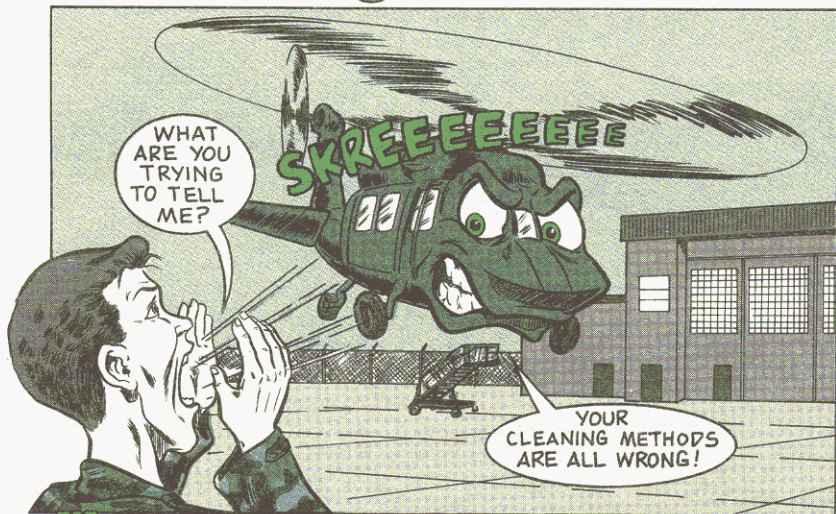
**ACROSS**

**DOWN**

- |   |  |
|---|--|
| <p>3. What secures the engine cowling of a Black Hawk.</p> <p>5. What an unsupervised, new, engine mechanic failed to secure.</p> <p>6. What the supervisor checked by banging on the cowling instead of making a visual inspection.</p> <p>7. What the pilot and copilot assumed was secure.</p> | <p>1. What the aircrew did not look at when they did their pre-flight inspection.</p> <p>2. What was left unhooked that allowed the engine cowling to fly off in flight.</p> <p>4. What you'll be in deep if this happens to you.</p> <p>8. This story's not false, but _____.</p> |
|---|--|

ANSWERS: 4 - HOLE; 8 - TRUE; 8 - LATCH. All others - LATCH.

# Cleaning the Blower

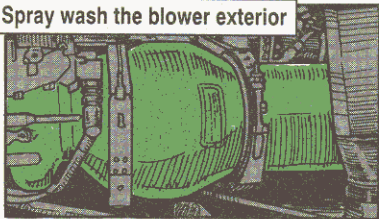


**W**orn, binding and noisy bearings in your Black Hawk's or Apache's improved particle separator blower could be telling you that your cleaning methods are wrong.

**THE OLD WAY** to clean was to dunk the T700 engine's particle separator in dry-cleaning solvent. However, this let solvent seep into the bearings, causing them to fail.

**THE NEW WAY** to clean is given in Para 5-12 of C17 to TM 55-2840-248-23. It says to flush or spray wash external surfaces with drycleaning solvent and remove grease, oil and dirt. Do not immerse the entire particle separator blower in drycleaning solvent.

Spray wash the blower exterior



When it comes to cleaning your T700's particle separator, replace immersion with flushing and spraying.

SO OUT WITH THE OLD  
AND IN WITH THE NEW!



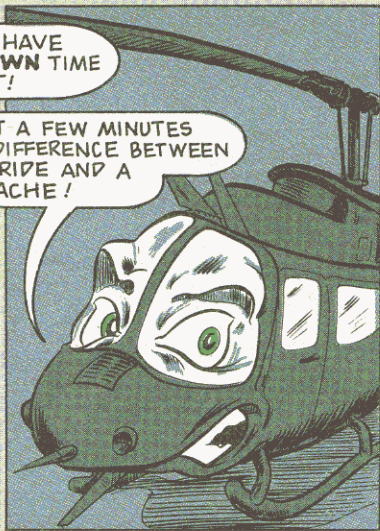


# Cool It!



OUR ENGINES MUST HAVE A SUFFICIENT **COOL-DOWN** TIME BEFORE A RESTART!

**RIGHT!** JUST A FEW MINUTES CAN MAKE THE DIFFERENCE BETWEEN A SMOOTH RIDE AND A BIG HEADACHE!



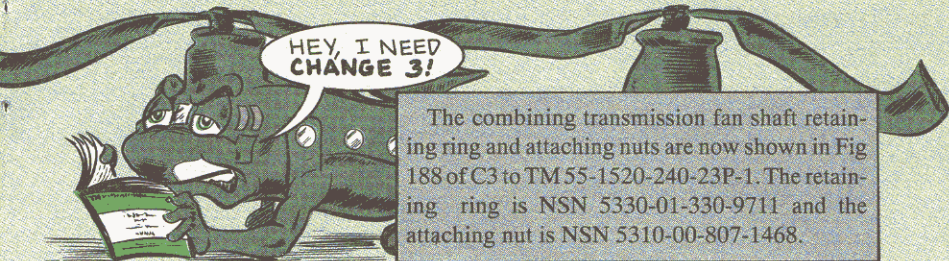
Take the Apache's engine. Without proper cool-down, you could get a bowed rotor. That makes the compressor rotor grind against the stator blades and possibly cause a compressor airfoil failure or hung start.

The rule is to not crank the engine if the TGT reading is more than 150° C (-701) or 80° C (-701C).

Or take the Kiowa's engine. Without sufficient cool-down before restart — at least a couple of minutes — carbon will build up around the labyrinth seals. Then the turbine blade tips will rub and the rotor will bind.

Giving an engine sufficient cool-down time before restarting prevents problems.

## CH-47 CombTrans Parts



HEY, I NEED CHANGE 3!

The combining transmission fan shaft retaining ring and attaching nuts are now shown in Fig 188 of C3 to TM 55-1520-240-23P-1. The retaining ring is NSN 5330-01-330-9711 and the attaching nut is NSN 5310-00-807-1468.

# Cleaning Connector Corrosion

**AIRCRAFT MULTIPIN ELECTRICAL CONNECTORS HAVE A SPECIFIC CLEANING AND CORROSION PREVENTION PATH THAT YOU MUST FOLLOW.**

Scrub a corroded connector's exterior with non-abrasive pad, NSN 7920-00-151-6120. If that doesn't do the trick, try abrasive pad, NSN 5350-00-967-5089.

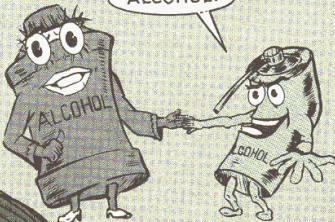
**BUT DON'T OVERDO THE MUSCLE!**

**WIPE AWAY THE CORRODED RESIDUE WITH CLEANING CLOTH, NSN 7920-01-180-0556.**

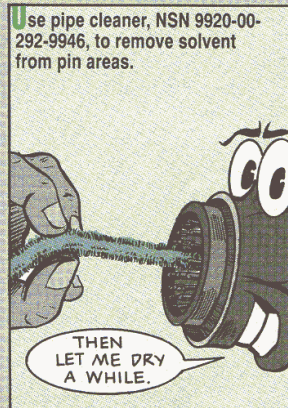
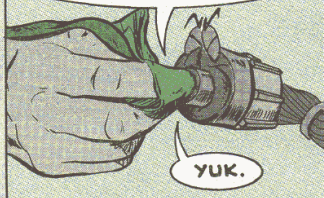


NSN 6810-00-983-8551 BRINGS A QUART OF **ALCOHOL**.

NSN 6810-00-753-4993 BRINGS AN 8-OZ **SPRAY CAN** OF THE SAME **ALCOHOL**.



**REMOVE THE EXCESS SOLVENT AND RESIDUE WITH THE CLEANING CLOTH.**



You can use NSN 8030-01-041-1596 on the outside as a substitute, but it builds up and is harder to remove later.

Tilt the connector down while coating to allow the excess to run off.

After a few minutes of drying time, wipe off any excess with the cleaning cloth.

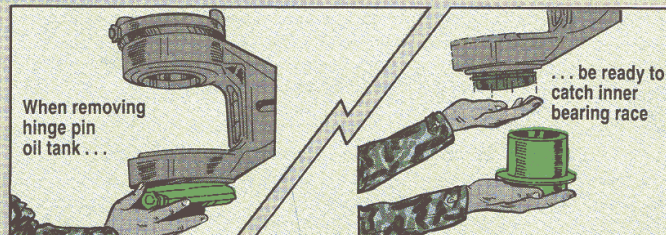
For more corrosion prevention info, read TM 1-1500-343-23, Aviation Cleaning and Corrosion Prevention Control.

To prevent future corrosion, cover the entire connector inside and out with a light coat of water-displacing corrosion preventive compound, NSN 8030-00-546-8637.

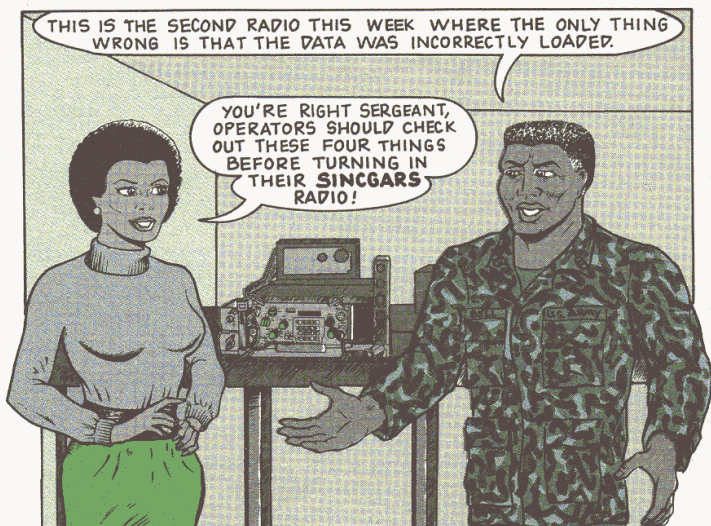
CH-47 Series ...

## The Fallen Race

**W**hen you mechanics remove the vertical hinge pin oil tanks on Chinook rotors, remember this: Once you remove the tank, nothing holds the inner bearing race in place! It will fall out and get damaged. So when you remove oil tanks, grab the inner bearing race and lower it with your hand.



# Communicate with Confidence



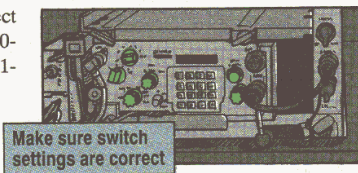
**1.** Check switch settings. The correct settings are shown in TM 11-5820-890-10-1 for RT-1523(C)/U and TM 11-5820-890-10-3 for RT-1439/VRC.

**2.** Make sure COMSEC variables are loaded, COMSEC alarms are cleared and the COMSEC

switch is set right. You won't be able to communicate if you're in a secure net and the switch is in the wrong position. COMSEC loading procedures are shown on Pages 2-38 and 2-39 of TM 11-5820-890-10-1 for RT-1523(C)/U and Pages 2-39 and 2-40 of TM 11-5820-890-10-3 for RT-1439/VRC.

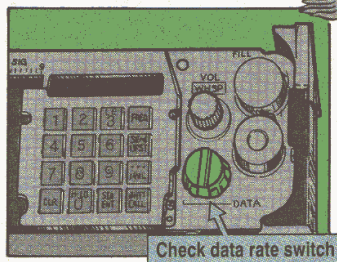
**3.** Check the data rate switch on the data device. When a data device's not being used with the radio, the data rate switch must be set to OFF.

TM 11-5820-890-10-1 gives the data rate settings for RT-1523(C)/U and TM 11-5820-890-10-3 gives them for RT-1439/VRC.



Make sure switch settings are correct

WHEN YOU OPERATE THE SINCGARS RADIO WITH DATA DEVICES, ALWAYS SELECT THE CORRECT DATA RATE.



Check data rate switch

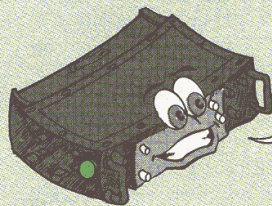


**4.** Do troubleshooting procedures in TM 11-5820-890-10-1 for RT-1523(C)/U and TM 11-5820-890-10-3 for RT-1439/VRC.

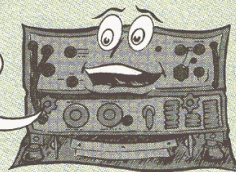
If the radio's still not working, call in your repairman.

AN/PSC-3, AN/VSC-7 Radio Sets...

## Get Upgraded Model



THANKS TO OUR UPGRADE, WE'VE GOT EXTERNAL CONTROLS!



**M**ake presetting frequencies easier by getting the newer model RT-1402A/G receiver/transmitter, NSN 5820-01-238-0559, and C-11119A/VSC-7 control-converter, NSN 5820-01-238-0561.

The upgraded RT has external controls so you can preset frequencies. That does away with having to open the RT to set or reset frequencies.

The newer control-converter has an external variable transmit power control.

You can get your old models upgraded to these newer models free of charge by calling the CECOM folks at DSN 992-4097/0511 or commercial (908) 532-4097/0511.

Or by writing:

CECOM  
ATTN: AMSEL-LC-LM-ST  
Ft Monmouth, NJ 07703-5007

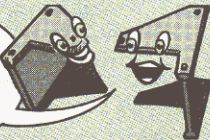
# Get a Handle on It



Leave the handle assemblies on your AN/VRC-12-series receiver-transmitter when you send it to support for repair.

Some local SOPs say to remove them. That may be convenient for support, but it won't do much to protect your equipment.

**MISSING HANDLE ASSEMBLIES LEAVE THE FRONT PANEL DEFENSELESS DURING THE TRIP!**



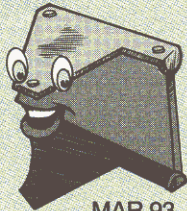
That means broken panel controls, more repair work, a longer wait and more money out of your pocket.

And that's just for openers. If you forget to replace the handle assemblies when the set comes back, the unbuttoned RT is exposed to dirt and moisture.

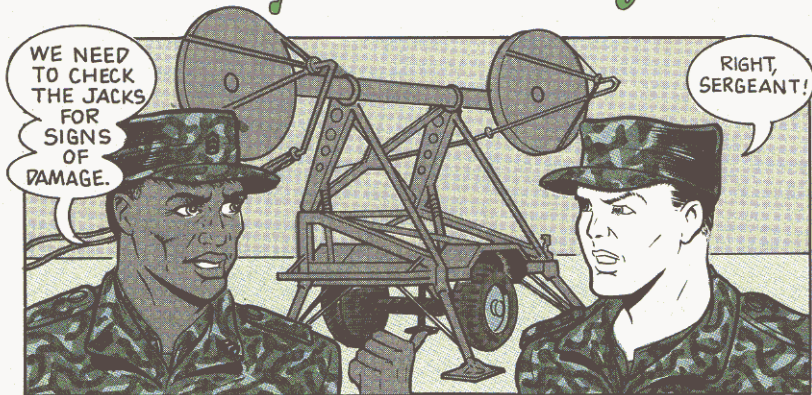
MWO 11-5820-401-20/1 authorized you to add handle assemblies to your RT. Get the right side handle with NSN 5340-00-057-7756. NSN 5340-00-089-0911 brings the left side handle. Use flathead screws, NSN 5305-00-764-0071, to fasten them down as shown on Page 3-142 of TM 11-5820-401-20-1.

If your RT doesn't have handle assemblies, take care when moving it. For instance, never set it on its panel guards. They weren't designed to support the RT's 50 pounds and they might break.

**NOW THE SITUATION IS "HANDLED!"**



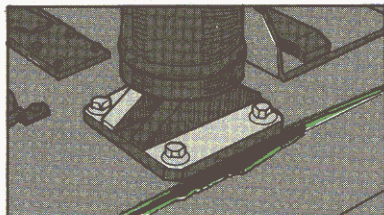
# Cranky Antenna Jack



**T**here's a limit to everything . . . especially when you raise or lower the quick reaction antennas on your AN/TRC-170(V)3 radio terminal set.

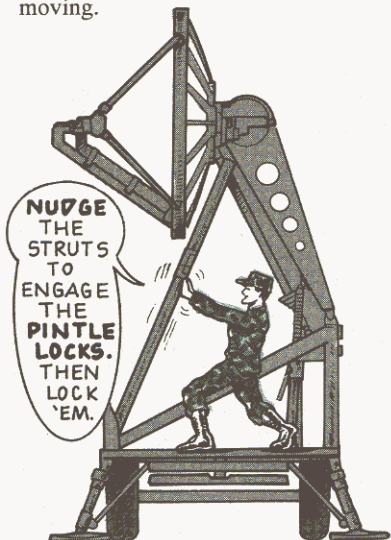
Cranking the screw jacks too far up or down damages the jacks. Next time you pull PMCS, look for these signs of trouble:

- ✓ Cracks or loose bolts at the base of the jack.
- ✓ Jack base loose or pulling away from trailer bed.



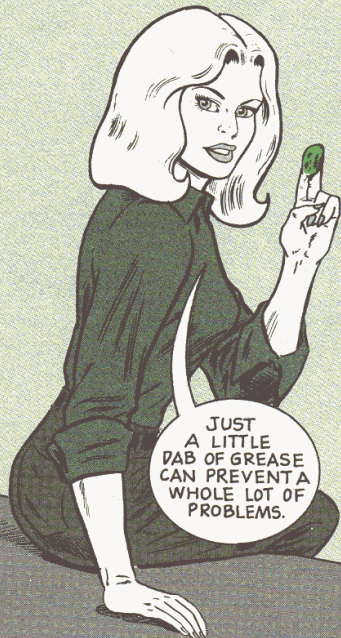
If you spot any of these problems, report them.

When you raise the antenna, crank the jacks until the folding struts stop moving.

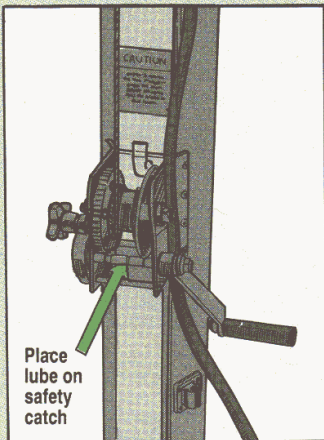


When you lower the antenna, crank until the support arms are seated in the frame — then stop.

# Lube Safety Catch



JUST A LITTLE PAB OF GREASE CAN PREVENT A WHOLE LOT OF PROBLEMS.



Place lube on safety catch

Avoid those lockups by lubing the safety catch each time you assemble the antenna and again before storage. Just squirt some silicone grease, NSN 9150-01-197-7693, on the tips of your fingers and rub it in place.

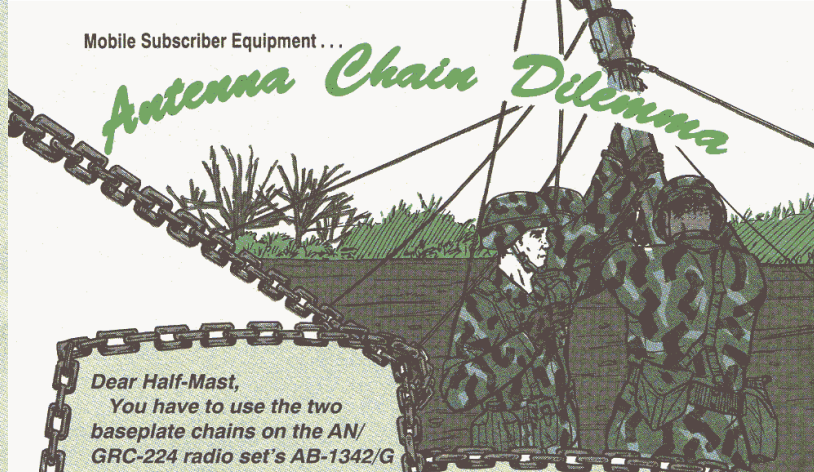
**WARNING**  
NEVER lube catch after antenna is erected.

If you accidentally release the catch, your fingers can get chewed up in the gears.

The safety catch on your AB-1339/G 15-meter and AB-1342/G 9-meter antennas is a real pain when it rusts. It's also a real danger.

If your hand slips while cranking up the antenna, the catch should lock up the gear teeth and stop the antenna from retracting. But a rusty catch freezes in place. All you can do is run for it as the antenna comes crashing down.

# Antenna Chain Dilemma



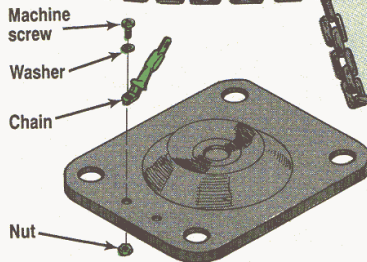
Dear Half-Mast,  
You have to use the two baseplate chains on the AN/GRC-224 radio set's AB-1342/G antenna to hoist the mast into place. But after you've raised and lowered the heavy antenna a few times, the stress tends to break the chains.

The -23P TM only lists the baseplate as a repair part, not the chains. So we're paying out more than \$89 every time a chain breaks. Is there an NSN for the chain?  
SGT L.B.K.

Dear Sergeant L.B.K.,  
The baseplate chains for the AB-1342/G are the same ones used on the AB-1339/G antenna. Get 'em with NSN 4010-01-318-8001.

You'll also need hardware to attach the chains. The washer comes with NSN 5310-01-350-0531, the nut with NSN 5310-01-350-0418. There is no NSN for the machine screw, so order it on a DD Form 1348-6 from RIC S9I using CAGE 0AM23 and part number 900070.

Half-Mast



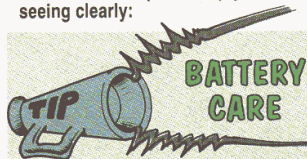
Take care of your night eyes with regular doses of PM.

Here are some tips to keep you seeing clearly:

# PM SAVES YOUR SIGHT

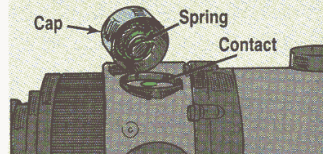
**HOLD ON TIGHT**

Your night sight is a delicate instrument and a hard fall can scramble its insides. Carry the sight with two hands. You're less likely to drop it.



**BATTERY CARE**

If your sight has a weak image or no image at all, look inside the battery assembly for dirt or corrosion that could prevent good contact.



Clean cap, spring and contact with cloth.

Use cleaner, NSN 6850-00-003-1194, on the contact. If the battery looks corroded (covered with white gunk), replace it.

Remove the battery after operations, just like it says in your TM. Left in too long, the battery can leak and corrode.



**COVER UP**

When you're not using the sight, keep the daylight cover on.



It protects the objective lens from scratches and keeps out dust and dirt.



**PM HELPS PRESERVE MY SIGHT— THAT'S WHY THEY CALL ME MR. BRIGHT!**

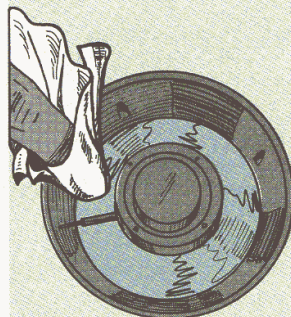
Whenever you remove the cover, put it in your pocket or storage case. That way, you won't lose it.

If the cover's face won't move—or moves by itself—tell unit maintenance. They'll adjust the cover nut. Never force the face to move. You'll break the cover stops and seals.



**CLEAN AND CLEAR**

Clean the lenses with lens tissue, cotton pads and dusting brush, the way your TM says. Never use a rag or handkerchief for cleaning. They just push the dirt around and scratch the lens.



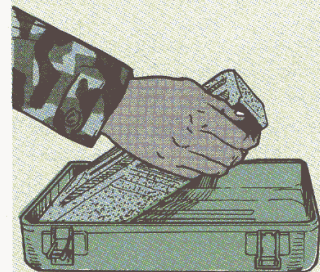
Use isopropyl alcohol, NSN 6505-00-655-8366, to clean lens. NSN 7920-00-205-0565 brings you the dusting brush. Get a pack of lens tissue with NSN 6640-00-597-6745.

Also clean the daylight cover and the eyeguard. That'll help keep dirt away from the lenses.

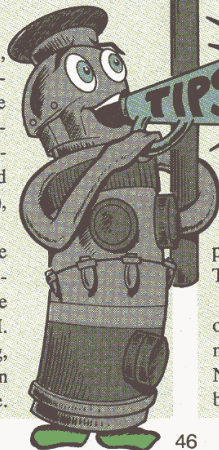


**STOW IT AWAY**

Stow the night sight in the storage case when you're through using it. The case protects the sight against hard knocks, as well as moisture that shorts out electrical components.



Water trapped in the metal case corrodes both the case and the night sight. It can also cause mildew. Keep the inside dry. Remove the foam inserts and look for moisture. Mop up water with a clean cloth and let the case and the inserts air dry.



# Pep Up the Hydraulics

THAT BIG GUY IS REALLY MOVING SLOW.

NOT EVERYONE CAN BE THE DYNAMOS THAT WE ARE.

PARN SLOW-MOVING BUCKET!

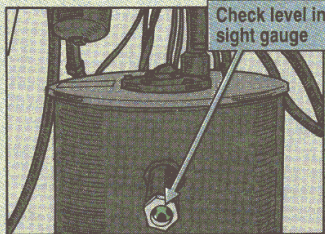


**A**re the hydraulics on your scoop loader sluggish? Slow? Dro-o-py? Not working at all?

## Pep them up like this:

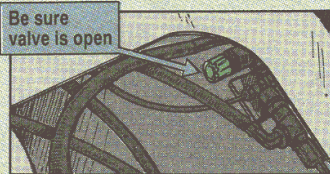
Make sure the air shutoff valve is open. If it's closed or partially closed, the hydraulic system won't work well or at all.

If the valve's open, check the oil level. On the MW24C, look through the sight gauge on the reservoir.



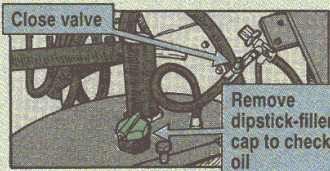
If you need to add oil, close the air shutoff valve. Then loosen the filler cap. . . slowly. . . to release pressure.

After the pressure releases, take the cap off and add oil. Replace the cap and turn the air valve back on.



On the MW24 and MW24B, check oil level like so:

1. Close the air shutoff valve.
2. Loosen the dipstick filler cap so pressure can escape.
3. Remove the cap and measure the oil level.

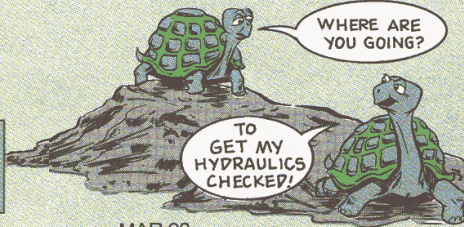


If the oil's low, add enough oil to bring the level between ADD and FULL on the dipstick. Screw on the dipstick filler cap and open the air valve.

Always be sure to open the air valve after you check the hydraulic fluid level. If the valve's closed, there'll be no air pressure to push hydraulic oil to the pump.

To make sure oil is flowing through the pump, run the engine at idle until the pump inlet pressure gauge reaches 5-15 PSI.

If that fails and the hydraulic system's still acting puny, get your mechanic to change or clean the filter.



# Windshield Washer

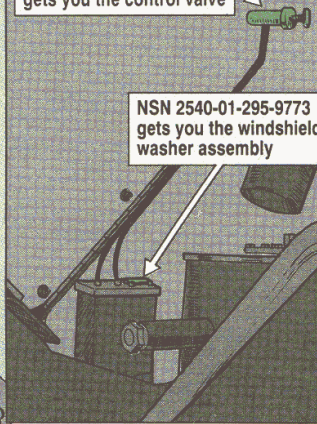
You can no longer get the MW24C's windshield washer or control valve listed in TM 5-3805-262-24P.

But that doesn't mean you have to leave your loader's windshield dry.

There is a replacement windshield washer assembly or a new control valve available. However, if either the original washer or valve goes bad, you have to replace both.

NSN 2540-01-106-7121 gets you the control valve

NSN 2540-01-295-9773 gets you the windshield washer assembly





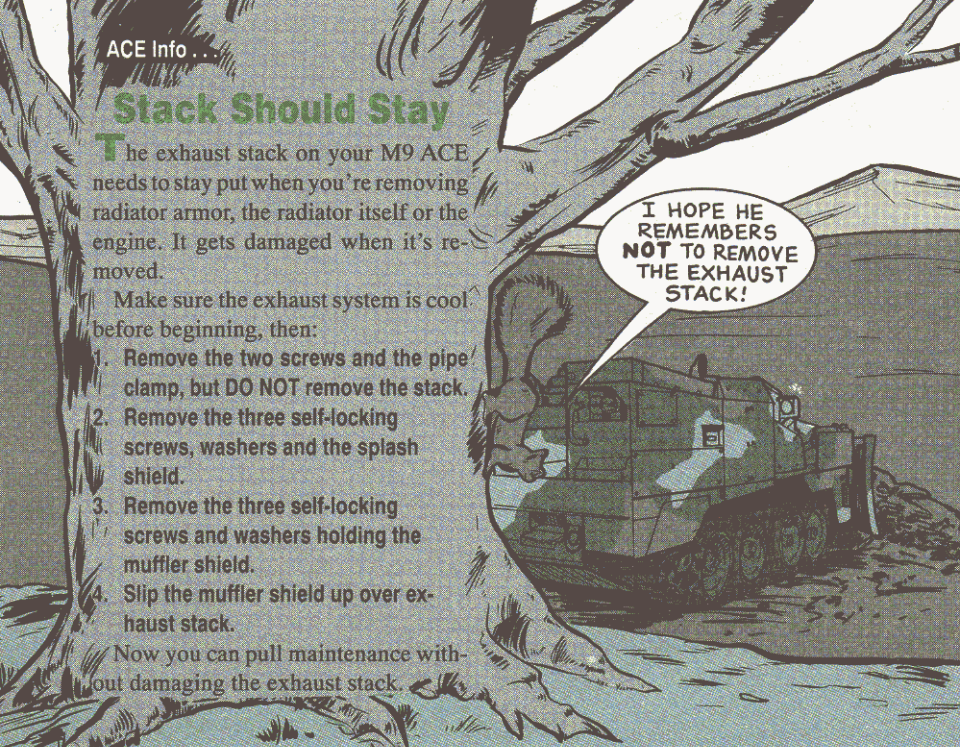
## Stack Should Stay

The exhaust stack on your M9 ACE needs to stay put when you're removing radiator armor, the radiator itself or the engine. It gets damaged when it's removed.

Make sure the exhaust system is cool before beginning, then:

1. Remove the two screws and the pipe clamp, but **DO NOT** remove the stack.
2. Remove the three self-locking screws, washers and the splash shield.
3. Remove the three self-locking screws and washers holding the muffler shield.
4. Slip the muffler shield up over exhaust stack.

Now you can pull maintenance without damaging the exhaust stack.



I HOPE HE REMEMBERS **NOT** TO REMOVE THE EXHAUST STACK!



MY HERO!

## Radiator Hose and Clamp Switcheroo

The names are switched in the M9 ACE's parts TM for the radiator hose assembly and hose clamp. The hose assembly, NSN 4730-00-908-6292, should be Item 2 and the hose clamp, NSN 4720-01-306-5704, should be Item 3. Make a note in your TM.

## Track Standards

There's a TM available that gives all you need to know about the wear limits on your M9 ACE's track. Get your pubs folks to order TM 9-2530-200-24, (Jun 89), Standards for Inspection and Classification of Tracks, Track Components and Solid-rubber Tires.

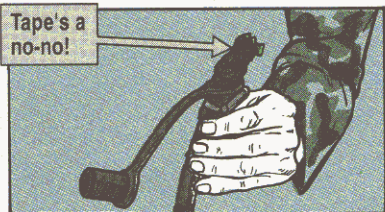
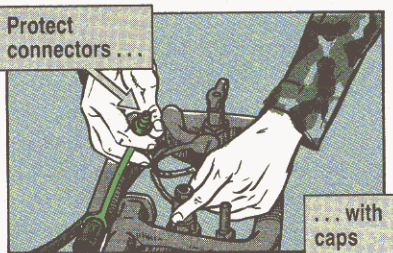


## Connector Covers are Pushovers

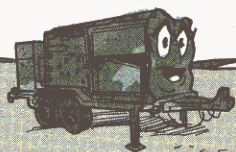
**W**hen you disconnect the chemical feed lines from the cans on your 600 GPH reverse osmosis water purification unit, be sure to put the dust caps over the chemical connectors. Dust, dirt and all kinds of gritty stuff get into the connectors when they're left uncovered.

The dust caps are foolers. They seem too large to fit snugly over the connectors, but they're not. They'll snap right in place if you'll work them down over the groove on the connectors.

Never use tape over the connectors to make the caps fit. The sticky residue that's left when the tape's removed attracts dirt.



## Gauge Fix



**WAIT!  
DON'T GO!  
YOU CAN BE  
FIXED!**

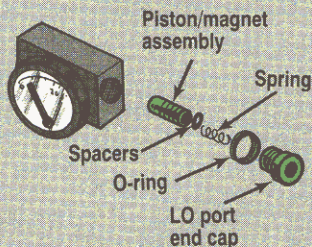


**I-I-I-I  
CAN?**

**Y**ou can fix a bum pressure gauge on your 600 GPH ROWPU. Just replace the piston/magnet assembly on those pressure differential gauges used for the multimedia gauge, cartridge gauge and R.O. vessel gauge.

Use PN SD12-2-A when you order the piston/magnet assembly for ROWPUs with serial numbers under 1500, and PN SD12-5-A for serial numbers 1500 and up. Order either assembly on a DD Form 1348-6 with CAGE 30839 from RIC A12.

To install the new piston/magnet assembly, remove the low port end cap, the spring and spacers. Replace the assembly and then reinstall the spacers, spring and end cap.



# Alarmin'gly Good PM

If your M8A1's M43A1 detector isn't in alarmingly good shape, it can't alert you to chemical danger. But there are several things you can do to keep your alarm as sensitive as a bloodhound on the trail:

## PMCS

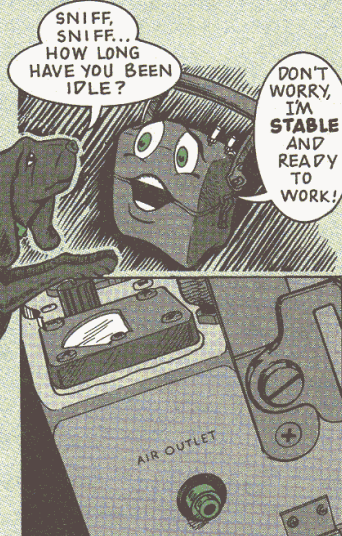
Don't get excited during PMCS if the detector meter doesn't reach the green zone after 15 minutes of operation.



If the M43A1's been idle for more than a month, it takes longer—as much as 40 minutes—for the pump to stabilize.

The air outlet cap stretches through use. It leaks and the M43A1 fails the flowmeter test. Use your finger instead of the cap to better seal the outlet.

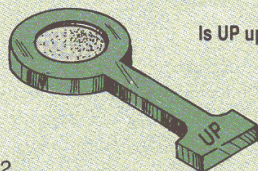
Wear a glove to protect against radiation.



**Air outlet loose? Report it! It will leak**

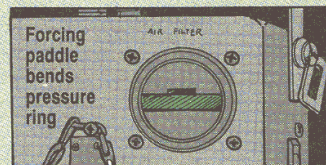
Never leave a test paddle in an M43A1 longer than two minutes and never try more than two paddles. Otherwise, you contaminate the detector cell and it takes hours to purge the cell.

When you remove a test paddle, immediately put it back in its foil wrapper. That lets you reuse the paddle.



Is UP up?

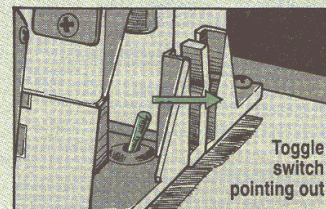
Never force either test paddles or air filters in the air inlet. The inlet's pressure ring is easily bent. If a paddle doesn't slip in easily, make sure UP is up on the paddle.



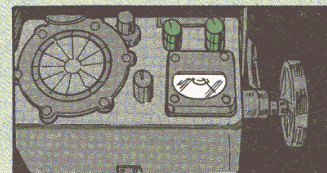
IF THAT DOESN'T WORK, GET A NEW PADDLE. NO LUCK? TELL YOUR NBC NCO.

If the ball in the flow meter doesn't rise far enough during the air flow test, make sure the rainshield adapter and the air filter cap are tight. If either is even a little loose, the alarm loses air pressure.

If the M43A1's not responding to tests, eyeball the toggle switch on the chassis beside the pump module. The switch should point out, away from the pump module. Flip it right if it's wrong.



If the remote binding posts stick or are weak, report them. Sticking posts make it difficult to connect the alarm. Weak ones make for a bad connection and an unreliable alarm.

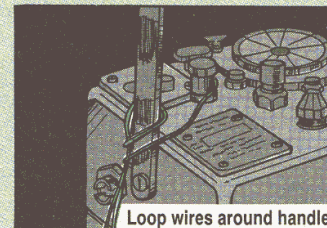


**Binding posts weak or sticking?**

## In the Field

All this PMCS will be for nothing if you don't secure your M43A1 for the road. If it spends the trip bouncing around, things like the handle and binding posts get bent out of shape.

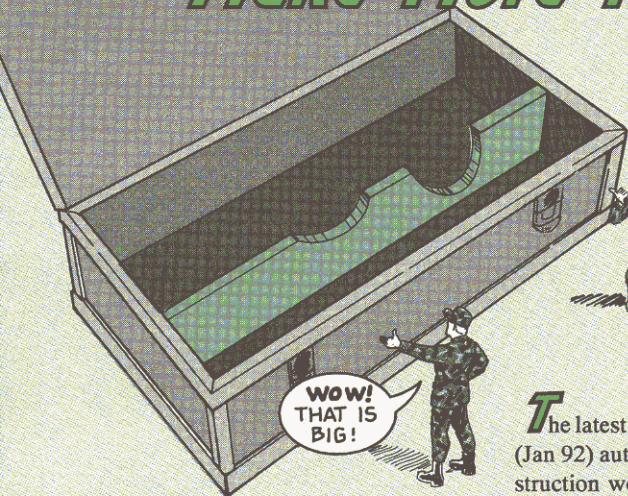
When you remote the detector to the alarm, tie off nine inches of the wire at the loop on the side.



If the loop is missing, wrap the wire around the detector handle. That prevents someone tripping on the wire and breaking the connection.

Carpenter's Tool Kit...

# Make More Room



**T**he latest edition of SC 5180-90-N08 (Jan 92) authorizes you to add six construction worker's aprons to the engineer squad carpenter's tool kit, NSN 5180-00-293-2875, LIN W34648.

Problem is, the tool chest is not big enough to hold all the aprons and tools. You need to make more room by removing all the inserts except one. Knock them out with a chisel and hammer. Smooth over rough edges with a rasp or file.

Leave the center insert — the one that runs the length of the chest — intact. It helps keep the tool chest stable.

## NSNs for Maul Handles

If you break the hickory handle on your wood maul, NSN 5120-00-926-7116, order a new one. Here's how:

### Maul eye

15/16 x 15/16

13/16 x 17/16

### NSN 5120-00-

288-6564

266-7023

## PACKAGING — THE BASICS

THIS PAMPHLET CAN HELP  
MAKE YOUR PACKAGING TASKS  
EASIER WHEN YOU RETURN ITEMS  
FOR REISSUE OR REPAIR.  
IT'S A MUST  
FOR EVERY  
SUPPLY  
ROOM!



This pamphlet shows what equipment or tools you need to complete your packaging job with instructions on how to order or make them.

Also, get a list of packaging publications that gives a short explanation of what's in them by writing to:

LOGSA-PSCC  
ATTN: AMXLS-TP-P  
11 Midway Rd  
Tobyhanna, PA 18466-5097

or call:

DSN 795-7150  
COMM (717) 894-7150

SMART...

## Send In Your Suggestions—

If you have a good idea that would improve the Army's maintenance or logistics system, jot it on a DA Form 5533 or a piece of paper. Give the current procedure and your idea to improve it!

Check out Chapter 10 of DA Pam 738-750 in the Maintenance Management Update for more information about SMART.

Be sure to include your name, address and telephone number.

Send your SMART suggestion to:

SMART  
US Army Combined Arms  
Support Command & Ft Lee  
ATTN: ATCL-CFI-S  
Ft Lee, VA 23801-6000

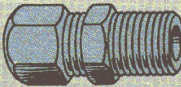
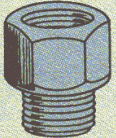
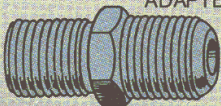

If your idea is approved, it could put money in your pocket.


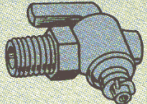
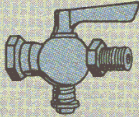
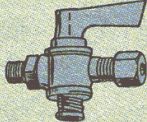
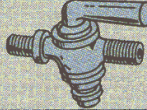

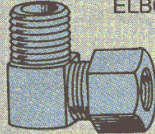
**SMART IS  
LOOKING FOR  
WAYS TO IMPROVE  
MAINTENANCE, SUPPLY,  
TRANSPORTATION,  
READINESS...  
YOU NAME IT!**

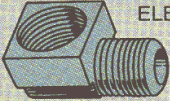
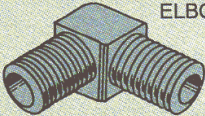
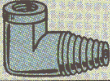
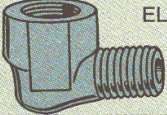







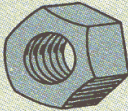
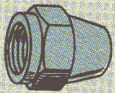





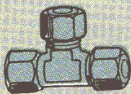
# Get Your Fittings Here

HERE'S A RUNDOWN OF THE TUBE AND PIPE BRASS FITTING KIT, NSN 4730-00-470-6625, IN THE NO. 1 AND NO. 2 COMMON SHOP SETS...

	Size (inches)	Qty in kit	NSN
	ADAPTER		
	1/8 x 1/8	2	4730-00-288-9928
	3/16x 1/8	2	4730-00-851-1940
	1/4 x 1/8	4	4730-00-278-4357
	1/4 x 1/4	2	4730-00-278-4575
	5/16x 1/8	3	4730-00-270-4613
	ADAPTER		
	3/16x 1/8	6	4730-00-278-8253
	1/4 x 1/8	6	4730-00-288-9930
	5/16x 1/8 (60° flare)	6	4730-00-011-4919
	5/16x 1/8 (42° flare)	6	4730-00-278-4592
	1/4 x 1/8	6	4730-00-540-2612
	ADAPTER		
	1/4 x 1/8	6	4730-00-900-3296
	1/4 x 1/4	6	4730-00-266-0533
	5/16x 1/8	6	4730-00-266-0535
	5/16x 1/4	4	4730-00-266-0536
	3/8 x 1/4	6	4730-00-266-0534
	BUSHING		
	1/4 x 1/8	3	4730-00-277-9386
	3/8 x 1/4	3	4730-00-202-6491

	DRAIN COCK		
	1/8 (Int seat)	2	4820-00-752-9040
	1/8 (Ext seat)	2	4820-00-684-0880
	DRAIN COCK		
	1/8	1	4820-00-555-9761
	1/4	1	4820-00-287-4268
	SHUTOFF COCK		
	1/8 x 1/8	1	4820-00-274-3646
	SHUTOFF COCK		
	1/4 x 1/8	1	4820-00-812-9029
	5/16 x 1/8	1	4820-00-430-5602
	SHUTOFF COCK		
	1/4 x 1/8	1	4820-00-263-3024
	1/2 x 1/8	1	4820-00-272-3360
	COUPLING		
	1/8	3	4730-00-287-1614
	1/4	3	4730-00-223-9255
	ELBOW		
	1/8 x 1/8	1	4730-00-263-4976
	3/16 x 1/8	2	4730-00-278-0187
	1/4 x 1/8	6	4730-00-287-1766
	1/4 x 1/4	6	4730-00-277-7621
	5/16 x 1/8	6	4730-00-278-4740
	5/16 x 1/4	4	4730-00-278-4741
3/8 x 1/4	4	4730-00-263-4983	

	ELBOW	5/16 x 1/8 3/8 x 1/8	4 4730-00-640-1051 6 4730-00-277-8269
	ELBOW	1/4 x 1/8 1/4 x 1/4 5/16 x 1/8 5/16 x 1/4 3/8 x 1/4	3 4730-00-254-6211 2 4730-00-254-6225 2 4730-00-288-9440 6 4730-00-254-6226 3 4730-00-902-8991
	ELBOW	1/4 x 1/8 5/16 x 1/8	2 4730-00-767-8076 2 4730-00-011-4920
	ELBOW, STREET	1/8 1/4	2 4730-00-053-0266 2 4730-00-277-5553
	INVERTED NUT	1/8 3/16 1/4 1/4 (Ford nut for gas) 5/16	2 4730-00-278-5490 6 4730-00-278-5551 6 4730-00-142-1593 3 4730-00-288-8567 6 4730-00-288-8011
	INVERTED NUT (STEEL, ZINC PLATED)	3/16 1/4 5/16	54730-00-288-9390 54730-00-013-7397 54730-00-013-7398
	NIPPLE, PIPE	1/8-27x3/4 1/4-18x15/1	6 4730-00-230-1996 6 4730-00-222-1837
	NIPPLE, TUBE (WITH NUT AND SLEEVE)	3/16 1/4 3/8	1 4730-00-289-1622 2 4730-00-278-8717 3 4730-00-289-0782

	NIPPLE, TUBE	5/16 3/8	6 4730-00-764-8770 4 4730-00-289-1074
	NUT	1/8 3/16 1/4 5/16 3/8	5 4730-00-067-9801 6 4730-00-043-3750 12 4730-00-011-4627 12 4730-00-278-8829 12 4730-00-287-1537
	NUT	1/4 5/16 3/8 1/2	3 4730-00-011-6452 6 4730-00-011-8538 6 4730-00-902-8990 4 4730-00-054-2572
	PIPE PLUG	1/8 1/4	6 4730-00-011-3175 6 4730-00-011-2578
	REDUCER	1/4x1/8	2 4730-00-529-1487
	COMPRESSION SLEEVE	1/8 3/16 5/16 3/8 1/2	15 4730-00-278-8761 20 4730-00-701-7737 24 4730-00-278-8764 24 4730-00-278-8765 24 4730-00-054-2571
	TEE	1/8x1/8x1/4	2 4730-00-274-9258
	TEE	1/8x1/8x1/8	1 4730-00-288-9482
	TEE	3/16x3/16x3/16 1/4x1/4x1/4	2 4730-00-287-1689 2 4730-00-424-5864

## New Phone Numbers

The General Services Administration (GSA) has some new phone numbers and a new address for folks needing Material Safety Data Sheets (MSDS) on GSA-managed hazardous materials. To get MSDSs, you'll need to access GSA's database, Fast Action Safety Data Transmission.



HERE ARE THE NEW PHONE NUMBERS TO ACCESS THE DATABASE ...

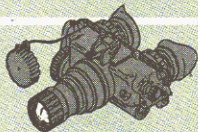
DSN 327-2710  
Toll-free 1-800-795-7925

The commercial number, (703) 305-6360, remains the same.

IF YOU NEED TO FAX INFO TO GSA'S MSDS OFFICE, USE COMM (404) 331-2066, OR YOU CAN WRITE TO...

General Services Administration  
Federal Supply Service (4FQ)  
ATTN: MSDS Coordinator  
401 W. Peachtree St., Suite 1940  
Atlanta, GA 30365-2550

NVDs...



## They're Nightwalkers

Seems a lot of night vision devices (NVDs) are taking a hike—late at night. To avoid paying the high replacement cost—\$4,000 to \$8,000—keep yours under lock and key.

AR 190-51 tells you to keep NVDs under double barrier protection. Some units lock them in their arms room inside a locked building. If your arms room is too small to store both weapons and

NVDs, make sure that wherever you store them meets the requirements in Appendix B of AR 190-51. And when you take 'em to the field, keep 'em locked in a storage box inside a locked combat vehicle, or some such.

Regardless of how you secure NVDs at home or away, you're responsible for them. Keep them safe and secure!



# Connie's POST SCRIPTS

## M1A1 Stub Base Catcher

A new mounting bracket for the stub base catcher on your M1A1 tank comes with NSN 5340-01-341-4658. Catcher, NSN 1015-01-185-0742, listed in some parts TMs, has sharp edges that make it unsafe.

## Bradley Pump Handle NSN

The BII list in TM 9-2350-284-10-1 gives the wrong part number for the M2A2/M3A2's hydraulic pump handle. The correct part number is 12338449, which crosses to NSN 5340-01-318-0196. Note both until the next TM change.

## M105 Tan Cover

If you're authorized sand-colored trailers, you can order a fitted tan cover, NSN 2540-01-325-1863, for your M105-series cargo trailers. Other units use the green cover, NSN 2540-00-205-0603, per TM 9-2330-213-14&P.

## Brass Fitting Cabinet

NSN 4730-01-112-3240 brings a cabinet for the brass fitting kit in your No. 2 Common tool set.

## M113 APC Revisited

The story on Page 61 of PS 482 says it's okay to operate your M113 personnel carrier without the engine compartment access cover. That's wrong. A missing cover makes the vehicle NMC. As long as the cover is in place, even if it leaks, your carrier is good to go.

## Seal Plastic-Coated Canvas

Stop seam leaks on the plastic-coated cargo covers on HMMWV, CUCV and M880 trucks, and M871/M872 trailer tarps with adhesive. NSN 8040-00-262-9028 gets a pint, NSN 8040-00-262-9031 a quart, and NSN 8040-00-281-1972 a gallon. Just coat leaking seams as needed.

## Trailer Brake Cable NSN

NSN 6150-01-168-7906 gets the hand brake cable for M101A2 and M116A2 3/4-ton trailers. The parts info in the TM is wrong.

## Clips for Radio Bag

NSN 5340-00-753-5580 gets a keeper to hook your AN/PRC-77 radio set's CW-503 cotton duck bag to a web belt or harness. It's the same keeper for almost all items hung from the individual equipment belt in TM 10-8400-203-23.

## M939A2 Starter NSN

To get the starter for M939A2-series 5-ton trucks, use NSN 2920-01-031-9027. The parts info in TM 9-2320-358-24&P is wrong.

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

Would You Stake Your Life <sup>right now</sup> on  
the Condition of Your Equipment?

U.S. GOVERNMENT PRINTING OFFICE: 1993 0-750-062

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

STAY ON  
THE RIGHT  
ROAD!

# FOR SFDLR INITIAL FAILURE CLAIMS... JUST FOLLOW THE YELLOW BRICK ROAD!

The unit  
submits an  
initial failure claim  
on SF 368, Quality  
Deficiency Report (QDR)

SF 368

YOU'RE  
ON THE RIGHT  
TRACK!

COME THIS  
WAY, DEARIE.

NO

SF 368

LAR decides whether  
the claim is valid

If it's not an initial  
failure, the claim is  
processed as a  
normal QDR.

MOVE ON  
DOWN THE ROAD.  
I DON'T WANT YOU  
TO WAIT AROUND  
AND RUST.

SEE, THERE  
WAS NO REASON  
TO BE AFRAID!

Supply  
issues or  
requisitions  
a replacement  
item or starts  
credit process.

SF 368

DD FORM  
1348-1

If it's a  
valid initial  
failure, the  
unit turns in  
the item on  
DD Form 1348-1  
or DA Form 2765-1  
along with the  
QDR to supply.