

Issue 593

PS

April
2002

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-593

Approved for
Public Release;
Distribution is
Unlimited

CAPTAIN...
ACCORDING TO
THE UNIVERSAL
TRANSLATOR, THEY
DON'T WANT TO
HEAR ANYTHING
ABOUT **PM!**

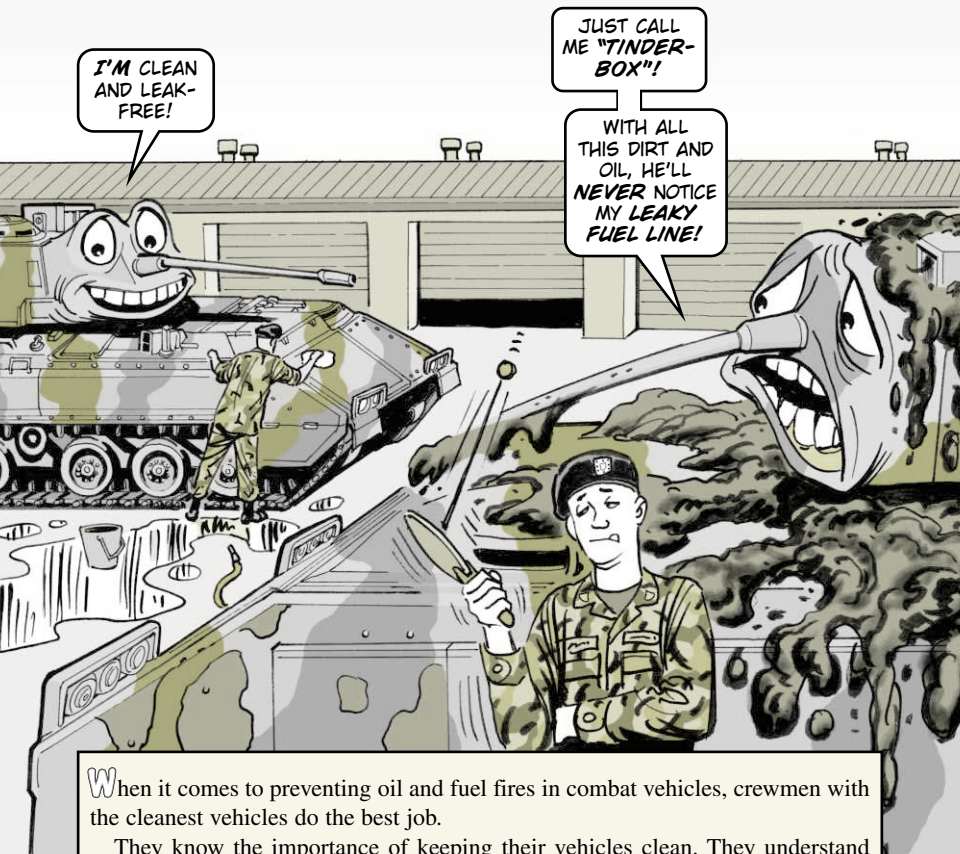
IT'LL
BE THEIR
LOSS.

**SCOTCHIE
...BEAM
US UP!**

JOE
KUBER

See
Page 27

JOIN THE CLEAN TEAM



When it comes to preventing oil and fuel fires in combat vehicles, crewmen with the cleanest vehicles do the best job.

They know the importance of keeping their vehicles clean. They understand that dirt, grease, oil and debris not only provide fuel for a fire, but can also cover up serious problems.

That's why they keep a good supply of clean rags handy. As they do their before-operation PMCS, they take the time to clean up oily messes that can hide damage to hoses and fluid lines.

They're the ones who spot leaks and get them fixed before they create a fire that can wipe out a vehicle—and its crew.

How about you? Is cleanliness important to you or is your vehicle just a fire waiting for a match to light it?

5-YEAR SERVICE PREPARATION

HURRY!
WE GOTTA
GET THIS
DONE, LIKE
NOW!

WHAT
GIVES?

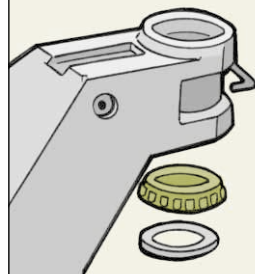
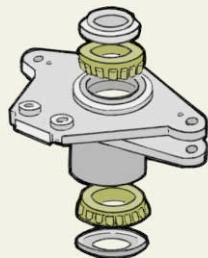
5 YEARS
ARE ALMOST
UP... AND
YOU GUYS
DIDN'T DO
SQUAT!

TIME WAITS FOR
NO MAN AND IT
CERTAINLY WON'T
WAIT FOR SERVICES
TO BE PERFORMED
ON M1000 HET
TRAILERS.

ESPECIALLY THE
5-YEAR SERVICE ON
UPPER AND LOWER
STEERING PLATE
BEARINGS AND
LOWER SUSPENSION
BEARINGS.

THIS SERVICE IS DIFFICULT AND TIME-
CONSUMING, BUT IT IS VITAL AND **MUST**
BE DONE WHEN THE TRAILER HAS BEEN IN
SERVICE 5 YEARS—AND EVERY 5 YEARS
THEREAFTER, GIVE OR TAKE 6 MONTHS.

5-year service is for upper and lower steering
plate bearings and lower suspension bearings



"IF YOUR TRAILERS
ARE **STILL** SHORT
OF THEIR FIRST 5-
YEAR SERVICE, USE
THE TIME TO GET
PREPARED FOR IT."

"IT WILL HELP
MAKE THE JOB
EASIER AND LESS
LIKELY TO CAUSE
MISSION HAVOC
BECAUSE THE
SERVICE SLIPPED
UP ON YOUR UNIT."

HERE ARE
MESSAGES AND A
PUBLICATION THAT
YOU NEED.

★ TACOM Maintenance Advisory
Messages (MAM) 01-001 and
01-006 for the M1000 HET

★ 5-Year Service
Supplemental Booklet
(M1000 Semitrailer), Feb 01

THE MAMS PROVIDE INFORMATION ON THE SERVICE
AND WHY IT IS NECESSARY. THE SUPPLEMENTAL
BOOKLET PROVIDES IMPROVED METHODS FOR
INSPECTION AND SERVICING OF THE BEARINGS.

Lubricate all
fittings underneath
the trailer platform
at least monthly
as required in
TM 9-2330-381-4

"HOWEVER, THE SUPPLEMENTAL
PROCEDURES WILL **ONLY**
BENEFIT UNITS THAT HAVE
BEEN FOLLOWING THE SERVICE
AND LUBE INFO IN THE TM."

"IF YOU ENCOUNTER ANY RUST OR
HARDENED GREASE IN GREASE
PASSAGES OR CAVITIES, COMPLETE
DISASSEMBLY AND CLEANING IS
REQUIRED, AS DIRECTED BY THE TM."

MAMS ARE AVAILABLE ON
THE AEPS WEB SITE AT
<http://aeps.ria.army.mil>. THE
SITE IS PASSWORD-PROTECTED,
BUT YOU CAN APPLY FOR ONE
AT THE SITE.

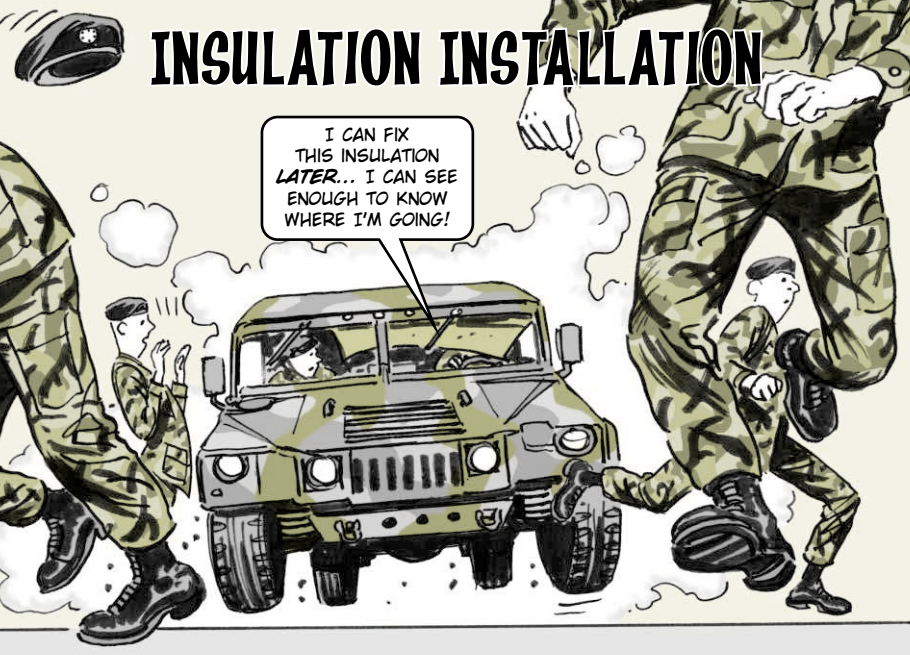
THE BOOKLET IS
AVAILABLE ON THE AEPS
WEB SITE AND FROM
wisel@tacom.army.mil
DSN 786-8920,
(586) 574-8920.

"MAKE SURE ALL PLATFORM
GREASE FITTINGS ARE LUBED
MONTHLY AS DIRECTED IN STEP 13,
PAGE 3-11, TM 9-2330-381-14."

"THE REMOVAL OF PINS AND BUSHINGS AT
THE 5-YEAR SERVICE IS MUCH EASIER IF
THEY HAVE BEEN LUBED REGULARLY—AND
ALMOST IMPOSSIBLE IF THEY HAVEN'T."

HMMWV...

INSULATION INSTALLATION

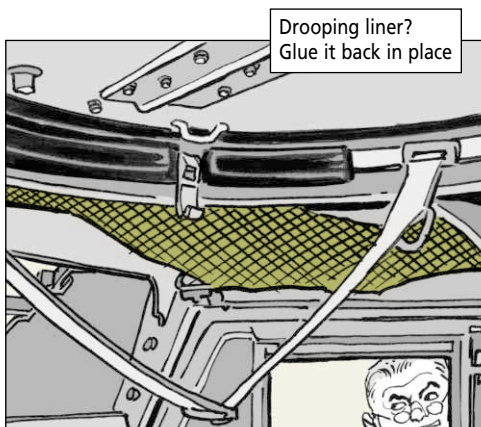


The self-sticking backing on the insulation liner in armored HMMWVs isn't always up to the job. It often doesn't stick around long, letting the liner droop.

If your hardtop HMMWV has a droopy liner, glue it back in place with adhesive primer, NSN 8040-00-826-3535.

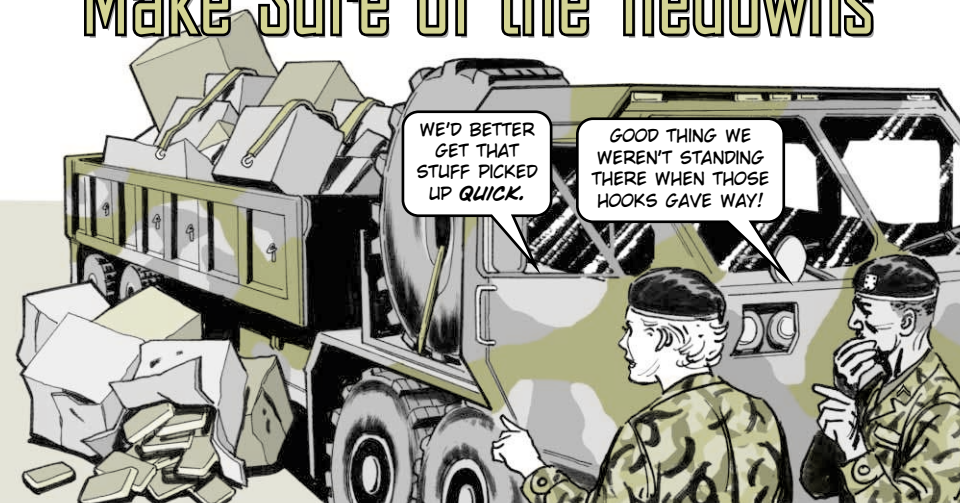
Mix up the adhesive according to instructions and apply it to the roof with a brush. Then hold the liner against the roof for about 3 minutes while the primer dries.

Next time you have to install entire liner pieces, spread some primer on the roof before you install the liner. It'll stay put longer.



HEMTT...

Make Sure of the Tiedowns



Soldiers, do not use the side panel tiedown hooks to tie down cargo on HEMTT cargo trucks.

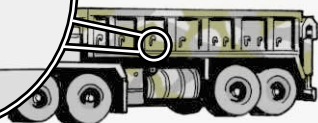
The side panel tiedown hooks are only strong enough to hold cargo covers in place, not cargo.

The tiedowns will break under a heavy load, which can cause injury or death to soldiers and damage cargo or the truck.

Only the tiedown eyes in the cargo bed floor are strong enough to secure cargo. The floor-mounted eyes are designed to hold as much as four missile pods or eight pallets.



Cargo cover (tarp) tiedowns are not strong enough to secure cargo

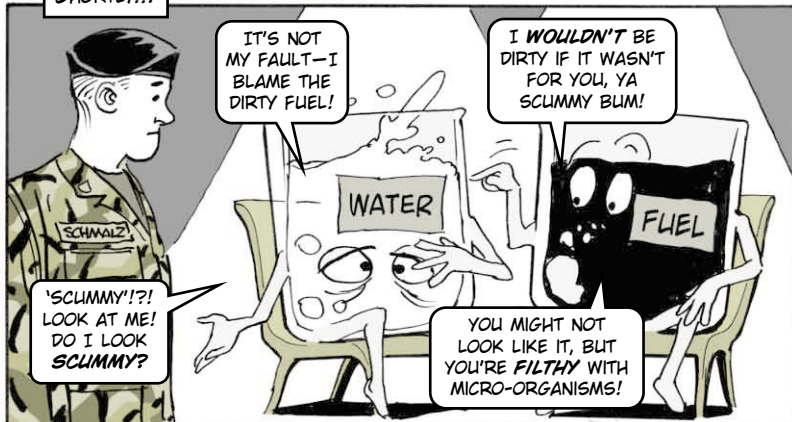


When hauling cargo, use cargo floor tiedowns

NO GROWTH NEEDED HERE



SHORTLY...



DIRTY FUEL GETS THE BLAME FOR A LOT OF MAINTENANCE PROBLEMS WITH VEHICLES AND OTHER ENGINE-POWERED EQUIPMENT.



BUT THE **MAIN CAUSE** OF DIRTY FUEL IS **WATER**.



WATER CAN GET INTO FUEL BY CONDENSATION, FROM A LEAKY FUEL CAP OR BECAUSE OF CONTAMINATED SUPPLIES.

ONCE WATER'S IN THE FUEL, MICROORGANISMS GO TO WORK BREAKING DOWN THE FUEL, THE TANK COATINGS AND SEALANTS, AND FUEL SYSTEM SURFACES.



THE STUFF THAT'S LEFT CLOGS FILTERS, LINES AND ENGINE INJECTORS.



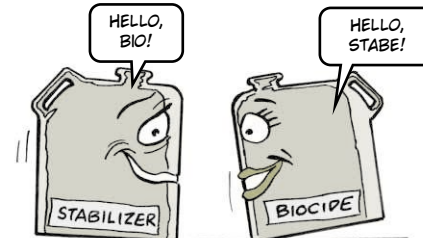
ONCE CRUD FORMS, IT TAKES A THOROUGH FUEL TANK CLEANING TO GET IT ALL OUT.



CHECK OUT YOUR VEHICLE TMS FOR HOW-TO INFO. IF YOUR TM DOESN'T HAVE THE INFO, A GENERAL REFERENCE CAN BE FOUND IN FM 10-67-1, CONCEPTS AND EQUIPMENT OF PETROLEUM OPERATIONS (CAPR 98). CHECK OUT SECTION IV OF CHAP 12.

AFTER THE SYSTEM'S CLEAN, WORK ON KEEPING IT CLEAN WITH A FUEL STABILIZER ADDITIVE.

THE ADDITIVE IS REALLY A MIXTURE OF **BIOCIDE** AND **STABILIZER**. GET A 5-GAL CAN OF BIOCIDES WITH NSN 6840-01-173-6940 AND A 5-GAL CAN OF STABILIZER WITH NSN 6850-01-167-4789.



YOU CAN GET A 55-GAL DRUM OF BIOCIDES WITH NSN 6840-01-041-0098 AND A 55-GAL DRUM OF STABILIZER WITH NSN 6850-01-167-4788.

THE ADDITIVE SLOWS FUEL BREAK-DOWN, KILLS MICROBIAL GROWTH AND INHIBITS CORROSION.

USE A MIX OF 1 GALLON OF **EACH PRODUCT** PER 5,000 GALLONS OF FUEL.



THE ADDITIVE WILL NOT DISSOLVE CRUD THAT'S ALREADY IN THE FUEL TANKS, BUT IT WILL STOP FURTHER GROWTH. IT WILL ALSO KILL ALL THE MICROORGANISMS IN THE FUEL.

NEVER PUT THE ADDITIVE IN AN EMPTY FUEL TANK. IT MIXES BETTER AND WORKS BEST WHEN ADDED TO A HALF-FULL TANK JUST BEFORE YOU FINISH FILLING IT.

IF YOU USE THE ADDITIVE WITHOUT FIRST CLEANING THE FUEL TANKS, KEEP A CLOSE EYE ON FUEL FILTERS. AS CHUNKS OF THE CRUD BREAK LOOSE, FILTERS CAN CLOG REAL QUICK. CLEAN OR CHANGE THE FILTERS OFTEN UNTIL THE CRUD DISAPPEARS.

FOLLOW THE INSTRUCTIONS THAT COME WITH THE ADDITIVE.



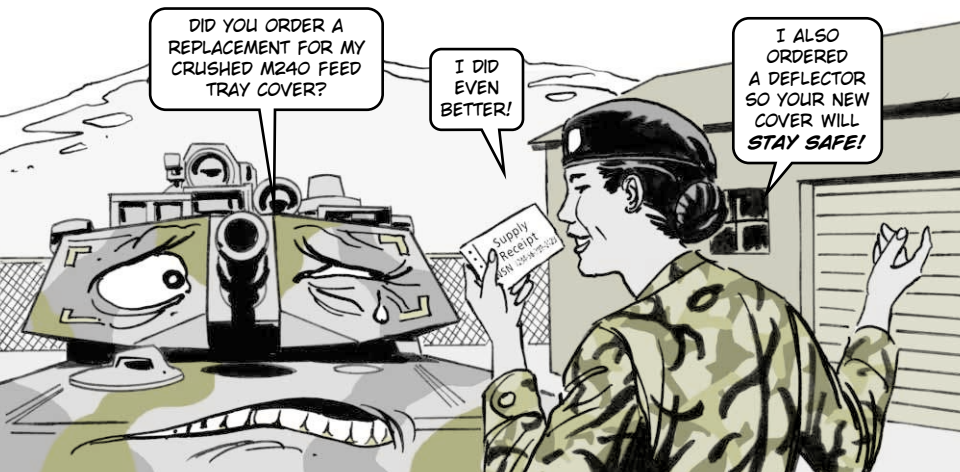
DO **NOT** ADD THE ADDITIVE TO JP-8. IT ALREADY CONTAINS A COMPOUND TO KILL MICROORGANISMS.

ALWAYS WEAR PROTECTIVE GLOVES AND GOGGLES WHEN HANDLING FUEL ADDITIVES AND BE SURE TO WORK IN A WELL-VENTILATED AREA.



PLUS, THE ADDITIVE IS **NOT** APPROVED FOR AVIATION USE.

Deflect the Damage

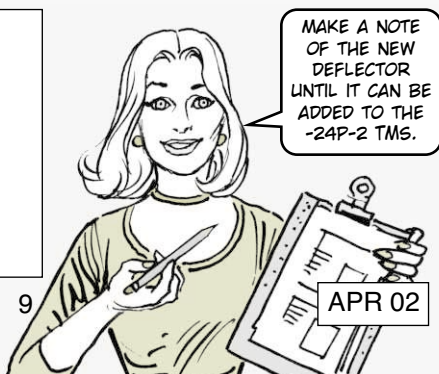
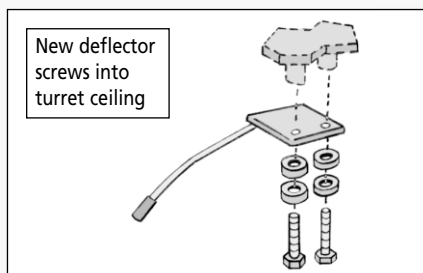


For years, a homemade deflector was the best way to prevent the M240 machine gun's \$250 feed tray cover from being crushed when the tank's main gun was lowered. But since units had to make the deflector themselves, a lot of tanks never got outfitted.

Now a deflector is available through the supply system for less than \$50. Here's what to order:

Item	NSN	Quantity
Tray deflector	5340-01-482-8376	1
Flat washer	5310-01-463-6363	2
Lock washer	5310-01-378-7852	2
Screw	5305-00-543-4372	2

The new deflector fastens to an existing mounting point on the turret ceiling and automatically closes an open M240 cover when the main gun is depressed.





Tires on vehicles that sit parked on hard stand in the hot sun for weeks and months can “wear out” from ozone damage, heat and age.

You see this wear as cracks in the tire sidewall. Once the cracks expose inner cords or belts, the tire is no longer usable.

To get the most life from your tires, wash them with soap and water, keep them inflated properly, and use approved rubber preservatives to reduce cracking.

NSN 8030-01-282-5626 gets a gallon of the preservative. Use it as described on the label.

Commercial products that put a shine on tires are not authorized. They don't help the tires and don't help camouflage your vehicle. So use only authorized preservatives and get longer life from your tires.

FMTV...

NEW DESIGN FOR DRIVESHAFT BOLTS

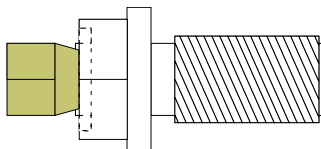
Replacements for the driveshaft end cap bolts on FMTVs are a new, two-headed design that makes the use of a torque wrench unnecessary.

Bolt, NSN 5305-01-479-7857, has a breakaway second head that snaps off once the torque applied to it reaches 30 lb-ft. So no matter how you tighten the bolt, it only gets the right torque.

When you have to service the transmission filters, remove the driveshafts for towing, or any time you have to loosen or remove the bolts, replace them. The bolts cannot be reused.

Make notes for Items 4 and 7 in Fig 128 of TM 9-2320-365-24P for 2½-ton models; Item 4 in Fig 153 and Items 4 and 11 in Fig 154 of TM 9-2320-366-24P-1 for 5-ton models.

Tighten 'till the
head breaks off



REPLENISH THE REPLENISHER

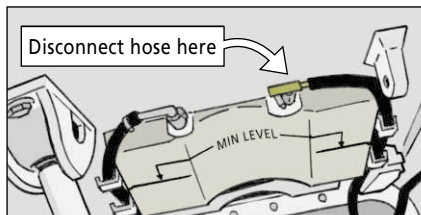


When was the last time you checked and topped off the FRH level in your tank's replenisher, crewmen? If it was after the last operation, that's great. That's when the -10-1 TMs say to do it.

But if it's been longer than that, you could be in danger. If the hydraulic fluid level is below the MIN LEVEL mark on the replenisher, the main gun could recoil out of battery the next time it's fired. When that happens, the cannon shears its retaining bolts and slams into the ammo compartment.

If the replenisher oil level is low, add some FRH now. Here's how:

1. Park the tank on level ground.
2. Make sure you're wearing long sleeves, gloves, goggles and a faceshield. FRH contains a chemical which can cause paralysis if it's taken internally. FRH can also be absorbed through the skin, so wash thoroughly with soap and water if you get any on you.
3. Disconnect the hose from the plug on the right side of the replenisher.
4. Uncoil the hose by sliding it out of the six retaining clips around the outside of the replenisher.
5. Extend the hose through the loader's hatch.
6. Put the small BII funnel, NSN 7240-00-404-9793, in the hose and slowly add FRH, NSN 9150-00-111-6256, until the fluid level reaches the MIN LEVEL mark on the replenisher.
7. Remove the funnel, slide the hose back through the retaining clips and reattach it to the plug on top of the replenisher.

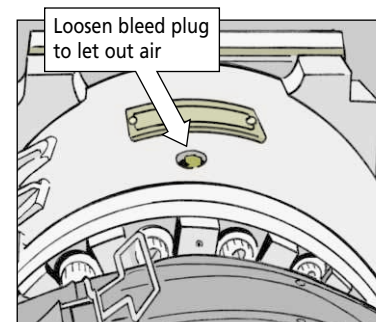


8. Depress the main gun slightly below the level position.

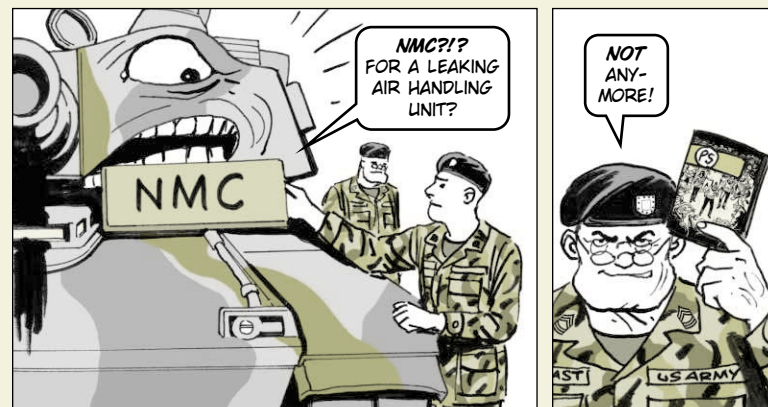
9. Loosen the bleed plug below the gun mount ID plate using a 15mm socket and wrench. Allow all the air to escape until you see FRH starting to flow from the bleed plug, then retighten it. Wipe off any FRH with a rag and dispose of it properly.

10. Recheck the FRH level in the replenisher. If the fluid level is below the MIN LEVEL mark, go back to step 3.

If the fluid level in the replenisher keeps moving down over time, report it. You could have a Class III leak.



AHU Leaks Not NMC



There's a mistake in the PMCS tables of TM 9-2350-388-10 that you M1A2 SEP (System Enhancement Package) crewmen need to know about.

Item 5 says a Class III hydraulic or coolant leak in the air handling unit (AHU) makes your tank NMC. That's wrong.

To keep the tank from leaking, have your mechanic remove the leaking AHU and install the stubbing kit, NSN 2540-01-471-5844. The procedures are on Page 12-105 of TM 9-2350-388-20-2-4. The AHU can then be turned in for repair.

Make a note in your TM until the next update.

REPLENISH THE REPLENISHER

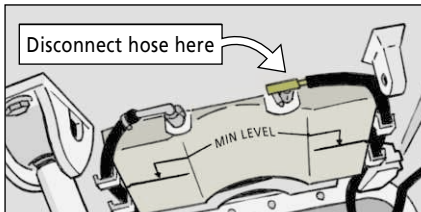


When was the last time you checked and topped off the FRH level in your tank's replenisher, crewmen? If it was after the last operation, that's great. That's when the -10-1 TMs say to do it.

But if it's been longer than that, you could be in danger. If the hydraulic fluid level is below the MIN LEVEL mark on the replenisher, the main gun could recoil out of battery the next time it's fired. When that happens, the cannon shears its retaining bolts and slams into the ammo compartment.

If the replenisher oil level is low, add some FRH now. Here's how:

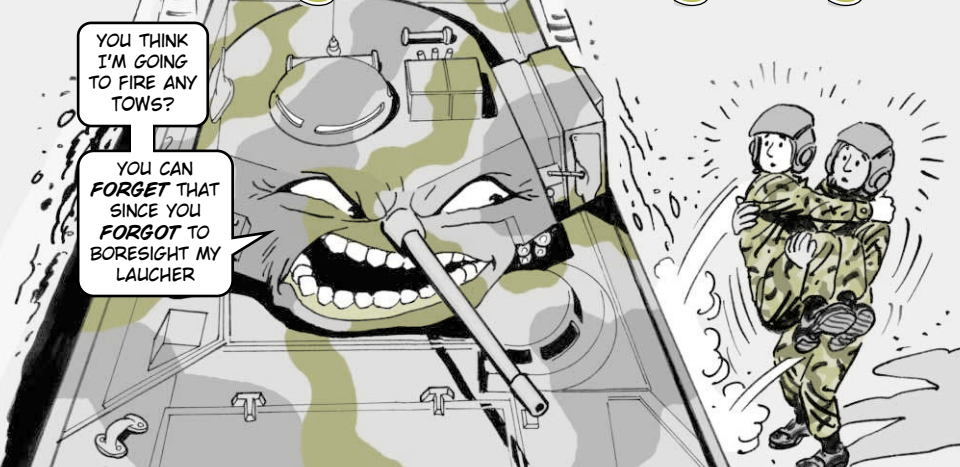
1. Park the tank on level ground.
2. Make sure you're wearing long sleeves, gloves, goggles and a faceshield. FRH contains a chemical which can cause paralysis if it's taken internally. FRH can also be absorbed through the skin, so wash thoroughly with soap and water if you get any on you.
3. Disconnect the hose from the plug on the right side of the replenisher.
4. Uncoil the hose by sliding it out of the six retaining clips around the outside of the replenisher.
5. Extend the hose through the loader's hatch.
6. Put the small BII funnel, NSN 7240-00-404-9793, in the hose and slowly add FRH, NSN 9150-00-111-6256, until the fluid level reaches the MIN LEVEL mark on the replenisher.
7. Remove the funnel, slide the hose back through the retaining clips and reattach it to the plug on top of the replenisher.



Shortsighted Boresighting

YOU THINK
I'M GOING
TO FIRE ANY
TOWS?

YOU CAN
FORGET THAT
SINCE YOU
FORGOT TO
BORESIGHT MY
LAUNCHER



① One Bradley unit stopped boresighting its TOW launchers for so long that they forgot how to do it. When the time came to fire TOWs, they didn't know what to do or where to find boresight information.

Other Bradley crews go to the field with broken boresight knobs.

So don't pick and choose when it comes to boresighting your Bradley's weapons. Even if you're not going to fire the M242 gun or TOW launcher, it's still good practice to boresight them. Then you'll know what to do before a real battle.

The boresighting procedures for all the Bradley weapons, including the TOW, are in Chapter 2 of both TM 9-2350-252-10-2 and TM 9-2350-284-10-2. When you boresight the coax guns and M242 gun, boresight the TOW, too.

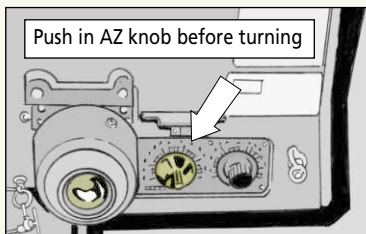
Don't forget to remove the TOW borescope when you're done. Otherwise, you damage the launcher when it's stowed.

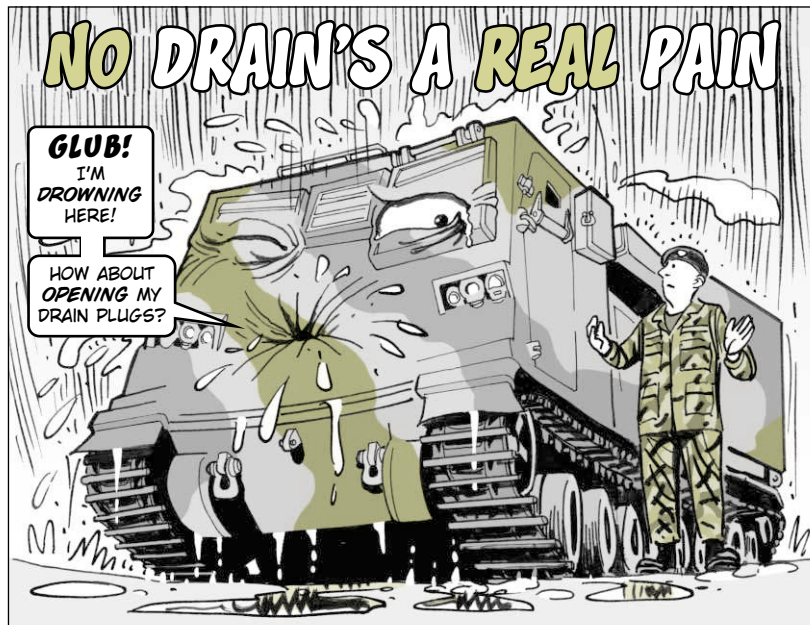
Also remember that when you boresight the M242, you must push in the AZ knob before you turn it. If you force the knob to turn without pushing it in first, the knob can break. That means no firing.

Boresight TOW when you
boresight other weapons



Push in AZ knob before turning





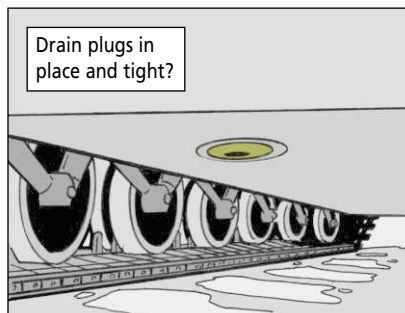
Drainage the hull on your MLRS should be second nature, crewmen. After all, water from rain and washing will continue to rise until you pull the drain plugs.

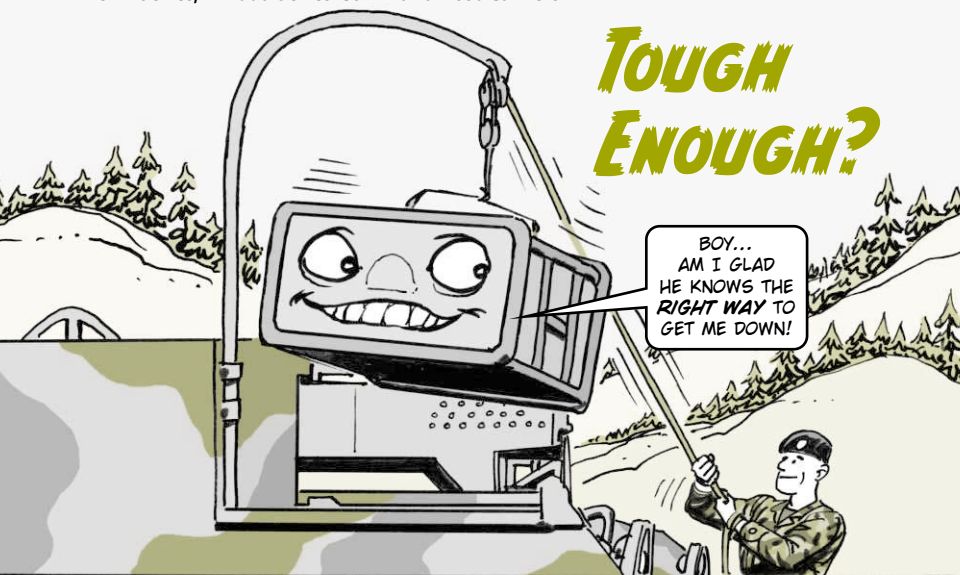
If you don't drain the hull, water will eventually short out the diodes on the 1W30 cable, NSN 2590-01-104-9148, and the 1W31 cable, NSN 2590-01-104-9146. Since those cables control the fuel pumps, your vehicle is going nowhere fast.

Once the hull's completely drained, be sure to close and tighten the drain plugs, NSN 4730-00-010-3867, before you drive the vehicle. If they're not closed tight, the plugs can work loose and fall out. That will let water in when you ford the carrier.

Clean the plugs before you install 'em, too. Wipe off any mud or sand that might keep the threads from meshing properly.

Before you screw in the plugs, lightly coat the threads with calking compound, NSN 8030-00-965-2397. That'll hold down corrosion and keep the plugs from sticking the next time you need to drain water.





You may be a lean, mean fightin' machine, but you're probably not tough enough to manhandle the 4.2 KW generator down from the top of a command post carrier.

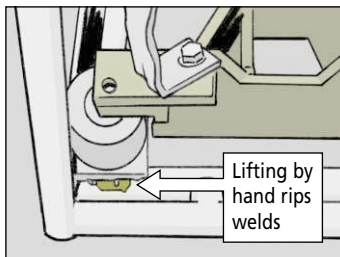
Try and you'll likely be sorry. The generator is large and bulky, so it's easy to hurt your back or even slip and fall off the vehicle.

Even if you are tough enough, the generator's not! Its weight strains and rips the frame welds. The frame's hollow tubing is too light to be re-welded, so you have to replace the entire frame.

The right way is the only way. Remove the generator by using the davit and chain hoist stowed on the top deck of the carrier. Here's how:

1. Slip the davit into the mounting brackets to the side of the generator.
2. Attach one end of the chain hoist to the davit and the other end to the lifting bar on the generator frame.
3. Hoist the generator above the enclosure, then swing the davit around until the generator is clear of the carrier.
4. Lower the generator gently to the ground.

Make sure you stand clear at all times when removing or installing the generator. That keeps you safe in case the generator slips and falls.



Extend Your Reach

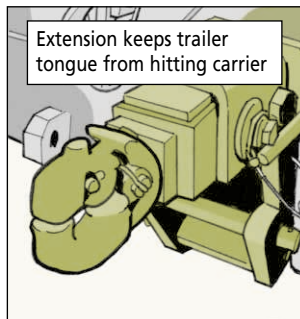


Drivers, if you've got banged-up fuel pods on your M113A3 personnel carrier, chances are you've been towing recently.

Whenever you make sharp turns, the trailer tongue hits the back corner of the carrier.

A new tow pintle extension, NSN 2540-01-458-4846, is the answer. The extension increases the reach of the tow pintle and keeps the trailer tongue from hitting the carrier during sharp turns.

Make a note of the NSN until it's added to TM 9-2350-277-24P.



GIVE BATTERIES A BOOST

Most crewmen run their vehicles only for the 10 minutes or so that's required to do PMCS. Not good. The start drains the batteries' charge and the engine doesn't run long enough to put the charge back.

Several starts will run the batteries out of juice. Then precious maintenance time is used trying to find a nonexistent fault in the charging system.

When you do your PMCS, be prepared to run the engine for 20-30 minutes to fully recharge the batteries. Keep the engine throttled to 1,200 rpm, too. The higher idle helps prevent another serious problem on air box-configured 6V53 engines: diesel slobber.

KEEP CABLE ABLE

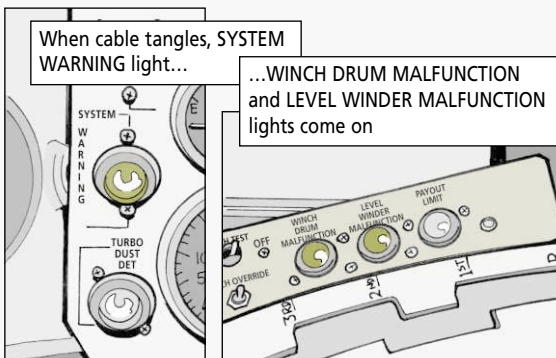
OH, MAN!
WITH **NO LOAD**
ATTACHED TO
MY CABLE, IT'LL
GET **TANGLED**
FOR SURE!

Mechanics, you need to be **very** careful when retrieving the main winch cable on your M88A2 Hercules.

Do it wrong or get in too big a hurry and the winch cable can birdnest. That tangled cable can burn out the winch, NSN 3950-01-434-3231. A new one will cost your unit \$90,000.

When cable tangles, SYSTEM WARNING light...

...WINCH DRUM MALFUNCTION and LEVEL WINDER MALFUNCTION lights come on

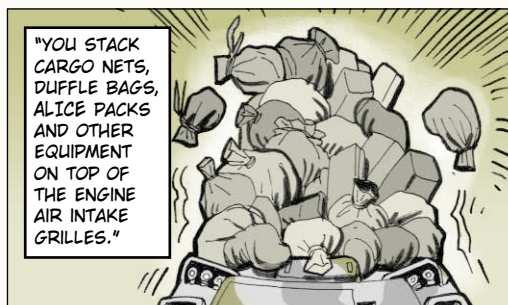
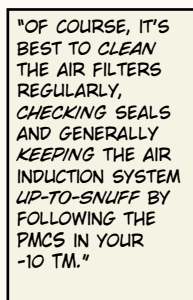
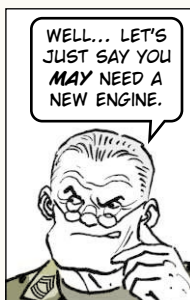
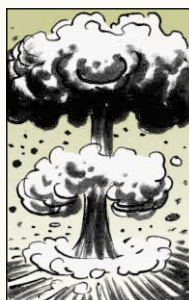
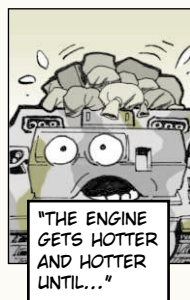
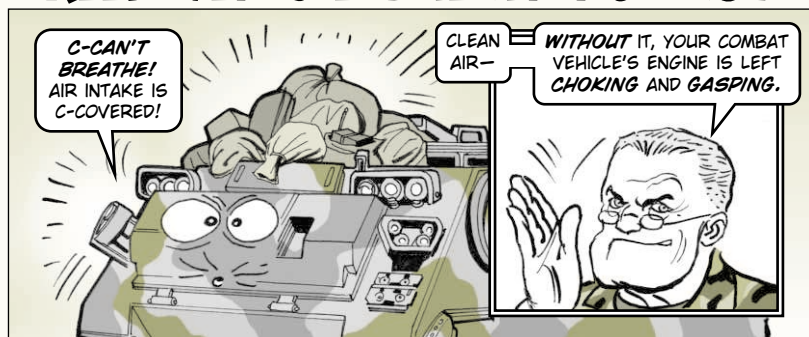


So keep the cable able on your Hercules like this:

- ★ Attach a heavy load—preferably another vehicle—to the cable before reeling it in. Without that load, the cable comes in loose and tangles up on the reel.
- ★ Flip the WINCH LIGHT switch to ON before reeling in the cable. With the light on, you'll be able to see any snags on the winch drum early and can prevent birdnesting.
- ★ If the winch gets tangled, flip the WINCH OVERRIDE switch to OVERRIDE and back the cable out, then reel it in again. Make sure there's no slack between the winch and the load before trying to reel the cable back in.



KEEP VEHICLE BREATHING EASY

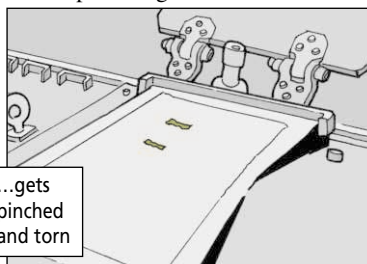
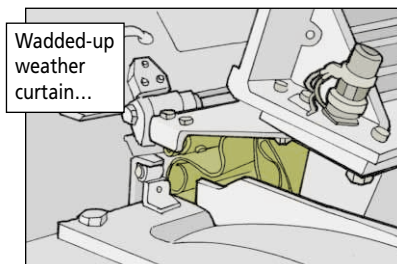


IS THE WEATHER CURTAIN HURTIN'?



Putting a brand-new weather curtain, NSN 1025-01-055-2786, on the Paladin's gun is wasted effort unless you do it the right way, mechanics.

If you get it wrong, the curtain wads up and gets pinched against the gun stop when the tube is elevated. A torn curtain has to be replaced again.

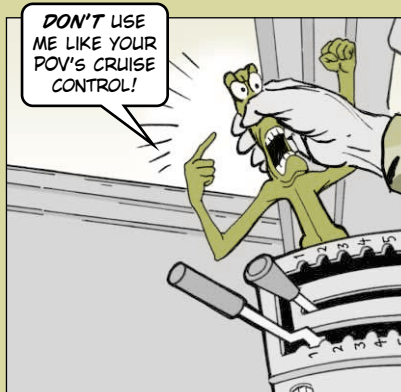


You'll find assembly instructions for the weather curtain in Para 4-18c of TM 9-2350-314-20-2-1. Pay special attention to Step 13. It says to wind the right curtain bracket, NSN 5340-01-055-2787, four turns counterclockwise before fastening it to the curtain support bracket.

Those turns put exactly the right amount of tension on the weather curtain and allow it to roll up and down like a window shade when the gun is elevated and depressed.

Dirt and rust that build up on the curtain's shaft, NSN 3040-01-144-9462, can also spell curtains for the curtain. So wipe away any dirt that collects and apply a few drops of OE/HDO-30 to the shaft's bushings. That'll keep the shaft from jamming and tearing the curtain.

No Cruise Control!



A few operators have learned the hard way that the grader's governor control handle is not a cruise control.

Unlike the cruise control on your POV, the grader's governor control doesn't cut off when you hit the brakes. If you need to stop in a hurry, you won't have time to mess with it. The end result will likely be loss of control.

Use the governor control handle only for non-driving operations, like moving the blade.

SEE...

TOO MUCH OR TOO LITTLE?

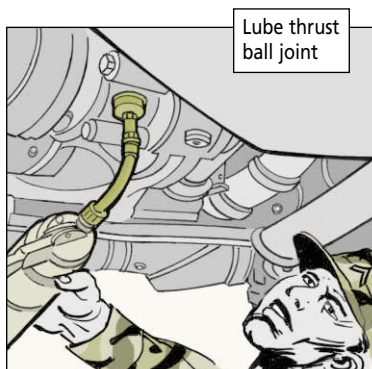
The grease fitting that lubes the excavator's front and rear drive shaft thrust ball joints can't win for losing.

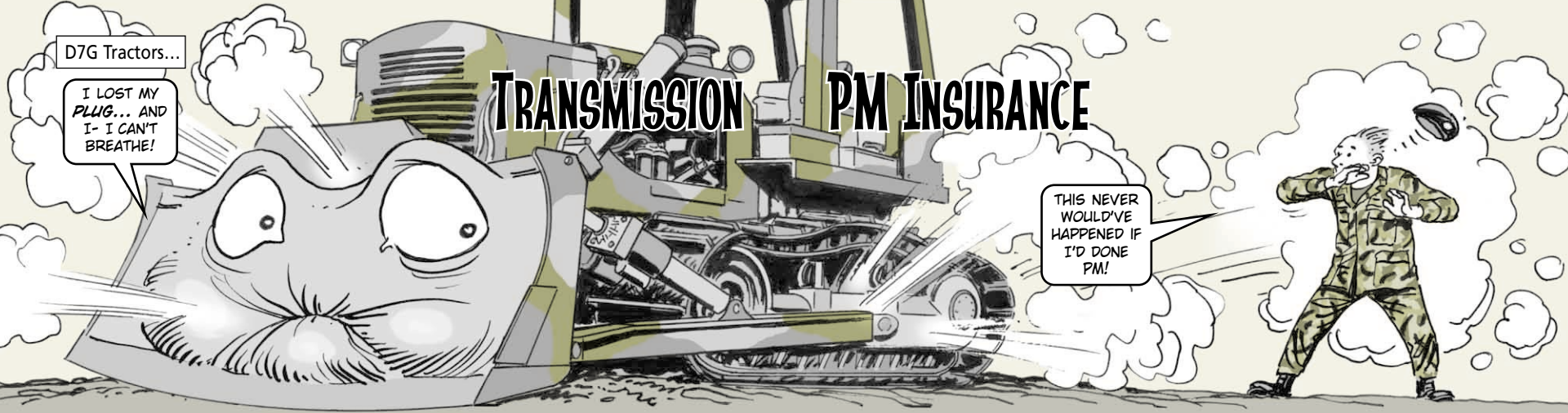
At lube time, it seems that the fitting is either overlooked completely or gets too much grease.

It gets overlooked because it's directly under the middle of the vehicle. You have to crawl under the excavator to find it. Left unlubed, friction will KO the ball joints.

When it's time to lube, read and heed the CAUTION in Note 18 of LO 5-2420-224-12. Give the fitting four to five pumps of lube from a hand-held grease gun.

Pumping in too much lube will split open the ball joint's rubber torsion boot. A split boot lets lube leak out and water get in. No lube leads to friction that ruins ball joints. Water rusts them.





KEEPING YOUR D7G'S TRANSMISSION IN TOP SHAPE FOR A DAY'S DIRT-MOVING MEANS SHIFTING YOUR PM INTO **HIGH GEAR**.



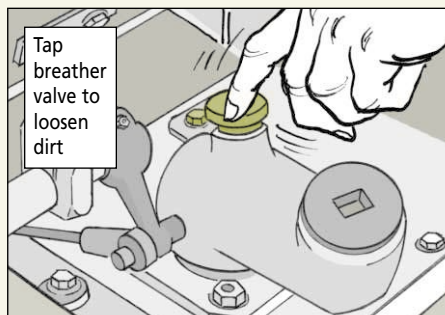
AFTER YOU'VE DONE YOUR PMCS ACCORDING TO TM 5-2410-237-10, HEED THIS ADDITIONAL PM.

Keep Breather Valve Clean

A plugged breather valve is a death sentence for the dozer's transmission. It's often forgotten because it's located under the operator's seat. Two things happen when the transmission's breather valve gets clogged and both are bad.

- ⊗ Pressure builds in the transmission and causes seals to blow. When the seals go, lube goes, too. No lube means friction and gear damage.
- ⊗ Pressure build-up also creates a vacuum in the transmission. That causes the transmission to stall or lock up—you can't move!

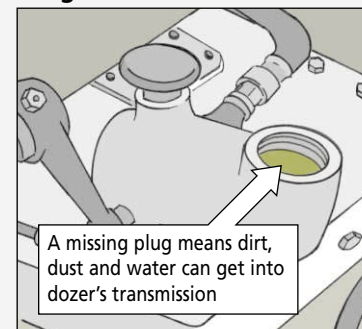
So keep the breather valve clean. It's simple to do. Just tap on the valve with your finger to loosen any dirt stuck inside. If the valve won't go down or it won't come back up if it does go down, have your mechanic replace the valve, NSN 2520-01-164-0077. It's Item 9 in Fig 83 of TM 5-2410-237-24P.



Snug Filler Plug

Vehicle vibration loosens the plug in the transmission's oil filler tube. Once loosened, the plug can fall off. A missing plug means dirt, dust and water can get into the dozer's transmission.

So before the day's run, make sure the plug is snug. Never stuff a rag or anything else in the filler tube if the plug is missing. Instead, have your mechanic replace the plug with NSN 4730-01-249-8409. It's Item 7 in Fig 82 of TM 5-2410-237-24P.

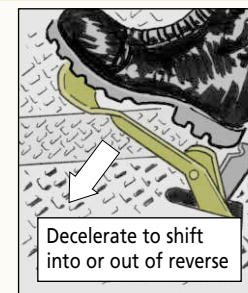


Before Shifting

Every time you shift in or out of reverse without reducing engine speed you put unnecessary strain on your dozer's transmission. That's bound to shorten its life.



1. While your dozer's still on the move, push down the decelerator pedal. That slows engine speed without changing the governor control setting.
2. Stop your dozer dead in its tracks.
3. Shift in or out of reverse.
4. Ease up on the decelerator pedal to speed up the engine until it reaches the governor control setting.



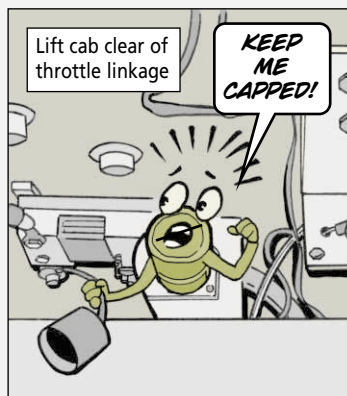
Keep NATO Dust Cap On

A missing dust cap on the ACE's NATO slave receptacle could keep you from slave starting the earthmover in cold weather.

The receptacle is mounted straight up. It'll hold water if the cap's missing. Once in the receptacle, water corrodes and rusts the receptacle's metal contacts. In freezing weather, water freezes in the receptacle. You can't slave a dead vehicle, and the ice could crack the plastic.

So do yourself a favor and make sure the dust cap is in place. If the dust cap assembly is missing, replace it with NSN 5340-01-059-0114.

Until it comes in, tape over the receptacle with electrical or duct tape to keep water out.



SEE...

Avoid Stuck Throttle Linkage

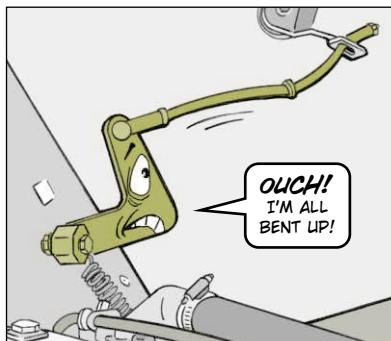
Mechanics, the size and weight of the SEE's cab makes it hard to control when you open and close it during services.

Even with a lifting device it's easy for the cab to hit the engine throttle linkage, mounting spring and bracket that are connected to the passenger's side of the cab's outer engine wall. There's just not much room between them and the vehicle's frame when the cab is tilted.

A damaged linkage means you're stuck with an engine that will neither accelerate nor decelerate.

So keep a close eye on the linkage when the cab is raised or lowered. Have a buddy hold on to the other side of the cab. Those extra hands help you steady and guide the cab clear of the linkage.

Pages 4-418 through 4-432 of TM 5-2420-224-20 have the complete low-down on how to raise and lower the cab.



GET THESE POWERFUL PLUG-INS



An electrical outlet isn't always close by when you need to plug in your power tools. That's when an extension cord comes in handy.

If you can't get an extension cord fabricated locally, order one of these:

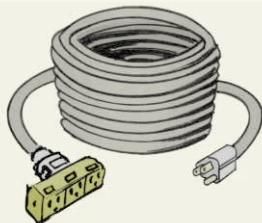
NSN 6150-	Length (feet)	AWG	Voltage Capacity	Color
01-429-5481*	25	12	300	Yellow
01-131-4882*	50	12	300	Yellow
00-233-4144*	50	14	300	Orange
01-245-7809	100	14	300	Orange
01-290-1707*	100	14	300	Blue
01-226-2057	100	12	600	Orange
01-146-6899	100	12	600	Yellow

*Order on a DD Form 1348-6 from 59G and put **NSN not on AMDF** in the REMARKS block.

The orange cords are double-insulated and resistant to oil, grease, moisture, abrasion and prolonged exposure to sunlight. The blue cord has a thermoplastic jacket that stays flexible down to -58°F.

The yellow cords have a thermoplastic elastomer jacket that is resistant to oil, grease, acid and solvent. Each cord stays flexible to -94°F and weighs about one-third less than a regular extension cord of the same length.

You can also get a standard extension cord with a three-outlet receptacle on one end. NSN 6150-01-325-6136 is 25 feet long, uses 12 AWG wire and can carry up to 300 volts. NSN 6150-01-396-2615 is 50 feet long, uses 14 AWG wire and can carry up to 300 volts.

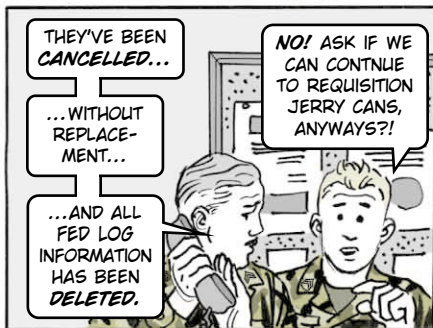


Three-outlet extension cord comes in 25- and 50-ft lengths

If a plug or receptacle on your new extension cord gets damaged, there's no need to toss the whole cord. Get a three-prong male plug with NSN 5935-01-005-3579. A three-prong female receptacle comes with NSN 5935-01-012-3066.



ORDERING JERRY CANS



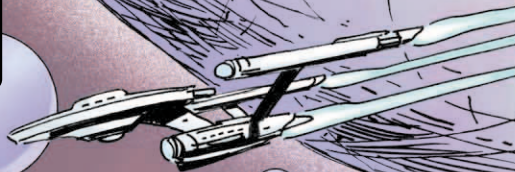
"HE SAYS THAT'LL ONLY CREATE A MESS OF CANCELLED PAPERWORK AND A BACKLOG IN THE SUPPLY SYSTEM."



BUT WE **NEED** FIVE GALLON WATER CANS. ASK HIM ABOUT THAT!



STARDATE 23245.3...
THE STARSHIP *NOSURPRISE*
STREAKS ACROSS THE COSMOS
AT WARP SPEED..



MY NAME IS
WINDSPOCK.
OUR SHIP
PATROLS
OUTER SPACE
IN A
CONSTANT
SEARCH FOR
SIGNS OF
TROUBLE.

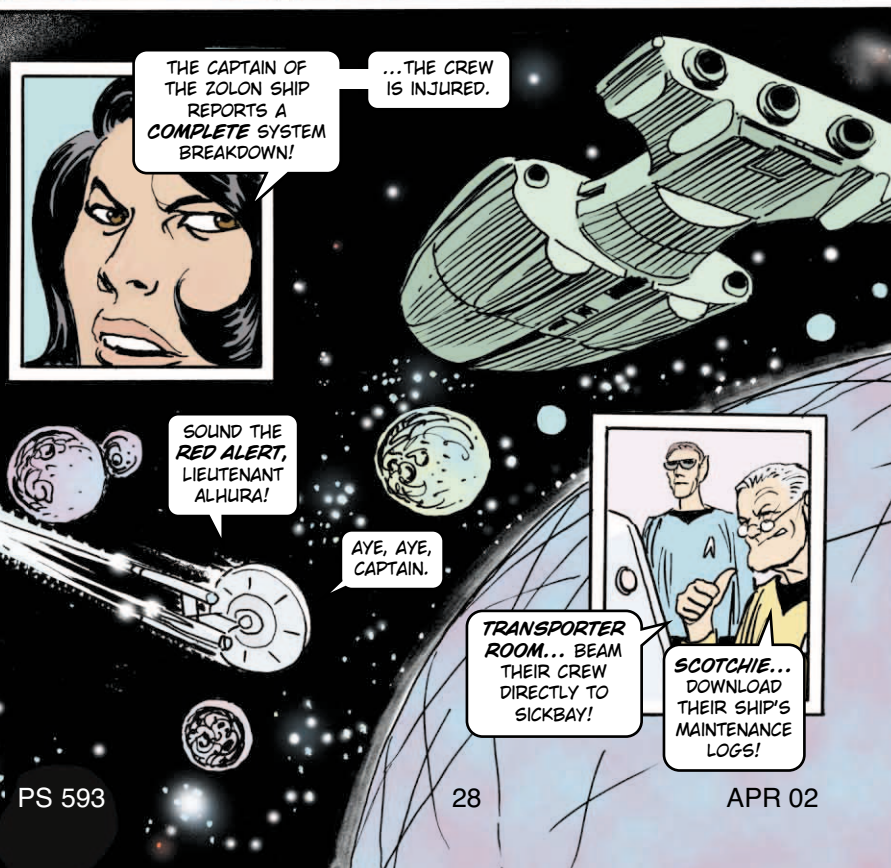
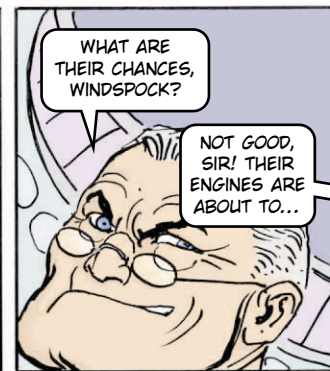
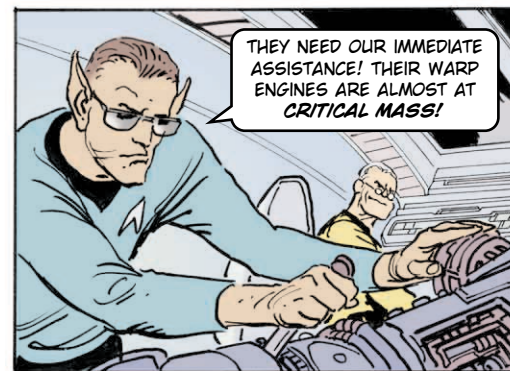
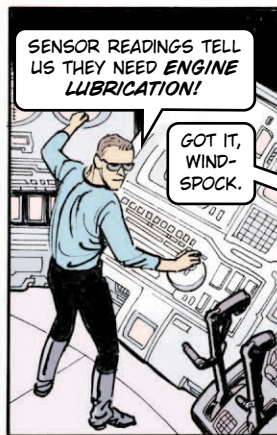
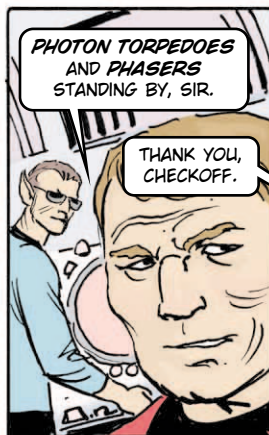
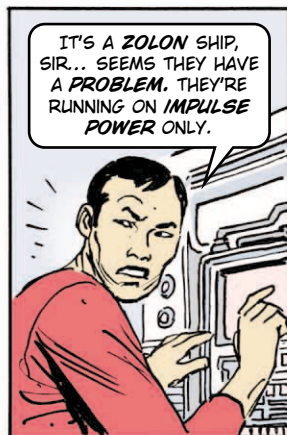
THIS IS A STORY
I THINK YOU
SHOULD HEAR!

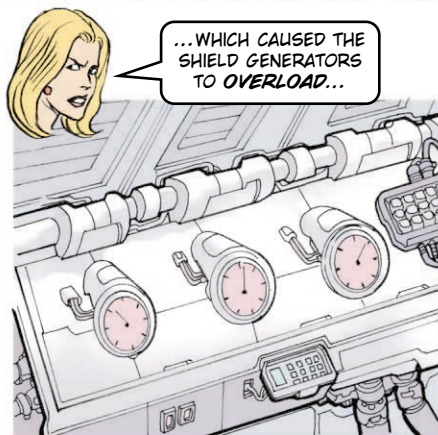
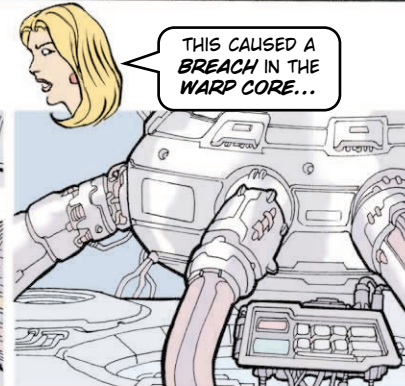
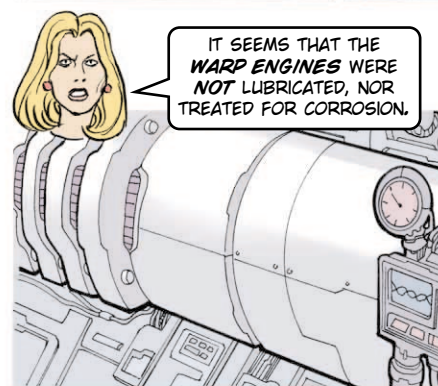
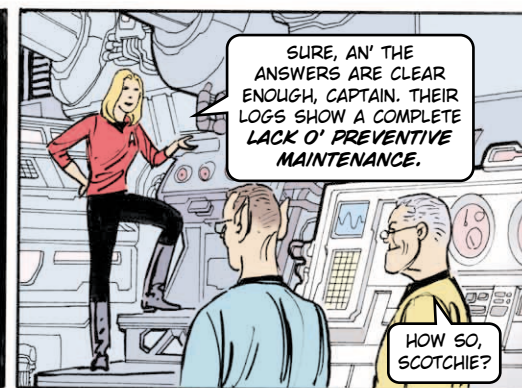
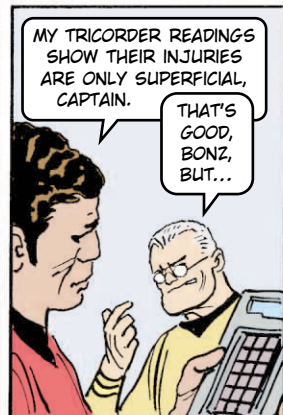
The Lost Mission of Zolon

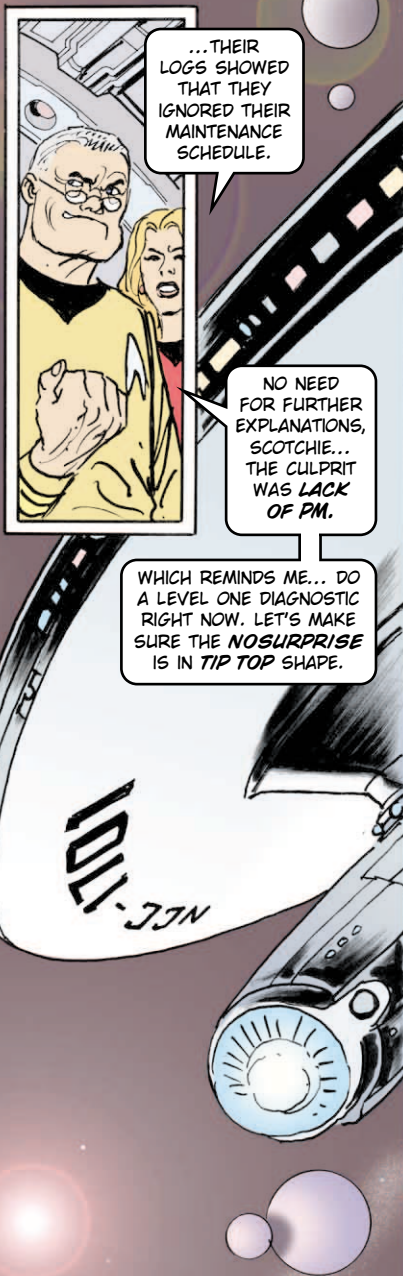
CAPTAIN SIRK...
I HAVE A
VISUAL ON AN
UNIDENTIFIED SHIP!

PUT IT
ON SCREEN,
TUSU, HIGHEST
MAGNIFICATION!

K/JOE
KUBER



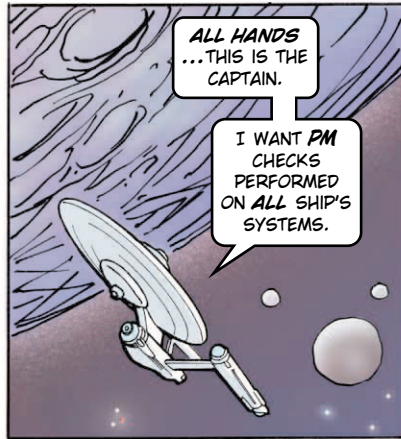




...THEIR LOGS SHOWED THAT THEY IGNORED THEIR MAINTENANCE SCHEDULE.

NO NEED FOR FURTHER EXPLANATIONS, SCOTCHIE... THE CULPRIT WAS LACK OF PM.

WHICH REMINDS ME... DO A LEVEL ONE DIAGNOSTIC RIGHT NOW. LET'S MAKE SURE THE NOSURPRISE IS IN TIP TOP SHAPE.



ALL HANDS ...THIS IS THE CAPTAIN.

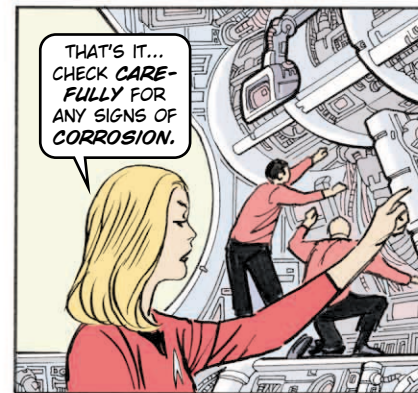
I WANT PM CHECKS PERFORMED ON ALL SHIP'S SYSTEMS.



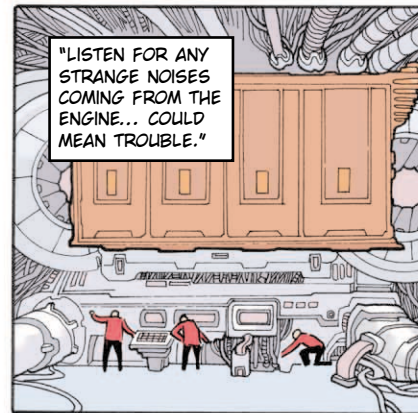
DON'T WORRY, SIR... WE'LL HAVE 'ER FINE-TUNED IN NO TIME!



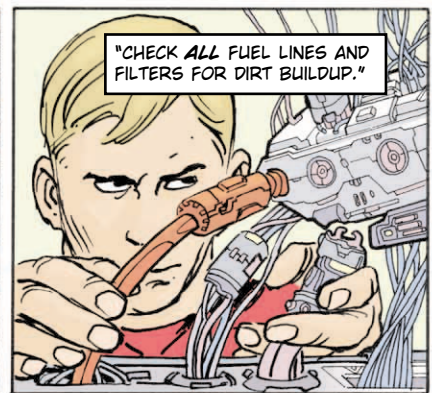
GO TO IT, SCOTCHIE! I ALWAYS DEPEND ON YOU AND THE CREW!



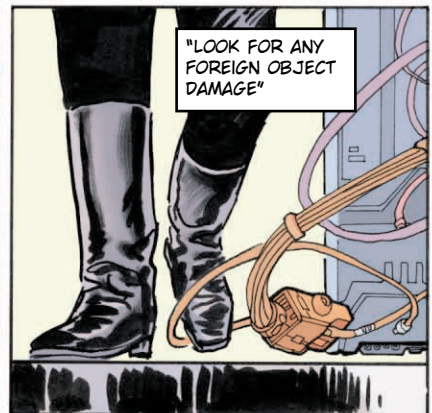
THAT'S IT... CHECK CAREFULLY FOR ANY SIGNS OF CORROSION.



"LISTEN FOR ANY STRANGE NOISES COMING FROM THE ENGINE... COULD MEAN TROUBLE."



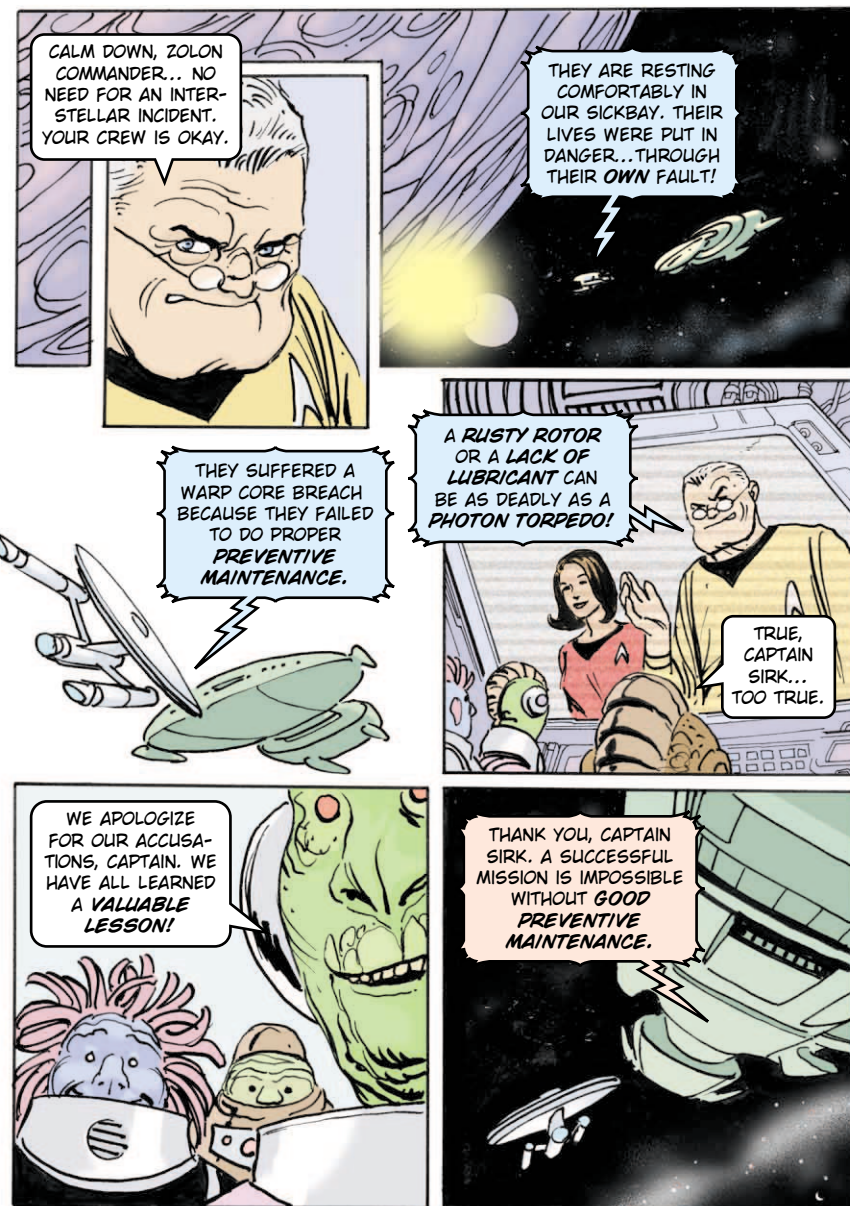
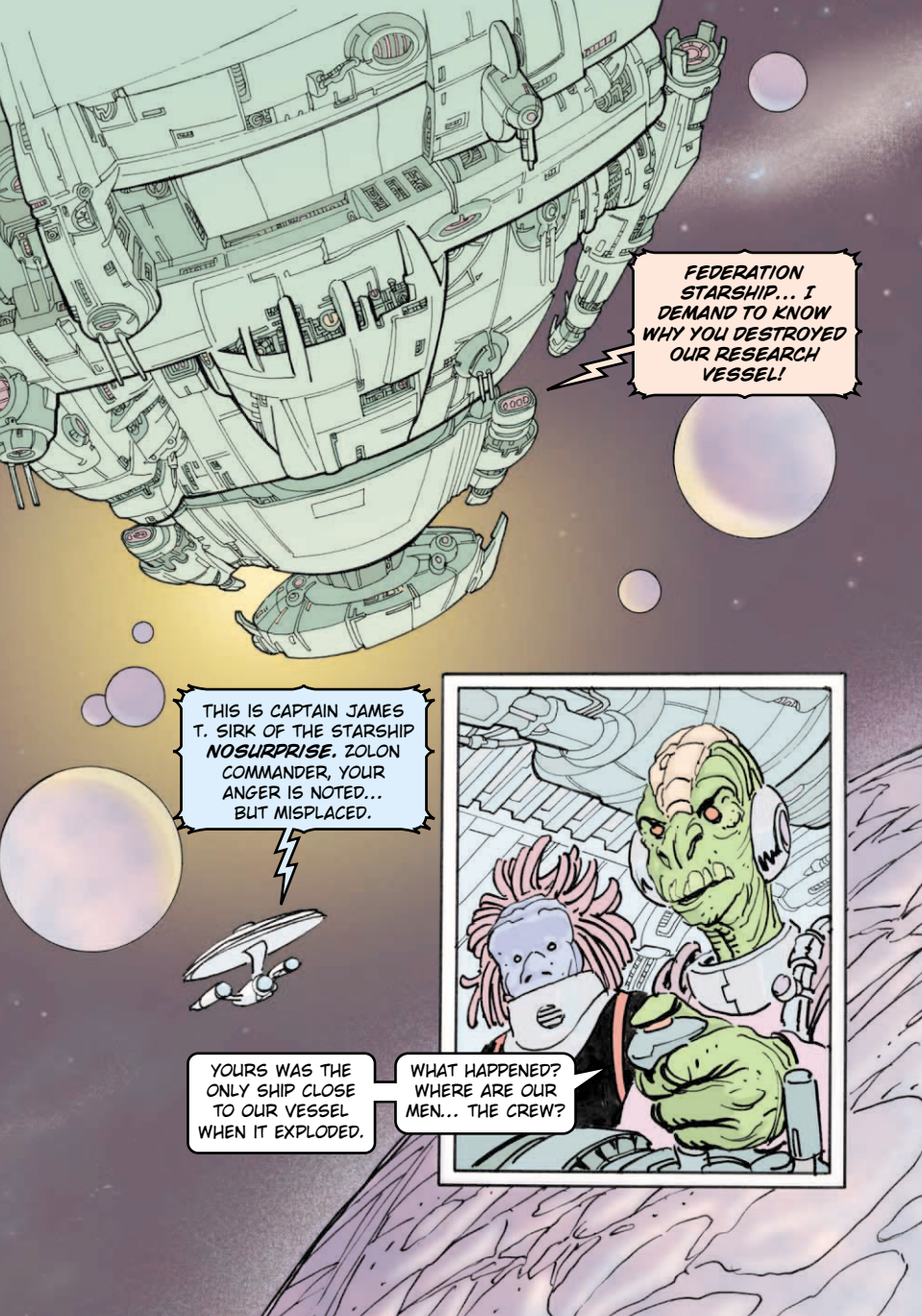
"CHECK ALL FUEL LINES AND FILTERS FOR DIRT BUILDUP."



"LOOK FOR ANY FOREIGN OBJECT DAMAGE"

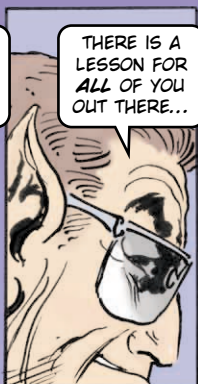


CAPTAIN... WE'RE BEING HAILED BY A ZOLON BATTLESHIP! THEY'RE IN ATTACK MODE!





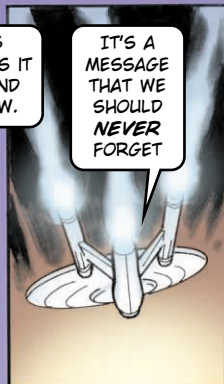
SO THAT'S THE
REAL STORY OF
THE LOST MISSION
OF ZOLON



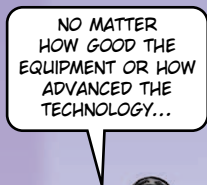
THERE IS A
LESSON FOR
ALL OF YOU
OUT THERE...



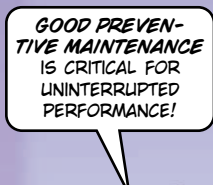
...ONE'S THAT AS
IMPORTANT TODAY AS IT
WAS YESTERDAY AND
WILL BE TOMORROW.



IT'S A
MESSAGE
THAT WE
SHOULD
NEVER
FORGET



NO MATTER
HOW GOOD THE
EQUIPMENT OR HOW
ADVANCED THE
TECHNOLOGY...



**GOOD PREVEN-
TIVE MAINTENANCE**
IS CRITICAL FOR
UNINTERRUPTED
PERFORMANCE!



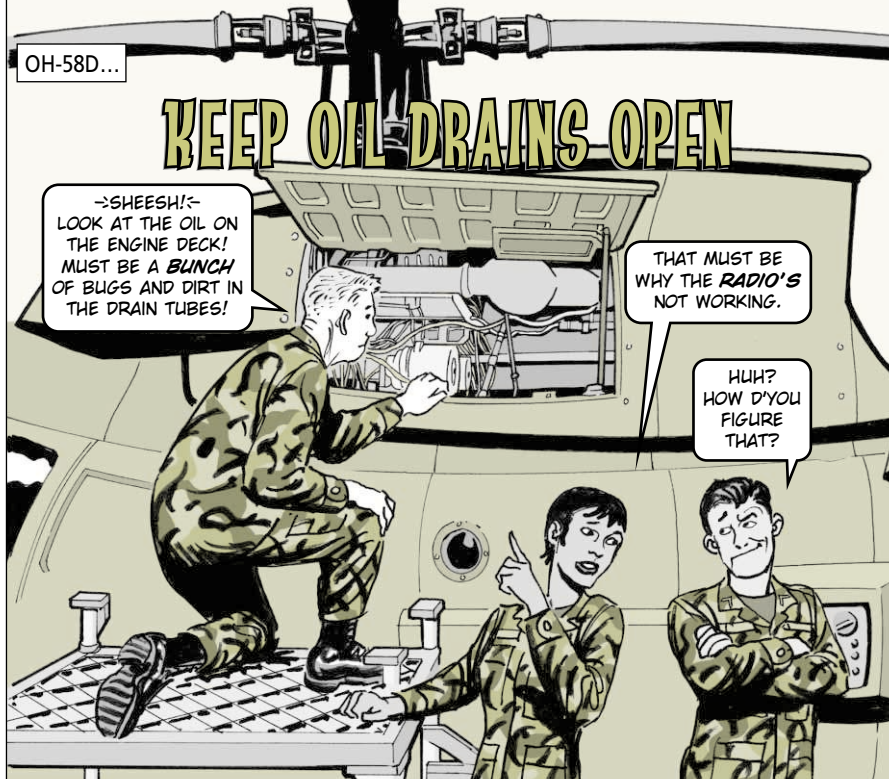
WITHOUT PM YOUR
MISSION IS DOOMED.
YOU CERTAINLY WON'T
GO WHERE NO ONE
HAS GONE BEFORE!

KEEP OIL DRAINS OPEN

→SHEESH!←
LOOK AT THE OIL ON
THE ENGINE DECK!
MUST BE A **BUNCH**
OF BUGS AND DIRT IN
THE DRAIN TUBES!

THAT MUST BE
WHY THE **RADIO'S**
NOT WORKING.

HUH?
HOW D'YOU
FIGURE
THAT?



Mechanics, just because the Kiowa engine deck's upper and lower oil drain tubes are out of sight, don't put them out of mind. You still have to keep them unplugged.

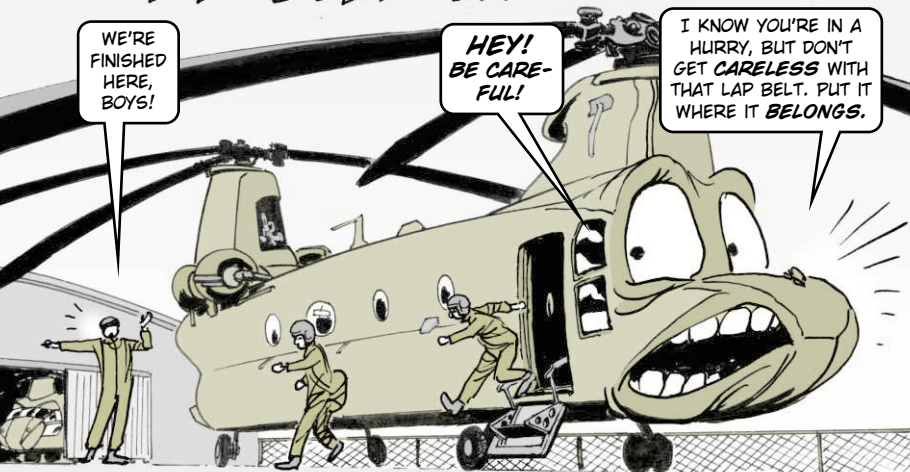
The tubes allow excess oil and condensation to drain off from the transmission and engine.

If bugs and dirt stop up the tubes, oil, fluid and condensation runoff will back up and overflow the scupper. The liquid overflow will leak into the AN/ARC-201 radio set's breather holes and short it out. Then your communications are shut down.

To keep the tubes free to drain, clean 'em like it says in Para 4-4-15 of TM 1-1520-248-23. Replace them if draining doesn't work.



LAP BELT SLINGING



Pilots and co-pilots, slow down! Unlatching and slinging lap belts to exit your Chinook puts components of the lower console in harm's way.

When you toss the belts, the buckle smacks the AN/ARC-201 radio and other component knobs, buttons and switches on the intercommunications control system (ICS) boxes, the KY-58, and the AN/ARC-186 radio.

If the lap belt buckle hits the AN/ARC-201 radio, for instance, it'll crack or scratch the liquid crystal display (LCD). That turns the LCD white, distorts the numbers, and makes them unreadable. Then it's NMC.

So take your time to exit the bird. Just unlatch the lap belt and place it on the seat or next to you as you leave.



Tools...

Hammer Takes a Beating



Repairmen, you'll be chasing down a mess of lead BBs if the dead blow hammer in your aviation footlocker cracks open. That could result in a FOD nightmare.

The hammer takes a beating when you're working on aircraft rotor heads or doing other prescribed maintenance. It takes more of a beating if you hit sharp surfaces.

Those blows can cut or crack it. Small cracks eventually get bigger. If they get too big, the dead blow hammer splits open and BBs spill everywhere.

If that happens while you're working around the rotor head, you've got a FOD problem that could take weeks to clean up.

So follow your TM instructions and use the hammer only where a maintenance procedure calls for it. Then inspect the hammer periodically for cracks before using it. Make sure BBs aren't showing through the rubber.



Check hammer for cracks or splits



IF THE DEAD BLOW HAMMER IS **CRACKING** OR **BADLY DAMAGED**, GET A **NEW ONE** WITH NSN 5120-01-065-9037.

Getting It Together

ALL THE PMCS IN THE WORLD WON'T MEAN A THING IF YOU TEAR A CABLE OR BREAK A COUPLING WHILE SETTING UP YOUR TOW 2 MISSILE SYSTEM.

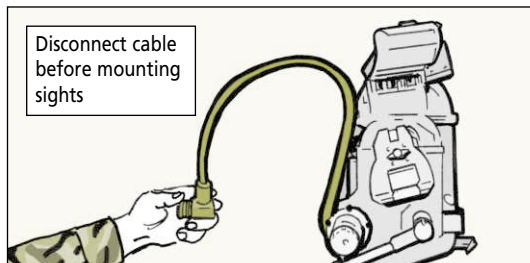
HERE'S HOW TO **STAY OFF YOUR TOES!**

UH-OH

WHAT DO YOU MEAN UH-OH?

✧ Remove the post amplifier cable from its storage cup before you put the day and night sights on the traversing unit (TU). Once the sights are mounted, you can't pull out the cable without crimping it.

Disconnect cable before mounting sights

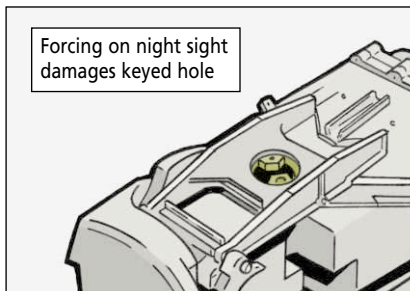


✧ Before you install the day sight, push its latch handle all the way down. If you don't, the sight won't latch tight. After you lock the handle, give the sight a shake to make sure it's tight.

✧ Push the night sight's latching lever all the way back when you mount the sight and all the way forward to lock it in. Give it a shake, too, to make sure it's secure.

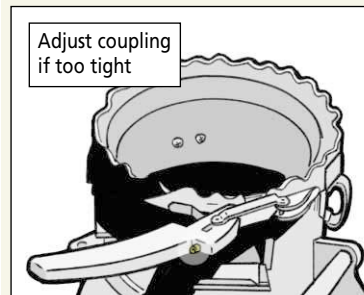
Don't try to muscle the night sight into place. That busts the sight's keyed hole. If you can't maneuver the sight into place, tell your repairman. Something's wrong.

Forcing on night sight damages keyed hole



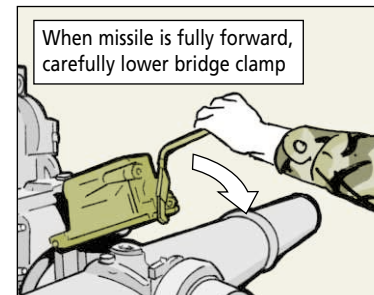
✧ If you have to strain to lock the coupling clamp's locking handle in place, something's wrong. Forcing the handle breaks the coupling pins. Get your repairman to adjust the coupling.

Adjust coupling if too tight



✧ Make sure the missile is fully forward in the launch tube before you bring down the bridge clamp. And bring the clamp down easy. Otherwise, you break electrical connector pins.

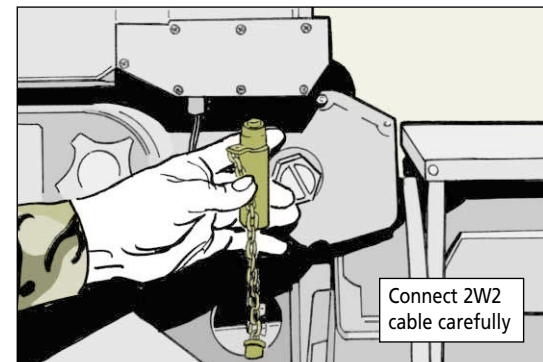
When missile is fully forward, carefully lower bridge clamp



✧ Unlock the TU's elevation lock before you begin to sight. Just one tug will break the lock.

✧ Carefully connect the 2W2 cable from the power conditioner to the night sight. If you don't have it aligned right, you bend connector pins when you plug it in.

Connect 2W2 cable carefully



Taking It Apart

When you disassemble the TOW, disconnect the W2J1 cable from the MGS first. Otherwise, you rip the cable out when you pull the TU off the tripod.

Lay down the TU with the azimuth lock sticking up. Otherwise, the TU's weight snaps off the lock.

Lay TU down with azimuth lock up



MLRS Launcher...

Cut Cable Crimps

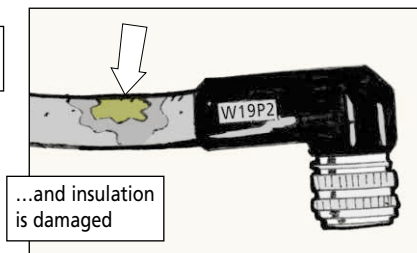
HEY, HOW ABOUT
A LITTLE HELP? MY
M19P2 AND W20P2
CABLES ARE GETTIN'
PINCHED!!

I'VE GOT
JUST WHAT
YOU NEED
RIGHT
HERE!

HEAT SHRINK
TUBING

Nobody likes being squeezed into a tight place. The W19P2 and W20P2 power cables on your MLRS launcher are no exceptions.

Unfortunately, those cables have no choice. When they're connected, the bottom part of the cables have to be squeezed into place. That crimps the cables and eventually wears out the insulation.

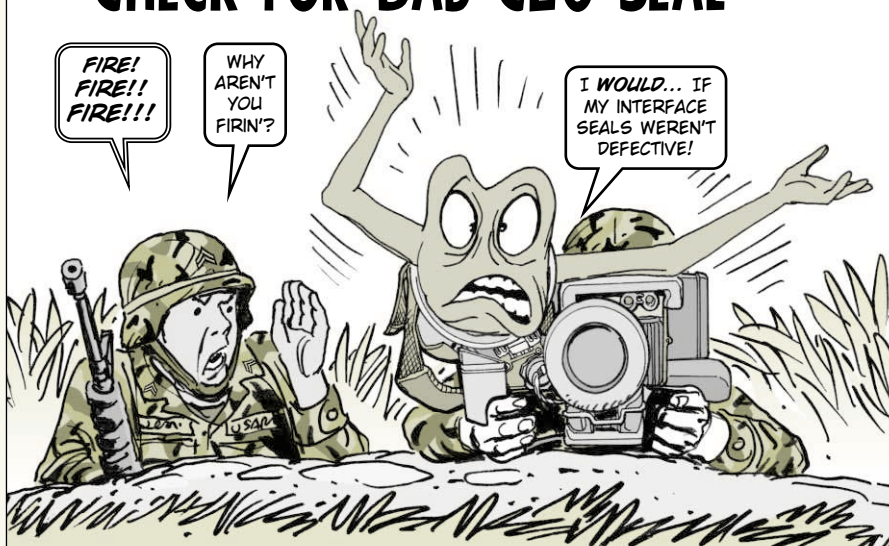


If the cables short out, you lose electrical power to the boom and the cables have to be replaced.

You can prevent that problem by giving the cables a little extra protection. Slip a length of 1-in diameter heat shrink tubing, NSN 5970-00-815-1300, over each of the cables where they are bent. Use a heat gun or a blow dryer to shrink the tubing in place.

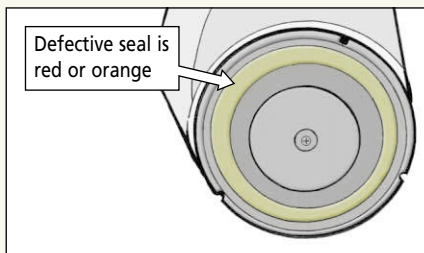
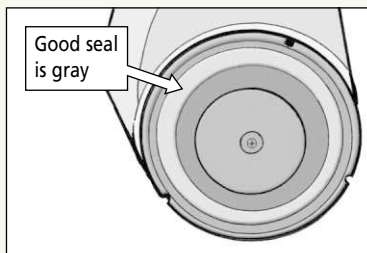
The tubing protects the cables' insulation and keeps power flowing to the boom.

CHECK FOR BAD CLU SEAL



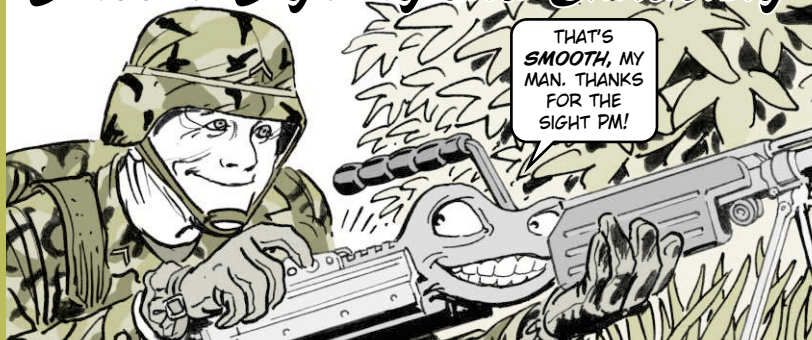
Defective interfacial seals for the Javelin missile system's command launch unit (CLU) round interface connectors have gotten into the field. The seals begin to come apart after only a few uses of the CLU, causing BIT failures and no communication between the CLU and the field tactical trainer or the Javelin round.

All Javelin units should immediately check all CLU round interface connectors—including spares—for the defective seal. Remove the protective cap from the connector and check the seal between the outer sleeve and the green barrel plug. If the seal is gray or translucent, it's OK. If the seal's red or orange, it needs to be replaced.



Tag the connector as defective and order a replacement connector through JAVTRAK, the Javelin requisitioning system, with NSN 5935-01-474-6361. After June, 2003, order the seal through the normal supply system.

Smooth Sighting and Extracting



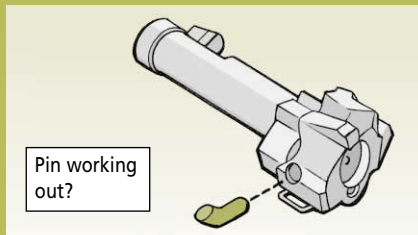
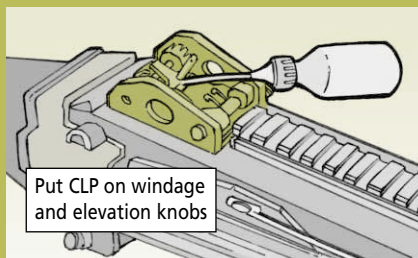
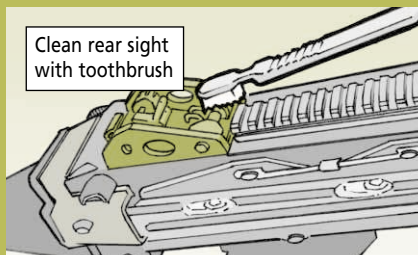
A little PM on your part will smooth out sighting and extracting on your M249 machine gun.

If the rear sight moves like it has arthritis, don't wait for your armorer to fix it. Do it yourself!

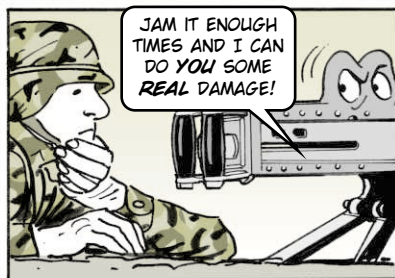
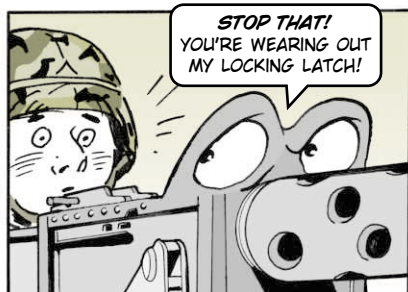
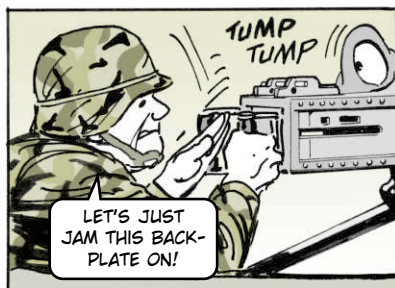
Attack the sight with a toothbrush. Brush the sight until you've removed dirt or sand that's jamming moving parts. Then put a couple of drops of CLP on both the windage and elevation knobs and work the knobs back and forth until they move smoothly.

If the knobs are still difficult to move, the sight needs to be taken apart by your armorer and cleaned.

The pin that holds the extractor in place can work out. Then your M249 can jam and leave you with a stuck live round. When you do your before-operation PMCS, eyeball the extractor pin. If it's working out, tell your armorer. He may need to have support put in a new pin.



NO JAMMING ALLOWED!

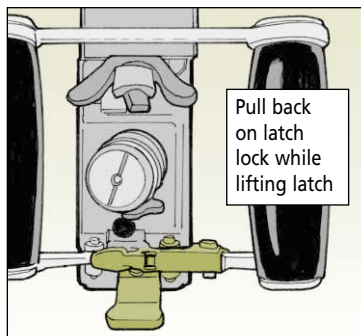


Jamming might be great at a rock concert or on the basketball floor, but it's not great when you assemble your M2 machine gun.

If you jam on the M2's backplate assembly again and again, it wears out the locking latch. Then the backplate could come off when you lift up on the backplate handles. If the M2's cocked, the op rod shoots out like a rocket. If you're in the way, that could severely limit your life possibilities.

To properly install the backplate, fit it on the receiver grooves, then pull back the latch lock while lifting up on the latch. Slide the backplate down until it locks in the receiver.

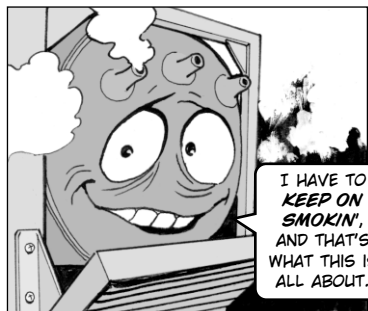
Never use backplate handles to carry the M2. If the backplate latches fail, the M2 takes a tumble, maybe onto your foot. The best way to carry the M2 is to get a buddy to hold the barrel support while you hold the receiver.



M157A2 Smoke Generator...

...I'M A SMOKE GENERATOR AND I GOTTA KNOW...

HOW NOT TO STOP SMOKING!



I HAVE TO KEEP ON SMOKIN', AND THAT'S WHAT THIS IS ALL ABOUT.



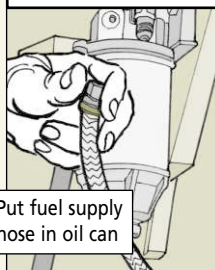
SITTING AND SHAKING CAUSE MOST OF THE PROBLEMS FOR THE M157A2 SMOKE GENERATOR.

HERE ARE A COUPLE OF WAYS TO SNUFF OUT THOSE PROBLEMS.

Sitting

SITTING UNUSED FOR LONG PERIODS LETS CORROSION FORM IN THE FUEL PUMP AND LOCK IT UP.

"BUT COATING THE INSIDE OF THE FUEL PUMP WITH A CORROSION FIGHTER LIKE 15W-40 OIL STOPS CORROSION."

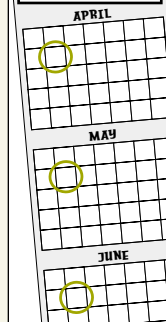


Put fuel supply hose in oil can

SO IF YOUR M157A2s ARE GOING TO SIT, RUN OIL THROUGH THE FUEL PUMP LIKE IT SAYS ON PAGE 2-22 IN THE M157A2'S TM 3-1040-283-10.



"DO IT MONTHLY AS LONG AS THE M157A2 SITS."



Shaking

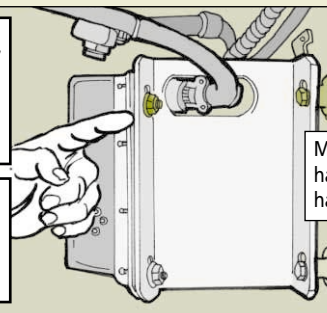


VIBRATION CAN LOOSEN THE FOUR NUTS THAT HOLD THE CONTROL PANEL TO THE MOUNTING BRACKET INSIDE THE M113 TRACKED VEHICLE IF ALL THE MOUNTING HARDWARE ISN'T IN PLACE.

IF THE NUTS GET TOO LOOSE, THE CONTROL PANEL SHAKES ENOUGH THAT THE CONTROLS AND SOLDERED CONNECTIONS ARE DAMAGED.

"SO BEFORE YOU GO TO THE FIELD, MAKE SURE EACH OF THE FOUR MOUNTING BOLTS HAS TWO WASHERS, ONE LOCK WASHER, AND A SELF-LOCKING NUT."

"IF ANY OF THE HARDWARE IS MISSING OR ANY OF THE BOLTS ARE LOOSE, TELL YOUR REPAIRMAN."

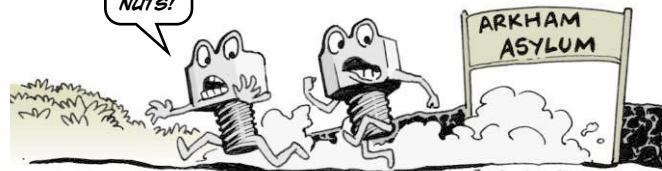


Make sure all four nuts have all their mounting hardware

"VIBRATION CAN ALSO LOOSEN THE NUTS THAT KEEP THE FOG OIL FLOW KNOB SPINDLES TIGHT."

"IF A NUT LOOSENS ENOUGH, YOU CAN'T CONTROL HOW MUCH FOG OIL IS BEING SENT TO THE GENERATOR. FOG OIL COULD FLOOD THE BURNER."

WE'RE LOOSE NUTS!



SPC JESUS ORTEGA OF THE 369TH CHEMICAL CO AT MCGREGOR RANGE, NEW MEXICO, CAME UP WITH THE SOLUTION.

THE SOLUTION

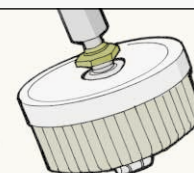
TAKE OFF THE CONTROL PANEL COVER AND REMOVE BOTH RHEOSTATS BY REMOVING THE TWO SCREWS, THE TWO LOCK WASHERS, AND THE TWO FLAT WASHERS FOR EACH.

TIGHTEN THE NUT ON EACH RHEOSTAT SHAFT AND PUT LOCTITE AROUND EACH NUT TO KEEP THEM TIGHT.

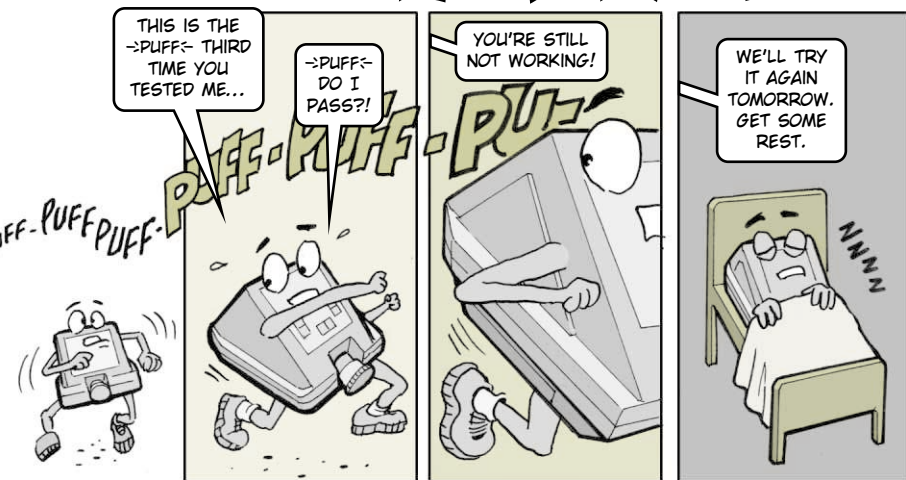
RE-INSTALL THE RHEOSTATS BY REVERSING THE PROCEDURE. YOU WILL NEED NEW LOCK WASHERS, NSN 5310-00-045-3296.

THE DISASSEMBLY AND ASSEMBLY PROCEDURES BEGIN ON PAGE 2-39 IN TM 3-1040-283-208P.

Tighten nut and then apply Loctite



PATS PM FOR

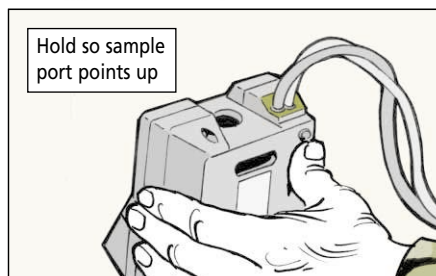
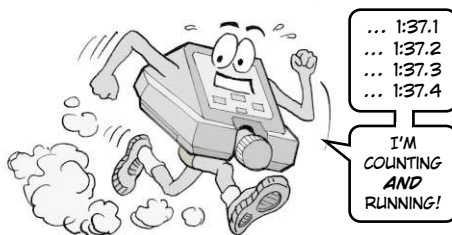


Help your M41 protection assessment test system (PATS) pass the test for accurate mask testing, NBC NCOs, by studying these two points:

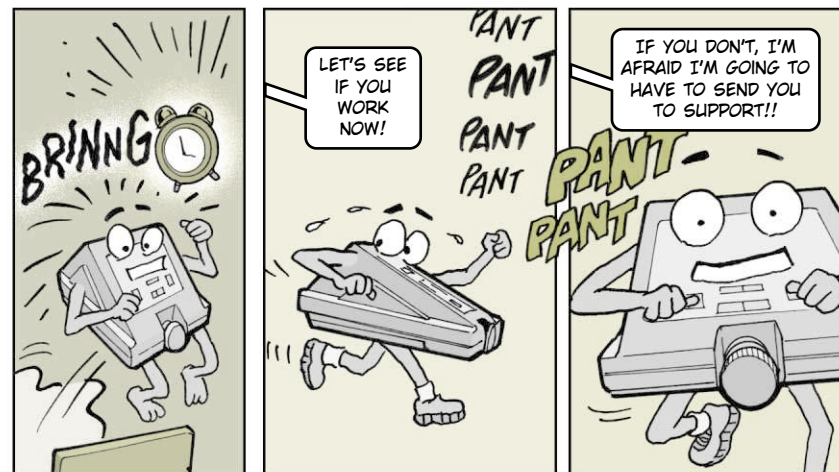
Counting Problem

If your PATS hasn't been used in 6 months or more and won't count particles, it may need some running time to clear the inlet nozzle. Let the PATS run for several hours in the count mode if necessary. The complete procedure's on Page 0014 00-1 in TM 3-4240-349-12&P.

If that doesn't clear it, remove the alcohol cartridge from the PATS. Hold the PATS so the sample ports point up. Find the small hole at the base of the cartridge cavity. Put 2-3 tiny drops of isopropyl alcohol in the cavity. Hold the PATS pointing up until all the alcohol drains into the small hole. It takes about 90 seconds.

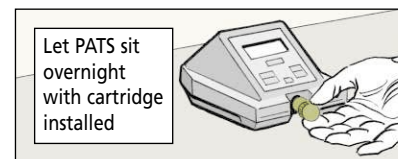
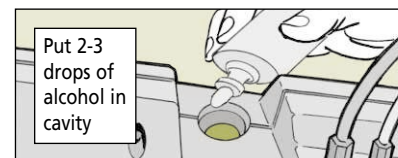


TRUE TESTING



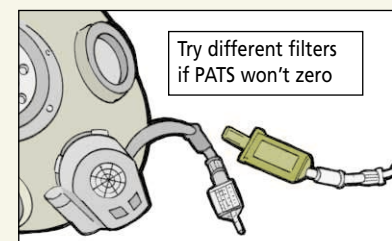
Put the PATS down and put the alcohol cartridge back in. Run PATS another hour and check if it now counts particles. Still no luck? Try the procedure one more time.

No change? Let the PATS sit overnight with the alcohol cartridge in place. Start the PATS in the morning to see if it works. If there's still no change, the PATS needs to go to support.

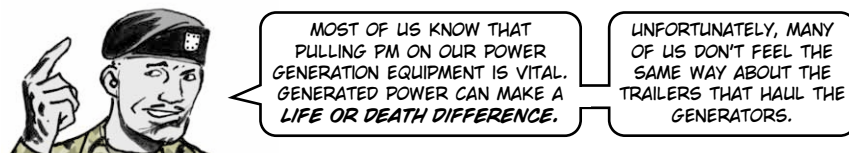
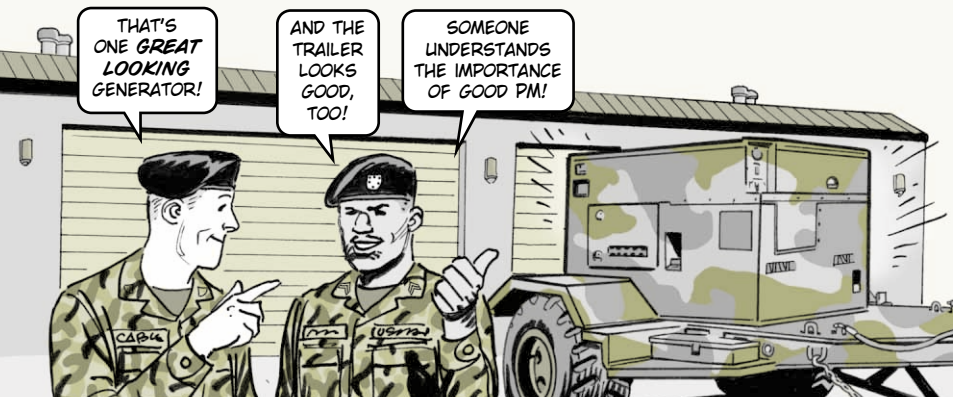


Zeroing Problem

If your PATS won't zero, you could have a bad HEPA filter. Bad filters have turned up in the field. Take off the filter and use the backup filter. If your PATS then zeroes, the first filter was bad. Order a new filter with NSN 4240-01-340-3715. If the backup filter doesn't make any difference, support should check out your PATS.



DON'T FORGET TRAILER PM



"YOUR GENERATOR CAN RUN LIKE A SWISS WATCH, BUT IF YOU CAN'T MOVE IT TO WHERE IT'S NEEDED, YOU MIGHT AS WELL PUT A FENCE AROUND IT AND CALL IT A WORK OF ART."

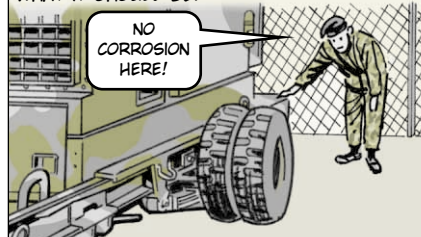
"SO, UNLESS YOUR NAME IS **REMBRANDT**, GET YOUR CLIPBOARD, GO OUTSIDE AND DO A WALK-AROUND FOR EACH OF YOUR TRAILERS."

HEY! MY NAME'S REMBRANDT!

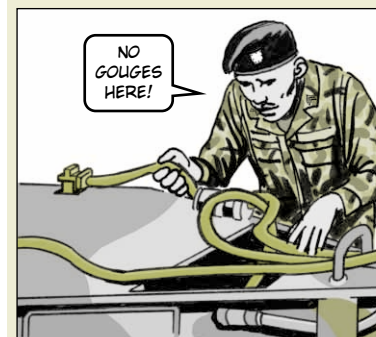
YOU JUST VOLUNTEERED. LET'S INSPECT THE NEXT TRAILER...



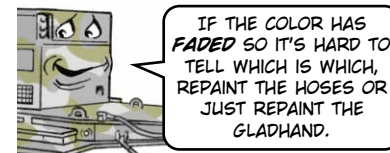
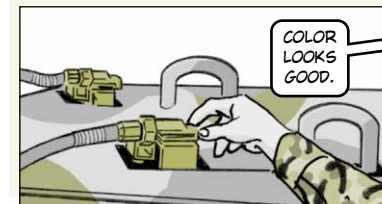
A GOOD STARTING POINT IS TO LOOK FOR **EXCESSIVE CORROSION**. NOT ONLY IS CORROSION A **PROBLEM** TO DEAL WITH, BUT IT'S ALSO AN **INDICATION** THAT YOUR STORAGE AND PRESERVATION JOB IS NOT WHAT IT SHOULD BE.



THEN EYEBALL THE INTERCONNECTING HOSES AND ELECTRICAL CABLE. LOOK FOR **GOUGES**, SPOTS THAT HAVE WORN SMOOTH AND CORRODED CONNECTORS.



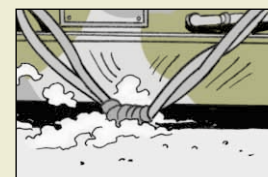
MAKE SURE AIR HOSES, ARE COLOR CODED—RED FOR EMERGENCY AND YELLOW FOR SERVICE.



MAKE SURE THE HOSES ARE TIED IN PLACE TO THE FRAME WITH NYLON TIES, NSN 5975-00-156-3253.



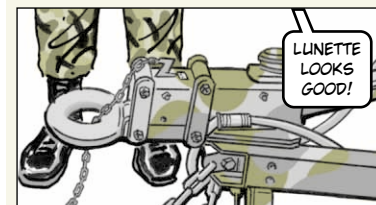
"TIED HOSES **DON'T** DRAG THE GROUND OR GET CUT BY A TURNING TRAILER."



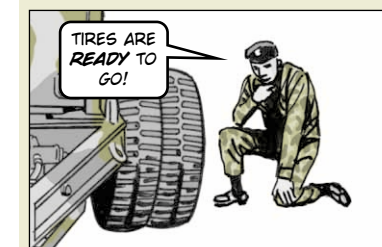
IF YOU NEED TO TIE YOUR HOSES DOWN, USE THE TWO-TIE METHOD. USE ONE TIE TO LOOSELY HOLD THE HOSE TO THE TRAILER. THEN PUT THE SECOND AROUND THE FIRST TIE BETWEEN THE HOSE AND THE FRAME.



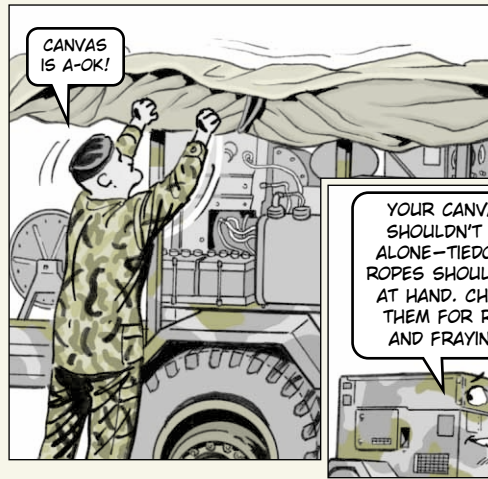
WHILE YOU'RE LOOKING AT THE HOSES IN THE LUNETTE AREA, TAKE A GOOD LOOK AT THE TRAILER'S TONGUE. *IS THE SIDE BAR GUARD BENT? IS THE LUNETTE BENT?* UNUSUAL BENDS IN THESE TWO AREAS COULD MEAN YOUR TRAILER HAS JACK-KNIFED IN THE PAST. THAT MEANS THERE MAY BE HIDDEN TROUBLE.



DROP YOUR GAZE DOWN TO THE TIRES. OF COURSE, TAKE CARE OF ANY FLAT ONES, BUT ALSO TRY TO DETERMINE WHICH ONES MAY BECOME FLAT NEXT. LOOK FOR EXCESSIVE WEAR AND CHUNKS OUT OF THE TREAD.



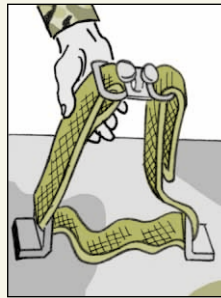
IF YOU STORE YOUR CANVAS IN YOUR TRAILER, IT NEEDS A ONCE OVER, TOO. CANVAS SEEMS TO BE A WATER MAGNET. DOES WATER PUDDLE UP AND STAY TRAPPED IN YOUR CANVAS? IF SO, TRY TO STORE IT IN A WAY THAT SOLVES THAT PROBLEM. CLEAN, DRY AND FLAT IS A START, BUT YOU MAY ALSO NEED A SLANTED BOARD UNDER THE CANVAS TO HELP WITH RUNOFF.




CANVAS IS A-OK!

IS THE CANVAS FREE OF HOLES AND TEARS? SMALL PINPOINT HOLES AND LEAKS AROUND SEAMS CAN BE HANDLED WITH SEALANT:

- 1 PT, NSN 8040-00-262-9028
- 1 QT, NSN 8040-00-262-9031
- 1 GAL, NSN 8040-00-281-1972



YOUR CANVAS SHOULDN'T BE ALONE—TIEDOWN ROPES SHOULD BE AT HAND. CHECK THEM FOR ROT AND FRAYING.



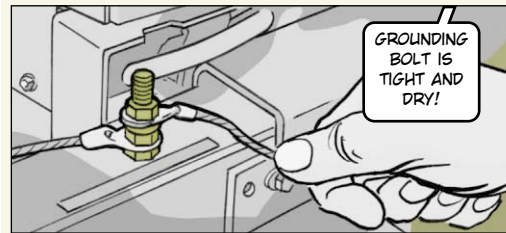
YOUR WALK-AROUND SHOULD INCLUDE A **HAND CHECK** OF ALL BOLTS FOR TIGHTNESS. EYEBALL THEM, TOO, FOR CORROSION.



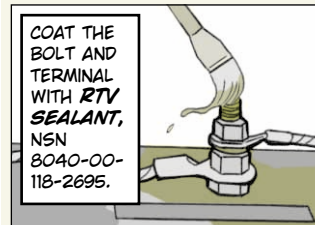
THESE BOLTS ARE TIGHT!

DON'T FORGET ABOUT THE GROUNDING BOLT. VIBRATION **LOOSENS** THIS BOLT AND MAKES FOR A POOR GROUND.


ALSO, A LOOSE BOLT LETS WATER CORRODE THE GROUND CONNECTION.



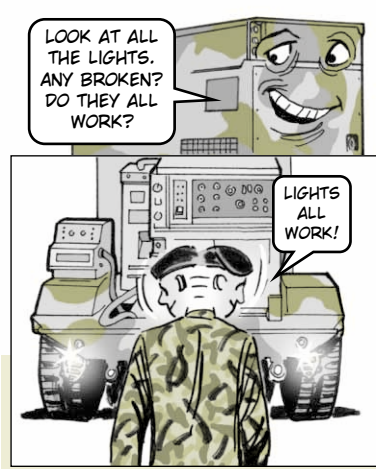
GROUNDING BOLT IS TIGHT AND DRY!



COAT THE BOLT AND TERMINAL WITH **RTV SEALANT**, NSN 8040-00-118-2695.

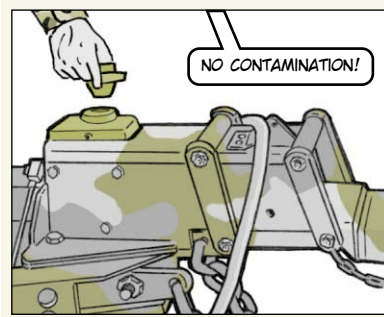


RTV SEALS OUT MOISTURE AND KEEPS THE BOLT TIGHT.



LOOK AT ALL THE LIGHTS. ANY BROKEN? DO THEY ALL WORK?

LIGHTS ALL WORK!



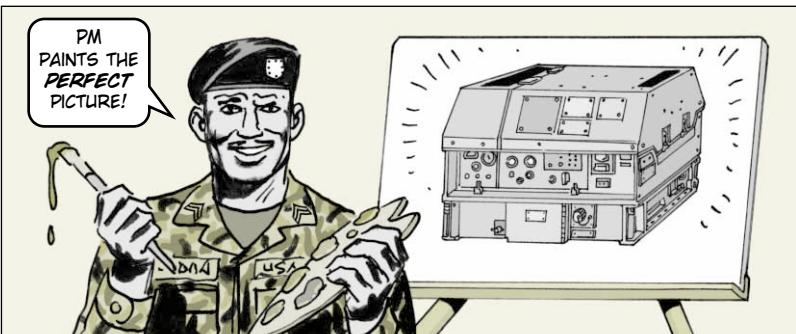
NO CONTAMINATION!

FINALLY, CHECK THE BRAKES. IF YOU HAVE HYDRAULIC BRAKES, CHECK THE MASTER CYLINDER TO MAKE SURE THERE'S ENOUGH FLUID IN IT AND THAT IT HASN'T BEEN CONTAMINATED WITH WATER. IT WILL LOOK MILKY IF THERE'S CONTAMINATION.

IF YOU HAVE AIR BRAKES, THE AIR TANKS SHOULD HAVE BEEN DRAINED AFTER THE LAST OPERATION. IF THEY WEREN'T, YOU MIGHT HAVE FROZEN OR CORRODED LINES.

CHECK THE PETCOCK. AFTER YOUR AIR TANKS WERE DRAINED, THE PETCOCK SHOULD HAVE BEEN CLOSED. MANY AREN'T THOUGH, AND AN OPEN PETCOCK LETS CONDENSATION FORM BACK IN THE TANK.

DON'T FORGET THE EMERGENCY HAND BRAKE. CHECK IT. IT SHOULD NOT BE SET IF YOUR TRAILER IS BEING STORED FOR A LONG TIME OR IF YOU'RE EXPECTING FREEZING WEATHER. THE CABLE AND HANDLE CAN FREEZE AND BREAK WHEN YOU TRY TO USE THEM. THEN YOU CAN'T RELEASE THE BRAKE.



PM PAINTS THE **PERFECT** PICTURE!

AN/PVS-6 MELIOS...

RANGE,
FIVE
FEET!

Pinpoint

Laser PM

WHEN *WAS* THE
LAST TIME PM WAS
DONE ON THAT
RANGEFINDER?

IF YOU THINK DOING PREVENTIVE
MAINTENANCE ON THE AN/PVS-6
NIGHT VISION DEVICE DOES THE JOB
FOR YOUR MINI EYESAFE LASER
INFRARED OBSERVATION SET
(MELIOS), TOO, THINK AGAIN...

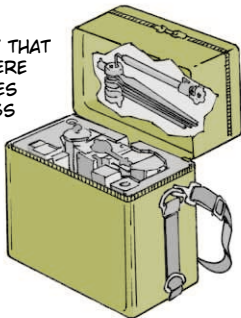


...THE MELIOS NEEDS SOME
SPECIAL PM ALL ITS OWN.

HERE ARE A FEW TIPS
TO GET YOU STARTED!

"THE **MOST NEGLECTED** MELIOS PM
AREA IS THE **CARRYING CASE**

...BUT DIRT THAT
RESIDES HERE
SOON MOVES
ITS ADDRESS
TO THE
MELIOS."



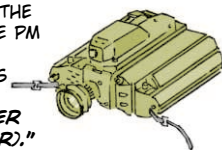
FIRST, USE A **DRY
CLOTH** TO REMOVE
LOOSE
DEBRIS.



"FOR **TOUGHER**
JOBS, A **WET**
DETERGENT CAN BE
USED, BUT MAKE
SURE THE MELIOS IS
REMOVED **BEFORE**
YOU BEGIN. DON'T
PUT IT BACK **UNTIL**
THE CASE IS DRY."

"WHILE YOU'RE CLEANING THE CASE, LOOK
FOR DAMAGE. DAMAGED AREAS ON THE CASE
MAY INDICATE THE MELIOS HAS SUFFERED
DAMAGE, TOO. DON'T FORGET TO LOOK OVER
THE SHOULDER STRAP. A CUT ON THE STRAP
COULD LEAD TO A LOST MELIOS."

"THE AREA ON THE
MELIOS WHERE PM
MUST BE DONE
JUST RIGHT IS
THE **MLRF**
(**MELIOS LASER
RANGE FINDER**)."



TAKE A CLOSE
LOOK AT THE
OBJECTIVE LENS,
LASER WINDOW
AND EYEPiece
LENS FOR DIRT,
CRACKS AND
SCRATCHES.

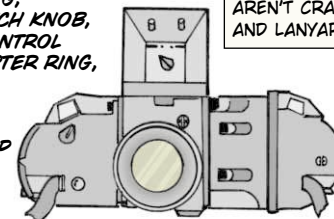


"TO CLEAN THESE GLASS AREAS, ROTATE
THE LENS CAP AWAY FROM THE OBJECTIVE
LENS AND LASER WINDOW. THEN REMOVE
THE EYESHIELD PLUG FROM THE EYESHIELD.
TAKE A DRY LENS CLEANING TISSUE, NSN
6640-00-393-2090, AND ADD A DROP OF
LENS CLEANING COMPOUND, NSN 6850-01-
076-9656.

NOW LIGHTLY AND SLOWLY WIPE THE LENS,
BUT **ONLY ONE COMPLETE STROKE!** MORE
THAN ONE STROKE BRINGS DIRT BACK OVER
THE GLASS AND LEADS TO SCRATCHES.

AFTER ONE STROKE, THROW THE TISSUE
AWAY. IF THE GLASS IS **NOT CLEAN**, DO IT
ALL AGAIN, BUT EACH TIME USE A **NEW
LENS TISSUE**.

"NEXT, LOOK AT
EVERYTHING!
THE **HOUSING**,
MODE SWITCH KNOB,
**RETICLE CONTROL
KNOB** DIOPTR RING,
LENS CAP,
**EYESHIELD
ASSEMBLY**,
NECK STRAP
AND
LANYARD."



"MAKE SURE THE KNOBS AREN'T LOOSE,
THE LENS CAP AND EYESHIELD ASSEMBLY
AREN'T CRACKED, AND THE NECK STRAP
AND LANYARD HAVE NO CUTS."

CLEAN
THESE AREAS
WITH A DRY
CLOTH AND A
LIGHT TOUCH.



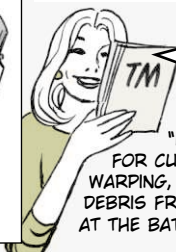
"YOUR MELIOS
USES TWO TYPES OF
BATTERIES. THE TM
HAS THE WORD
ON BOTH."



"DEPENDING UPON YOUR MISSION, YOU MIGHT HAVE THE
BA-6516/U, LITHIUM BATTERY, OR THE **BB-516/U**,
NICKEL-CADMIUM BATTERY. EACH TYPE OF BATTERY
REQUIRES SPECIAL HANDLING AND DISPOSAL."

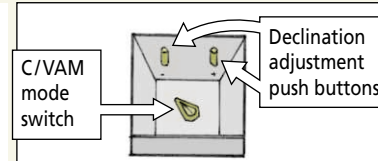
READ THAT INFO IN
TM 11-5860-202-12
BEFORE YOU WORK
WITH THE BATTERIES.

ONCE YOU'RE CLEAR
ON HOW TO HANDLE
THEM, CHECK THE
CHARGE DATE.



"LOOK AT THE LANYARD ON THE BATTERY CAP
FOR CUTS. CHECK THE BATTERY COMPARTMENT FOR
WARPING, CORROSION, DIRT AND DEBRIS. CLEAN DIRT AND
DEBRIS FROM THE COMPARTMENT WITH A DRY CLOTH. LOOK
AT THE BATTERY CAP O-RING FOR CUTS AND NICKS."

"FINALLY, LOOK OVER
THE **C/VAM**
(**COMPASS/
VERTICAL ANGLE
MEASUREMENT**).
CLEAN OFF ANY DUST
WITH A DRY CLOTH."



"CHECK THE
HOUSING MODE
SWITCH, DECLINATION
ADJUSTMENT PUSH
BUTTONS AND
THE HOUSING
FOR DAMAGE."



ACTIVE ARMY

MTOE Company With Property Book

Winner: HHB, 18th Field Artillery Bde,
Ft Bragg, NC

Runner-up: HHD, 115th Military
Intelligence Group,
Schofield Barracks, HI

MTOE Company Without Property Book

Winner: B Co, 15th MI Bn (AE),
Ft Hood, TX

Runner-up: HSC, 533d Bn, 66th Military
Intelligence Group, Darmstadt, Germany

MTOE Battalion With Property Book

Winner: 205th Military Intelligence Bn,
Ft Shafter, HI

Runner-up: 25th Trans Bn, 19th Theater
Support Command, Yongson, Korea

MTOE Battalion Without Property Book

Winner: 725th Main Support Bn,
25th Inf Div (Light),
Schofield Barracks, HI

SUPPLY EXCELLENCE

TDA LOWER (SMALL)

Winner: Aviation Technical Test Center,
Ft Rucker, AL

Runner-up: 279th Base Support Bn, 98th
ASG, Bamberg, Germany

TDA UPPER (LARGE)

Winner: 527th Military Intelligence Bn,
Camp Humphreys, Korea

Runner-up: A Btry, 1st Bn, 30th FA Rgmt
(FSCAOD), Ft Sill, OK

SSA SMALL

Winner: Supply Point #60, 20th ASG,
Camp Carroll, Korea

Runner-up: B Co, 626th FSB,
101st Abn Div (AASLT), Ft Campbell, KY

SSA MEDIUM

Winner: 98th Maint Co, Ft Richardson, AK

Runner-up: 24th Quartermaster Supply Co
(DS), Ft Lewis, WA

SSA LARGE

Winner: D Co, 701st Main Support Bn,
1st Inf Div, Kitzingen, Germany

Runner-up: A Co, 704th Div Support Bn,
Ft Hood, TX

ARMY RESERVE

MTOE Company With Property Book

Winner: 179th Transportation Co,
(89th RSC) Belton, MO

Runner-up: HHD, 361st Quartermaster Bn
(WS) (81st RSC), Montgomery, AL

MTOE Company Without Property Book

Winner: HHC, 489th Eng Bn (C)(M)
(90th RSC), North Little Rock, AR

Runner-up: 317th Support Center (RAOC)
(7th ARCOM), Wiesbaden, Germany

MTOE Battalion With Property Book

Winner: 325th Field Hospital
(89th RSC), Independence, MO

AWARDS FY 2001

Runner-up: 94th General Hospital
(90th RSC), Seagoville, TX

MTOE Without Property Book

Winner: 243d Quartermaster Bn
(89th RSC), Parsons, KS

Runner-up: 448th Civil Affairs Bn
(USASOC), Ft Lewis, WA

TDA LOWER (SMALL)

Winner: SETAF Augmentation Unit,
Vincenza, Italy

Runner-up: 1395th Transportation
Terminal Bde (70th RSC), Seattle, WA

TDA UPPER (LARGE)

Winner: Area Maint Support
Activity 157 (G), Springfield, MO

Runner-up: 7th Army Reserve Cmd,
Schwetzingen, Germany

SSA SMALL

Winner: 854th Quartermaster Co (DS),
Logan, UT

Runner-up: Detachment 1, 1011th
Quartermaster Co, Pittsburg, KS

ARMY NATIONAL GUARD

MTOE Company With Property Book

Winner: 1157th Transportation Co,
Oshkosh, WI

Runner-up: 3631st Maint Co (GS),
Santa Fe, NM

MTOE Company Without Property Book

Winner: HHC, 1st Bn, 150th Aviation,
West Trenton, NJ

Runner-up: 1436th Engr Co (CSE),
Montague, MI

MTOE Battalion With Property Book

Winner: 1/221st Cavalry Squadron,
Las Vegas, NV

Runner-up: HQ, 2d Bn, 147th Aviation,
St. Paul, MN



MTOE Battalion Without Property Book

Winner: HQ, 2d Bn, 127 Inf, Appleton, WI

Runner-up: 150th Engr Bn (CBT),
Meridian, MS

TDA LOWER (SMALL)

Winner: HQ, 90th Troop Command,
Oklahoma City, OK

Runner-up: Det 2, STARC Camp McCain
Training Center, Elliot, MS

SSA SMALL

Winner: B Co, 193d Aviation (AVIM),
Wheeler Army Airfield, HI

Runner-up: B Co, 192d Support Bn,
Salinas, PR

SSA MEDIUM

Winner: USPFO Nebraska Supply Center,
Lincoln, NE

Runner-up: USPFO Wisconsin
(Camp Williams), Camp Douglas, WI

SSA LARGE

Winner: USPFO Louisiana, Pineville, LA

Runner-up: DOL Warehouse, Class IX DSU,
Camp Ripley, Little Falls, MN

Supply...

GO TO THE HEAD OF THE CLASS

THERE ARE **10 CLASSES** OF SUPPLY THAT ARE USED TO ID DIFFERENT CATEGORIES OF ITEMS.

THEN, A NUMBER OF SUBCLASSES ARE AUTHORIZED FOR USE WITH EACH SUPPLY CLASS TO FURTHER DEFINE WHAT FAMILY THE ITEM IS IN.

BOTH HAVE A LOT TO DO WITH YOUR REQUISITIONING PROCESS SO **CHECK 'EM OUT!**

DO YOU HAVE A STACK OF **REQUISITION** **REJECTS** THAT'S DRIVING YOU CRAZY BECAUSE YOU CAN'T FIGURE OUT WHY THEY WERE REJECTED?

RELIEF MAY BE AS NEAR AS THE ITEM'S SUPPLY CATEGORY OF MATERIEL CODE (SCMC).

AN SCMC IS ASSIGNED TO EVERY ITEM IN THE FED LOG-AMDF.

IT IS A **2-POSITION** **CODE** SHOWING AN ITEM'S CLASS AND SUB-CLASS OF SUPPLY.

"THE **FIRST** POSITION TELLS YOU **WHERE** TO ROUTE YOUR REQUISITION AND IS RARELY A PROBLEM."

"THE **SECOND** POSITION DEFINES **WHAT KIND** OF EQUIPMENT THE ITEM IS USED ON OR THE TYPE OF UNIT ALLOWED TO ORDER IT."

The Supply Category of Materiel Code (SCMC)

CLASS/ CODE:	ITEM CATEGORY:	AUTHORIZED SUBCLASS (Pos 2, SCMC):
I/1	Subsistence	A, C, R, S, W
II/2	Clothing, Kits, Tools, & Household Equipment	A, B, D, E, F, G, H, K, L, M, N, O, P, Q, T, U, W, Y, Z
III/3	POL (fuel, antifreeze, lubricants and oil)	1, 2, 3, 4, 5, 6, 7
IV/4	Construction Material	X
V/5	Ammunition	A, L, N, W, Z
VI/6	Personal Demand Items	X
VII/7	Major End Items	A, B, D, G, H, K, L, M, N, O, P, Q, W, Z
VIII/8	Medical Material	0-9
IX/9	Repair Parts	A, B, D, E, F, G, H, K, L, M, N, O, P, Q, T, U, W, Y, Z
X/10	Economic Development & Agriculture. Non-military	X

IT'S THE **SECOND** **POSITION** THAT CAUSES THE PROBLEMS.

Position 2, SCMC (Subclass) and Short Definition

- A-Aviation
- B-Troop Support Items
- C-Operational Rations
- D-Commercial Vehicles
- E-General Supply Items
- F-Clothing & Textiles (ICE/OCIE)
- G-Commo/Electronics Items
- H-Test, Measurement & Diagnostic Equip.
- K-Tactical Vehicles
- L-Missiles
- M-Weapons (small arms, artillery, fire control, machine guns, air defense, etc.)
- N-Special Weapons
- O-Combat Vehicles (tanks, recovery vehicles, tracked/half-tracked, etc.)
- P-Signal Intelligence, Electronic Warfare, Items in FSC 5811
- Q-Marine Equipment (landing craft, barges, tugs, etc.)
- R-Refrigerated Subsistence
- S-Non-refrigerated Subsistence
- T-Industrial Supplies (repair parts, hardware)
- U-COMSEC items not under G
- W-Ground
- X-No subclass assigned
- Y-Railway Equipment and Supplies
- Z-Chemical (gas masks, decontamination items, smoke generators, etc.)

THERE ARE 10 CLASSES OF SUPPLY AND ABOUT 36 SUBCLASSES.



PS 593

"FOR EXAMPLE, NSN 5310-00-616-3555 IS A LOCK WASHER ASSIGNED TO SCMC 9T..."



"...AND NSN 6240-00-155-7836 IS A LAMP ASSIGNED TO SCMC 9G."



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"**BOTH** ITEMS ARE **CLASS IX** REPAIR PARTS, BUT THE LOCK WASHER IS AN INDUSTRIAL SUPPLY ITEM (SUBCLASS T) AND THE LAMP IS A COMMUNICATIONS/ELECTRONICS ITEM (SUBCLASS G)."

PS MORE

APR 02

MOST UNITS USE INDUSTRIAL SUPPLY ITEMS SO THERE'S **NORMALLY** NO PROBLEM WITH THEM.

BUT RESTRICTIONS MAY APPLY ON THE COMMUNICATIONS/ELECTRONICS ITEM.

HEY SARGE, I'M TRYING TO ORDER SUCH-AND-SO...

...BUT I **CAN'T**... WHY NOT?

HERE'S ANOTHER EXAMPLE...

LET ME SEE.

HERE'S YOUR PROBLEM. THE SUBCLASS IS A. 'A' FOR **AVIATION**.

ONLY AVIATION AND AVIATION SUPPORT UNITS CAN ORDER THESE ITEMS.

ARE WE IN AN AVIATION UNIT?

NO, SERGEANT.

THERE YOU GO.

"REQUISITIONS FOR AVIATION SUBCLASS ITEMS FROM ALL OTHER UNITS WILL BE...

REJECTED

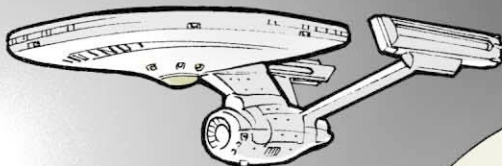
SAVE YOURSELF THIS REJECTION HEADACHE.

CHECK OUT TABLE 3-42 OF DA PAM 708-2, **CATALOGING AND SUPPLY MANAGEMENT DATA PROCEDURES FOR THE ARMY CENTRAL LOGISTICS DATA BANK (SEP 00)**.

IT LISTS **ALL CLASSES AND SUBCLASSES** OF SUPPLY!

"THEN, **BEFORE** YOU SUBMIT A REQUISITION, MAKE SURE YOU CHECK OUT THE SCMC FOR THE ITEM YOU NEED. DOING SO WILL **SAVE** YOU TIME AND FRUSTRATION AND ELIMINATE UNEXPECTED REJECTS."

PS END



On-line Weapons Training

Training on the M2, MK 19, and M249 machine guns is now available on-line at <http://aeps.ria.army.mil/aepsbpublic.cfm>. You will need to have a login and password or fill out an access form to use the site. Then click on TRAINING.

M2 CLEARANCE CHANGED

Armorer's, the standard for the clearance between the M2 machine gun's cover latch and the receiver's top plate has been changed to .02 inch, regardless of whether your unit is CONUS or OCONUS. The check is in Para 3-3 in TM 9-1005-213-23.

HELMET TROUBLESHOOTING

Having problems communicating while wearing the HGU-56/P or the SPH- 4B flight helmets? There is an additional electronic test set, NSN 6625-01-251-8705 that units can buy to troubleshoot the commo parts of their helmets. The set costs about \$335.00.

CABLE TUG OF WAR Update

Get the UG-1366/U RF connector needed to extend the radio cable on your CH-47D with NSN 5935-00-177-2712. Page 37 of PS 588 has the wrong NSN.

SOM for Aircraft Update

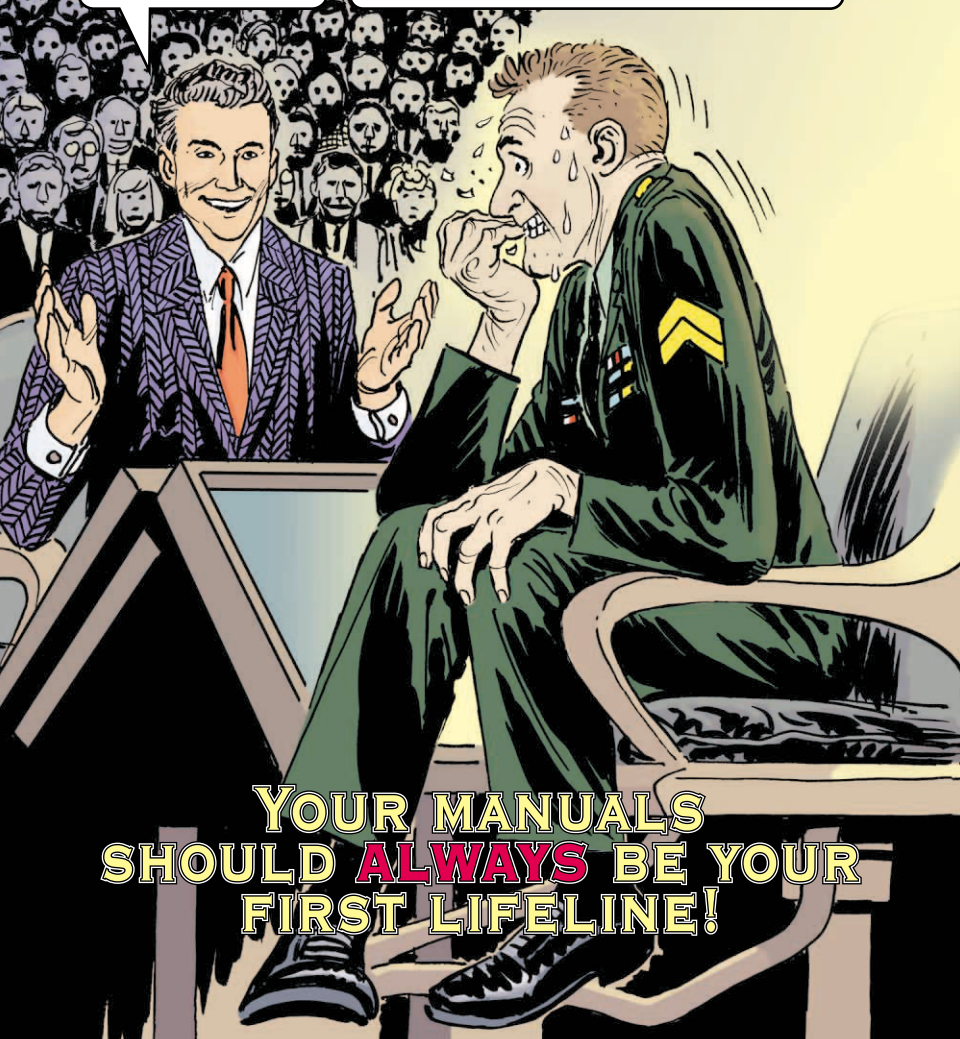
On Page 2 in PS 589 we said that information on aircraft safety-of-use messages is covered in AR 95-3 Aviation: *General Provisions, Training, Standardization and Resource Management*. The reference should be AR 95-1, Flight Regulations. All the information contained in AR 95-3 was moved into AR 95-1.

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

FOR A **MILLION DOLLARS**, IF YOUR TM DOESN'T TELL YOU AND YOU'RE **CONFUSED** OVER WHAT SAFE COMMO CLEANER TO USE, YOU SHOULD...

- A. GUESS
- B. GRAB WHATEVER IS HANDY
- C. ASK A BUDDY WHAT HE WOULD USE
- D. LOOK FOR THE ANSWER IN TB 43-0135, ENVIRONMENTALLY SAFE SUBSTANCES FOR USE WITH COMMUNICATIONS-ELECTRONICS EQUIPMENT



**YOUR MANUALS
SHOULD ALWAYS BE YOUR
FIRST LIFELINE!**