Issue 592

P.S

March 2002

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-592

Be An Habitual PMer

If you want your aircraft to operate better and go longer between maintenance downtime, get in the habit of doing regular preventive maintenance. A habit like that means the difference between breakdowns with costly repairs and equipment readiness.

Make PM a habit by doing **all** daily checklist aircraft inspections everyday. And get in the habit of using common sense during PM, too.

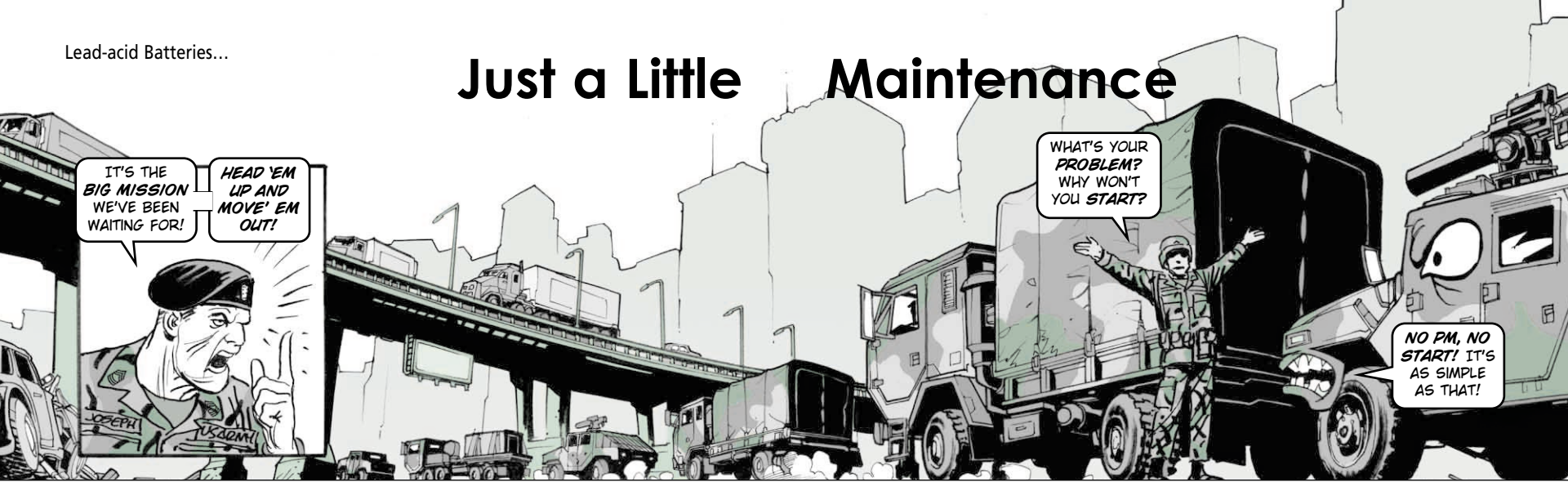
For instance, when you're doing pre-flight checks, if your aircraft sounds funny or the lights don't come on, check it out right then and there. Don't wait 'til later. If you smell fuel or feel something unusual, find out what it is. If anything seems out of place, don't ignore it.

If you find a problem that requires AVIM repair, get them involved so they can fix the problem.

Habitual PM will help you spot problems early. Being your own PM inspector will spot even more.

Make no-nonsense, common sense PM a regular habit, sort of second nature. It'll lead to functional, mission-ready equipment.

Just a Little Maintenance

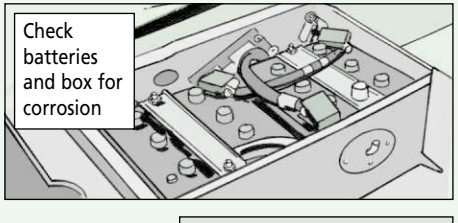


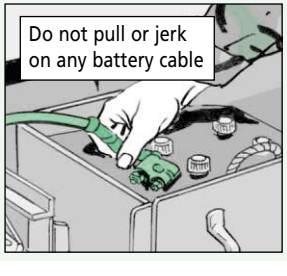
When that big mission comes along, you operators must be sure there's power in your vehicle's batteries.

You do that by performing the preventive maintenance required by the vehicle's -10 TM, and by letting your mechanics know about problems you can't correct.

Just to make sure you know the basics—those PM items that apply to all vehicular batteries—eyeball this list:

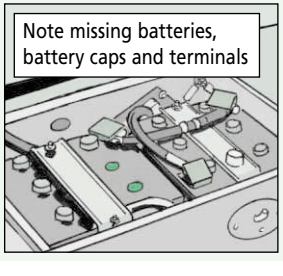
- At least weekly, check the batteries and battery box for corrosion. Cables, connnections and the box itself should be free of that fluffy white stuff. If you spot any corrosion, let your mechanics know pronto.





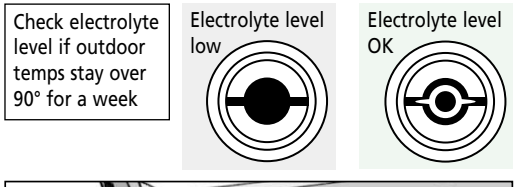
Note any missing batteries, missing or damaged terminals, and missing or damaged battery caps.

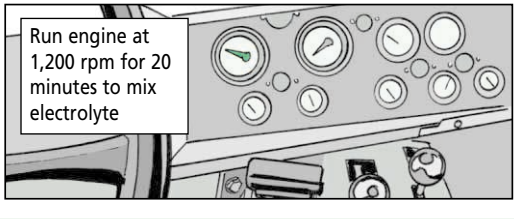
Let your mechanics know about these problems, too.



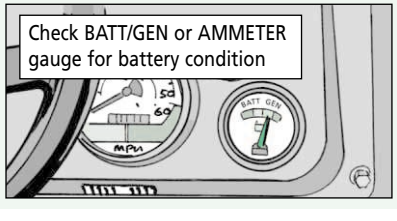
- If the temperature in your area is 90° F or higher for more than a week, remove the battery caps and check the electrolyte level. If the level is low, let your mechanic know the battery needs distilled water.

After water is added, start your vehicle and run it at 1,200 rpm for about 20 minutes to mix the water with the electrolyte.





- When you start your vehicle, make sure the BATT/GEN or AMMETER gauge is operating correctly. If the gauge shows that the batteries are discharging (in the yellow or red range on the dial), there's an electrical system problem your mechanic needs to fix.

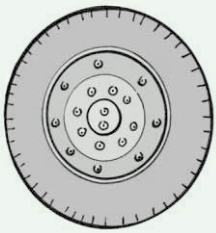


- Do not remove batteries unless you've been told to do so by unit maintenance personnel. Even then, a mechanic should monitor your work.

MATCHING TIRES TO TRUCKS

Bias ply or radial tires			
M966	M1025	M1037	M1044
M996	M1026	M1038	M1045
M997	M1035	M1042	M1046
M998	M1036	M1043	M1121

Radial tires only	
All A1 and A2 models	
M1097	M1113
M1097A1	M1114
M1097A2	M1123
M1109	



EVENTUALLY, ALL HMMWVS WILL USE RADIAL TIRES.

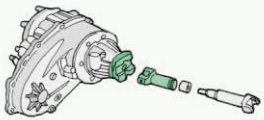
COMMANDERS CAN CONVERT TO RADIALS WITH UPDATED RUBBER RUN-FLAT DEVICES ANY TIME AT THE UNIT'S EXPENSE.

REMEMBER, ALL FOUR TIRES MUST EITHER BE BIAS OR RADIAL— NO MIXING ALLOWED!

Check Your Transfer

"BASIC HMMWVS ORIGINALLY HAD A MODEL 218 TRANSFER CASE, NSN 2520-01-163-4999.

THE MODEL 218 HAS A BOLT-ON FLANGE ON THE REAR PROPELLER SHAFT."



Model 218 transfer

"CONVERSION KIT, NSN 2520-01-434-0822, CONVERTS A BASIC VEHICLE WITH THE MODEL 218 TRANSFER TO A MODEL 242 TRANSFER."

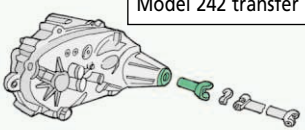
"THE KIT CONTAINS A TRANSFER, NSN 2520-01-409-2512, TWO PROP SHAFTS AND ALL NEEDED HARDWARE."

"IT IS DESIGNED TO BE USED ONCE PER VEHICLE. ONCE THE KIT IS INSTALLED, ORDER THE -2512 TRANSFER WHEN A REPLACEMENT IS NEEDED."

THE MODEL 218 TRANSFER IS NO LONGER BEING BOUGHT. IT IS AVAILABLE IN ***SMALL QUANTITIES*** FROM A TACOM REBUILD PROGRAM.

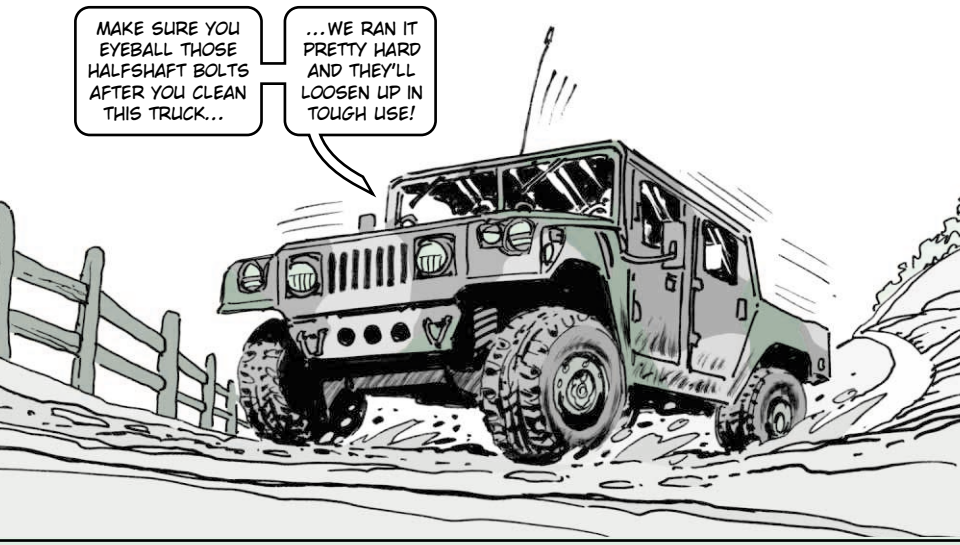
IF YOU NEED ONE OR TWO 218S, ORDER THEM OR THE -0822 KITS. IF YOU NEED MORE, ORDER JUST THE KITS.

"A1-SERIES HMMWVS AND ALL THE M1097S USE A MODEL 242 TRANSFER, NSN 2520-01-452-8365, THAT IS ***DIFFERENT FROM*** AND ***NOT COMPATIBLE*** WITH THE MODEL 242 USED ON A2-SERIES TRUCKS, NSN 2520-01-409-2512."



Model 242 transfer

Halfshaft Bolts Vibrate Loose



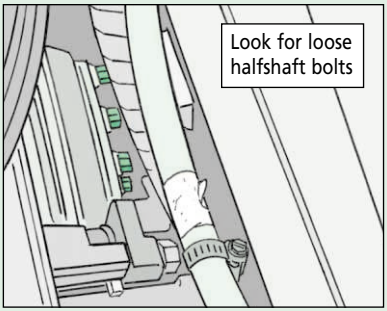
It's well known that vibration loosens the halfshaft bolts on HMMWVs. And you get plenty of vibration when your HMMWV goes cross-country.

As you rock and roll over hill and dale, the bolts can back out and move closer to the brake caliper adapter. Eventually, they catch the adapter and break off.

Then the brake rotor wobbles, wearing out brake pads. That can leave you brakeless.

So eyeball the halfshaft bolts any time you pull a service on the HMMWV—and for sure while you're in the field.

Look for shiny areas under and around the bolt heads. If you see a loose bolt, report it. Have your mechanic replace the bolt, NSN 5306-01-185-7048, and its lock washer, NSN 5310-01-185-7218.

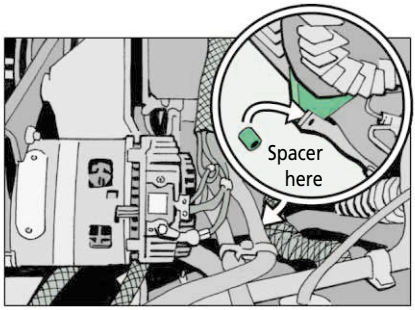


Never reuse the lock washer. It won't hold the second time around. It's a one-use item. Also, make sure all bolts and washers are replaced when the disc rotor or halfshaft assembly is replaced.

STOP BREAKING THE EARS OFF

Space between **your** ears is no reason for broken ears on 60-amp, 100-amp and 200-amp HMMWV alternators.

But if you forget to re-install the spacer at the rear alternator brace, that's what you get—a broken ear. Tightening the brace nut without the spacer in place puts too much strain on the ear. Then the ear breaks off and the alternator has to go to the rebuild shop.



"IF YOU HAVE TO, TIE THE SPACER TO A FINGER SO YOU REMEMBER TO USE IT AGAIN."

Spacer, NSN 5310-01-292-5354, is used with brace, NSN 5340-01-293-0125, on 60-amp and 100-amp alternators.

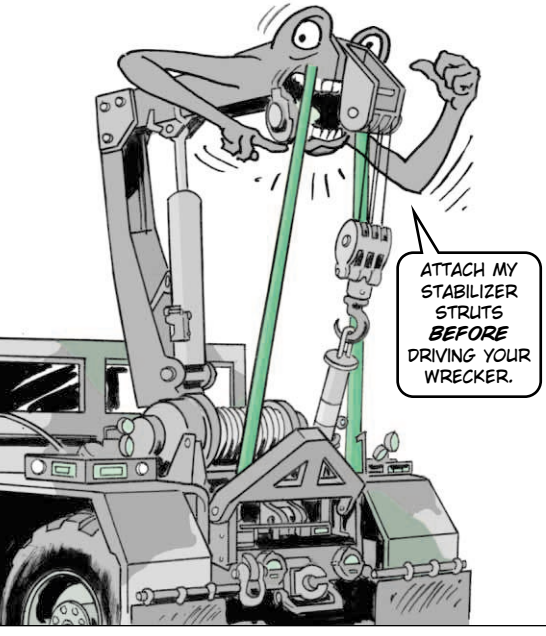
Spacer, NSN 5310-01-337-7034, is used with brace, NSN 5340-01-292-8404, on 200-amp alternators.

"EYEBALL PAGES 4-10 AND 4-11 OF TM 9-2320-280-20-2 FOR DETAILS."

Protect the Fuel Bowl

M984 HEMTT Wrecker...

USE STABILIZER STRUTS



Before you move an M984 HEMTT wrecker equipped with the HIAB crane, make sure the boom stabilizer struts are locked in place.

No matter how short the trip, those struts must be in place to prevent the boom from bouncing around. The boom is top-heavy and the bouncing over-stresses the lay-down cylinders, ripping them loose from their welds. Then the boom falls.

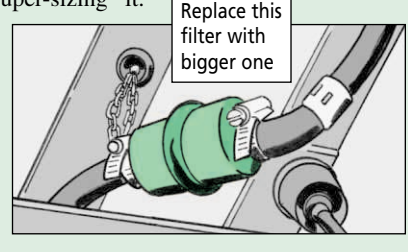
If anything or anybody is in the way when the boom falls—worse still, if a load is attached when it falls—well, just make sure the struts are installed before moving out. It's cheap insurance against equipment and body damage.

M939A2-Series Trucks...

In-line Fuel Filter Change

If your M939A2-series 5-ton trucks are still using those small in-line fuel filters that clog up real fast, consider "super-sizing" it.

With help from your DS unit, you can switch to the same filter used on older M939s that's larger and doesn't clog up nearly as often.

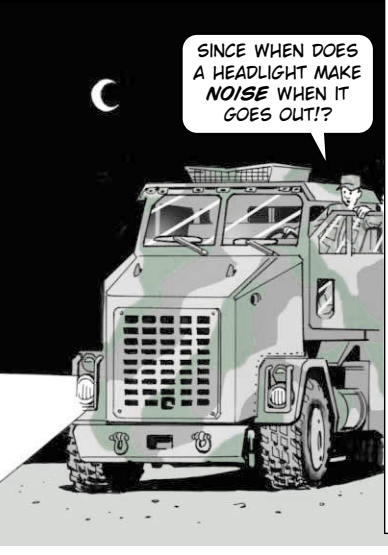


Your DS shop will need a kit, NSN 4930-01-387-1147, to convert your trucks to the larger filter. Instructions come with the kit.

After that, you'll just need to replace the element when it gums up. It comes with NSN 2910-00-152-2033.

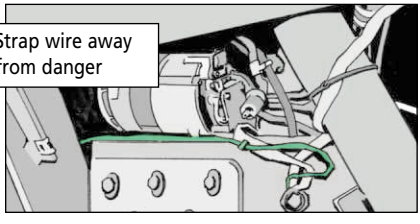
M1070 HET Tractor...

Headlight Ground Wire Check



Take a minute, drivers, to eyeball the driver's side headlight's ground wire on your M1070 tractor.

If the ground wire is drooping, it may be loose enough for the radiator or alternator fan to snag it. So tie up the loose ground wire to the nearest frame ground strap with an electrical tie, NSN 5975-00-111-3208.



That'll keep your headlights working and sparks away from the engine area, where you sure don't need 'em.

M915-Series Trucks...

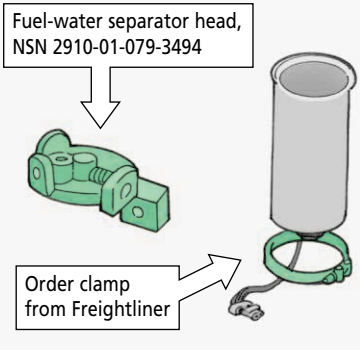
Tough to Find Separator Parts

Need a fuel-water separator head or air dryer clamp for your M915A2, M916A1 or -A2 or M917A1 or -E1 truck, but can't find them in the TM or get the supply system to deliver?

Look no further:

While Item 1 in Fig 40 of TM 9-2320-363-24P shows the fuel-water separator element and body, the head is Item 12 in Fig 32. It's NSN 2910-01-079-3494.

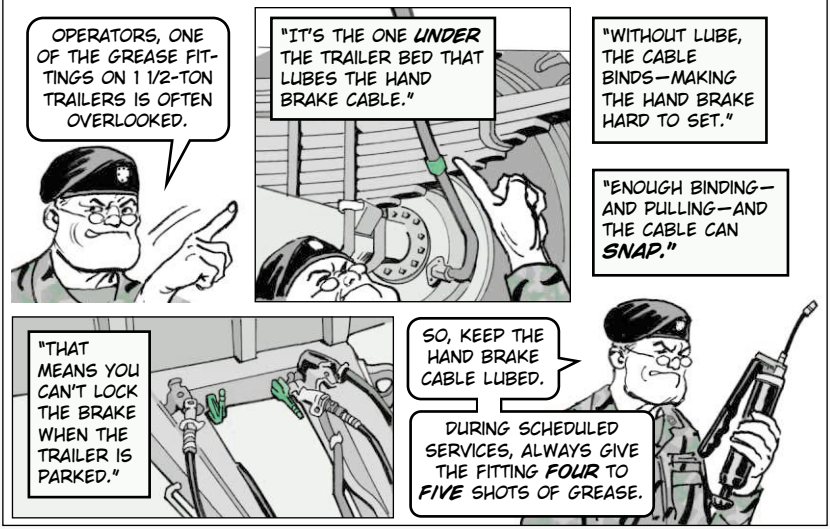
As for the air dryer clamp that breaks often when removed during services, it's shown as Item 38 of Fig 206. Problem is, the supply system is real slow on filling demands.



So buy the clamp directly from a local Freightliner dealership and save time. Ask for part number MID/KAF9000056. Freightliner's CAGE code is 64678.

M103/M105/M149-Series Trailers...

SNUB OF A GREASE FITTING



M1022A1 Dolly Set...

ONE DRAIN IS NOT ENOUGH

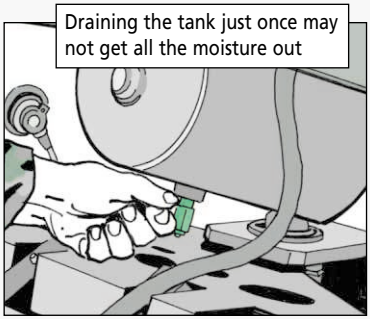
A dolly set can sit for months at a time in the motor pool. That idle time creates big trouble in its air brake system.

Changes in temperature cause condensation to form in the dolly set's air brake system. That moisture leads to corrosion, which plugs up brake valves and cylinders. That leads to brake failure.

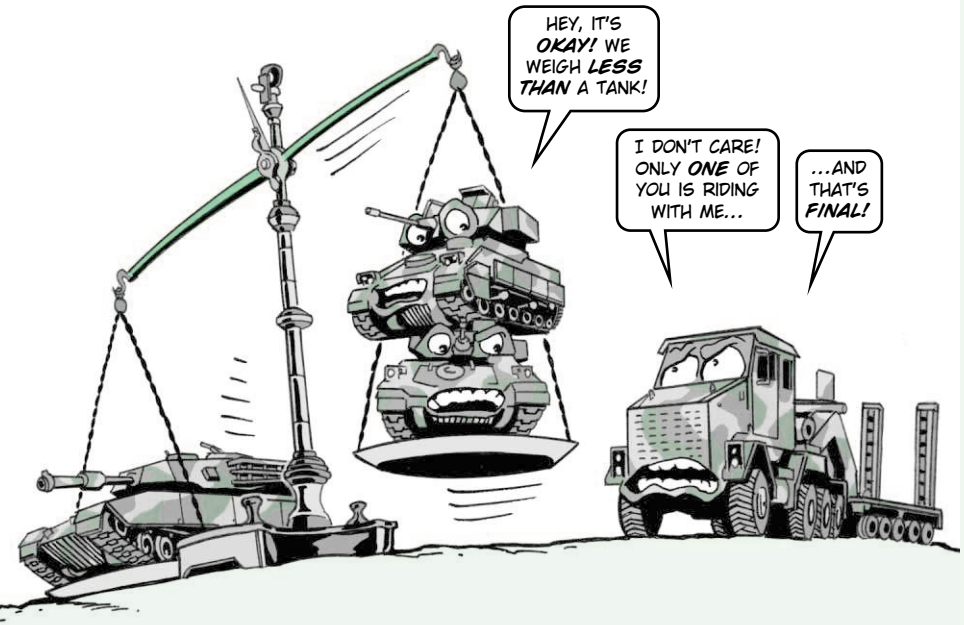
You can head off a lot of condensation by leaving the air tank valve open when you park the dolly for long periods.

In addition, drain moisture from the air tank before you head out with the dolly. After vehicle hookup, drain the tank and let the air pressure build up in the vehicle's brake system, then drain the tank again.

Repeat this procedure until no more water comes out of the tank.



Trailer Takes One, Not Two



Two Bradleys may weigh less than one M1-series tank, but that doesn't mean they can be transported safely on your M1070/M1000 heavy equipment transporter system (HETS). **They can't.**

The HETS is designed to carry one M1, which weighs 70+ tons. Since the heaviest Bradley—the M2A3—weighs a little more than 33 tons with combat load, you might think you could load two on the HETS and still have almost 4 tons to spare.

If total weight were the only consideration, that would be true. Unfortunately, you have to account for two other factors as well: bogie weight limits and tiedown points.

Bogie Weight Limits

Even equipment weighing less than 70 tons can exceed the load limit on the HETS. Each trailer bogie is designed to handle 15,000 pounds with a 10 percent overload capacity. That's a total of 16,500 pounds per bogie.

When loaded, the 70 tons of an M1- series tank are spread over the entire trailer with the two rear bogies carrying a total of 30,000 to 31,500 pounds.

When two Bradleys are loaded, the two rear bogies are forced to carry approximately 47,400 pounds—well above their load capacity. Those bogies could collapse.

Tiedown Points

Since more tiedown points are needed for securing two Bradleys, some units use the cargo tiedown D-rings.

All forward tiedown restraints must be able to hold 70 percent of the vehicle's total weight for highway transportation. That's according to Military Traffic Management Command Transportation Engineering Agency (MTMCTEA) Pam 55-20, *Tiedown Handbook for Truck Movements* (Jul 01).

Based on the 66,600-lb weight for the M2A3, the two forward D-rings would have to hold 23,310 pounds each (66,600 x 70% ÷ 2 = 23,310). Those D-rings are only designed to hold up to 15,000 pounds each. They won't hold.

If you plan to load two Bradleys on your HETS, don't! If you've transported two Bradleys in the past, inspect the trailer for damage to the suspension castings, bogies, deck, brakes, chains and all tiedown points.

Get Your Chock Blocks Here!

NSN	Material	Size (LxWxH in inches)
2540-01-271-7167	Rubber	7 x 6.5 x 5.38
2540-00-678-3469	Wood	8 x 9.5 x 8
2540-01-459-4266	Rubber	9 x 15 x 6
2540-00-288-2873	Aluminum	9.438 x 8 x 5.75
2540-00-769-5048	Steel	11.25 x 11.5 x 5.5
2540-00-912-1848	Aluminum alloy	12 x 15 x 9.375
1730-00-294-3695	Wood	14 x 6 x 4
2540-01-165-6136	Wood	15.5 x 7.75 x 5.75
2540-01-184-4897	Aluminum alloy	18 x 18 x 1.75

DIRTY OIL = A *DEAD* ENGINE

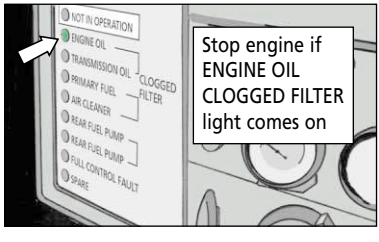
It's been said, "He who hesitates is lost." That's something that tank drivers who see the ENGINE OIL CLOGGED FILTER light come on can relate to.

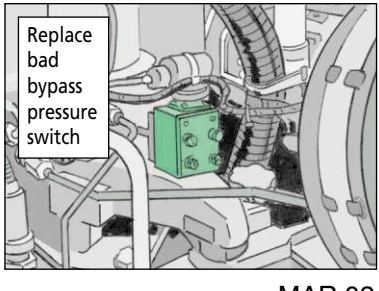
If you see that light, don't hesitate. Shut down your tank **now** and call in your mechanic! Otherwise, the dirt, sand and other gunk that's in the oil will shut down the engine for you—permanently.

Dirty oil bypasses a clogged filter, carrying dirt into the engine. This bypass feature is to keep the engine running when you're on the battlefield.

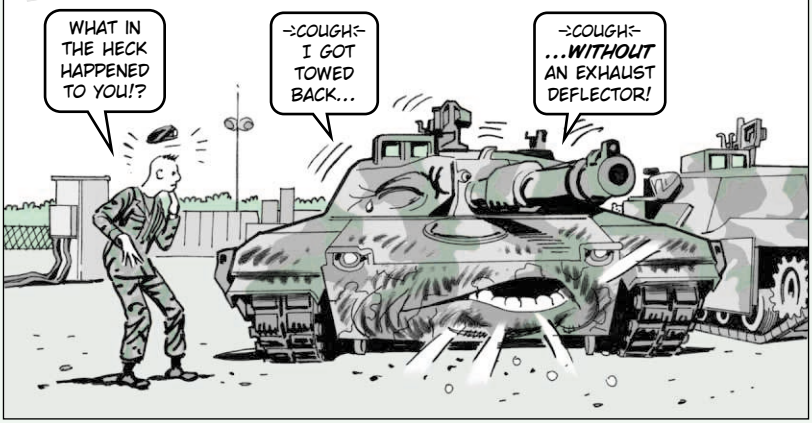
But that dirty oil still gets into engine parts. The longer you run with a clogged filter, the more damage grit and dirt cause.

Mechanics, if the light stays on after changing the filter element, the problem is probably a bad by-pass pressure switch on the engine oil pump assembly. Replace the switch with NSN 5930-01-089-9142.



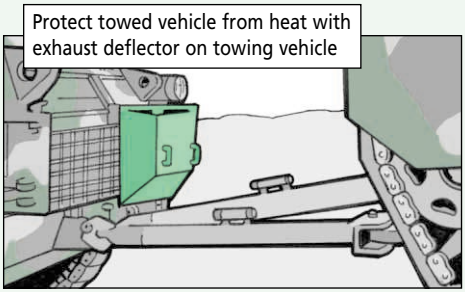


WHAT TO KNOW BEFORE YOU TOW



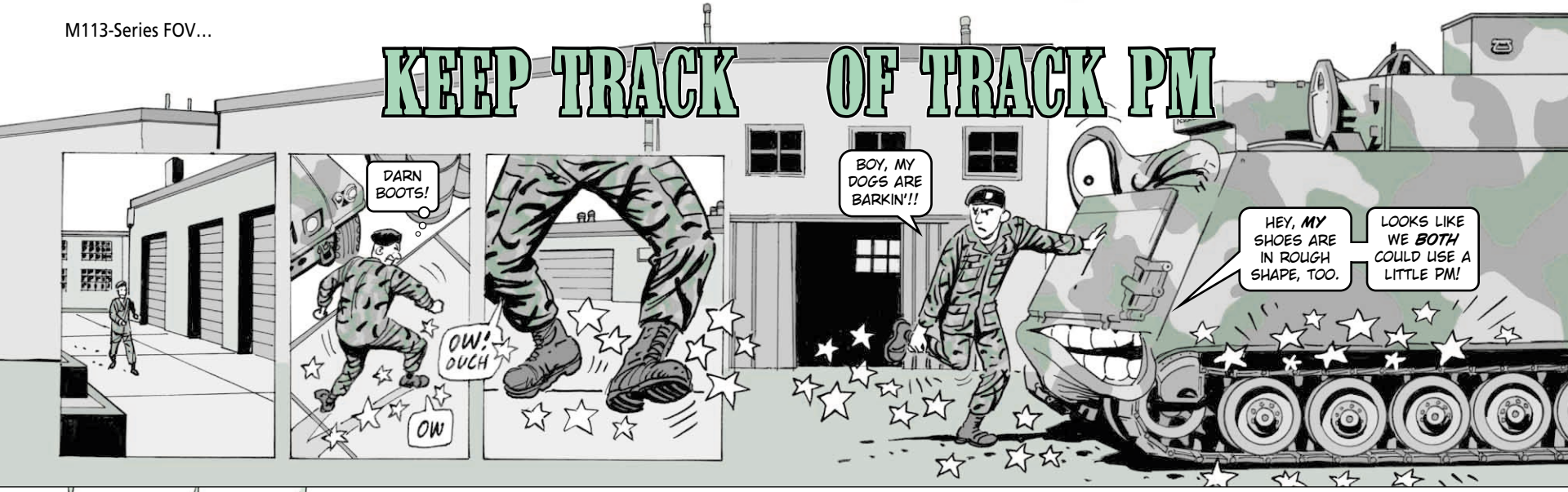
Before you tow a disabled tank with another M1, you need to do more than just hook up the tow bar correctly. You also need to use an exhaust deflector.

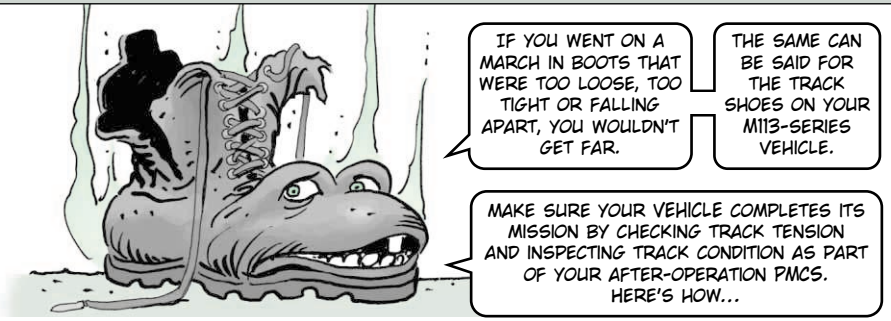
A deflector funnels the hot exhaust from the towing tank upward and away from the disabled tank. Without it, the exhaust can damage the disabled tank's vision blocks, hatch covers, precleaner, and even the vulcanized rubber on the scavenger shaft. That means even more repairs will have to be made.



Exhaust deflectors aren't in the supply system, so you'll have to make one. The plans are in Fig 7 of Appendix D in the -20-1-5 TMs. If you have trouble mounting the deflector to the exhaust grate of the towing tank, try grinding down the deflector's lower hook a bit to help it fit.

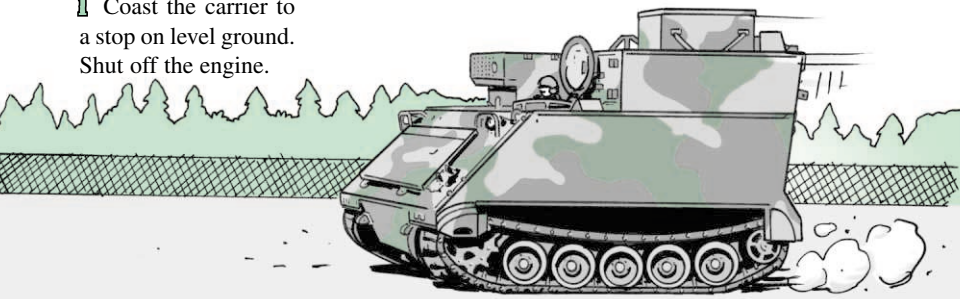
KEEP TRACK OF TRACK PM





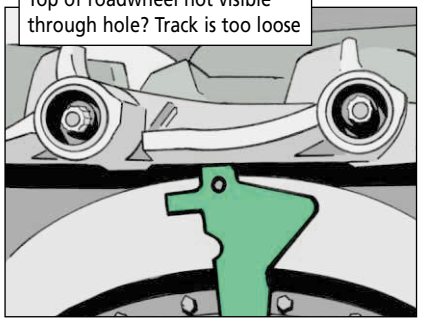
Checking Track Tension

1 Coast the carrier to a stop on level ground. Shut off the engine.

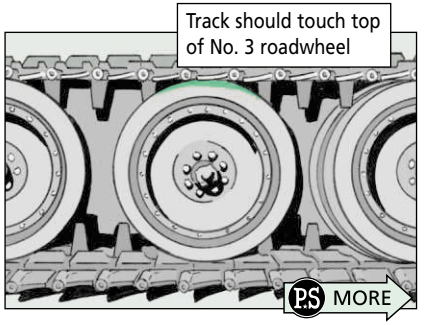


2 Try to insert the handle of a track pin punch between the top of the No. 2 roadwheel and the bottom of the track. If you don't have a track pin punch handy, place your track and sprocket gauge, NSN 5220-01-041-9920, flat against the side of the No. 2 roadwheel with the top touching the bottom of the track. You should be able to see the top of the roadwheel through the hole in the gauge.

If the track pin punch doesn't move freely, or if you can't see the top of the roadwheel through the track gauge, the track is too loose.



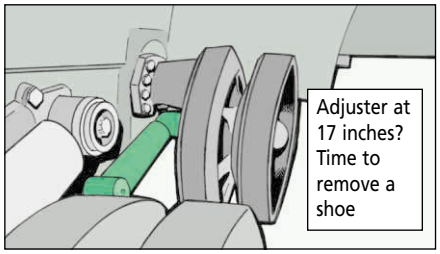
3 Look at the No. 3 roadwheel. The bottom of the track should touch the top of the roadwheel. If not, the track is too tight.



4 Eyeball the track adjusters for damage or leaks. The vehicle is NMC if an adjuster is missing or has a Class II or Class III leak.

P.S MORE

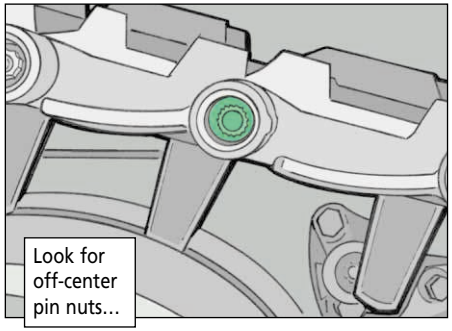
Never extend the track adjuster more than 17 inches as measured between the mounting screws. If the track is still too loose after the adjuster has reached 17 inches, release tension and remove a track shoe. The adjuster can buckle if you try to extend it past 17 inches.

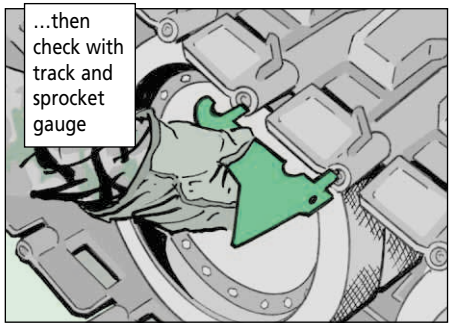


Track Inspection

1 Eyeball the track shoes for worn bushings. A pin nut that is off-center, touching, or protruding from the bushing bore is a sure sign of a worn bushing.

Double-check any suspect track shoes with the track and sprocket gauge. Both gauge pins should fully insert into the bushing bores between the pin nuts. Replace any unserviceable shoes.

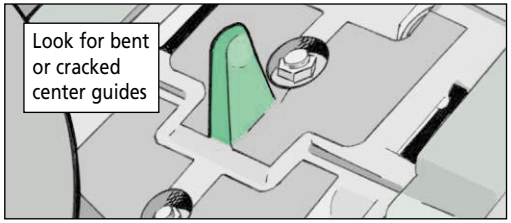




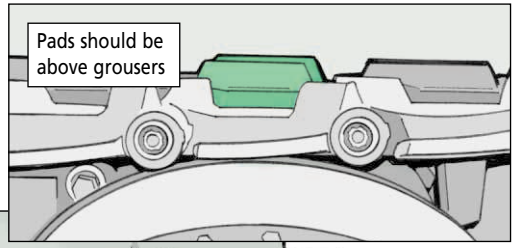
2 Use the track and sprocket gauge to check grouser height. Place the gauge against the grouser with the hole down. If you can see the grouser through the hole, it's OK. If the grouser is ⅛ inch or less, replace the shoe.

3 Check each of the shoes for cracks, bends and breaks. If you spot one, the carrier is NMC until the shoe is replaced.

4 Eyeball the center guides for cracks or bends that could damage the roadwheels. Replace any that are damaged or are ⅛ inch thick or less.

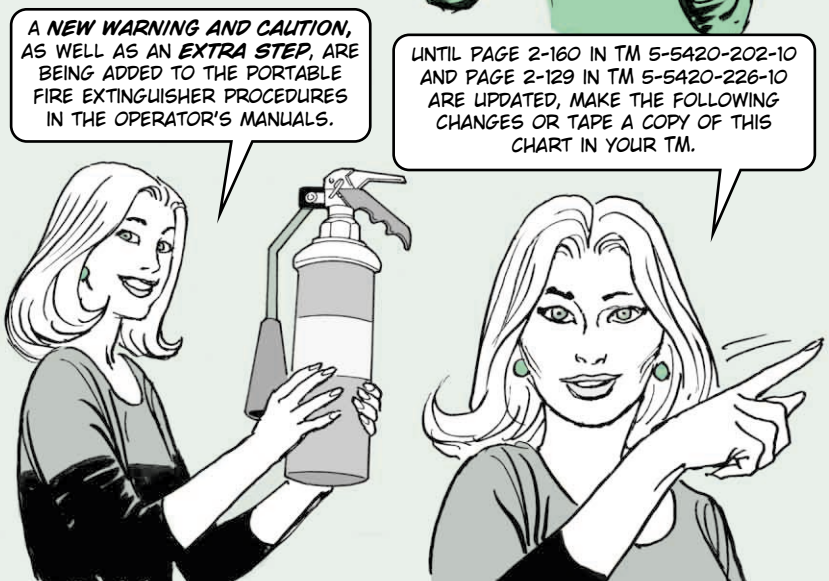


5 Inspect the track pads. Replace any pads that have 1/16 inch or less showing above the grousers.



P.S END

FIRE EXTINGUISHER SWITCH



PORTABLE FIRE EXTINGUISHER

2. Remove portable fire extinguisher (1) from bracket behind operator's seat.
3. Break wire (2) and pull pin (3).
4. Pull horn (4) up to level position.
5. Take fire extinguisher (1) as close to fire as possible and point horn (4) directly at base of flames.

WARNING

- Fire extinguisher agent will irritate eyes and throat. Avoid contact with fire extinguisher agent.
- If fire is outside tank, approach fire with wind at your back to avoid burns

NOTE

Fire extinguisher does most good when held within five feet of fire.

6. Press down and hold trigger (5).

NOTE

If fire was inside vehicle, open all hatches and let vehicle air out for five minutes before ~~continuing operation~~ entering vehicle.

7. Put pin (3) back into trigger (5).
8. Turn horn (4) down.
9. Tag fire extinguisher (1) with word empty.
10. Replace empty fire extinguisher (1) as soon as possible.

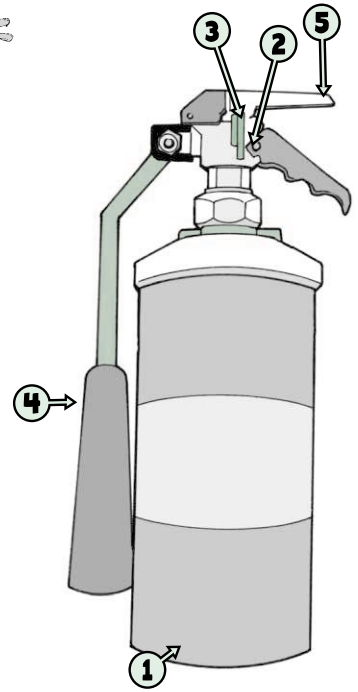
WARNING

When hand held portable CO_2 fire extinguisher is used on a crew compartment fire, the vehicle must be evacuated before using the fire extinguisher. If the vehicle is not evacuated, crew death from asphyxiation may occur.

1. In the event of a fire, immediately begin crew evacuation while accomplishing step 2.

CAUTION

Do not enter vehicle to fight fire. Ensure crew is out of vehicle before discharging fire extinguisher.

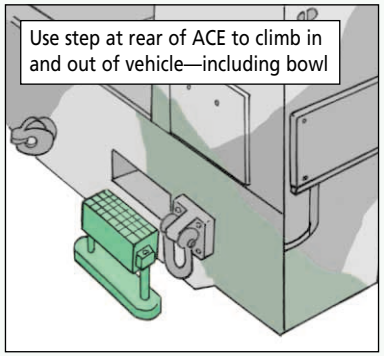


Those Bumbling Boots

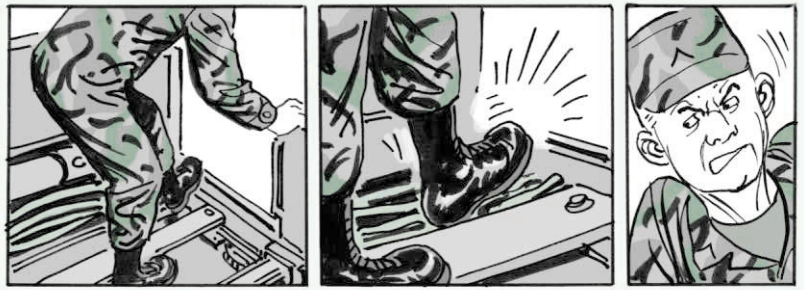
Use the Rear Step

Recently, a mechanic suffered a broken foot when he stepped on the vehicle's track to get into the bowl. While his foot was on the track, the hydraulics settled and his foot was crushed between the track and the front track guard (Florida plate). To get his foot out, his buddies had to start up the ACE and raise the vehicle in the SPRUNG mode.

So use only the step at the rear of the ACE to climb in and out of the vehicle, including the bowl.



Starter Master Relay

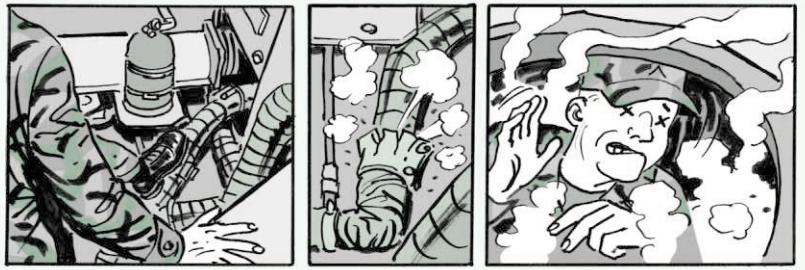


The starter master relay on your earthmover does its job best when left alone.

Problem is, some well-meaning mechanic pulls out the vehicle's floorboards for cleaning and uses the relay's protective box as a step. All that weight breaks the box's mounting bracket, shorting out the starter master relay. Then your ACE won't start!

So never put your boot on the relay's protective box when cleaning or doing maintenance

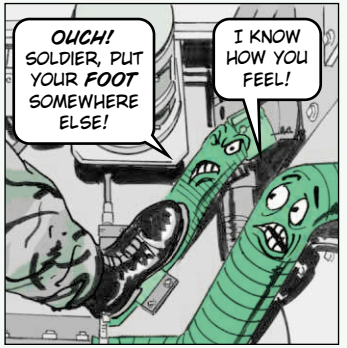
Exhaust Hose



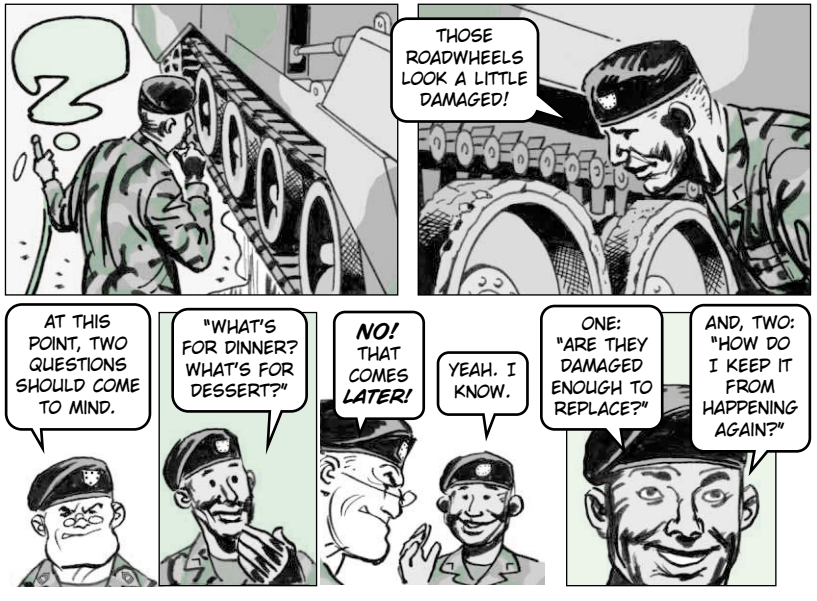
Also, stay off the exhaust hose inside the engine compartment. The hose looks like a convenient footrest while you're working on the engine, but your weight breaks the hose clamps.

A busted clamp means exhaust gas can vent directly onto the batteries and cook 'em. Or engine exhaust can seep into the operator's compartment. That's life threatening.

So eyeball the exhaust clamps. See a loose one? Snug up the hose and tighten the clamp. Replace a broken clamp with NSN 5340-01-183-6863.

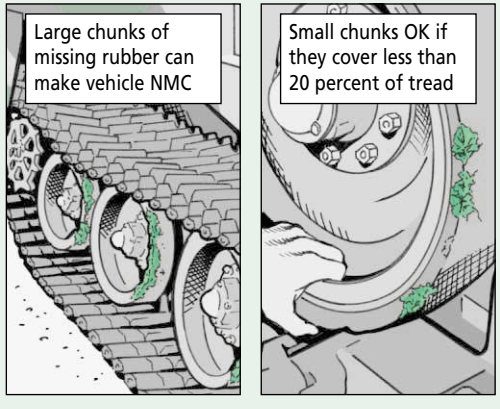


THE DEAL ON ROADWHEELS



Chunking

For roadwheels, one missing chunk of rubber that exposes an area of metal 3x4 inches or larger on the wheel surface is enough to make your vehicle NMC. Even smaller chunks can make the roadwheel unserviceable if together they cover more than 20 percent of the tread surface. Depth of the chunking doesn't matter.



Tread Separation and Weather Cracking

Separation of the tread that is 1 inch or wider and goes around 75 percent of the roadwheel makes your vehicle NMC.

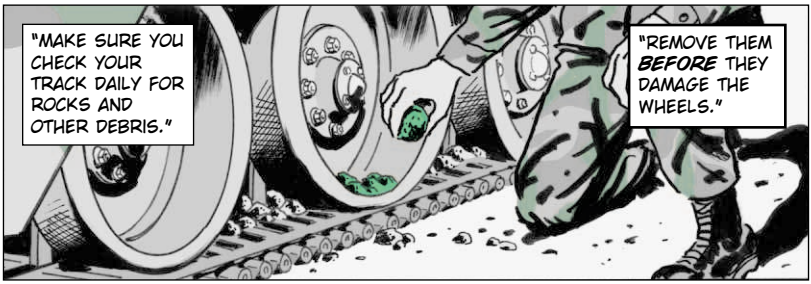
If weather cracks extend completely across the tread surface the wheel is unserviceable.

PS MORE

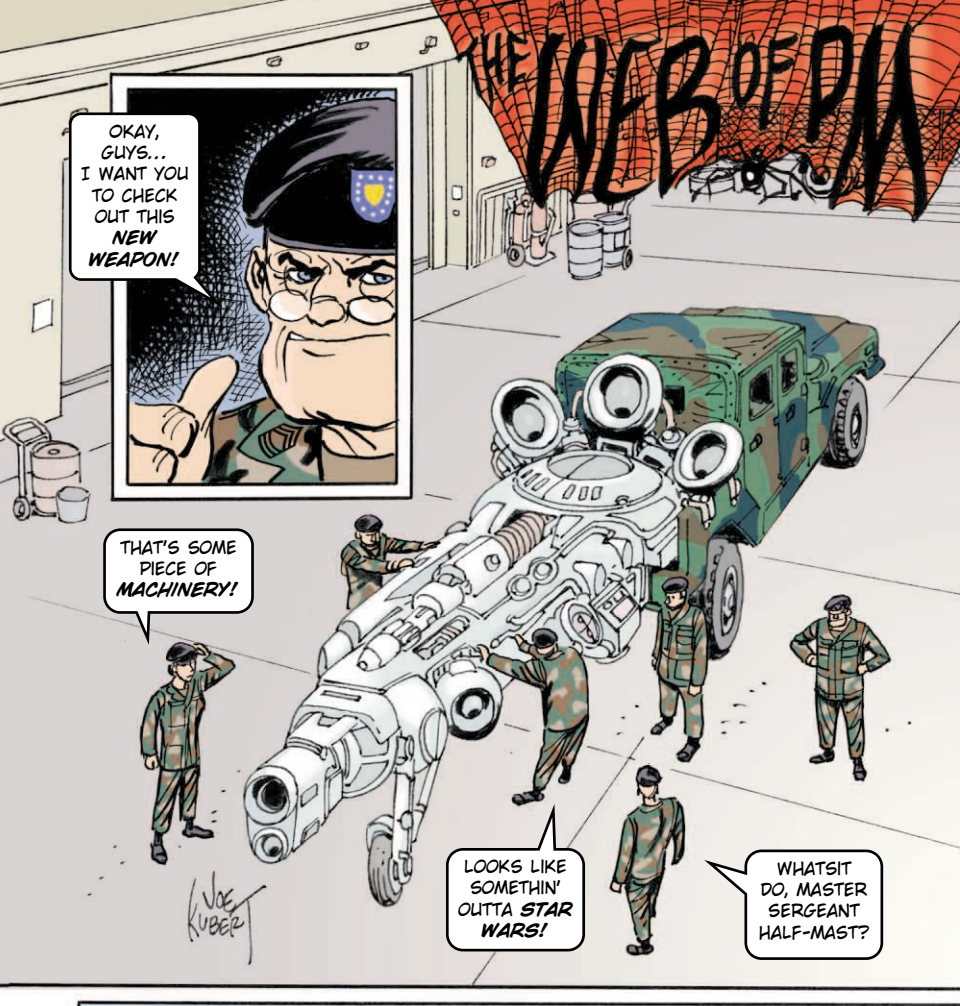

"CHECK TRACK TENSION AFTER EVERY OPERATION AND ADJUST IT AS NECESSARY."

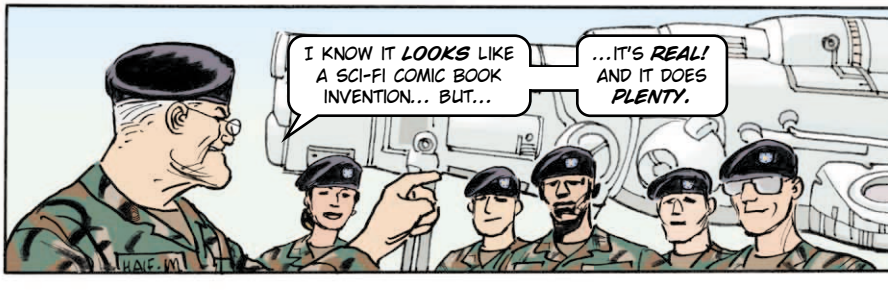

"EYEBALL ROADWHEEL MOUNTING NUTS FOR LOOSENESS."

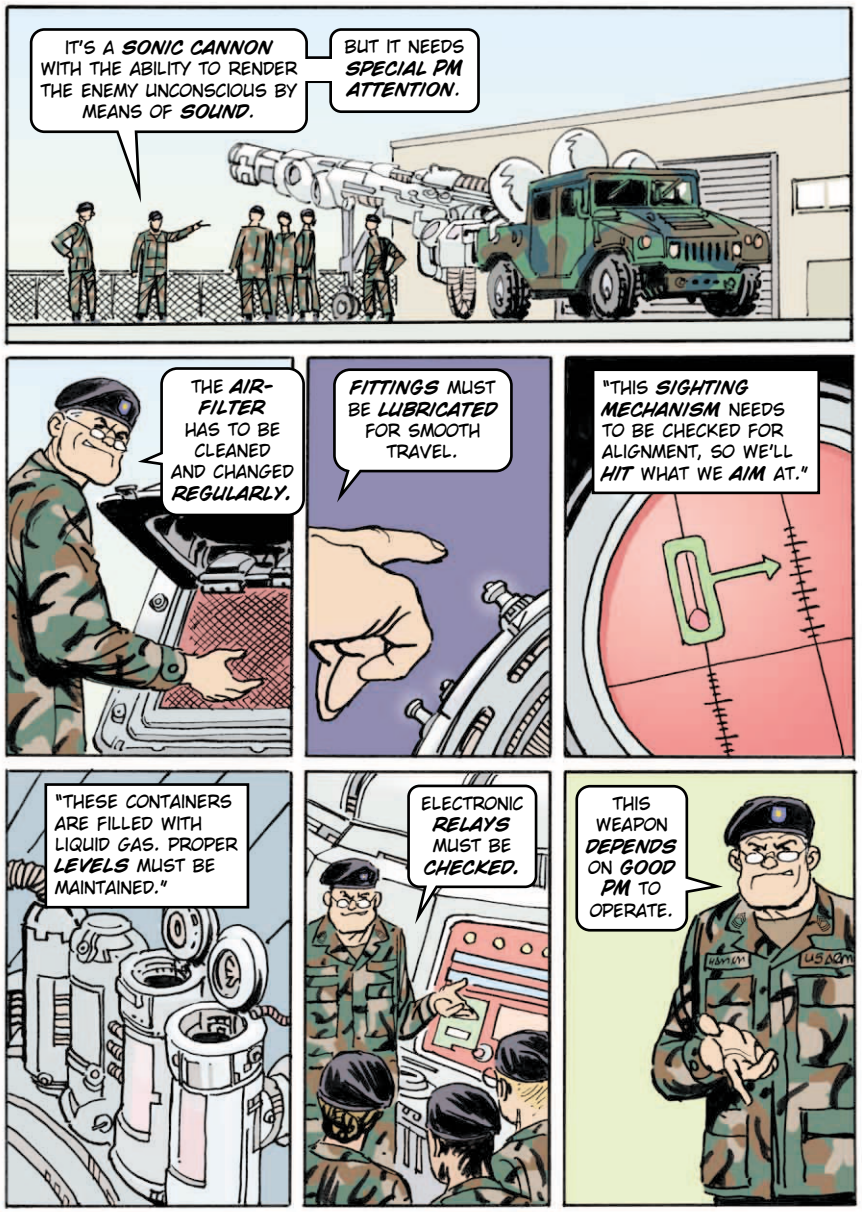

REPORT ANY YOU FIND.

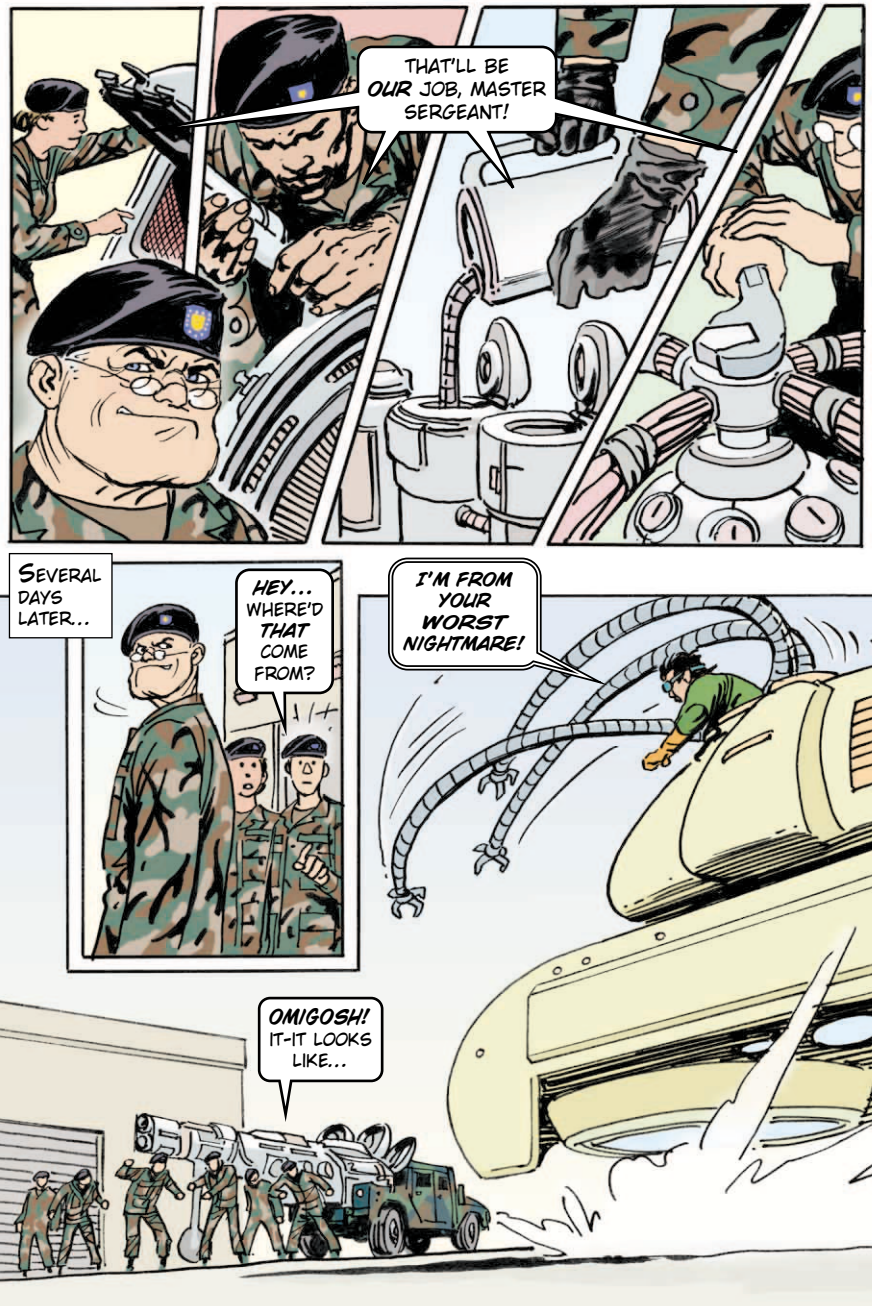

"MAKE SURE YOU CHECK YOUR TRACK DAILY FOR ROCKS AND OTHER DEBRIS."
"REMOVE THEM BEFORE THEY DAMAGE THE WHEELS."


READ AND HEED THE WORDS IN TM 9-2530-200-24, STANDARDS FOR INSPECTION AND CLASSIFICATION OF TRACKS, TRACK COMPONENTS AND SOLID-RUBBER TIRES, FOR ADDITIONAL INFORMATION.
HALF-MAST
US

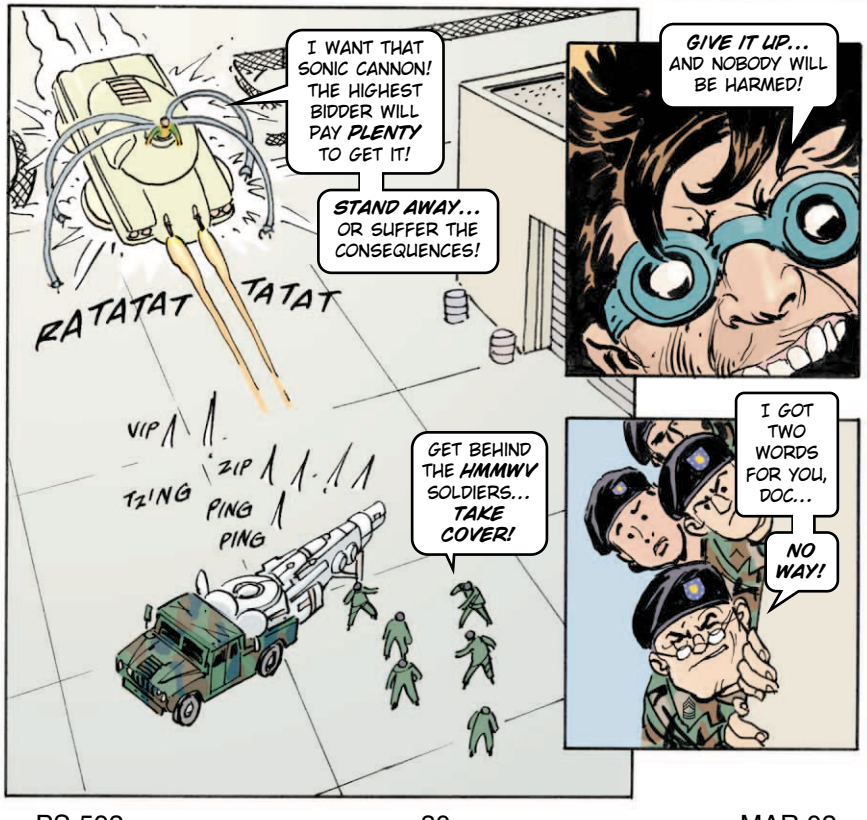


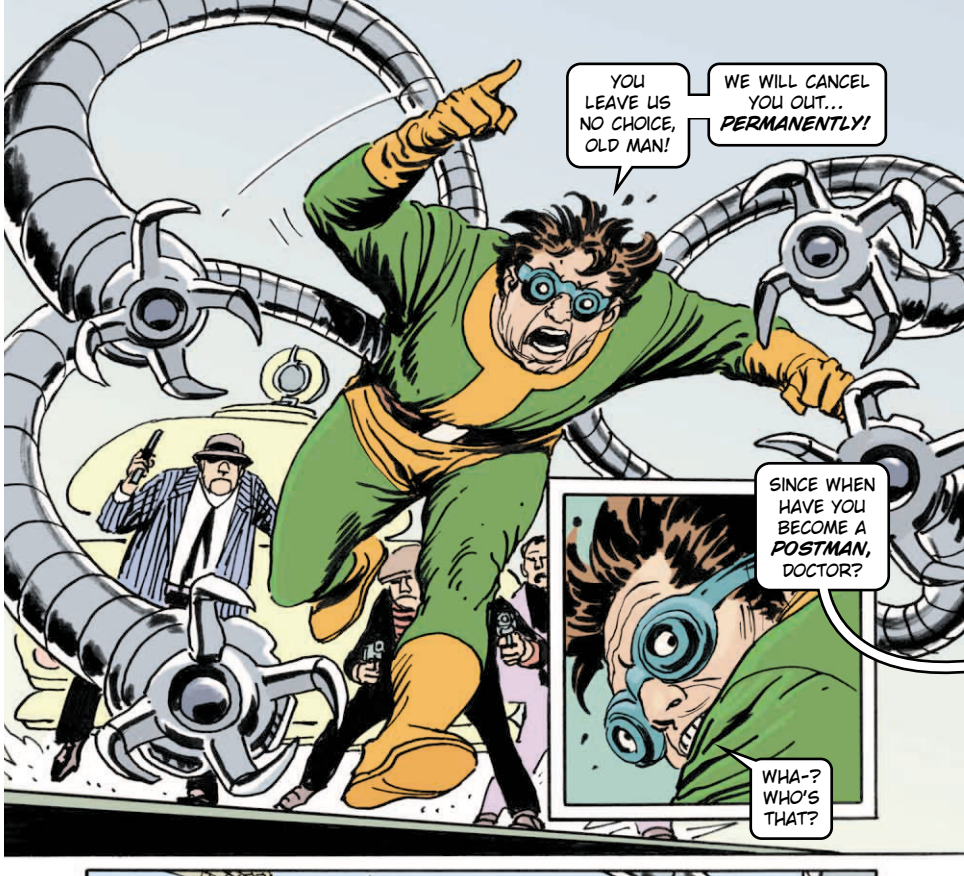


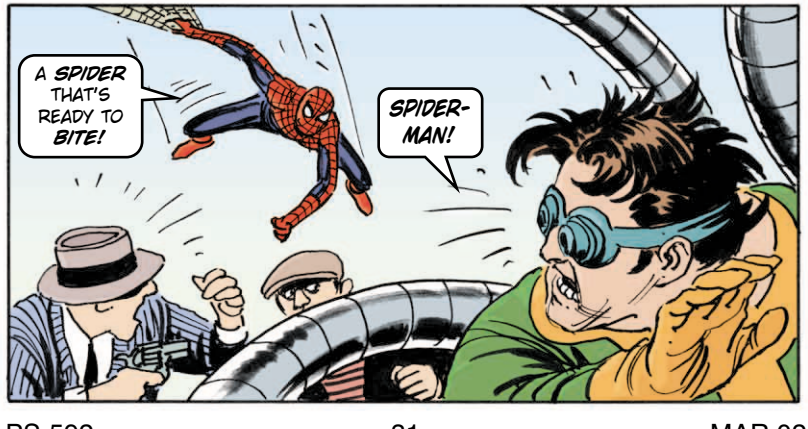

IT'S A SONIC CANNON WITH THE ABILITY TO RENDER THE ENEMY UNCONSCIOUS BY MEANS OF SOUND.
BUT IT NEEDS SPECIAL PM ATTENTION.
THE AIR-FILTER HAS TO BE CLEANED AND CHANGED REGULARLY.
FITTINGS MUST BE LUBRICATED FOR SMOOTH TRAVEL.
"THIS SIGHTING MECHANISM NEEDS TO BE CHECKED FOR ALIGNMENT, SO WE'LL HIT WHAT WE AIM AT."
"THESE CONTAINERS ARE FILLED WITH LIQUID GAS. PROPER LEVELS MUST BE MAINTAINED."
ELECTRONIC RELAYS MUST BE CHECKED.
THIS WEAPON DEPENDS ON GOOD PM TO OPERATE.

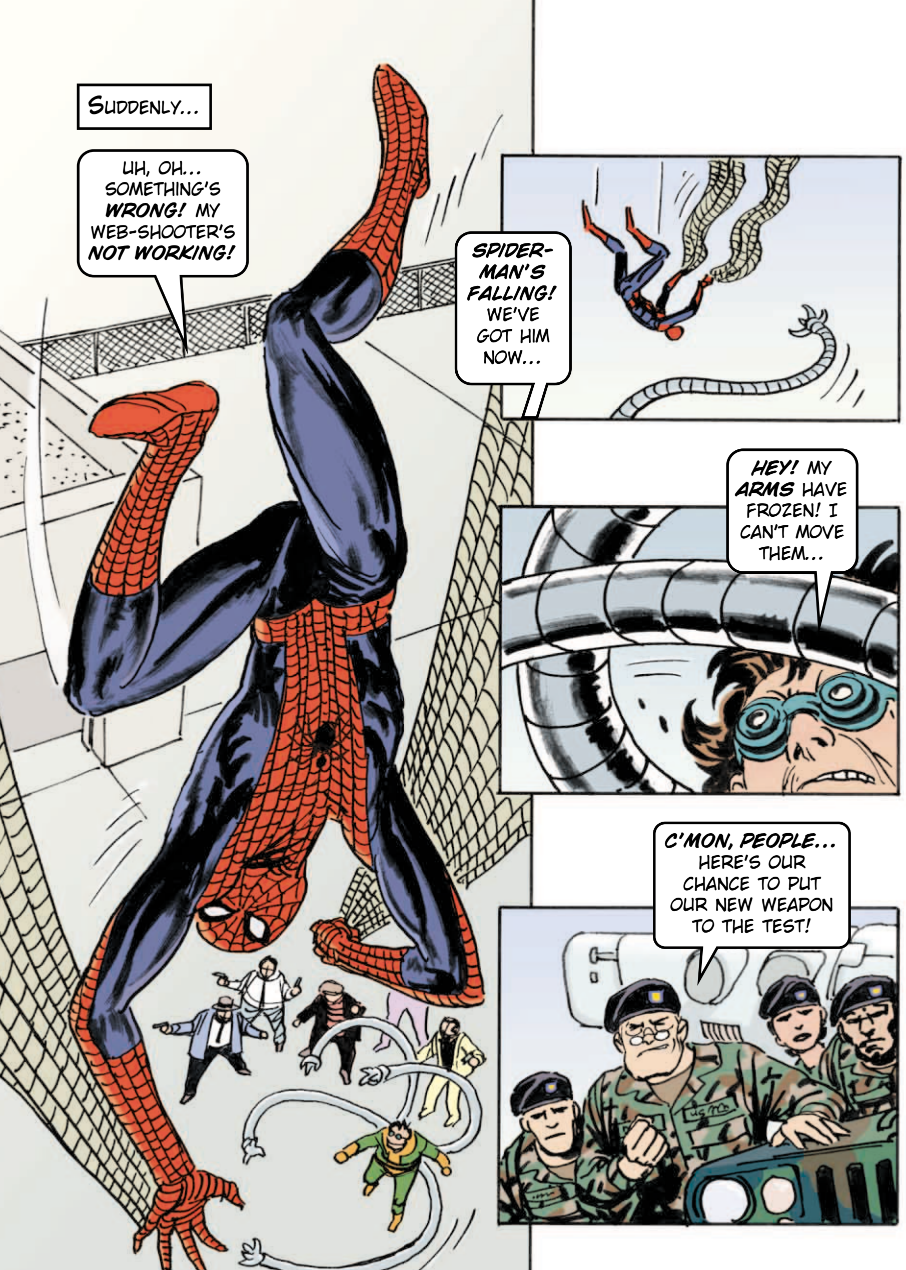

THAT'LL BE OUR JOB, MASTER SERGEANT!
SEVERAL DAYS LATER..
HEY... WHERE'D THAT COME FROM?
I'M FROM YOUR WORST NIGHTMARE!
OMIGOSH! IT-IT LOOKS LIKE...


... DOCTOR OCTOPUS!


I WANT THAT SONIC CANNON! THE HIGHEST BIDDER WILL PAY PLENTY TO GET IT!
STAND AWAY... OR SUFFER THE CONSEQUENCES!
RATATAT
TATAT
VIP
ZIP
TZ'ING
PING
PING
GET BEHIND THE HMMWV SOLDIERS... TAKE COVER!
GIVE IT UP... AND NOBODY WILL BE HARMED!
I GOT TWO WORDS FOR YOU, DOC...
NO WAY!


YOU LEAVE US NO CHOICE, OLD MAN!
WE WILL CANCEL YOU OUT... PERMANENTLY!
SINCE WHEN HAVE YOU BECOME A POSTMAN, DOCTOR?
WHA-? WHO'S THAT?

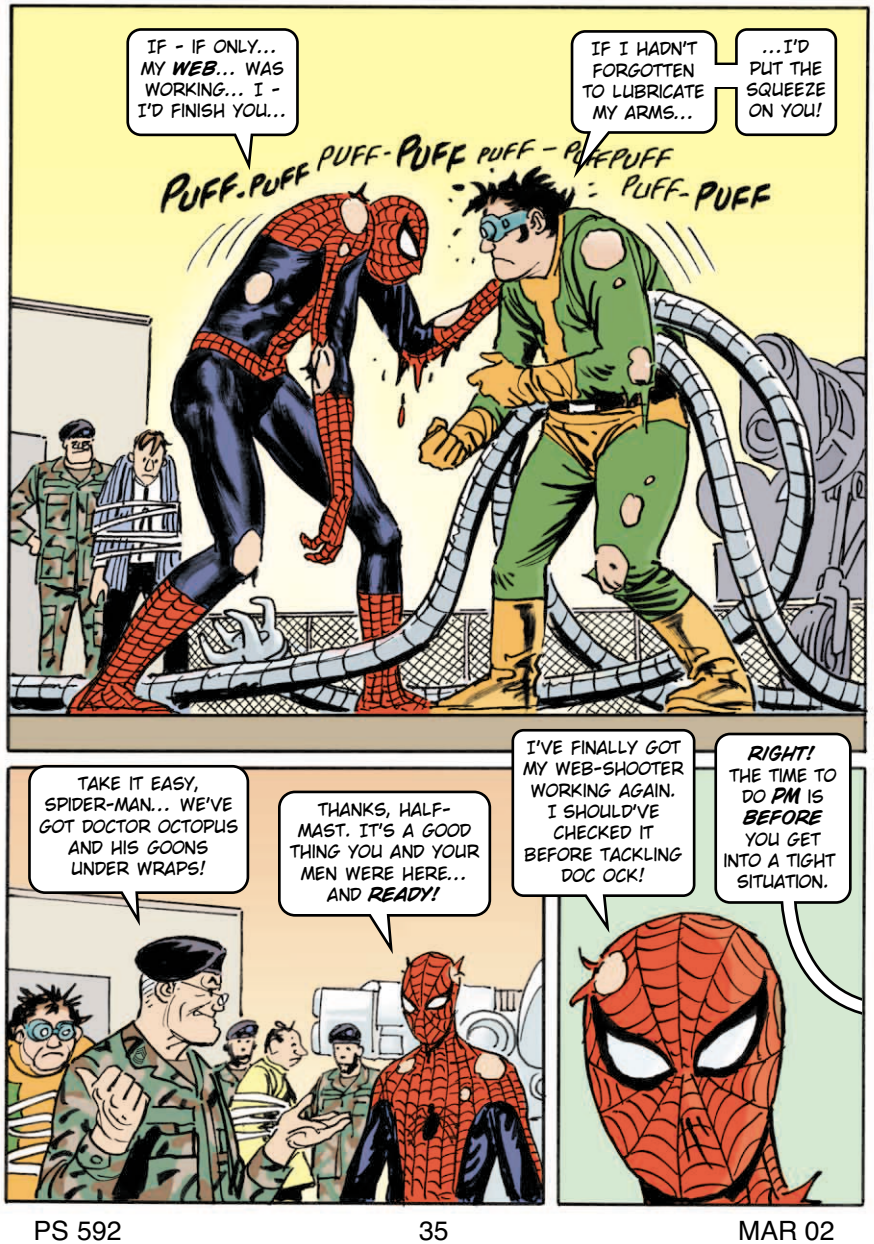

A SPIDER THAT'S READY TO BITE!
SPIDER-MAN!



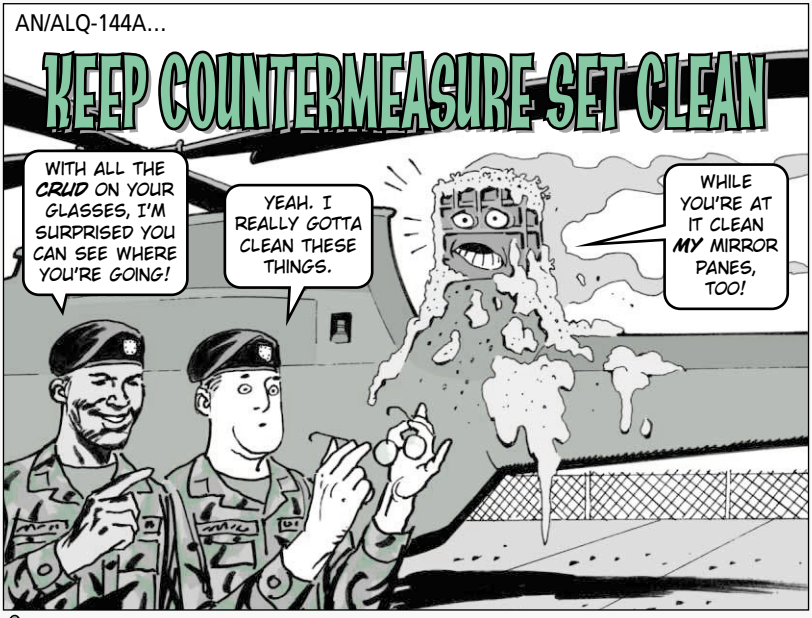
SUDDENLY...
UH, OH... SOMETHING'S WRONG! MY WEB-SHOOTER'S NOT WORKING!
SPIDER-MAN'S FALLING! WE'VE GOT HIM NOW...
HEY! MY ARMS HAVE FROZEN! I CAN'T MOVE THEM...
C'MON, PEOPLE... HERE'S OUR CHANCE TO PUT OUR NEW WEAPON TO THE TEST!

IT'S A GOOD THING WE DID PM ON THIS SONIC CANNON.
SET SIGHTS FOR A CLOSE TARGET!
MY WEB-SHOOTER'S STUCK... CAN'T FIX IT IN TIME!
GO GET 'EM, SOLDIERS!
GET THEM ...BEFORE THEY FIRE THE CANNON!
SET THE RANGE ON THE SIGHT...
READY...
...AIM...
US ARMY
...FIRE!


OKAY, DOC... IT'S JUST YOU AND ME NOW! I DON'T NEED MY WEB TO TAKE CARE OF YOU!
BIG TALK, SPIDER-MAN. I CAN STOMP YOU WITH FIVE ARMS TIED BEHIND MY BACK!
POW
KRUMPF
SMACK
THUD
CRACK
BLAM
THUMP
THUMP
KLACK
THUD


IF - IF ONLY... MY WEB... WAS WORKING... I - I'D FINISH YOU...
IF I HADN'T FORGOTTEN TO LUBRICATE MY ARMS...
...I'D PUT THE SQUEEZE ON YOU!
PUFF-PUFF PUFF-PUFF PUFF-PUFF PUFF-PUFF
TAKE IT EASY, SPIDER-MAN... WE'VE GOT DOCTOR OCTOPUS AND HIS GOONS UNDER WRAPS!
THANKS, HALF-MAST. IT'S A GOOD THING YOU AND YOUR MEN WERE HERE... AND READY!
I'VE FINALLY GOT MY WEB-SHOOTER WORKING AGAIN. I SHOULD'VE CHECKED IT BEFORE TACKLING DOC OCK!
RIGHT! THE TIME TO DO PM IS BEFORE YOU GET INTO A TIGHT SITUATION.


IF YOU'D DONE YOUR PM, YOU COULD'VE COLLARED DOC OCTOPUS WITH NO TROUBLE.
JUST LIKE EVERY SOLDIER SHOULD MAINTAIN ALL HIS EQUIPMENT AT ALL TIMES. HIS LIFE AND THE LIVES OF HIS BUDDIES MAY DEPEND ON IT.
YOU'RE RIGHT, SIR... I WON'T MAKE THAT MISTAKE AGAIN.
I'M SURE YOU WON'T, SPIDER-MAN.
SPIDER-MAN'S A GREAT GUY. I'M GLAD HE'S ON OUR SIDE.
YEAH... AND HE'LL CONTINUE TO DO GREAT THINGS...
...AS LONG AS HE DOESN'T FORGET TO DO PM!



Crewmen, you can't see through a dirty window pane. Neither can your AN/ALQ-144A countermeasure set.

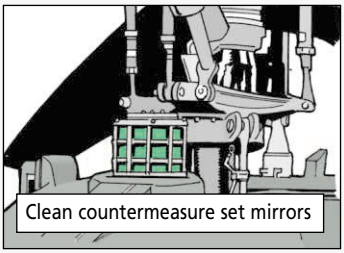
If you don't keep your countermeasure set clean or cover it when it's not being used, it won't detect and jam heat-seeking missiles. Who needs that?

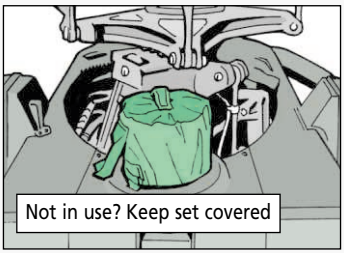
For instance, the Kiowa's countermeasure set sits right in the path of the engine exhaust. So before each takeoff and after each landing, clean the mirrors like it says in Chap 4 of TM 11-5865-200-12.

If you don't clean the mirrors regularly, the extreme heat generated by the countermeasure set will bake on dirt, grit, dead bugs and soot. Then your unit will take a $36 hit per mirror because you couldn't clean them or because you damaged them trying to remove the baked-on crud.

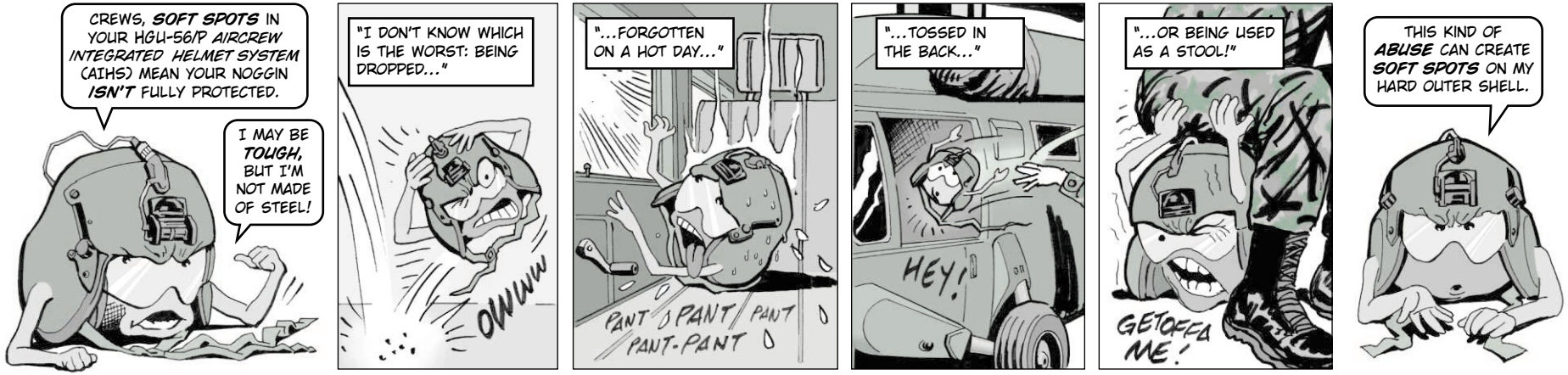
When you're not flying the aircraft, protect the set with cover, NSN 5865-01-109-1800.

The cover shields the mirrors from direct sunlight, which dulls their refracting power. It also protects the mirrors from other aircraft's rotor blade debris.

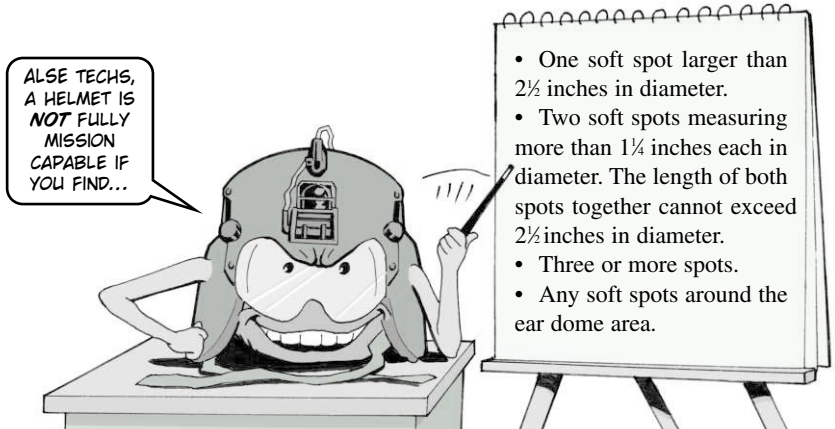

Clean countermeasure set mirrors


Not in use? Keep set covered

HELMET CARE AND INSPECTION



1. Place the palm of your hand against the shell so you can press on the suspected soft spot with your index finger. Use the flat part of your finger, not the tip.
2. If a spot is detected, use a coin the size of a quarter or larger and tap around the area to find the extent of the soft spot. The noise will sound dull or flat on the soft spot.
3. Mark a circle around the edge of the soft spot with a fine-tipped marker.
4. Turn it in to your ALSE tech for evaluation.



M130 Chaff Dispenser Needs PMCS

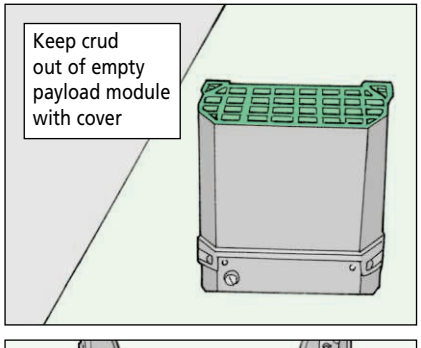
Your Black Hawk's M130 chaff dispenser sits right in harm's way. It's a target for APU, engine and main rotor fan exhaust moisture and dirt.

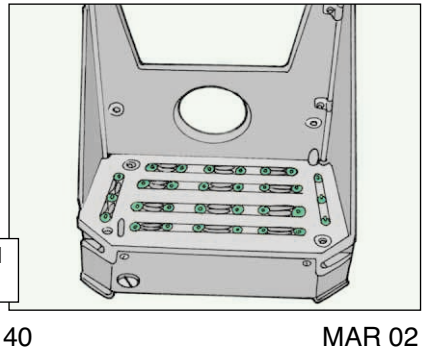
All that crud will corrode the contacts and make the dispenser NMC.

The PMCS chart in TM 9-1095-206-12 tells you to check the dispenser before operation, after every 25 hours of operation and monthly.

Do it! If you don't, all that gunk can get into an empty payload module assembly and muck up the firing contacts and corrode the flat springs. If it's bad enough, you'll have to replace them.

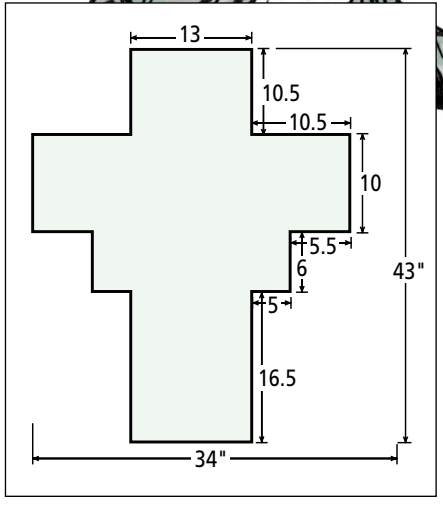
'Course, when you're not using the dispenser, use nylon cover, NSN 1730-01-456-2557, to protect the dispenser.

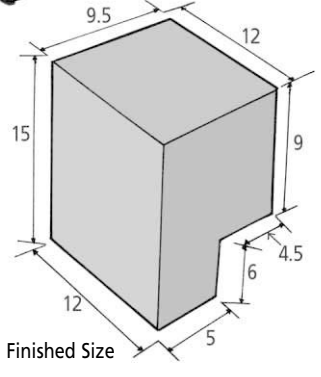




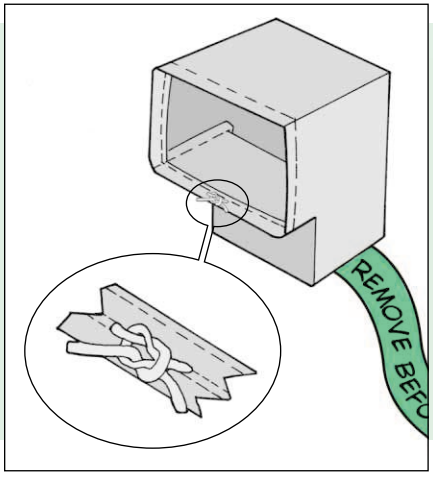
Item	NSN	QTY
Coated cloth	8305-00-515-4244	1.2 yd
Elastic cord	8305-00-267-3114	1 yd
Warning streamer	8345-00-673-9992	1 ea

All dimensions in inches





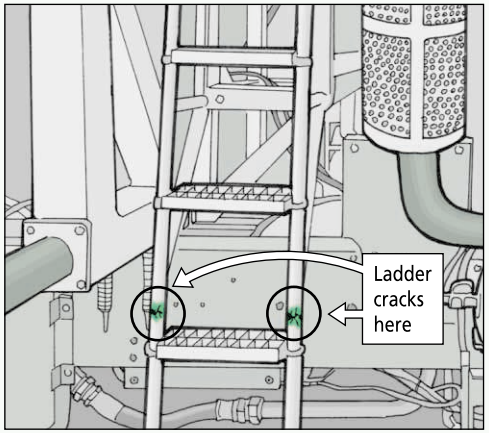
Finished Size



Step Up to AMG

Dear Editor,

We had quite a problem with the ladder on the Patriot's antenna mast group (AMG) cracking right below the support bars. We tried welding the areas that cracked, but as soon as somebody stepped on the bottom step the ladder cracked again. And we can't order a replacement ladder because it's a depot-replaced item.

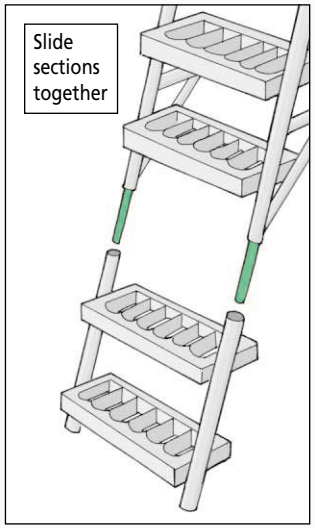


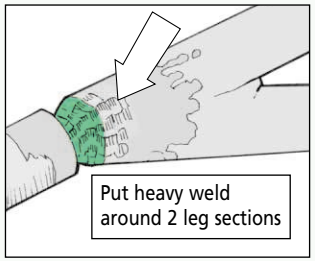
We solved the problem by reinforcing the legs with 1-in diameter aluminum bar stock.

Cut off both ladder legs where they cracked. Cut off two 6-in pieces of the bar stock. Stick 3 inches of the stock into the upper portion of each ladder leg. You may need to shave the stock to make it fit. Weld the stock to the leg. A TIG (tungsten inert gas) welder will give the strongest weld.

Fit the bottom sections of the ladder over the bar stock and slide the bottom up so the upper and bottom ladder sections meet. Weld the ladder sections together by putting a heavy weld completely around the break in each leg.

Ladder Fix





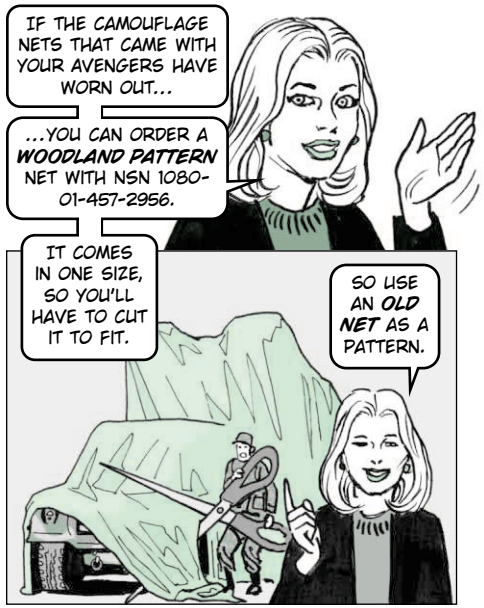
SGT James Riley
507th Maint Co
Ft Bliss, TX

From the desk of the *Editor*

Great idea! The crew should check the ladder for cracks during their PMCS. Eventually, the welding may need to be repeated.

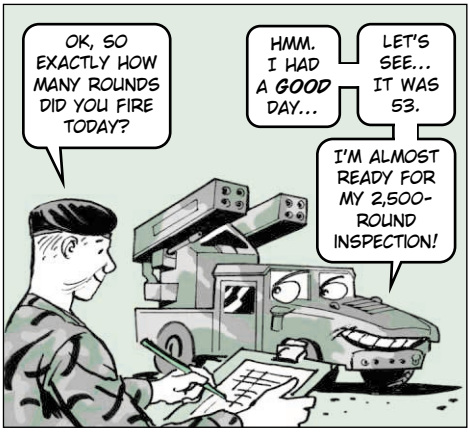
Avenger Missile System...

Camouflaging Avengers



Avenger Missile System...

Track M3P Rounds to Stay on Track



If you don't keep track of how many rounds your Avenger's M3P machine gun fires, you'll miss its 2,500-round inspection.

That means the M3P's extractor, sear slide, firing pin, and cocking lever may not be replaced when they're worn out. An M3P with worn parts fires poorly.

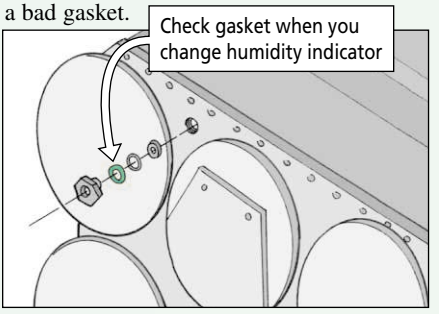
So record the rounds fired on a DA Form 2408-4, *Weapons Record Data,* every time you fire. All rounds—live and blank—count toward that 2,500 limit.

ATACMS...

Seal Out Moisture

That's why it's critical that you repairmen check the humidity indicator's gasket when you change the indicator. If the gasket is cracked, deformed, or doesn't seal properly, it won't be able to seal out moisture.

If the gasket is bad, replace it with NSN 5330-01-146-7182. You do not need to replace the entire sight glass just because of a bad gasket.



Use Your Head on Headspacing

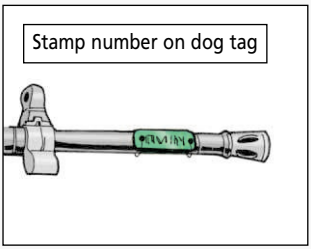
Don't take chances with headspacing, armorers. If the space between the bolt face and the chamber isn't exactly right, not only will the gun shoot poorly or not at all, but it could explode.

That's why you must make sure every rifle and machine gun has been headspaced by support before it goes to the field. Active duty units must have their weapons headspaced at least every 12 months, while Army Reserve and National Guard units should do it every 24 months.

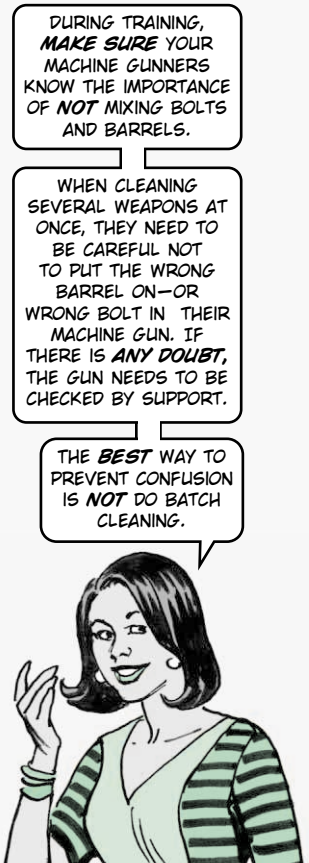
But any time a bolt or barrel is replaced, DS needs to headspace the weapon.

With machine guns, get the spare barrel headspaced by support, too. Clearly mark both barrels with the gun's serial number so they can easily be identified.

Have the number stamped on a dog tag and use lacing wire to secure the tag to the barrel's handle or leg. Paint the tag a dark color so it won't reflect in the field.



Of course, the M2 machine gun is an exception. It must be headspaced and timed every time it's fired.



BE YOUR OWN INSPECTOR

Cover: Won't stay up in two open positions? Doesn't latch securely? Accessory mounting rail nicked or burred so badly that accessories can't be mounted?

Barrel locking latch: Weak spring?

Barrel: Blocked or dirty? Doesn't lock securely in receiver within 2-7 clicks? Flash suppressor loose, cracked or dented?

Rear sight: Binds? Markings unreadable?

Safety: With safety on FIRE, bolt won't move forward when trigger's pulled?

Gas regulator plug: Carbon on plug? Is it set to anything but 1?

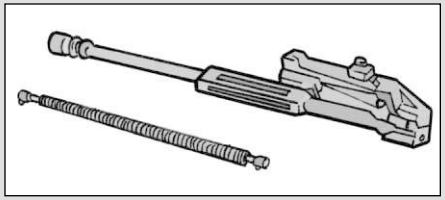
Bipod: Bent or cracked? Legs bind or won't lock in place?

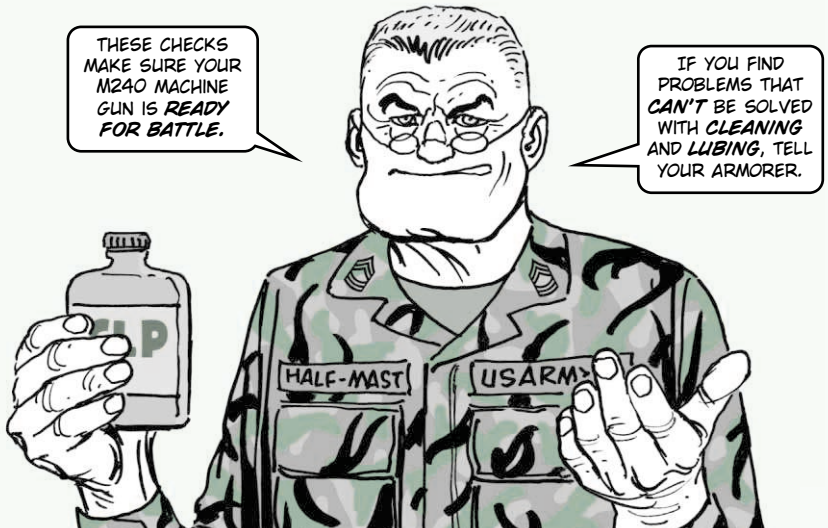
Cocking handle or charging cable: Binds or broken? Rails chipped or burred?

Buttstock: Cracked? Loose? Won't lock in receiver?

Trigger housing: Sear won't raise when tripping lever is pushed back or won't fall when trigger is pulled? Sear ***should not*** move when trigger's pulled with safety set to S. Sear ***should*** move with safety set to F. Sear or tripping lever worn, burred, chipped, or cracked?

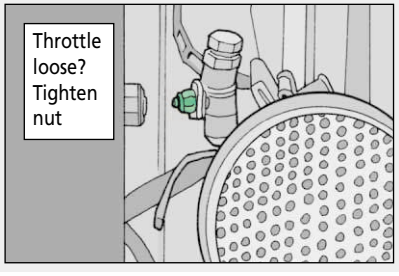
Bolt and op rod assembly: Binds? Won't lock in charged position? Roller binds, won't depress or rotate? Carbon in piston? Two or more strands broken on the same spring coil or three or more breaks anywhere on the drive spring?





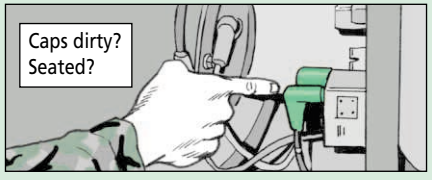
Throttle

Vibration frequently loosens the throttle. Then it can slide to OFF during operation. If the heater is hot, it will be damaged by not having a chance to cool off before shutdown. Feel the throttle for play and move it up and down to test the linkage. Fix a loose throttle by tightening the nut on the throttle handle. Report loose linkage.



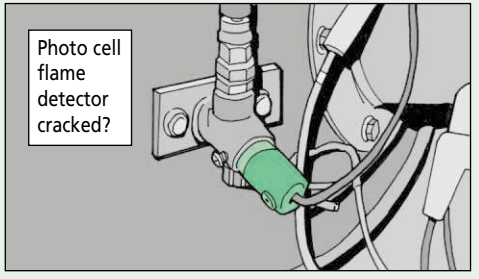
High Voltage Tripler

If the tripler caps are dirty or loose, the heater won't ignite. Just wipe dirt off with a dry, clean cloth. Gently push in on the caps to make sure they're seated.



Photocell Flame Detector

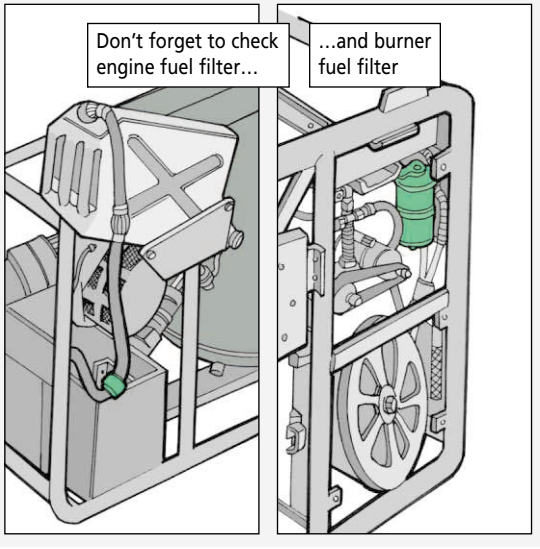
If the detector is cracked or broken, you won't be able to tell if the burner is working. Report a cracked detector. Your repairman should tighten the detector holding screw hand-tight and stop. Forcing it tighter is what cracks the casing.



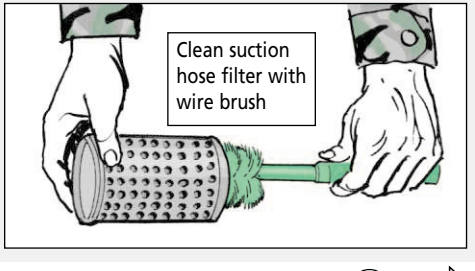
Filters

The fuel and water lines, engine and burner all have filters that need attention. If just one of the filters is clogged, your M17 either won't run or won't draw water.

Dirt or water in the burner filter? Drain it. Clean the fuel can filter with your fingers or a toothbrush. Get the engine fuel filter replaced if it's clogged.

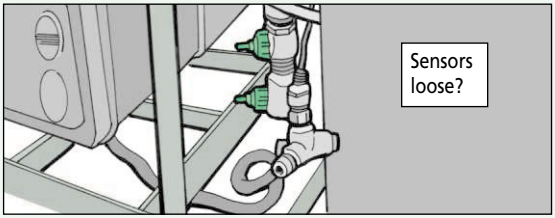


Clean the water suction hose and branch hose filter with a wire brush. If the filters are in bad shape, replace them with spares from the accessory box. Be sure to order new ones.



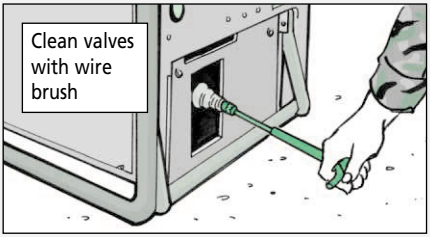
High and Low Temperature Sensors

If sensors are loose, steam and hot water can pour out of their connections and burn you. Have DS tighten them if they're loose.



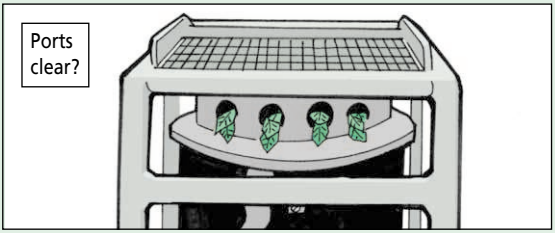
Water Inlet and Outlet Valves

Over time, sediment and rust build up in the ports of the quick disconnects and block water flow. That strains the water pump and eventually kills it. Run your wire brush in and out of the ports to break up sediment and then flush out the system with clean water.



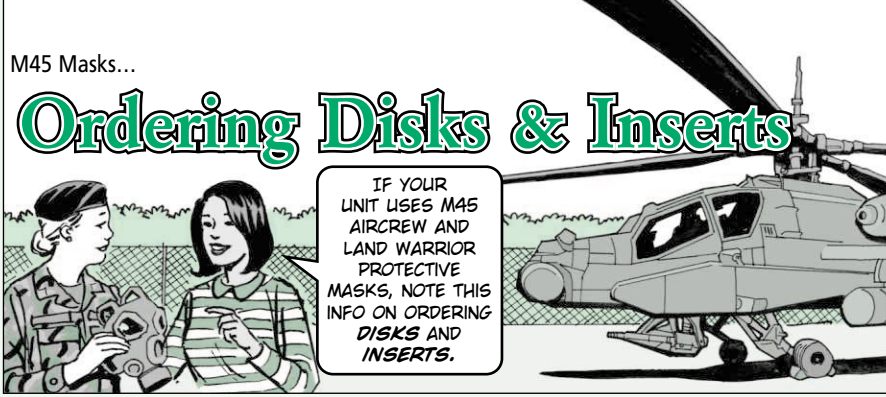
Heat Exhaust Ports

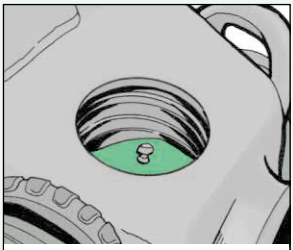
If the ports are blocked, you've got a fire waiting to happen. Clear out any leaves or dirt in the ports.



PS END

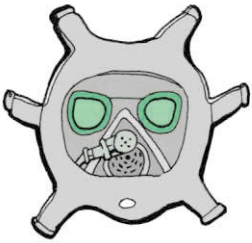
Ordering Disks & Inserts





Disk valve

The disk valve listed in the M45's TM 3-4240-341-10 is no longer available. Instead, use the M40/M42's disk valve, NSN 4820-01-260-8709.



Optical inserts

The optical insert, NSN 4240-01-443-5489, which is listed in the -10's AAL brings just a frame without lenses. To order the inserts, go through your local opthalmic services. They should follow the instructions in Chapter 2 of AR 40-63, *Opthalmic Services,* to get the inserts.

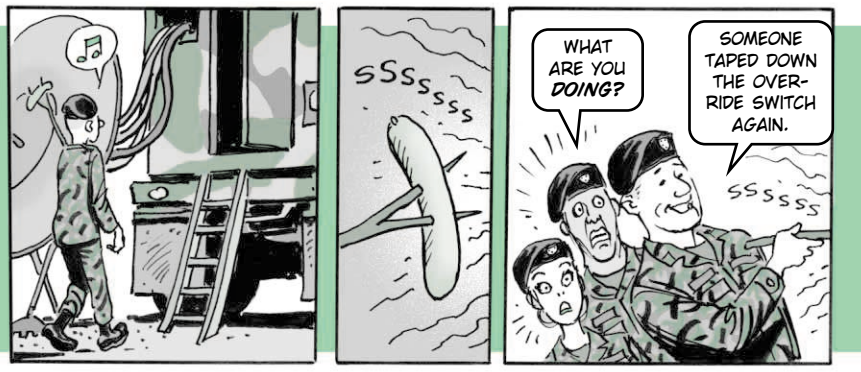
IF YOUR OPTHALMIC SUPPORT FOLKS HAVE QUESTIONS, THEY SHOULD CONTACT THE ***NAVAL OPHTHALMIC SUPPORT AND TRAINING ACTIVITY*** AT DSN 953-7152/4435, (757) 887-7152/4435,

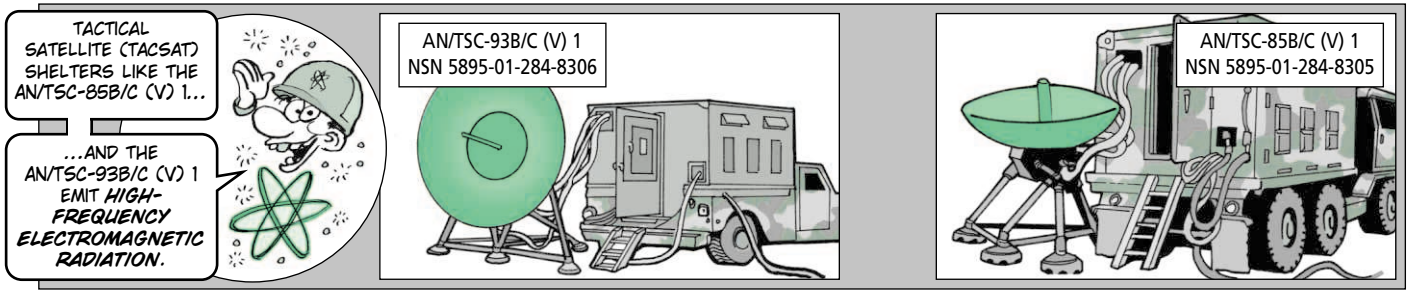
OR E-MAIL pebeard@mar.med.navy.mil
OR janickerson@mar.med.navy.mil

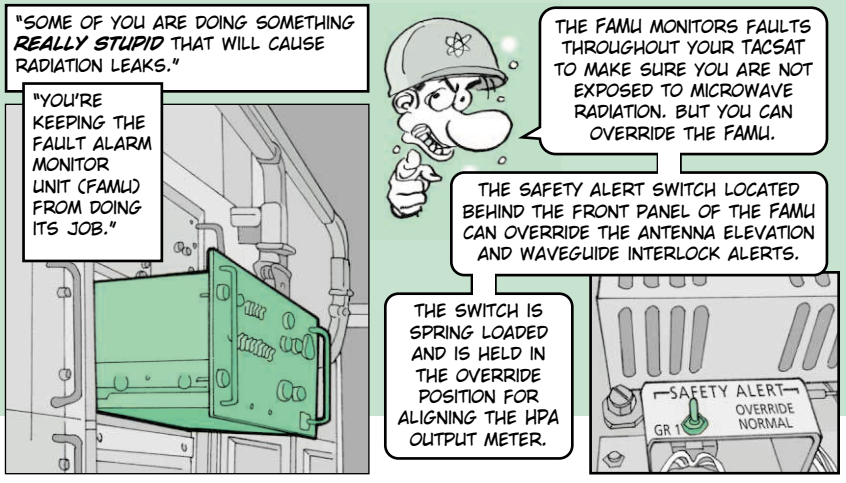
BY THE WAY, ***BALLISTIC OUTSERTS*** FOR THE M45 LAND WARRIOR MASK ***WON'T*** BE AVAILABLE FOR ***2 YEARS.***

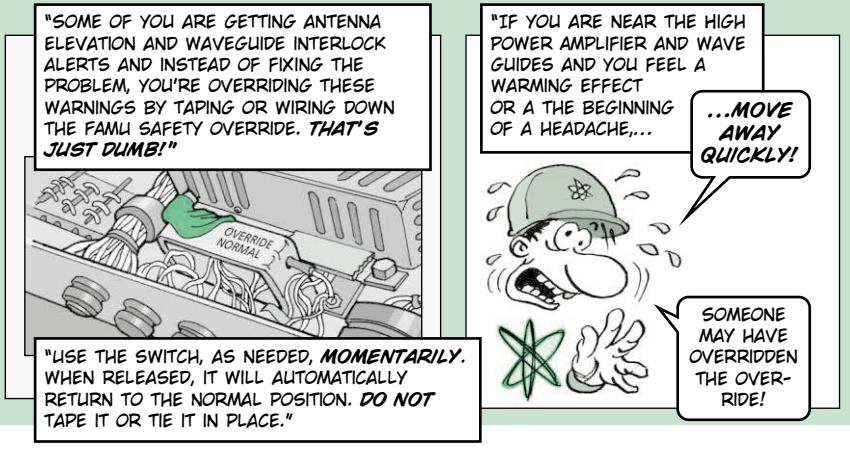
IF YOU HAVE ***OTHER*** QUESTIONS ABOUT THE M45 MASK, CONTACT SBCCOM'S MARY MCDONOUGH AT DSN 793-7240/(309) 782-7240 OR E-MAIL mcdonoughm@ria.army.mil

RADIATION WILL BURN YOU UP!









Make a C/VAM Guard

Dear Half-Mast,

The compass/vertical angle measurement (C/VAM) selector switch on the AN/PVS-6 mini-eyesafe laser infrared observation set (MELIOS) sticks out from the laser like a sore thumb.

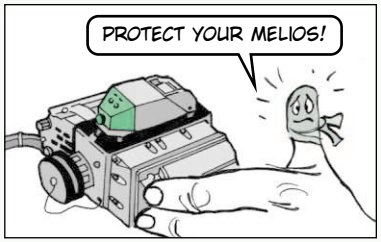
And, like any sore thumb, it often gets bashed!

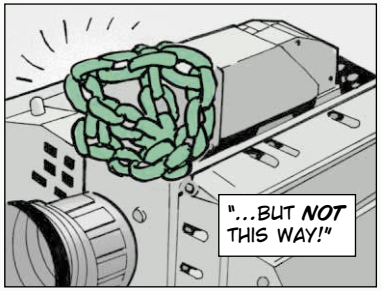
I've come up with a plastic guard to protect the selector switch.

Each time the shaft of the selector switch breaks, it costs more than $1,500 to replace it. The plastic guard will save big bucks.

CECOM has approved the use of this guard and I was hoping you would spread the word about it.

Kirk Gadberry
CECOM LAR
Ft Shafter, HI





Dear Mr. Gadberry,

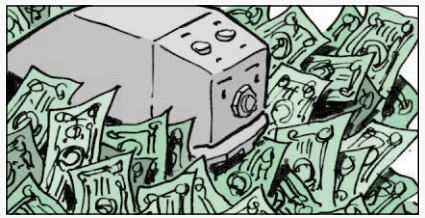
Great idea and we'll be happy to spread the word. MELIOS users, installing this guard is optional, but it sure makes a lot of (dollars and) sense. For specifications, fabrication and assembly instructions, send an e-mail to:

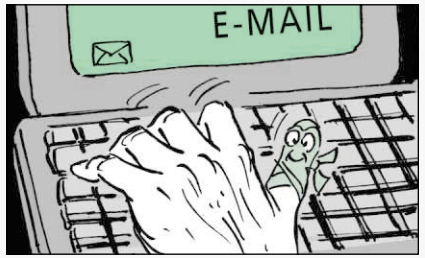
george.ambrosia@mail1.monmouth.army.mil *or* **mary.grasdorf@mail1.monmouth.army.mil**.

Or write to:

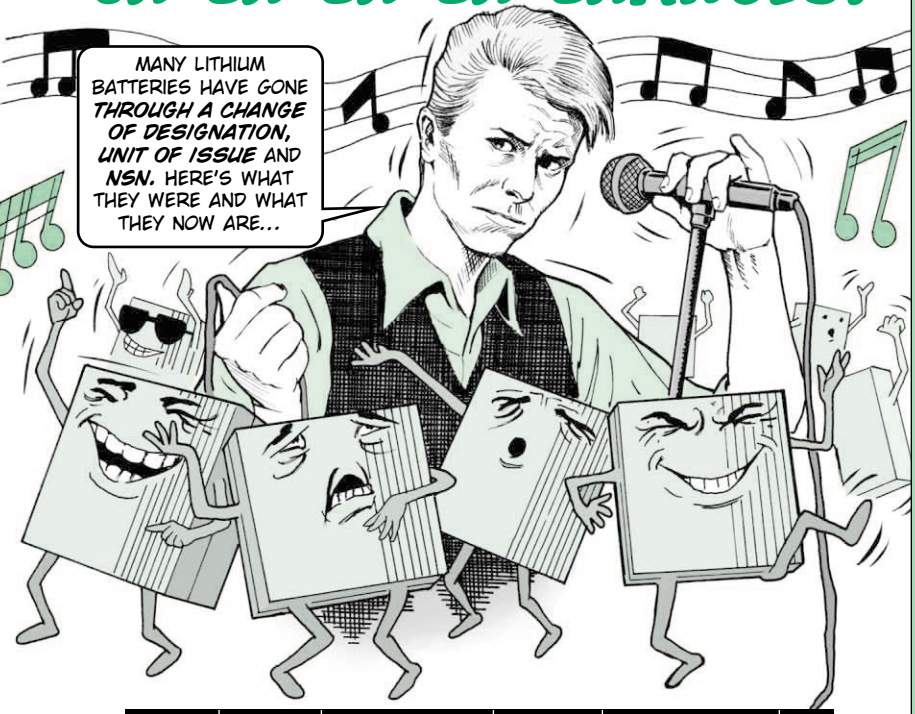
US Army CECOM
AMSEL-LC-IEW-N-LS
Ft Monmouth, NJ 07703

Half-Mast





CH-CH-CH-CH-CHANGES!



OLD TYPE	NEW TYPE	NEW NSN	NEW U/I	OLD NSN	OLD U/I
BA-5093		6135-01-216-9771	EA	NONE	EA
BA-1372	BA-5372	6135-01-214-6441	PG (10 EA)	6135-01-801-3493	PG
BA-5112	BA-5112A	6135-01-439-6229	PG (4 EA)	6135-01-235-4168	EA
BA-5557	BA-5557A	6135-01-448-4680	PG (4 EA)	6135-01-088-2707	EA
BA-5567	BA-5567A	6135-01-447-5082	PG (12 EA)	6135-01-090-5365	PG
BA-1567	BA-5567A	6135-01-447-5082	PG (12 EA)	6135-01-485-7402	EA
BA-5588	BA-5588A	6135-01-447-5083	PG (5 EA)	6135-01-088-2708	EA
BA-5590	BA-5590B	6135-01-438-9450	PG (4 EA)	6135-01-036-3495	EA
BA-5598	BA-5598A	6135-01-447-5081	PG (4 EA)	6135-01-034-2239	EA
BA-5599	BA-5599A	6135-01-447-4001	PG (4 EA)	6135-01-069-8575	EA
BA-5600	BA-5600A	6135-01-441-0402	PG (8 EA)	6135-01-168-2944	EA
BA-5800	BA-5800A	6135-01-440-7774	PG (8 EA)	6135-99-760-9742	EA
BA-5847	BA-5847B	6135-01-430-3119	EA	6135-01-090-5364	EA
BA-1568	BA-5368	6135-01-455-7947	PG (10 EA)	6135-00-838-0706	EA
BA-1574	BA-5374	6135-01-455-9646	PG (10 EA)	6135-00-073-8939	EA

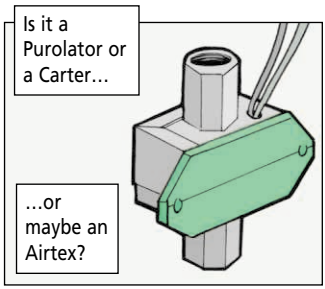
Main Fuel Pump Problem

Operators and unit maintainers, take a look at the main fuel pump, NSN 2910-01-378-6025, on your 5-KW, NSN 6115-01-274-7387 and NSN 6115-01-274-7391; and 10-KW, NSN 6115-01-275-5061 and NSN 6115-01-274-7392, tactical quiet generators.

The main fuel pump will be either a Purolator, part number (PN) 40193, or a Carter, PN P61139S.

If it's a Purolator, you're in good shape.

If it's a Carter, make a note of it and monitor its performance. The Carter pump is having a tough time doing its job when environmental conditions are less than perfect.



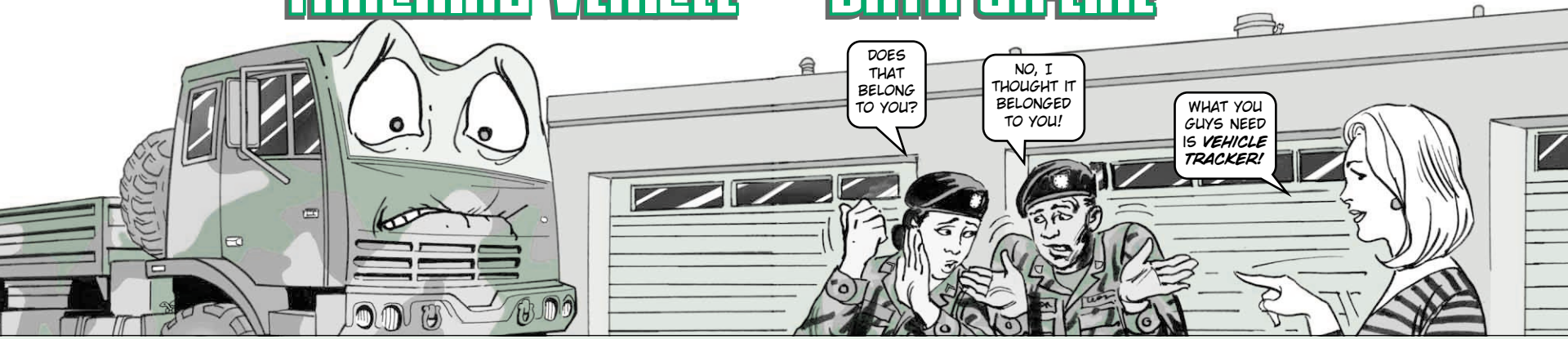
If you're already having fuel performance problems with a generator that has a Carter pump, replace it with a Purolator. NSN 2910-01-378-6025 now only brings a Purolator pump.

One more piece of pump advice: Never use a main fuel pump in place of the auxiliary fuel pump. You can make it fit, but it will not do the same job and could cause a dangerous fuel overflow.

For more information on the main pump problem and for instructions on how to replace a Carter with a Purolator, contact CECOM at DSN 992-4748 or (732) 532-4748. Or e-mail them at: **donald.youll@mail1.monmouth.army.mail**.

CECOM will also tell you about an Airtex pump that new generator sets will be using.

TRACKING VEHICLE DATA ON-LINE

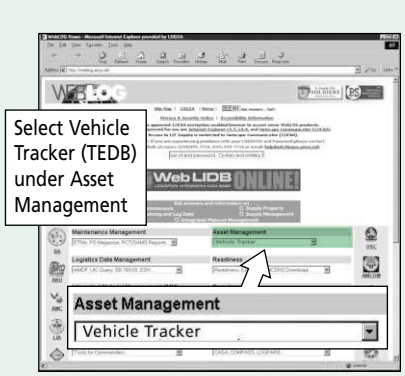


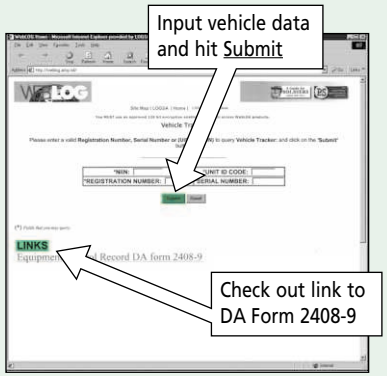
Make sure all your reportable equipment is listed in The Army Maintenance Management System Equipment Data Base (TEDB). To check or correct your equipment listing in the TEDB use the Vehicle Tracker in the Asset Management Menu.

The Vehicle Tracker has other uses, too. It contains information on registration numbers, date of manufacture and ownership.

You'll find the Vehicle Tracker at the Logistics Support Activity's (LOGSA) WebLOG site at **http://WebLOG.army.mil**. (WebLOG users, need an ID and password, so if you don't have one, click on System Access Request, complete the form and submit it.)

Look for Vehicle Tracker (TEDB) on the **Asset Management** menu. Click on it and enter the info you have: serial number, USA/registration number, unit ID code, or the NSN. Then hit Submit. The next screen will have the info you need. The data is located in the TAMMS Equipment Data Base (TEDB).

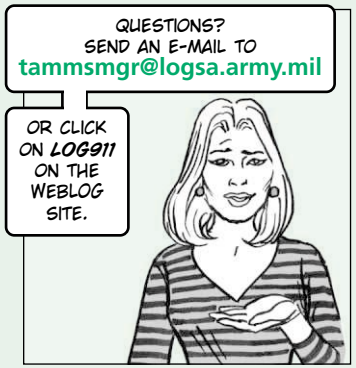


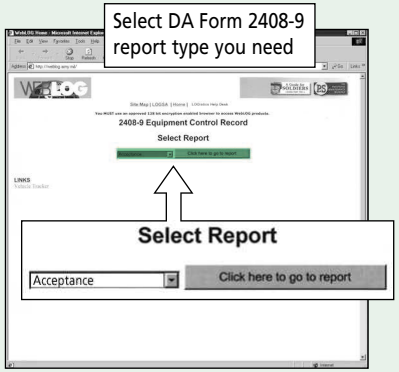


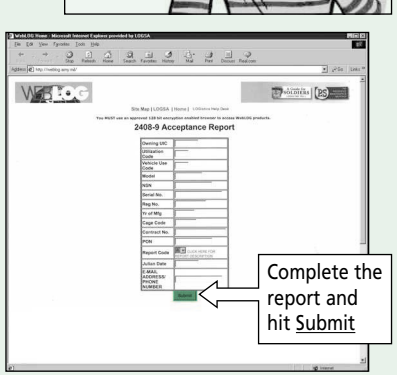
You can use the data to create missing DA Form 2408–9s, fill in missing data on your DA Form 2408-9, or prepare DA Form 2408-9s for submission on-line to LOGSA.

On-line DA Form 2408-9

The on-line DA Form 2408-9 is also at the WebLOG site on the **Asset Management** menu. Just click on Equipment Control Record DA Form 2408-9 Input. Then input your data at the next screen, hit Submit and the TEDB will do the rest.







POST SCRIPTS

HMMWV DISTRIBUTION BOX UPDATE

The only power distribution Box that deadlines your HMMWV is NSN 6110-01-446-7126 without a label on it reading "VER 14.0A" . Any other box is OK to use until it fails. At failure, replace with NSN 6110-01-463-9260 (for Army users) or NSN 6110-01-395-9585 (for Marine Corps users).

New SEE Air Lines

Corrosion destroys the carbon steel air line that runs between the small emplacement excavator's pressure regulator and its air tanks. When you need a new air line, replace the carbon steel with stainless steel tubing, NSN 4710-01-384-6291. Pages 3-26 through 3-31 of TACOM EIR Digest TB 43-0001-39-5 (June 95) have the replacement instructions. See your TACOM LAR for a copy.

Bradley Ammo Bin Switch

Use NSN 5930-01-456-0530 to order an ammo bin switch for your M2A3/M3A2 ODS Bradley. The NSN listed for Item 24 in Fig 13A of TM 9-2350-284-24P-2 is wrong.

Distress Marker Battery

To get light out of distress marker lights, NSN 6230-00-938-1778 or NSN 6230-00-067-5209, use battery, NSN 6135-00-073-8939.

SEE Brake Reservoirs

When you bleed the brake system of the excavator, keep the air pressure between 14.5 and 29 psi, like it days on Page 4- 263 of TM 5-2420-224-20. Higher air pressure can crack the reservoirs.

M989AI HENAT SHOCK ABSORBER

NSN 2510-01-289-8286 gets the M989A1 trailer's shock absorber that's shown as Item 2 in Fig 22 of TM 9-2330-383-14&P. Make a note until the parts info is updated in the technical manual.

Painting PLS Flatracks

The palletized load system flatracks (M1077/M1077A1, M1 ISO compatible and M3/M3A1 CROPs) do not require camouflage pattern painting. When repainting is needed, use solid woodland green, tan or white CARC paint as required in your mission area. See TB 43-0209 for painting info.

M120/M121 MORTAR TRAINING INSERT

The M303 sub-caliber insert for the M120/M121 mortar has a carrying case whose latches, hinges, and handles tend to break. Now you can replace them. Change 3 (Aug 01) to TM 9-1015-254-13&P added repair parts and instructions. The case repair kit, NSN 1015-01-414-4456, comes with two handles, two hinges, two latches, and an installation tool.

REPLACING M2 GUN SPRINGS

Armorers, next time your M2 machine guns go to support for their annual inspections, make sure the sear helical spring, NSN 5360-00-209-8720, and flat adjustable trigger lever spring, NSN 5360-00-731-2029, are replaced. TACOM-Rock Island says the springs should be replaced every year. The requirement will be added to the PMCS in the next change to TM 9-1005-213-23&P.

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CAN STOP 'EM ALL!

Clean or replace them according to your TMs!