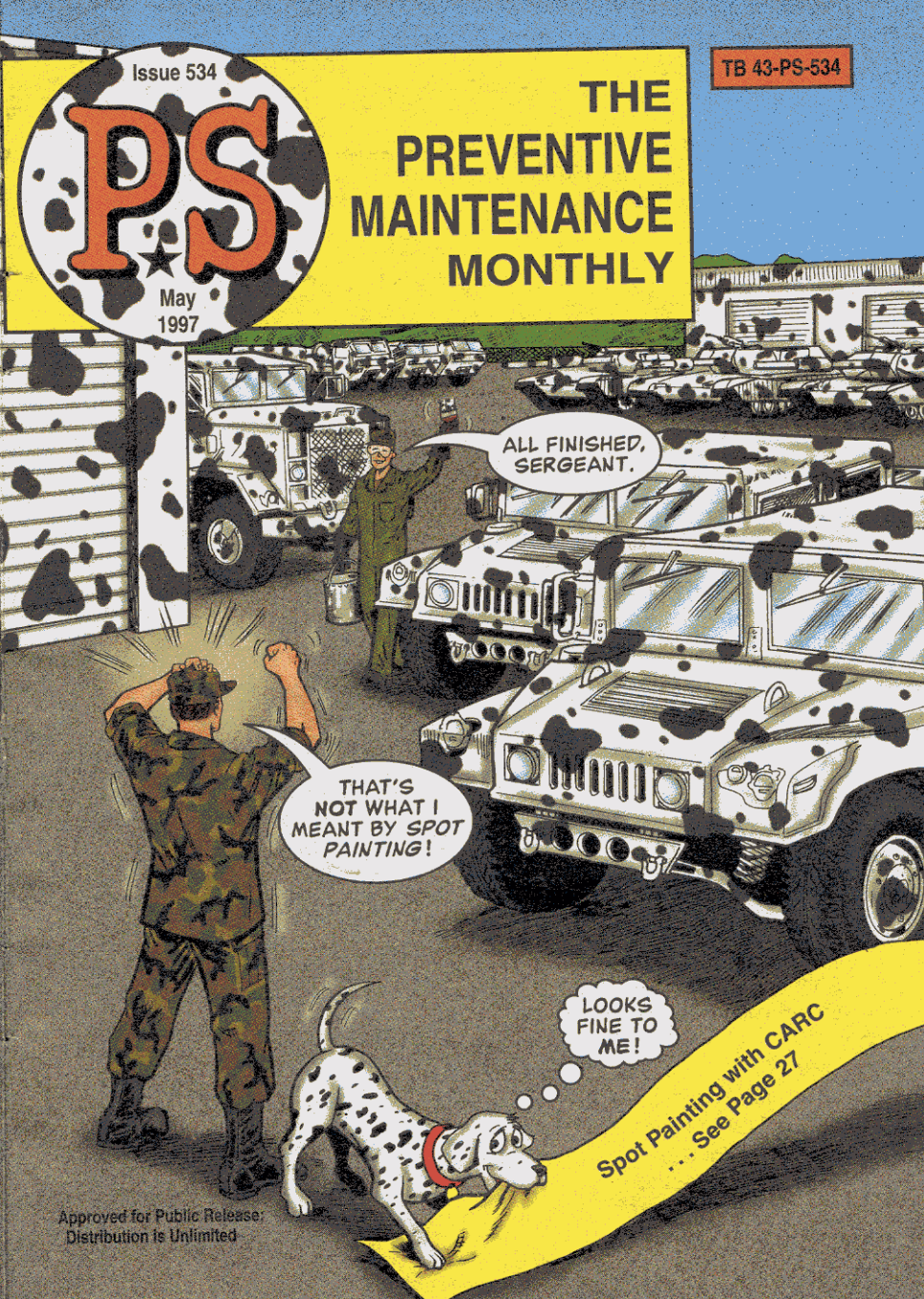
Issue 534

PS

May 1997

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-534



Spot Painting with CARC . . . See Page 27

STE Cool as ICE

Ever get frustrated when…

- Your vehicle's alternator or generator won't charge the batteries?
- The engine spits and sputters, coughs, or lacks get-up-and-go?
- Your truck's automatic transmission shifts sluggishly?

Some mechanics, when faced with these equipment failures, start yanking and replacing components until the problem is solved. Or until they throw up their hands when all those new parts don't fix the problem.

Either way, lots of good parts get replaced and then clog the supply pipeline when they're sent for repair.

Forget this trial-and-error method. Use the modern technology at your finger tips. Brush up on your vehicle's STE/ICE-R, STE-M1/FVS or CTS/ICE. They short-cut your troubleshooting chase and lead you right to the trouble.

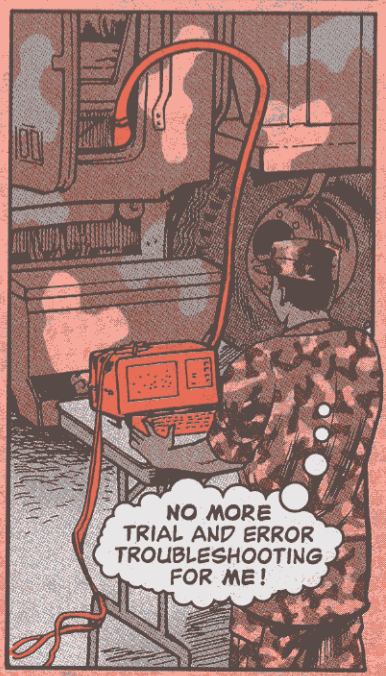
Got a problem with your STE/ICE? Think the TM's too complicated? Or there's no one trained to operate the set?

Whatever the problem, there's no need to just let that test equipment sit idle.

Call your TACOM logistics assistance representative for help. Or call the STE/ICE-R and CTS/ICE hotline at **DSN 786-6360** or **(810) 574-6360,** or e-mail: **carneym@cc.tacom.army.mil**

For the STE-MI/FVS, call **DSN 786-8309, (810) 574-8309**, or e-mail: **antoschr@cc.tacom.army.mil**

Or call the STE customer hotline:
US **(800) 229-3458**
Germany **0130-81-8694**
Korea **0078-16-800-7547**



PS
THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-534, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user.

ISSUE 534 MAY 1997

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

MSG Half-Mast
The Preventive Maintenance Monthly
LOGSA, Bldg. 5307
Redstone Arsenal, AL 35898-7466

Or E-mail to:

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By Order of the Secretary of the Army:

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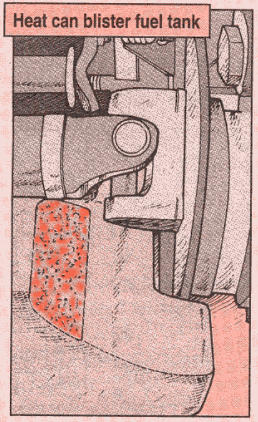
Care for the Parking Brake

You are all that stands between a parking brake that works correctly, and one that can burn up or create enough heat to blister your fuel tank.

If you don't fully release the brake before you move out, friction between the rotor and the brake pad will burn up the brake.

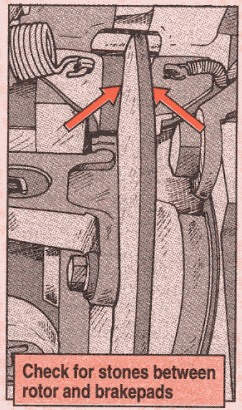
Additionally, those hot brakes can blister the fuel tanks on older HMMWVs that have the parking brake mounted on the rear propeller shaft.



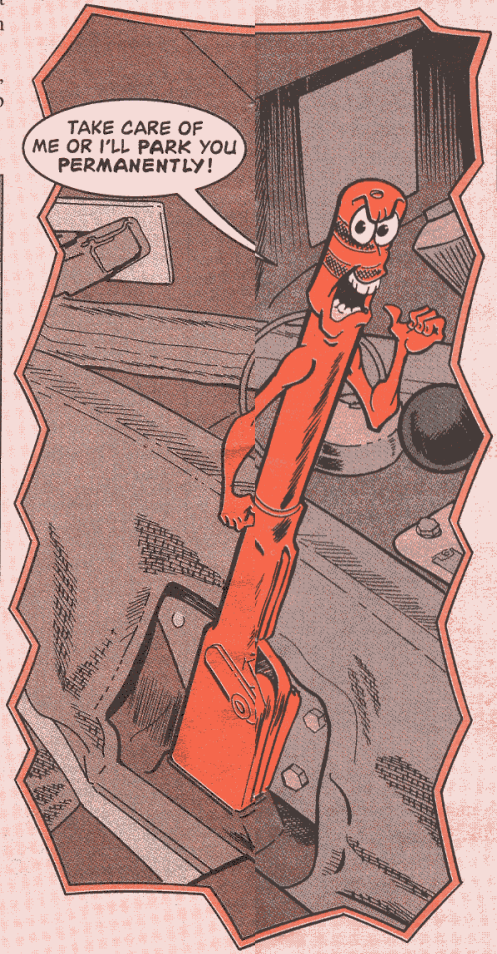
Before Operation

The parking brake won't release completely every time if debris and corrosion have built up around the push pin or the caliper guide.

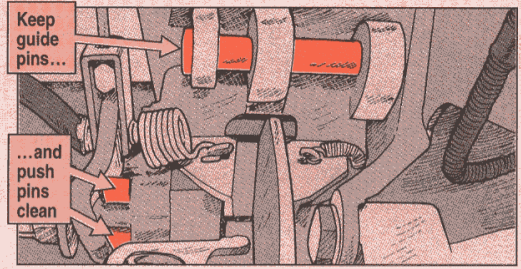
You must keep exposed brake parts free of sand, mud and stones. Check for stones lodged between the rotor and the brake pad, especially after fording a stream. They can wear out a rotor in no time.



If the brake is sticking, have your mechanic spray it with aerosol lubricant, NSN 9150-01-380-4470. The lubricant works into the moving parts of an assembled brake. It's handy for between-service lubrication, too.



If corrosion has already made a mess of your parking brake, your mechanic needs to clean the push pin and guide pin. He can keep 'em moving freely by taking the brake apart, cleaning the pins and lubing them according to the LO.



During Operation

To get an idea of how your parking brake is working, apply the parking brake while the truck is stopped.

Idle the engine and shift the transmission into drive (D). The vehicle shouldn't move. If it does, have your mechanic check out the brake.

With the transmission still in drive, release the parking and service brakes.

Lightly tap the accelerator pedal. If your truck doesn't move, or if it hesitates or drags, have your mechanic take a look.

When Driving

Stop a HMMWV right away if the parking brake drags when you put it in gear, makes unusual noises or vibrates. Make sure the parking brake is fully released. If that's not the problem, get help from your mechanic.

And by the way, never just throw the parking brake handle when you release the parking brake. Keep your hand on it all the way down. That'll go a long way toward keeping the control cable in good shape, and it'll save spot painting the engine cover where the handle bangs it.

HMMWV . . .

Pan Gasket NSN

If you're sick and tired of trying to use RTV sealant as an oil pan gasket for your HMMWV, there's a better way.

Use NSN 5330-01-310-6780 to get a tailor-made oil pan gasket.

This gasket also works on CUCVs with the 6.2-liter diesel engine.

According to Tank-automotive and Armaments Command, replacement of engine valve cover gaskets is DS-level work. See your local TACOM LAR for more info.

HEMTT . . .

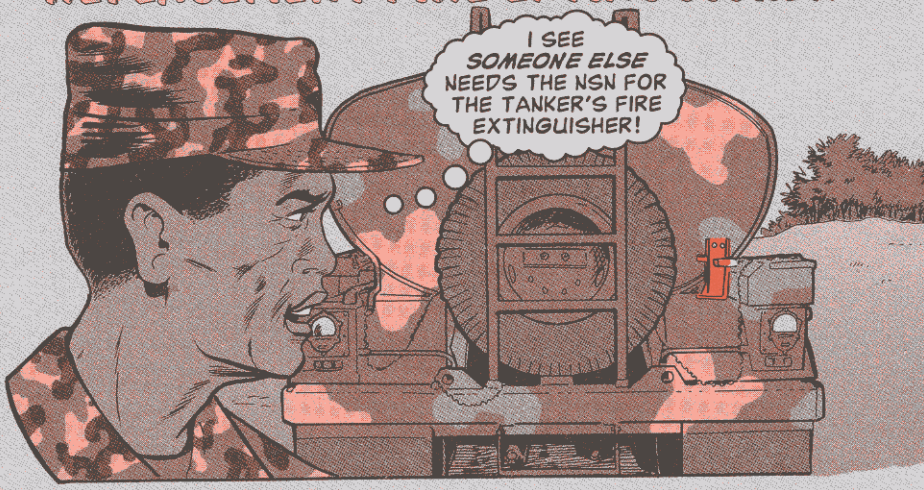
Tanker Hoses and Gasket

✔ NSN 4210-01-381-2846 gets a fuel hose assembly that's more durable than the one shown as Item 1 in Figure 254 of TM 9-2320-279-20P. The hose comes assembled with brass fittings

✔ NSN 4730-01-152-8526 gets a 2-in fuel pipe coupling and gasket. The NSN for the coupling shown in the assembly of Item 40 in Fig 302 of TM 9-2320-279-20P is wrong.

M900-Series Fuel Tankers . . .

REPLACEMENT FIRE EXTINGUISHER



Use NSN 4210-00-965-1116 to get a replacement 10-lb dry chemical fire extinguisher with mounting bracket for the following fuelers:

- M969/969A1 5,000-gal fuel tanker (ground vehicle use)
- M967/967A1 5,000-gal bulk haul tanker
- M970/970A1 5,000-gal fuel tanker (aviation use)

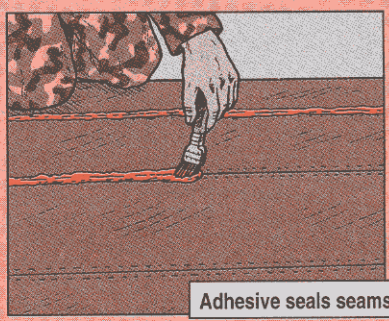
The old fire extinguisher, NSN 4210-00-818-4544, is no longer available.

Cargo Covers . . .

Stop the Leaks

Seal leaky seams on the plastic-coated tarps used on HMMWVs, CUCVs and M871/872 semitrailers with a 1/2-in wide strip of adhesive, NSN 8040-01-010-8758. That gets a kit that makes 11 ounces. To make the job complete, press the adhesive into the tarp stitching, too.

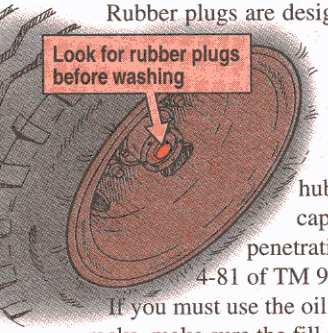
Clean the tarps before applying the adhesive. Let the adhesive cure for 20 minutes after application.


Adhesive seals seams

HUBS & HIGH PRESSURE WATER

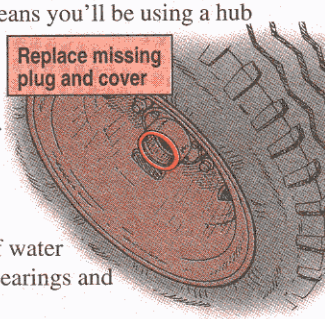
If your M871A1 trailer wheel hubs are oil lubed and have a rubber "plug" to seal them, beware of high pressure water in "bird baths" and other wash racks.

Rubber plugs are designed only to keep oil in the hub, not to keep high pressure water out. Water under high pressure will loosen or blow out the plugs. 'Course, that lets oil leak out and lets water get into the hub bearings.



Either way, you get bearing damage.

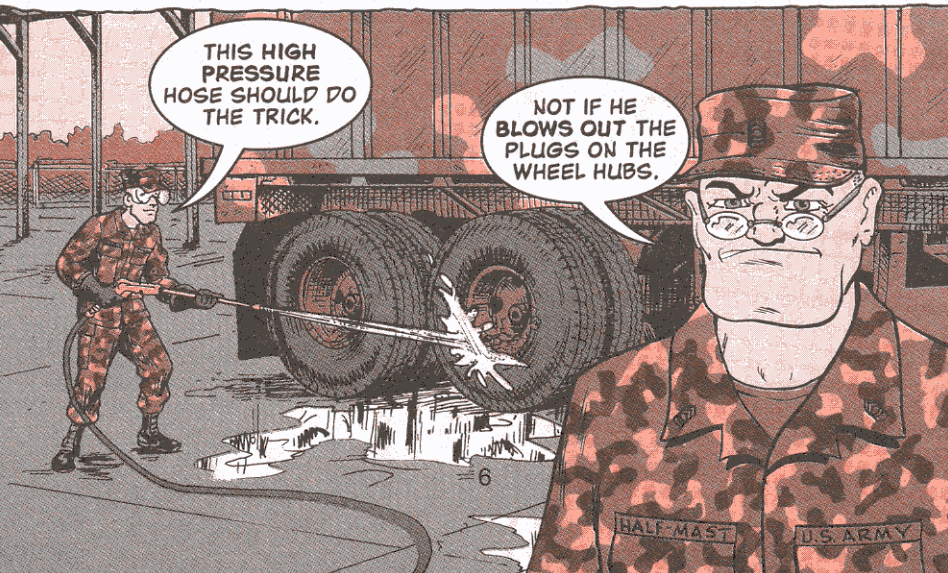
So what do you do? The best thing is to convert the hubs back to grease lube. That means you'll be using a hub cap that'll resist water penetration. See Pages 4-76 through 4-81 of TM 9-2330-358-14&P for the info.



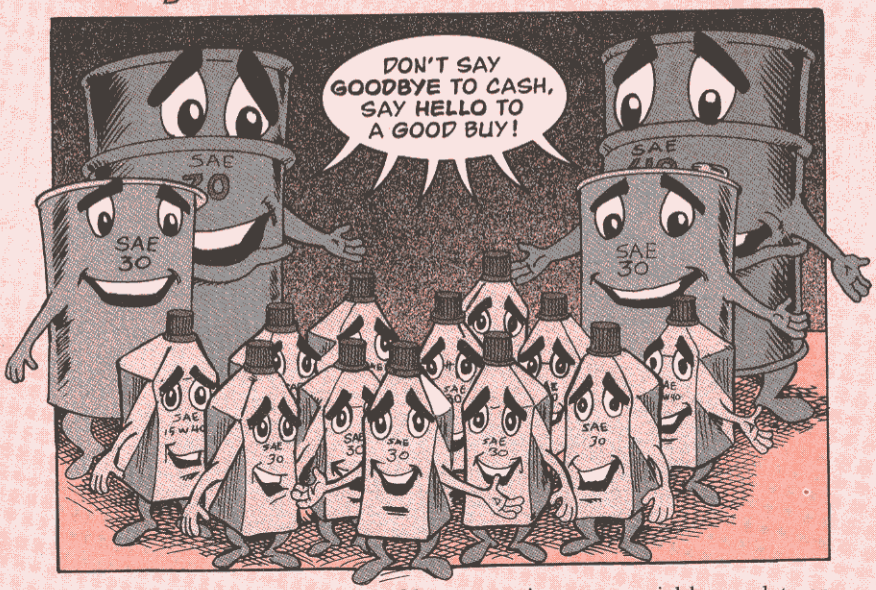
If you must use the oil hubs **and** high pressure water racks, make sure the fill plugs are in place before and after the wash.

If you notice that oil has leaked out during the wash, check for water in the hub. The lube will look milky. If water is found, your mechanic will drain the hub, clean the bearings and refill with new oil.

New fill plugs are NSN 5340-01-104-9826. If the entire access cover is missing from your trailer's hub, get it with NSN 5340-01-042-0573.



Engine Oils Go Commercial



TACOM has approved the use of less expensive commercial heavy-duty engine oils (A-A-52306) in tactical wheeled vehicle engines.

The oil can be used in place of MIL-L-2104 oil in **wheeled** vehicle engines only, not in their transmissions or hydraulic systems. It can't be used at all in combat vehicles or aircraft. So keep that in mind when you weigh your cost savings.

The commercial oil is cheaper than the military oil because it doesn't have to carry the required military markings on the containers.

Oil	U/I	NSN 9150-
SAE 15W40	12 1-qt	01-351-9019
	5-gal	01-352-2962
	55-gal	01-351-9018
SAE 30	12 1-qt	01-351-9016
	5-gal	01-352-8090
	55-gal	01-351-9015
SAE 40	55-gal	01-352-8091

The word on this change is in TACOM EIR Digest TB 43-0001-39-6 (Sep 95). See Para 8-3B.

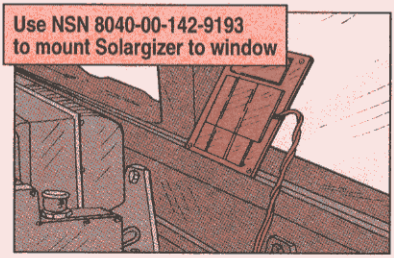
For more information, contact DLA at DSN 695-4908 or (800) 345-6333.

Keep Solargizer on the Job

Many of you have bought and are using the solar-powered battery maintainer/conditioner (Solargizer) mentioned in PS 520.

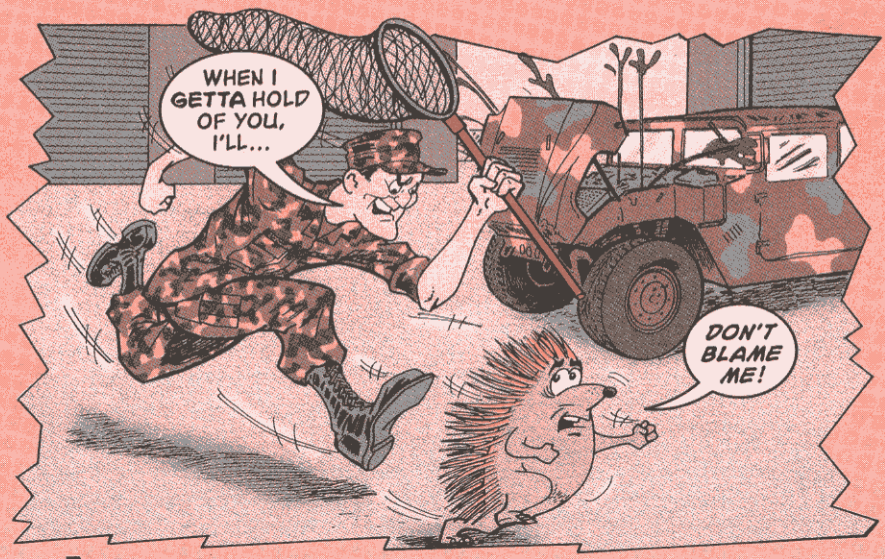
Most reactions are that it works well at maintaining the charge of the battery by slowing plate sulfation.

What doesn't seem to work so well are the mounting instructions that come with the Solargizer, NSN 6130-01-392-8347. Many users can't get the device to stick to a window.



Field reports say the best adhesive to use is the stuff you buy to reattach the rear view mirror in your POV. If you want something that's already in the supply system, try a cyanoacrylic adhesive, NSN 8040-00-142-9193. That'll get you a box of ten 1-oz plastic bottles.

Thar She Blows!

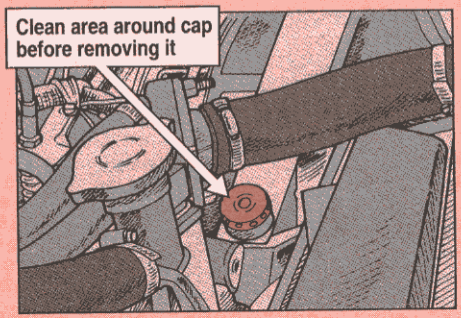


An overfull power steering pump can cause more system leaks than a porcupine can.

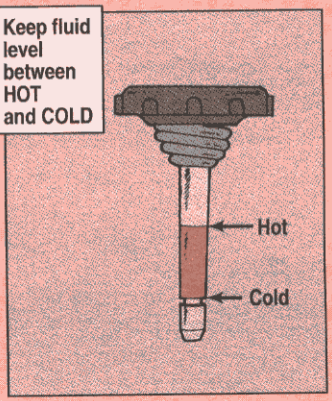
You'll get blown seals, a worn-out pump and maybe even blown-off hoses if you put too much hydraulic fluid in the pump.

You can't just eyeball the level and fill the reservoir to the top. That probably puts too much oil in the system.

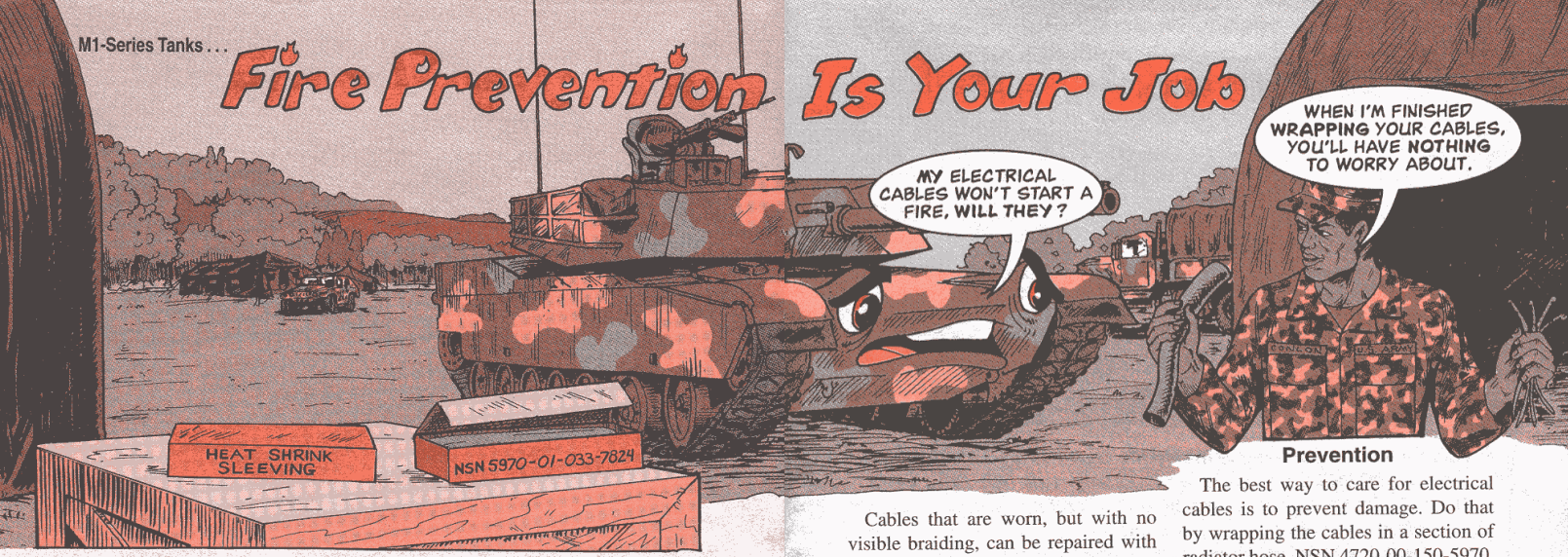
Use the dipstick when the engine is **cold**.



Clean the area around the cap before removing it. Keep the fluid between the COLD and HOT marks. If it's below COLD, add enough to raise the level between the two marks.



Fire Prevention Is Your Job



Most M1 fires are the result of overlooked or unreported electrical cable damage.

Cables get damaged when they're…

…routed through the opening between the battery box and the engine compartment, or;

…routed along the upper side of the powerpack—like the 3W101, 3W102 and 3W102-1 cables.

Inspection

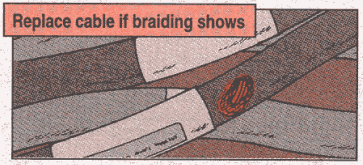
Eyeball these cables during semi-annual and annual services. Make sure they are properly routed and all hardware is in place. Replace any missing grommets on the battery box.

You'll need to disconnect the 3W101, 3W102 and 3W102-1 harnesses during the inspection. Otherwise, you can't see any damage to the inside of the cables at the 45° bend.

Repair

If you can see wire braiding under the insulation, replace the cable now.

Replace cable if braiding shows



Don't throw out the damaged cable, though. DS can repair it with the electrical maintenance repair kit, NSN 5935-01-344-1073.

Cables that are worn, but with no visible braiding, can be repaired with heat shrink sleeving. Here's how:

1. Place the sleeving over the damaged area.
2. Put a little adhesive, NSN 8040-01-147-9957, inside each end of the sleeving.
3. Shrink the sleeving in place using a heat gun or blow dryer.

Use the following heat shrink sleeving based on the diameter of the damaged cable:

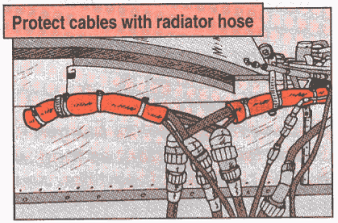
Cable diameter (inches)	Sleeving NSN 5970-
Under 1/4	01-060-0974*
1/4 to 3/8	00-914-3118
3/8 to 1/2	01-033-7824

**Order on a DD Form 1348-6 and put "NSN not on AMDF" in the Remarks block.*

Prevention

The best way to care for electrical cables is to prevent damage. Do that by wrapping the cables in a section of radiator hose, NSN 4720-00-150-5970.

Protect cables with radiator hose



Hold the hose in place with plastic ties. NSN 5975-00-074-2072 gets 100 1/2-in wide by 6 1/4-in long ties. NSN 5975-00-570-9598 brings 100 1/4-in wide by 11 1/2-in long ties.

For more tips, get a copy of the training film, "Abrams Tank Fire Prevention." The film—TVT 17-198—is available from your local TASC by ordering PIN 710571.

Keep Handset Hangin' Around

Dear Editor,

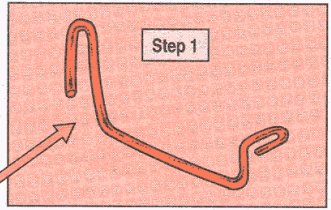
There's just no good place inside the MLRS to keep the handset for the SINCGARS voice radio. So it usually ends up on the seat.

Then, it's just a matter of time before you sit on the handset or it's crushed under TMs and equipment.

I've fixed this problem by clipping the handset to a homemade bracket that's attached to the cab ceiling. The handset stays out of the way, but it's still easy to grab when you need it.

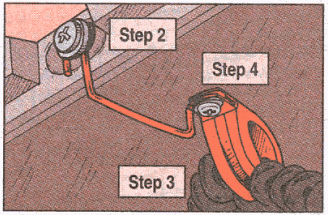
Here's how to do it:

1. Make the bracket from a piece of metal clothes hanger. Shape isn't important as long as it's the right length and the handset will clip in place easily. The one I made looks like this:



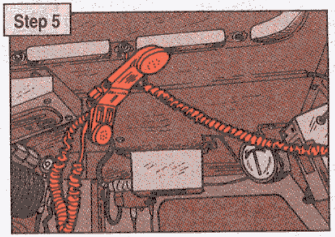
2. Attach one end of the bracket to the ceiling with the center screw on the track commander's hatch pad.

3. Thread the handset cord through a loop clamp, NSN 5340-01-166-8694. The clamp will keep the cord from dangling in your way.



4. Slip the remaining end of the bracket between the two eyes on the loop clamp. Then attach it to the ceiling using the existing screw a few inches to the side of the hatch pad.

5. Clip the handset in place.



SSG Kenneth Morse
5/17th FA
Ft Sill, OK

FROM THE DESK OF THE *Editor*

That ought to keep the handset hanging in there!

The Lowdown on ISU Lifters

Mechanics, without proper care, the integrated sight unit (ISU) lifting device, NSN 1240-01-116-4518, could break on you.

The ISU weighs in at 180 pounds and costs about $142,000. That's a real heavyweight punch no matter how you look at it.

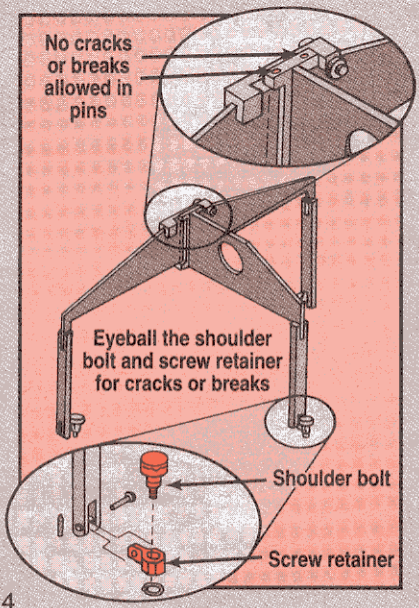
Follow these tips to keep yourself and the ISU in good shape:

✔ Eyeball the lifter before you use it. Make sure all the parts are present and in good shape.

✔ Look closely at the shoulder bolt, NSN 5306-01-190-3165, and screw retainer, NSN 1005-01-188-7879, on each "foot" of the lifter. The bolt and retainer take a lot of strain and sometimes bend or break. Replace 'em if necessary.

✔ Check each end of the straight headless pins, NSN 5315-01-190-6840, that hold the two side arms to the main beam. If you see any cracks or breaks, replace the pins.

✔ Never use force when attaching the lifter to the ISU. That just bends and breaks parts. If **any** part doesn't fit properly, replace it.



AVLB . . .

EXTERMINATE GREASE WORMS

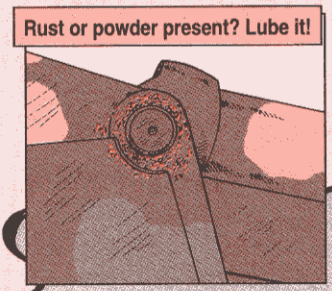
AVLB crews often complain about grease worms. No sooner do they lube the fittings on their launcher, they say, than the grease worms eat the grease. The worms seem especially fond of the grease in the hard-to-get-at fittings. Once the grease is gone, bearings burn out, or seize. If a bearing seizes, something breaks.

To keep your AVLB lubed despite these imaginary grease-eaters, you have to follow LO 5-5420-202-12 to the letter—and then some.

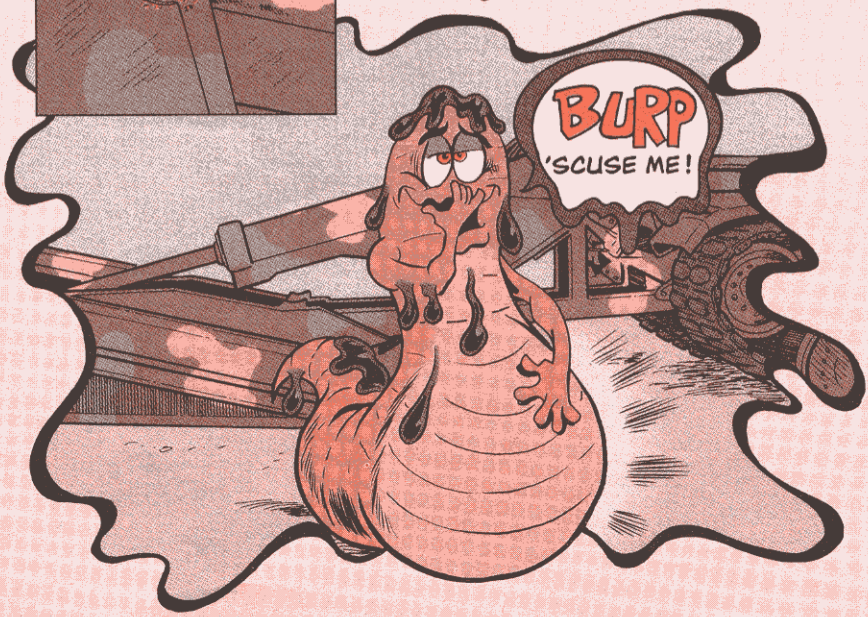
LO lube intervals are based on an AVLB that normally launches its bridge about four times a month.

If you launch your bridges more often, you need to adjust your lube intervals. Eyeball lube points more often with more launches, or if the weather's been rainy, or hot and dusty. Any squeaking pin needs to be found and lubed.

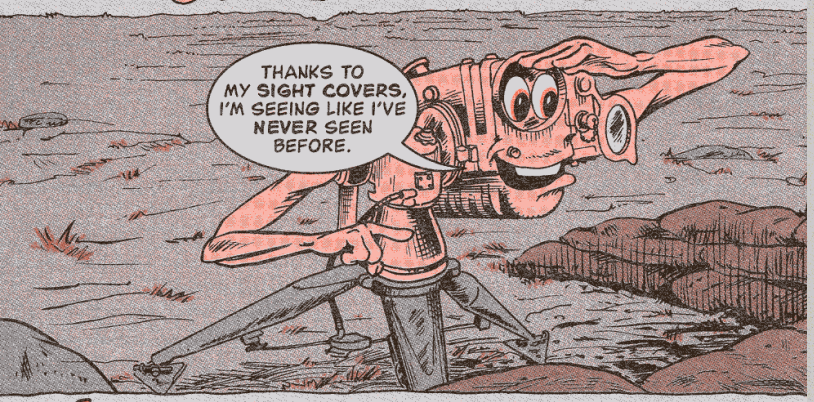
Any time a hinge point badly needs lube, you'll see a rusty color or powdery substance. Any squeaking of the bridge during launching or retrieving means the inner and outer center hinge pins need lube.



Before operation would be a good time to do the extra check. If you see rust, or the fitting appears dry, lube it. Always wipe off excess lube so it doesn't collect dust. After lubing, launch the bridge to evenly distribute the lube. Then lube again.

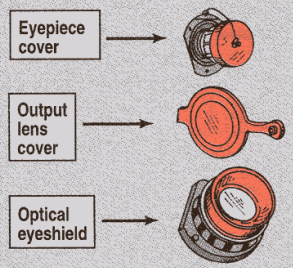


SEE A GOOD SIGHT



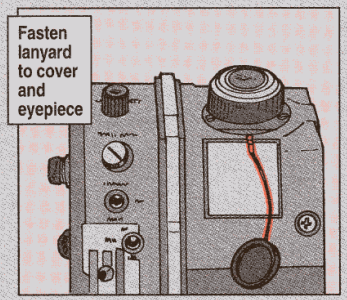
See a good sight better with these ground/vehicular laser locator designator (G/VLLD) visual aids:

Before G/VLLDs leave the motor pool, make sure they have eyepiece covers, NSN 1260-01-073-1649, output lens covers, NSN 1260-01-073-5896, and optical eyeshields, NSN 6650-01-074-4854. G/VLLDs without these covers come back from the field with scratched lenses.



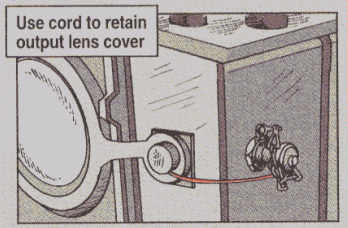
No matter what you do, though, lens covers will disappear. Order extras so you will have replacements. Here are a few things you can do to help covers stick around:

Make sure the eyepiece cover lanyard is securely fastened to the cover and the eyepiece. If it's missing or frayed, replace the lanyard with lacing wire from the arms room.

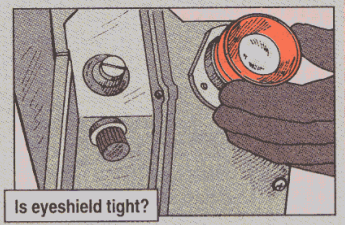


BETTER

Use a nylon cord, NSN 4020-00-262-2019, to keep the output lens cover from dropping off. Tie one end through the cover's post hole and the other through the connector cap chain.



Feel the optical eyeshield for looseness. If it's loose, tell your repairman.



Cleaning

Make sure your unit knows to clean lenses **only** with the lens cleaning kit. Shirttails and rags scratch the lenses. Order plenty of lens cleaning kits with NSN 1260-01-151-2698. That gets a bag, bottle, brush, and tissue. But you'll also need cleaning solution, NSN 7930-00-880-4454, and isopropyl alcohol, NSN 6505-01-075-5546. They must be ordered separately.

Let Barrels Show Red

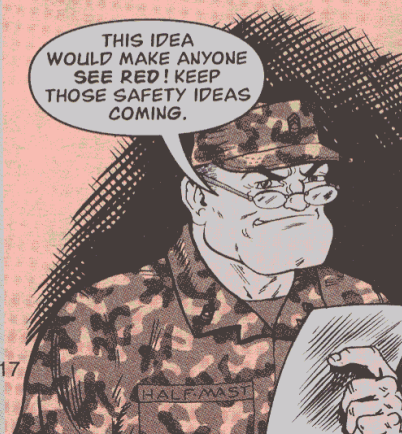
Dear Half-Mast,

People are walking into the barrels of howitzers and tanks when the barrels are down.

Some folks tie a red rag on the end of the tube. These rags are hard to keep up with and hard to see in the dark.

We solved this problem by using the old OD barrel cover as a sample to cut out a safety cover from a bright red tarp, NSN 8305-00-273-8650. We also leave streamers hanging so people will be sure to take notice.

Peter Kohler
Robert Falkenstein
100 ASG, 7ATC
Vilseck, Germany



Scoop on the Loader PM

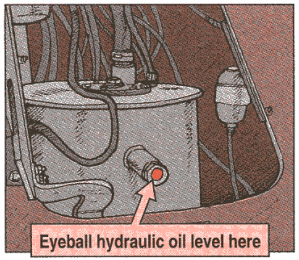
Operators, your MW24C scoop loader is a tough old bird, but it still needs a little TLC to keep it moving around the work site.

You probably know your operator's pub—TM 5-3805-262-10—like the back of your hand. That's great, but eyeball these PM tips for a little extra help in keeping your loader mission-ready.

Hydraulic Oil Fill

When the hydraulics on your loader get slow, check the fluid level. It could be low.

Park the MW24C on level ground with the bucket lowered. Eyeball the sight gauge on the reservoir.



If the oil is low, close the air shutoff valve. Slowly loosen the filler cap. When the pressure is released, remove the cap and add oil. Make sure the oil level fills the sight glass, then replace the cap and turn the air valve back on.

Run the engine at idle until the hydraulic pump's oil pressure gauge reaches 5–15 psi. That way you'll know the oil is flowing through the pump.

Hydraulics still sluggish? Get your mechanic to change the hydraulic filter element mounted near the reservoir. A new filter, NSN 2940-01-270-5868, replaces the one that's shown as Item 7 in Fig 147 of TM 5-3805-262-24P.

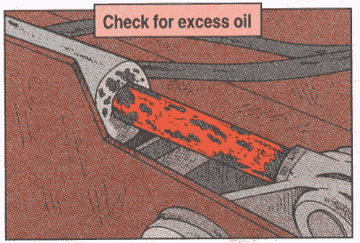
Exercise Helps

Speaking of hydraulics, make sure you exercise your scoop loader's bucket to keep rust off the hydraulic cylinder rod.

Once a week, fully extend the loader's bucket. This spreads a thin coat of oil on the cylinder rods.

If you can't exercise the bucket once a week, smear a light coat of oil on the cylinder rods.

When you see excess oil on the rod after use, the cylinder's main seal is probably shot. Report it as soon as possible.

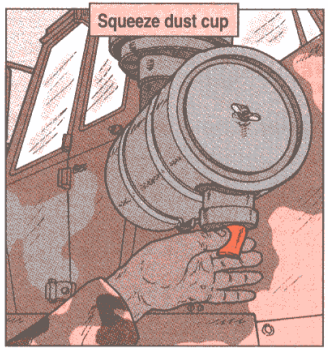


If a loader will be sitting idle for more than a month, coat the polished cylinder rod with grease, then wrap it with waterproof paper, NSN 8135-00-753-4662. Secure the paper with preservation sealing tape, NSN 7150-00-852-8180.

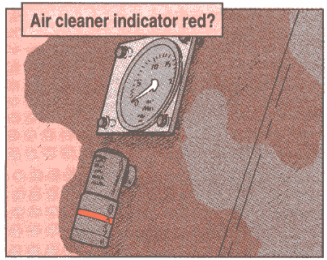
PS MORE

Lots of Clean Air

Your scoop loader needs lots of clean air to run right. Do your part to keep clean air flowing. Before the day's run, squeeze the dirt out of the dust cap on the bottom of the air canister. Do it more often if you're operating in a dusty or sandy area.

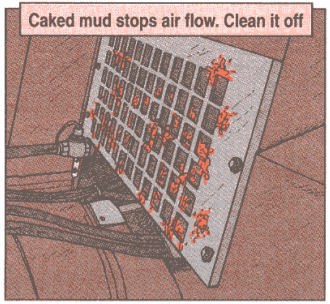


Keep an eye on the air cleaner indicator, too. If it shows red, stop and clean the filter.



Any dirt or mud caked in the transmission oil cooler fins will stop air flow that carries heat from the oil. That leads to overheating of the transmission and engine.

Clean dirt or mud off with low-pressure water or air.



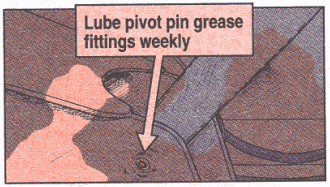
Fitting PM

Pivot pins on the clamshell bucket and the bucket lift arms need lots of clean lube to do their job.

Those grease fittings are usually coated with dirt and sand. Make sure you wipe gunk off the fittings before you start the lube job.

And don't forget to wipe off the dirty end of the grease gun. That way you won't pump any grit into a pivot pin.

Lube the pivot pins on the clamshell bucket every week. If you don't, the pins will bind and break. Then your loader's down until the pins are replaced.

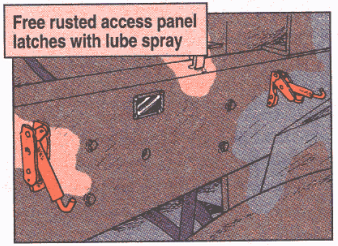


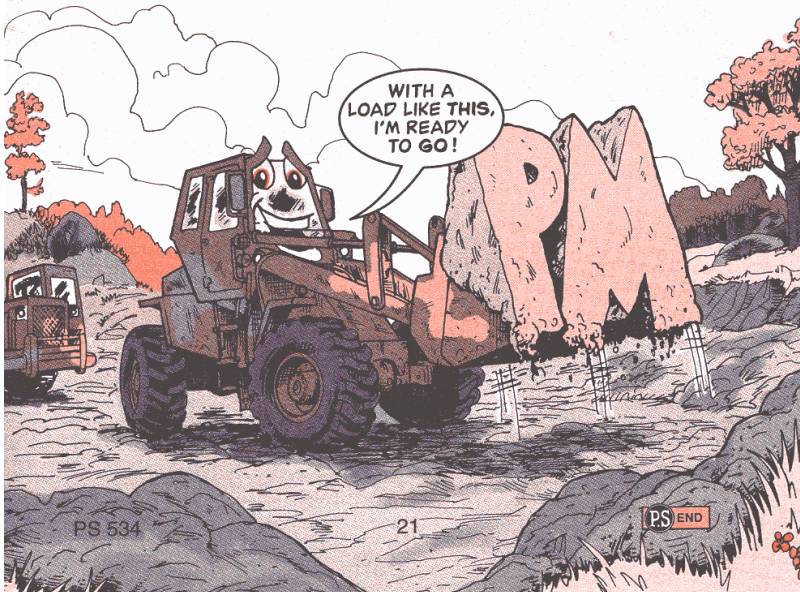
When you lube, pump grease into the fittings until you see clean grease oozing out. Six to eight pumps should do it.

If a fitting clogs and won't take grease, report it. Have your mechanic replace the fitting with NSN 4730-00-050-4208.

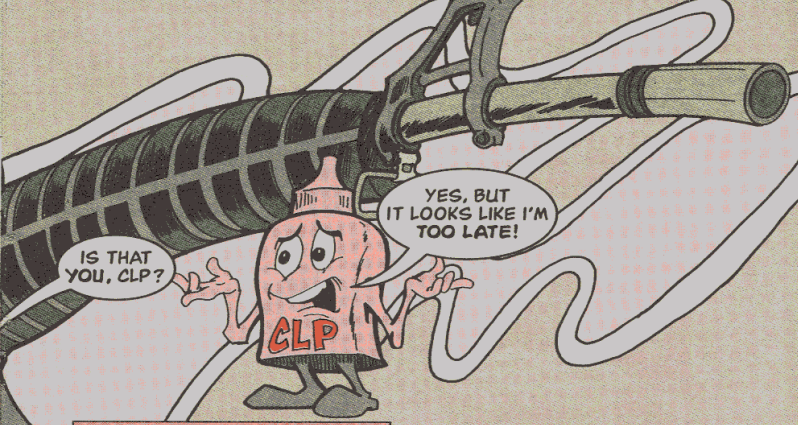
Pull latches on the engine's access panels get caked with mud. That rusts the latches' internal spring in place. They're a bear to pull open when you need to remove the panels to get at the engine.

Free up the spring with a shot of lubricating spray, NSN 9150-00-458-0075. Open and close the latch vigorously a few times. Then spray the spring at every scheduled service.



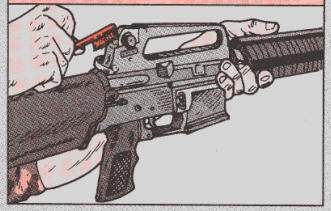


Blinded by the Sight

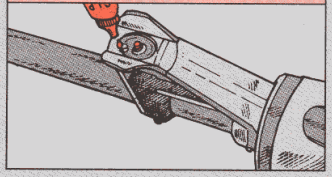


Neglect of your M16 rifle's sights can leave you shooting blindly. If the sights bind from dirt and corrosion, you can't adjust them to sight the target. Sight in on this PM to keep sights moving smoothly:

Every time you clean your rifle, clean the sights. Use a toothbrush to brush away dirt from both rear and front sights. Get into all crevices.

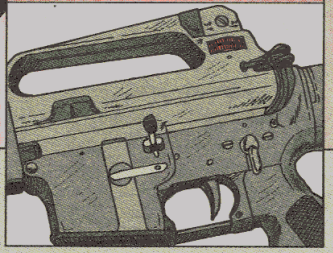


Depress front sight detent and give it a couple of drops of lube. Work detent up and down until it moves smoothly.

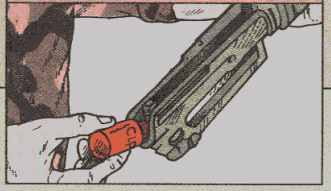


Squirt a couple of drops of lube on the rear sight's moving parts.

Rotate windage knob five clicks and elevation knobs completely to work all lube in. Return windage knob to its original position.



Remove the charging handle and turn the upper receiver upside-down. Put a few drops of lube on bottom of elevation screw shaft and detent spring hole.



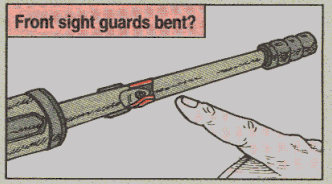
With the receiver still upside-down, move the elevation knob back and forth several times. Return the elevation knob to its original position.

Wipe off both sights to get rid of any lube that will attract more dirt.

If the sights are still difficult to adjust, too much dirt has gotten in them. Your armorer or support needs to take the sights apart and clean them before you fire again. Forcing the sights to move wears out their parts.

Tell your armorer if the front sight guards are bent. Support—not your armorer—can straighten the guards.

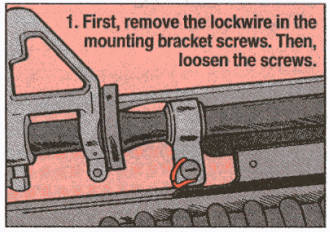
Front sight guards bent?

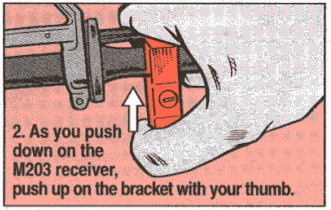


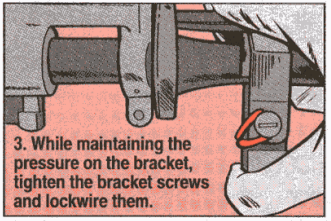
Loose Bracket Cure

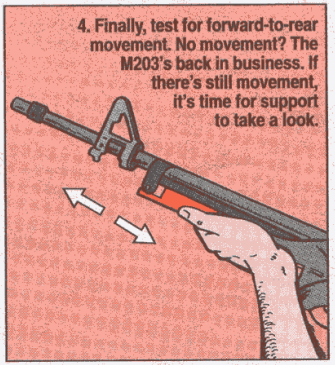
"The jolts that an M203 grenade launcher takes during firing loosens its mounting bracket screws. Loose screws let the M203 move up and down on the M16 rifle. Any up-and-down movement makes the launcher NMC.

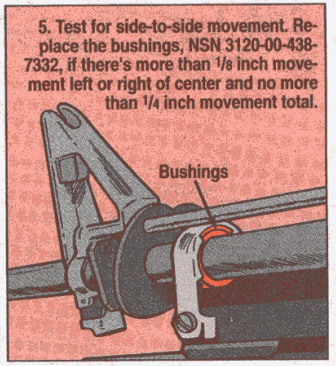
No problem. Armorers can cure loose brackets.











Remember that an M203 bracket has been fitted to an M16 by support. Never switch brackets between rifles. Switched brackets won't fit tight and the M203 could break loose during firing.

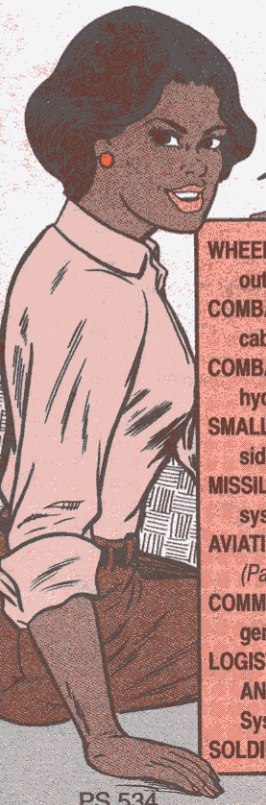
Where to Go for Dummies

You don't have to be a rocket scientist to know dummy ammo is a handy thing to have. It's great for testing weapons during PMCS and it prevents dry firing damage.

Problem is that some of the small arms TMs are out-of-date when it comes to dummy NSNs. Here's the info that shoots straight:

Weapon	Dummy NSN
M2 machine gun	1305-00-028-6384
M249 machine gun/M16 rifle	1305-00-764-8437
M60/M240 machine guns	1305-00-926-4009
M9 pistol	1305-01-206-8351
MK 19 machine gun	1310-01-154-6525

Reader Quiz



WHEELED VEHICLES—Have you and your vehicle's Solargizer "fallen out"? *(Page 8)*

COMBAT VEHICLES—What is the best way to prevent damage to electrical cables on M1-series tanks? *(Pages 10-11)*

COMBAT ENGINEERING—How can you prevent the MW24C scoop loader's hydraulics from becoming sluggish? *(Pages 18-21)*

SMALL ARMS—How much play can an M203 grenade launcher have side-to-side and up-and-down? *(Page 24)*

MISSILES—How often must the trunnion bearings on a Patriot missile system's M860A1 trailer be repacked? *(Pages 36-37)*

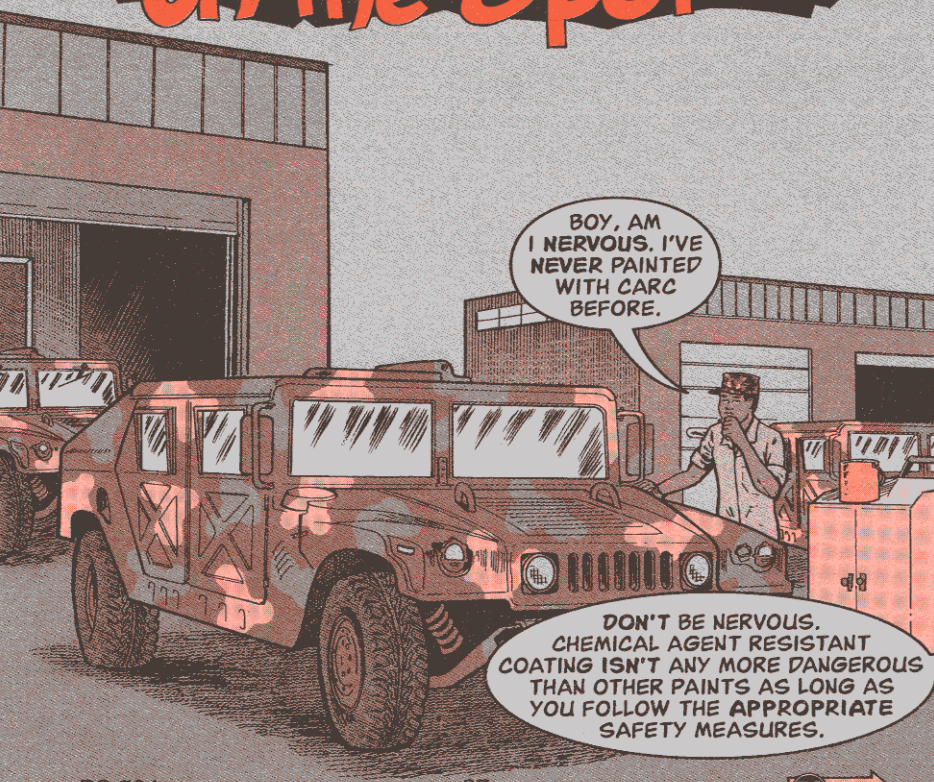
AVIATION—Where do you first check if you want to replace a NATS tool? *(Page 42)*

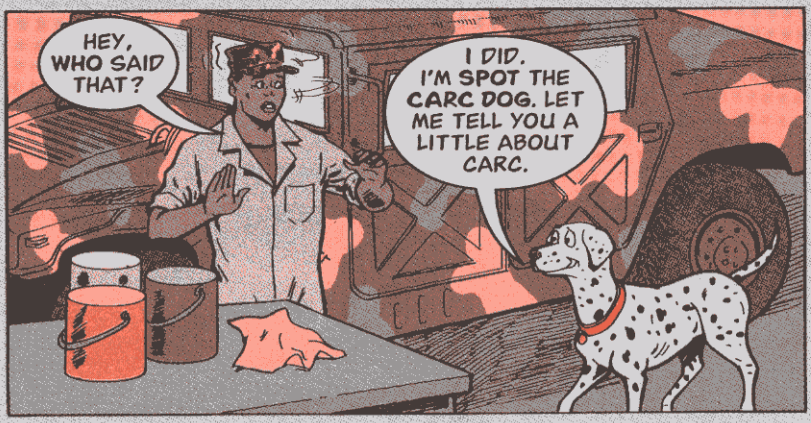
COMMO—How can you prevent the exhaust cover on a tactical quiet generator from going AWOL? *(Page 47)*

LOGISTICS MANAGEMENT—What effect can a dirty filter have on an AN/TYQ-33(V), Tactical Army Combat Service Support Computer System (TACCS)? *(Page 54)*

SOLDIER SUPPORT—How can you keep rope ends from fraying? *(Page 58)*

Don't Let CARC Put You On-the-Spot





What is CARC?

CARC is a special type of paint that is **resistant** to chemical agents. Since it won't soak up chemical agents like alkyd paint, decontamination is quicker and easier. That means less time spent in MOPP gear for you.

CARC is applied in two steps, primer and topcoat. After surface preparation and pretreatment, the vehicle is painted with an epoxy primer followed by a polyurethane topcoat.

Most vehicles are already painted with CARC. Look for a CARC stencil near the vehicle data plate. If you're unsure about your vehicle, try this test: Wet a cloth with acetone, NSN 6810-00-753-4780, and rub hard on the painted surface for about 10 seconds. Then wet another cloth with acetone and rub again. If no paint comes off the second time, it's CARC.

If your equipment is already painted with CARC, only CARC should be used for spot painting. Likewise, only CARC should be used for adding unit identification markings. Using alkyd paint over CARC leaves areas where chemical agents will be retained.

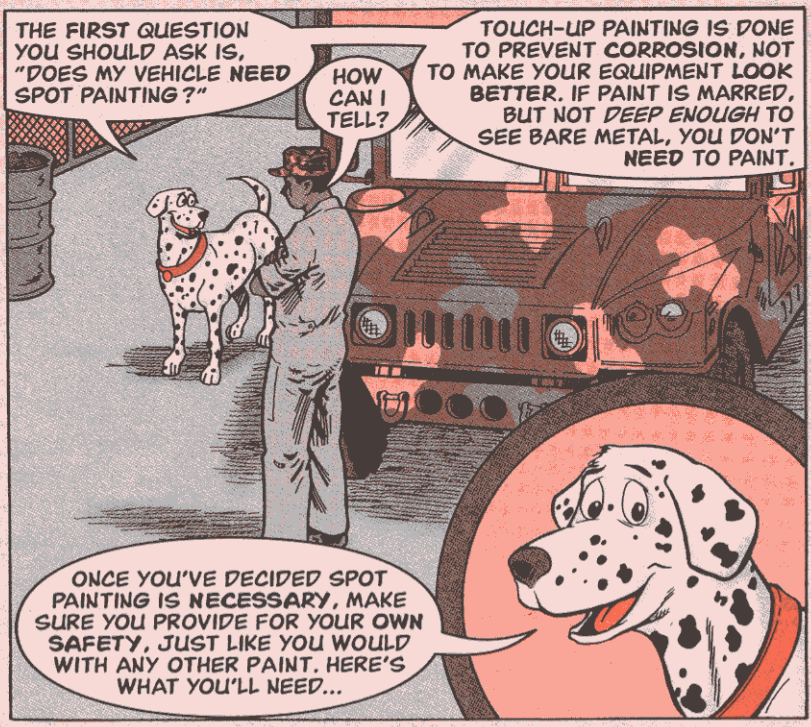
CARC should not be used on fabric, metals that have anodized finishes—such as small arms—or hoses or other flexible surfaces. It should not be used on exhaust pipes, turbochargers, cooling fins or other surfaces that conduct heat or get above 400°F.

Don't use CARC on wood. Wood expands and contracts with changes in the weather—CARC doesn't. CARC will begin peeling off wood surfaces soon after application.

Never weld or use a cutting torch on CARC-painted surfaces, either. Heat releases toxic gases, vapors and metal fumes that can cause lung damage. It can also cause severe eye and skin irritation.

Remove the CARC paint from **both** sides of anything you weld.

Before You Start



- Clothes that provide full skin coverage. Coveralls work well.
- Rubber gloves. You may want to tape the coverall sleeves closed over the gloves for additional protection.
- Face shield or splash goggles to protect your eyes from paint and thinner.

- Respiratory protection. Paint-spray respirator, NSN 4240-01-259-4572, is what you need when using a paint booth. Appendix A of CTA 50-970 is your authority for ordering one.

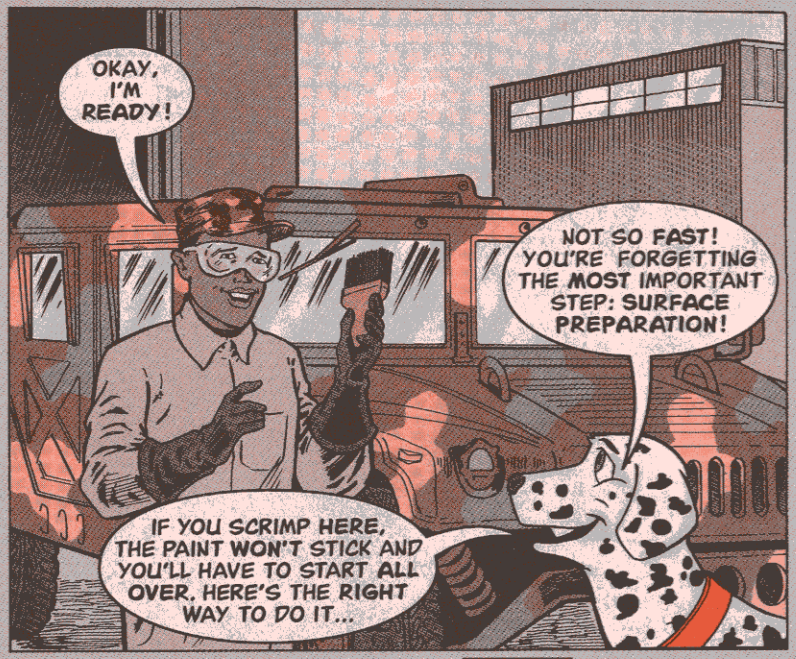
For respirator spare parts, use this list:

NSN 4240-01-	Item
246-5399	Facepiece
235-0823	Cartridge retainer
246-5407	Organic vapor cartridge
246-5413	Spray paint prefilter

Before using this or any other respirator, make sure it's been properly fit-tested by the safety office.

P.S MORE

Surface Preparation



1. Wash the area to be painted with liquid detergent, NSN 7930-00-282-9699, mixed with water. Rinse the area with fresh water and let it dry.

2. Remove all loose paint and rust by sanding or with an orbital grinder. Make sure you wear a respirator designed to filter out dust, because the old paint may contain lead or chromates. A vacuum, NSN 7910-01-068-5662, helps with clean up.

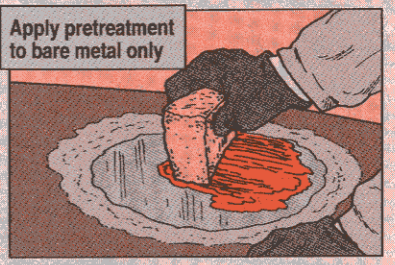
3. Sand the damaged spot down to bare metal using sandpaper or steel wool. Then sand the surrounding paint, tapering up to the topcoat surface. This process is called featheredging.

4. As soon as possible, but no more that four hours later, clean the area to be painted with thinner, NSN 8010-00-181-8079, and let it dry.

5. Immediately coat all bare metal surfaces with wash pretreatment. This protects the surface and helps the primer bond properly. Keep it off the surrounding paint because it can keep the primer from bonding to old paint.

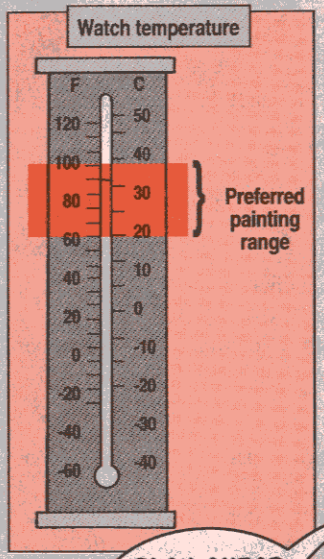
Order the pretreatment with these NSNs:

Size	NSN 8030-00-
1¼ qt	850-7076
1¼ gal	281-2726
5 gal	165-8577



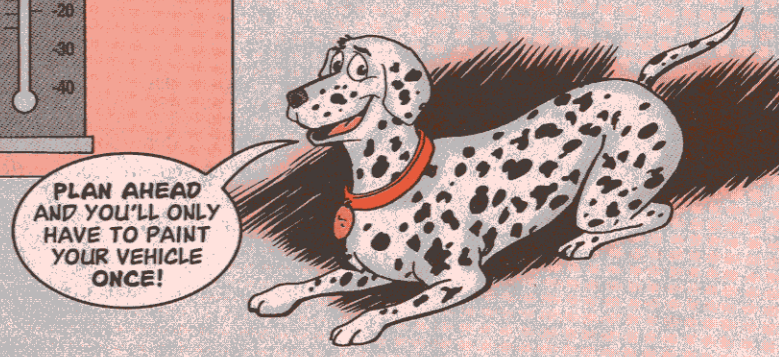
After the pretreatment dries—give it at least 30 minutes, but no more than 24 hours—the surface is ready for priming.

Plan Your Painting



If possible, paint your vehicle when the outside temperature is between 60° and 100°F. The ideal temperature is 75-80°F with a humidity of 45–50 percent. CARC will still cure at temperatures below 50°F, but it takes much longer.

Paint your vehicle in the shade or on an overcast day, never in the sun, and never when the surface temperature of your vehicle is over 100°F. The solvents in the paint evaporate too fast and the CARC won't stick.



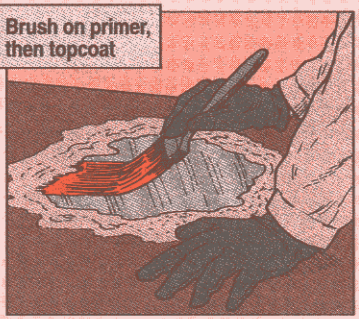
Step-by-Step Touchup

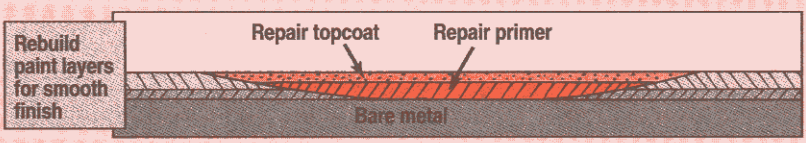
NOW THAT YOU'RE READY TO SPOT PAINT YOUR VEHICLE, FOLLOW THESE STEPS...

1. Follow the directions that come with the primer to mix only as much as you'll need for that day. Remember, you'll have to dispose of any extra primer because it hardens quickly and can't be reused.

2. When the mixture is uniform, let the primer stand for 30 minutes, then brush it on. Make sure you feather the primer over the edge of the old paint. The primer will harden within 30 to 90 minutes.

3. Stir the container of CARC topcoat thoroughly, then brush it on. Apply the paint lightly at the outer edges and heavier as you move to the middle. That rebuilds the paint layers to the original thickness.





The topcoat will be dry to the touch in about 30 minutes. It will be dry enough to walk on in four to six hours. Complete curing will take seven to 14 days.

Treat any leftover paint as hazardous waste. Follow your unit's SOP for proper disposal.

Paint Failures

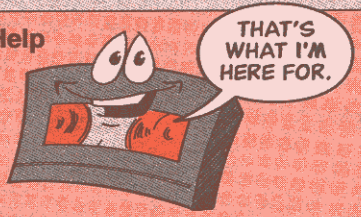
Occasionally, you'll get a CARC failure—peeling paint—after application. Here are some of the causes:

- The surface was not properly prepared. Loose or blistered paint, sanding dust, grease or oil, diesel fuel—even fingerprints are enough to keep CARC from sticking to the surface.
- No primer was used. The topcoat was applied to bare metal.
- The primer did not have time to dry before the topcoat was applied.
- The surface was too hot or cold and the paint didn't have a chance to cure properly.

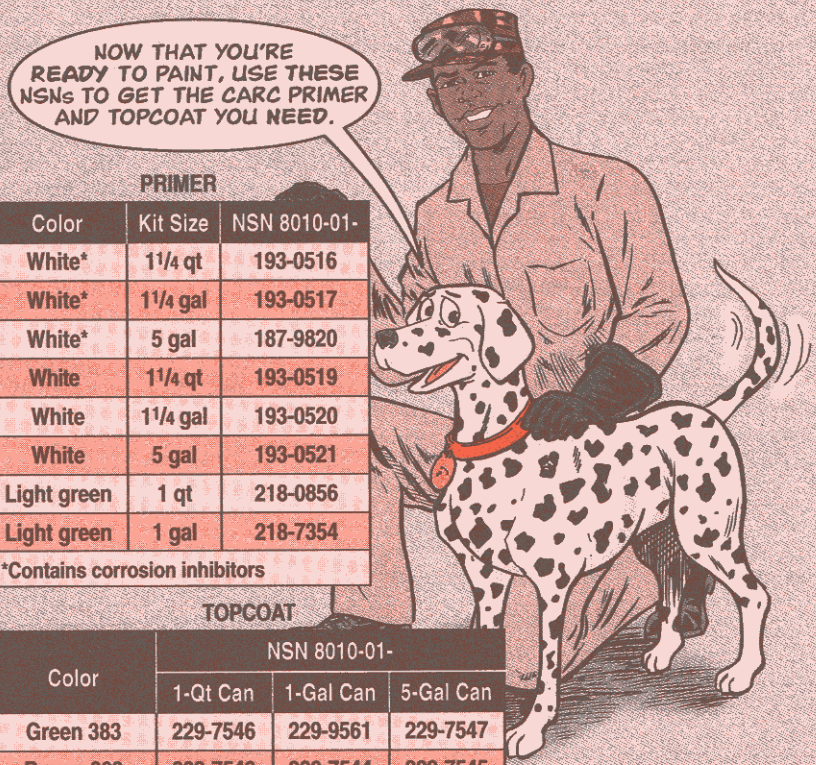
As with most paint failures, your only choice is to strip the spot down to bare metal and start over.

Video Help

If you need more help, a training video that shows how to spot paint with CARC is available. Just order TVT 3-40, PIN 708415DA, from your training and audiovisual support center.



Paint NSNs



PRIMER

Color	Kit Size	NSN 8010-01-
White*	1¼ qt	193-0516
White*	1¼ gal	193-0517
White*	5 gal	187-9820
White	1¼ qt	193-0519
White	1¼ gal	193-0520
White	5 gal	193-0521
Light green	1 qt	218-0856
Light green	1 gal	218-7354

*Contains corrosion inhibitors

TOPCOAT

Color	NSN 8010-01-		
	1-Qt Can	1-Gal Can	5-Gal Can
Green 383	229-7546	229-9561	229-7547
Brown 383	229-7543	229-7544	229-7545
Black	229-7540	229-7541	229-7542
Sand	234-2934	234-2935	234-2936
Tan 686A	276-3638	276-3639	276-3640
Aircraft Green	246-0717	246-0718	246-0719

Sand color should only be used for spot painting the old, four-color desert camouflage. For the newer, three-color desert camouflage, use Tan 686A.

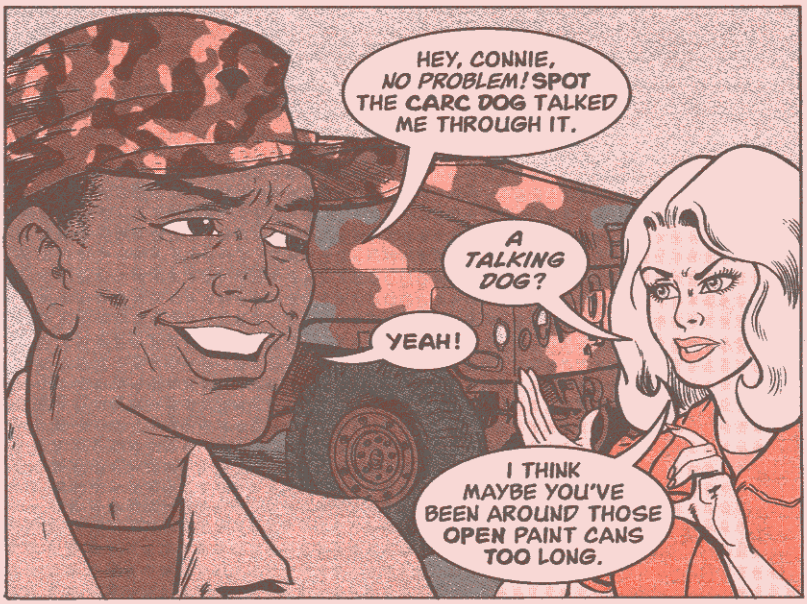
Paint Removal

There are times you'll need to remove CARC from a surface that can't be scratched or scored—like hydraulic cylinders, cannon mounts, and aircraft surfaces. You can't grind or sandblast without damaging the equipment.

Use epoxy and polyurethane paint stripper to remove CARC in sensitive areas. Get the stripper with these NSNs:

Qty	NSN 8010-00-
1 pt	142-9273
1 gal	181-7568
5 gal	926-1488
55 gal	926-1489

Be careful where you use the stripper, though. It can damage non-metal surfaces such as plastic and rubber.



KNOCK DOWN KNOB COSTS

Dear Editor,

TM 9-1425-474-24P and TM 9-1425-453-24P list eight different NSNs for four identical knobs used on the integrated sight unit of the Bradley's TOW and TOW 2 subsystems.

Since there's quite a bit of difference in price, you can save some money by ordering the cheaper ones. Here's the rundown:

1. Knob, NSN 5355-01-202-7591, is listed as Item 25 of Fig 49 in TM 9-1425-474-24P. The AMDF lists it as a terminal item with a replacement NSN of 5355-01-253-6658. The replacement knob costs more than $260

TM 9-1425-453-24P lists basically the same knob as Item 29 of Fig 62. Knob, NSN 5355-01-265-8647, costs less than $9.

2. Knob, NSN 5355-01-263-6403, is listed as Item 37 of Fig 62 in TM 9-1425-453-24P. The knob costs about $20. Compare that to the $7 knob, NSN 5355-01-257-3100, which is listed as Item 23 of Fig 49 in TM 9-1425-474-24P.

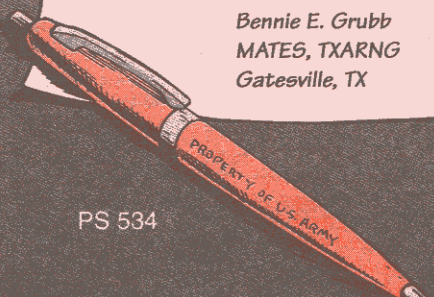
3. Knob, NSN 5355-01-252-7124, is listed as Item 26 of Fig 49 in TM 9-1425-474-24P at a little under $20. Order knob, NSN 5355-01-230-3222, instead. It's Item 22 of Fig 62 in TM 9-1425-453-24P and costs about $17.

4. Knob, NSN 5355-01-195-3637, is listed as Item 27 of Fig 33 in TM 9-1425-453-24P at about $6. A similar knob, NSN 5355-01-255-4651, costs about $4 when listed as Item 26 of Fig 19 in TM 9-1425-474-24P.

Bennie E. Grubb
MATES, TXARNG
Gatesville, TX

FROM THE DESK OF THE *Editor*

Looks like your research will save units a lot of money!

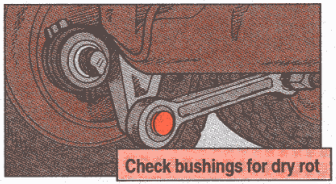


Hitch Up to Trailer PM

Even if your Patriot missile components are in great shape, they won't be worth diddly if they can't be moved. And that's what happens if you don't pay attention to the M860A1 trailers.

Hitch up to this trailer PM to keep your Patriot on the road:

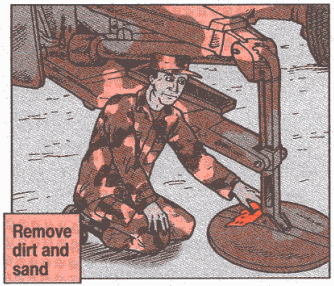
Trunnions. Dry rot can ruin the trunnion torque rod bushings. Eyeball the bushings monthly. If they're badly cracked or worn, get them replaced.

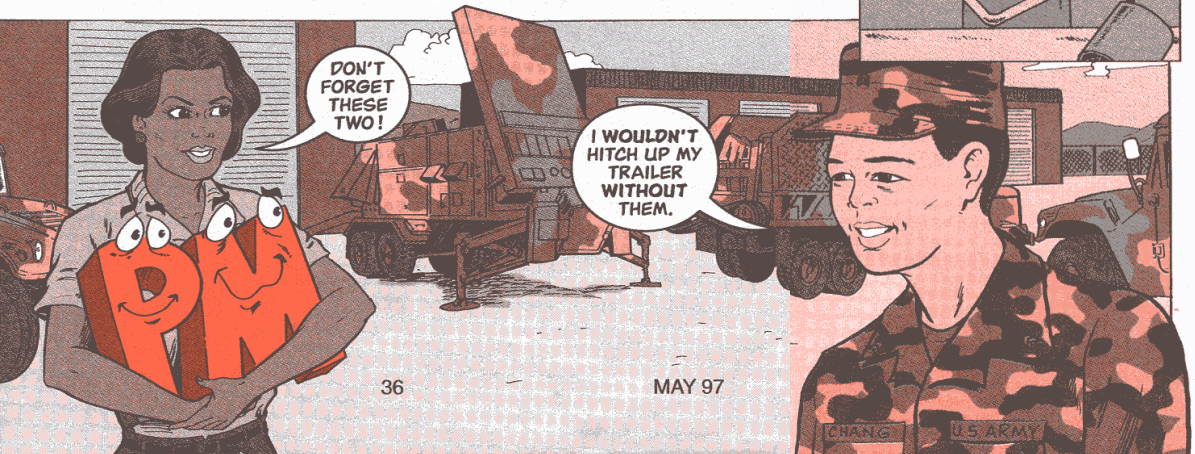


The trunnion bearings need to be repacked annually or they freeze up. It's a support job, but your unit has to schedule it. Most units forget this because the bearings are barely mentioned in the trailer LO.

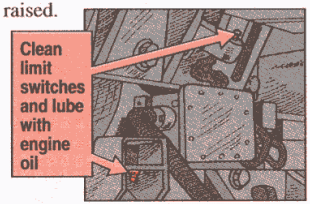
Outriggers. Exercise the outriggers at least monthly. Otherwise, outrigger seals dry out and leak and the ball screws rust and freeze the outriggers in place.

While the outriggers are extended, clean off any sand or dirt with a rag. Use a cleaning pad to rub away rust. Give the lube points a shot of GAA.

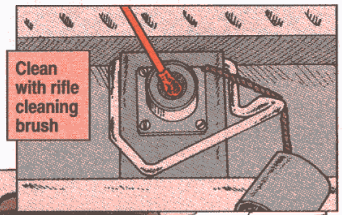




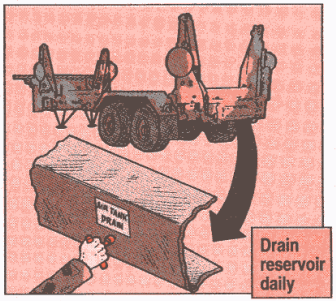
Clean and lube the outrigger upper/lower and interlocking limit switches. Brush away any gunk from the switches and lube them with engine oil. If the switches stick, the actuator will crush the relay assembly when the outrigger is raised.



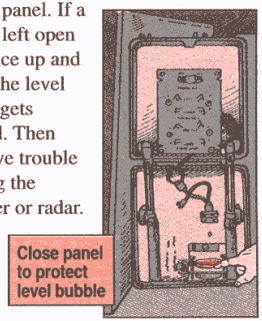
Slave receptacle. Dirt and corrosion inside the trailer's NATO slave cable receptacle cause a poor connection. Use an M16 rifle bore brush to clean out the receptacle. Then spray silicone, NSN 9150-00-823-7860, in the receptacle to stop future corrosion.



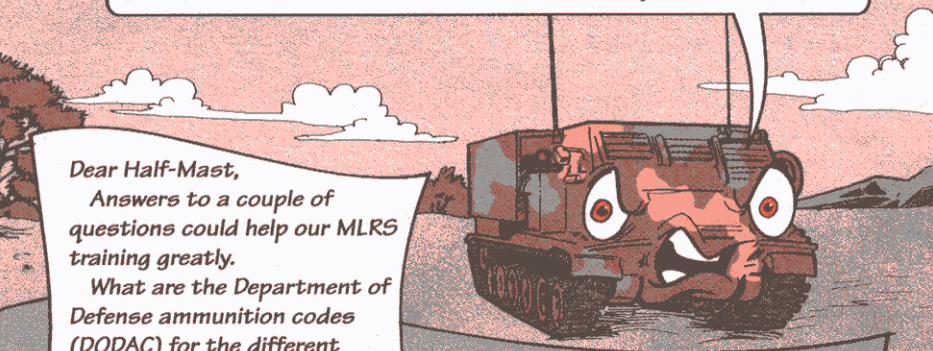
Air reservoir. Drain the air reservoirs every day you operate. Otherwise, condensation leads to corrosion in the brake system and possible brake failure.



Control panels. Make a point before travel to latch every outrigger control panel. If a panel's left open to bounce up and down, the level bubble gets cracked. Then you have trouble leveling the launcher or radar.



THAT'S THE DODAC, JACK!



Dear Half-Mast,

Answers to a couple of questions could help our MLRS training greatly.

What are the Department of Defense ammunition codes (DODAC) for the different rockets? DODACs are how the fire control panel tells the crew what rockets are loaded in the launcher. Our gunners need to know whether they're firing real or practice rockets or someone could be killed.

What are the settings on the weapons trainer to simulate the rockets?

SGT M.H.

Dear Sergeant M.H.,

Here are the rockets and their DODACs:

Rocket	DODAC
M26	H104
M28 practice	H108
M28A1 reduced range practice	H185
M39 ATACMS missile	PL81

Here are the trainer settings that are being added to a revision of TM 9-6920-647-14.

Table 1-3. Weapon Select Codes

MSD				LSD				
S4 SWITCH POSITION	OUTPUT W56J1 - PIN			S3 SWITCH POSITION	OUTPUT W56J1 - PIN			LSD
	55	52	46		38	31	24	
0	1	1	1	1	1	1	0	M26 weapon code
0	1	1	1	6	0	0	1	M39 weapon code
1	1	1	0	0	1	1	1	M28A1 weapon code
3	1	0	0	0	1	1	1	M26A1 weapon code
7	0	0	0	7	0	0	0	LP/C trainer confidence test

0 = switched to return line (less than 1.0 ohm between rocket status line and return line)
1 = open (greater than 1.0 megohm between rocket status line and return line)

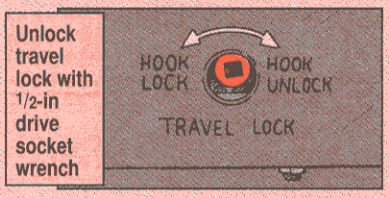
Half-Mast

USE CAUTION DURING MANUAL OPERATIONS

Using the manual drive controls to move the launcher loader module (LLM) on your MLRS is no walk in the park, crewmen. It's time consuming, and tedious, but it's the only way to move the LLM when you have an electrical failure or when you adjust the limit switches.

Make sure you use the manual controls only when you must. Unnecessary use causes wear and tear on the system. Same thing goes if you use the wrong tools.

When you have to use manual controls, follow the directions in Para 4-30 of TM 9-1425-646-10-2. Unlock the travel lock and operate other drives with the wrenches in the MLRS tool bag.



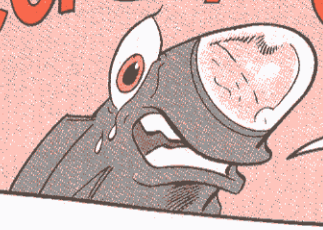
Unlock travel lock with 1/2-in drive socket wrench

Stay away from power tools or you risk bending the actuator arm or damaging the flexible driveshaft. Either one makes your MLRS NMC. Leave the power tools to DS personnel.

Remember, during manual operation, be extra careful lowering the LLM and boom. The protective limit switches do not operate when you use the manual controls.

AH-64A . . .

Protect and Seek



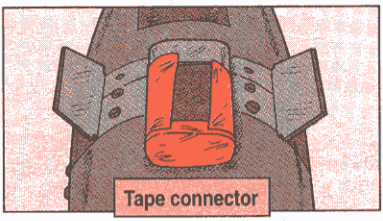
Dear Editor,

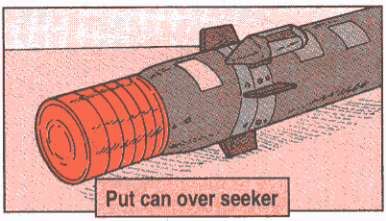
During live fire in the field or during maintenance, we normally remove the Hellfire training missiles from the launchers and leave them on the ground.

But that causes problems. Rotor wash from aircraft blows sand and rocks into the trainer's umbilical connectors. When the trainers are pushed back in place on the launcher, the sand and rocks damage the launcher connector or the trainer connector pins.

Sand and rocks also scratch the trainer seeker dome. If the seeker gets too scratched up, it can't do its job and has to be replaced. Seekers aren't cheap.

A little cheap protection stops this expensive damage. To seal off the trainer connector, we put tape over the end of the connector. Putting a balloon or plastic bag over the connector works too.





We protect the seeker with a FOD can or a 39-oz coffee can. Just stick the can over the seeker.

SGT Martin Little
SGT Thomas Mohr
SPC Joshua Gunn
4/3 ACR
Ft Carson, CO

FROM THE DESK OF THE Editor

Our search for seeker protection is over. Thanks. Of course, whenever possible you should put the training missiles in their cases when they're not mounted.

Cover Bumpers

Wanna bet?

I'll bet that half the Apaches on your flight line have a missing part on some of their Hellfire missile launcher rails.

I'm on?

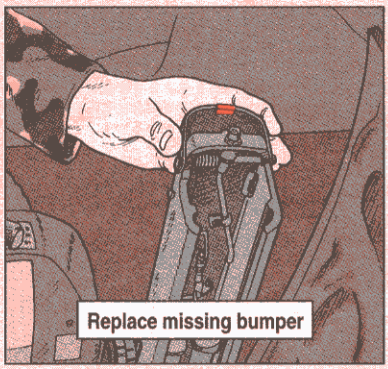
Okay, go flip up the wiring harness connector covers at the front end of the rails. How many are missing the rubber bumper?

That many, huh?

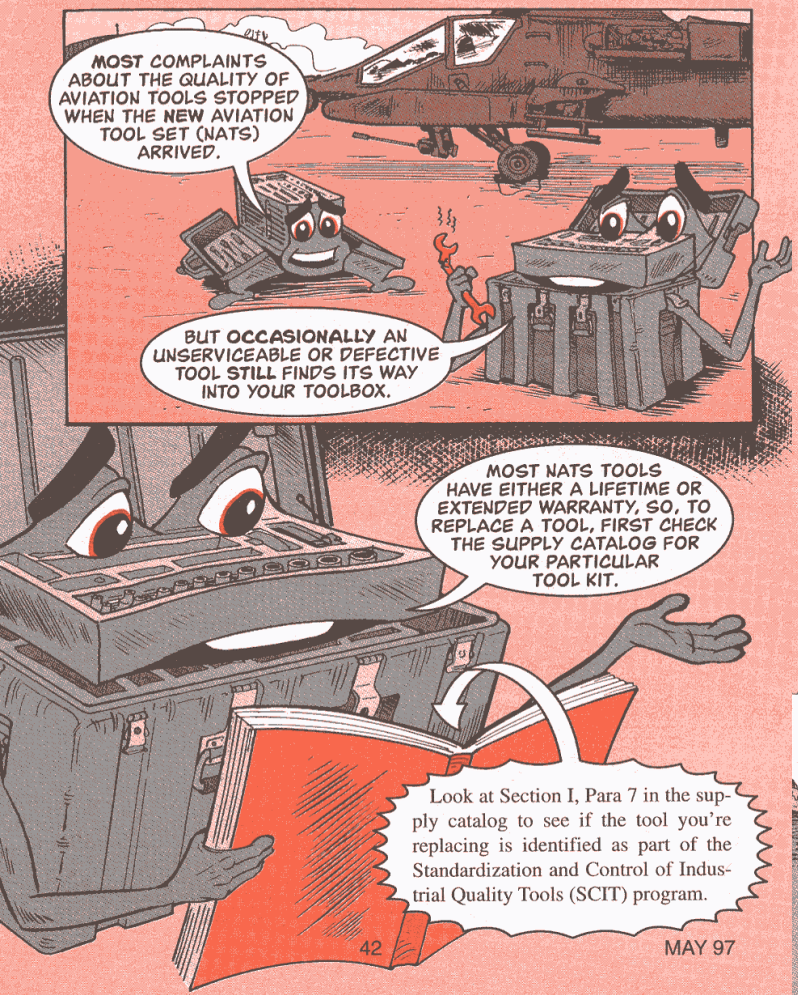
The bumper's not much, but it does protect the connector from some hard knocks.

So replace missing and worn ones. The bumpers aren't stocked. To get one, you must order the connector cover, NSN 1440-01-181-5893.

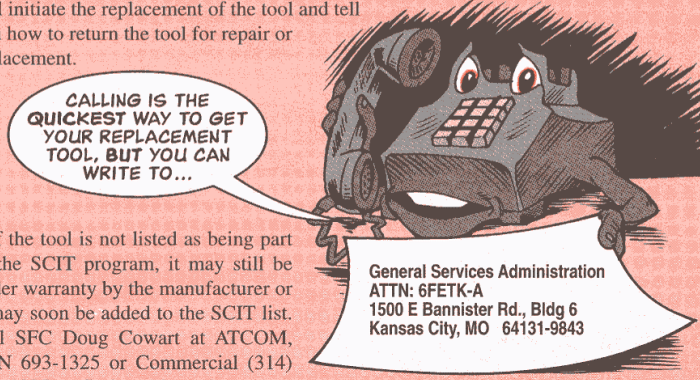
That's a big cost for a little replacement. So, try making your own bumper. Model it after the old one in size and shape. Use rubber or an equivalent. Hold it in place with a strong adhesive. Make sure the next time I bet you, I lose.



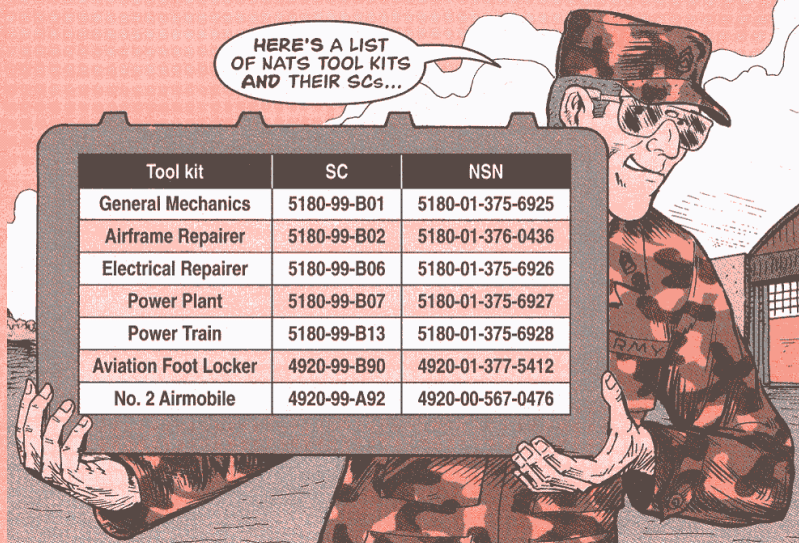
NATS Warranty Knowledge



If it is, you're under warranty, so call the General Services Administration (GSA) at (800) 488-3111 or DSN 465-1416 to report the defective tool. GSA will initiate the replacement of the tool and tell you how to return the tool for repair or replacement.



If the tool is not listed as being part of the SCIT program, it may still be under warranty by the manufacturer or it may soon be added to the SCIT list. Call SFC Doug Cowart at ATCOM, DSN 693-1325 or Commercial (314) 263-1325, to find out about the tool.



Tool kit	SC	NSN
General Mechanics	5180-99-B01	5180-01-375-6925
Airframe Repairer	5180-99-B02	5180-01-376-0436
Electrical Repairer	5180-99-B06	5180-01-375-6926
Power Plant	5180-99-B07	5180-01-375-6927
Power Train	5180-99-B13	5180-01-375-6928
Aviation Foot Locker	4920-99-B90	4920-01-377-5412
No. 2 Airmobile	4920-99-A92	4920-00-567-0476

PM Before the Mission

Before the mission comes the maintenance. So, before you hike into the field with an AN/PRC-77 radio strapped to your back, make sure to give it the PM treatment.

Switches

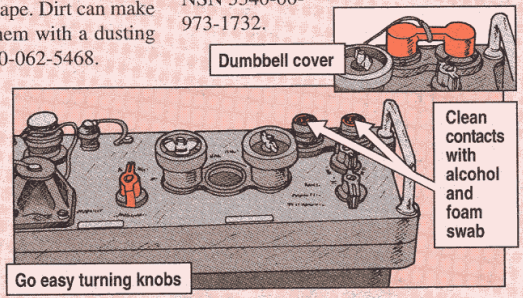
Make sure switches and knobs are snug and in good shape. Dirt can make them bind. Clean them with a dusting brush, NSN 7920-00-062-5468.

Go easy when you turn knobs. When you feel them stop, stop turning. Forcing them any further can twist them off or break the inside wiring.

Connectors

Clean dull or corroded audio contacts with a foam swab, NSN 7045-01-154-1317, dampened in isopropyl alcohol, NSN 6810-00-753-4993.

Keep moisture and dirt out of audio connectors with dumbbell covers, NSN 5340-00-973-1732.

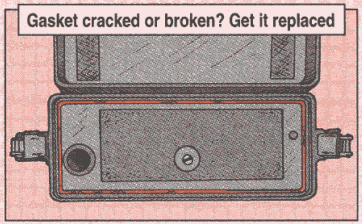


Of course, if you're using only one connector, keep the other one covered. No covers? Use tape until you get them.

Make sure the shorting cap, NSN 5935-00-973-1859, is in place on the power connector. If it's missing or loose, the radio won't operate on battery power.

Gaskets

Take a look at the gaskets for the front panel, battery box and battery connector plug. Make sure they're not cracked, broken or too flattened to do their job of keeping out moisture. Unit maintenance can replace a battery connector gasket, NSN 5330-01-049-0038. DS replaces the others.



AN/PVS-4 Night Vision Sight . . .

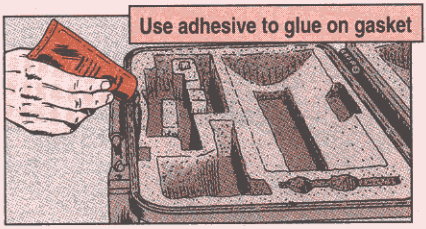
The Case of the Case Gasket

Dear Editor,

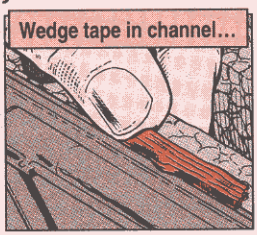
The gasket for the AN/PVS-4 night vision sight's carrying case doesn't stick around long. The gasket is just fitted into the case channel. It doesn't take much for the gasket to come out…and then it's gone. It isn't stocked in the supply system, either.

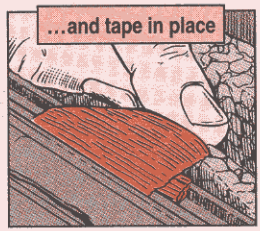
Without the gasket, the case isn't watertight. Moisture collects in the case and causes mildew. No gasket also means the sight is loose and unprotected as well. Without the gasket, the case can fall open and the sight takes a tumble. That can blind a sight.

The best way to hang onto the gasket is to glue it in the case channel with silicone adhesive, NSN 8040-00-843-0802. Just put a few drops of adhesive around the channel and stick the gasket in place.

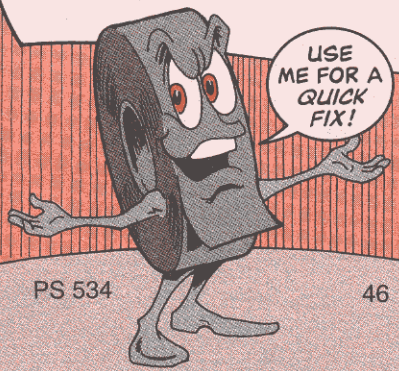


If the gasket has already disappeared, adhesive tape provides a good temporary fix. Roll up the tape until it's the thickness of the gasket. Wedge it into the gasket channel. Tape over the tape to keep it in place. Do this on all four sides of the case. The tape will give the case enough tightness to seal out water and hold the sight tight.





Curtis James
Ft Benning, GA

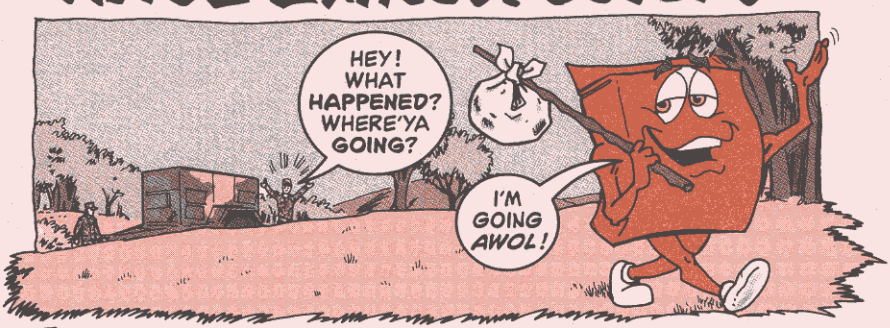


FROM THE DESK OF THE *Editor*

I think you've solved the case of the disappearing gasket. Since there are no replacement gaskets, your only choices are to use the tape or order a new case.

TQGs . . .

AWOL Exhaust Covers



Exhaust covers on your tactical quiet generators go AWOL because things like camouflage nets catch the sharp corners. The fingers of metal holding the cover in place aren't secured to anything, so the covers slip right out.

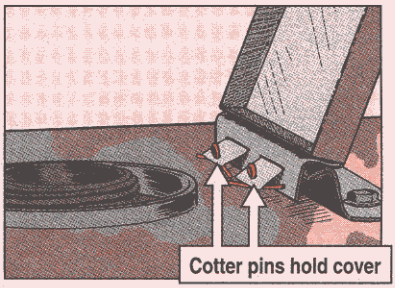
To keep a cover in place, first remove it and its mounting bracket from the generator set's top housing panel.

Drill a 1/8-in hole in the center of each finger on the mounting bracket, 1/4 inch from the end.

Insert the fingers of the mounting bracket through the slots on the exhaust cover. Insert a cotter pin through the hole and spread it apart.

Put the mounting bracket back on the generator's top housing panel.

This fix costs almost nothing, and will save you from having to replace lost exhaust covers.



GPS Help Line

When you're baffled by a problem with global positioning system (GPS) equipment, help is a phone call away.

Just dial the GPS Help Line at (908) 532-4729 or DSN 992-4729.

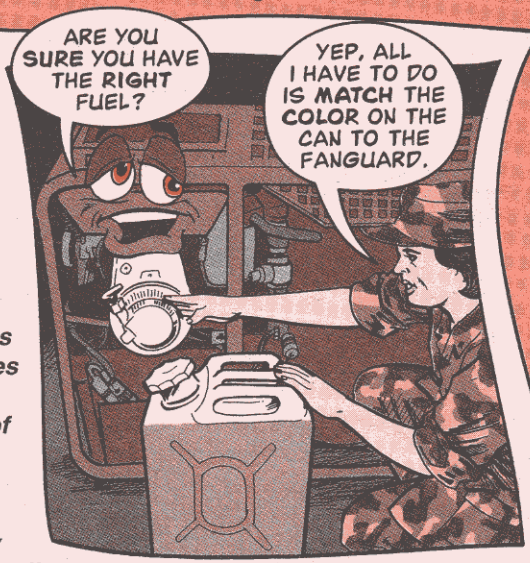
The phone is manned from 7a.m. to 4p.m. ET Monday-Friday. At other times, you'll get a recording. Leave your name, unit and location, DSN or commercial phone number, and your question or problem with GPS operations, maintenance, supply or training.

Keeping Fuel Straight

Dear Editor,

Fuel confusion can kill the M17. The M17 engine runs only on MOGAS mixed with two-cycle oil. Any other fuel ruins the engine.

But that's not all you must remember. The older M17s and M17A1s have JLO 197cc engines that require one quart *of oil per five gallons of MOGAS. The newer M17A2s and M17A3s have Cuyana 215cc engines that need only one* pint *of oil per five gallons.*



What complicates things more is that many chemical companies have different M17 models, so they can't use one mix formula when they prepare the fuel in the motor pool.

To keep fuel straight, we color-code fuel cans. Since the M17 and M17A1 engines have silver fan guards, we paint the tops of their fuel cans silver or white. The M17A2 and M17A3 guards are black and that's what we paint their cans. Operators pick out the fuel can they need in a snap.

SSG John Maddox
USA Chemical School
Ft McClellan, AL

FROM THE DESK OF THE *Editor*

That's a suggestion of a different color. Operators, remember that the fuel cans must be shaken to mix fuel and oil before they are used in the engine. Shaking creates pressure inside the can, so unscrew the lid slowly with the opening facing away from you.

M17 Tools You Need

The tools you need for your M17-series decon are listed in Change 2 to TM 3-4230-228-23P.

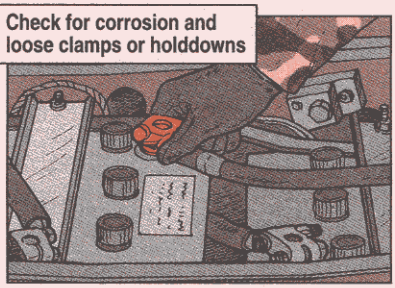
Item	NSN
Wrench, adjustable	5120-00-240-5328
Wrench, combination, 13mm	5120-01-054-7131
Socket wrench, 13/16-in	5120-00-678-2431
Screwdriver, flat-tip	5120-00-227-7356
Wrench, open-end, 8mm-10mm	5120-00-737-7964
Gauge, gap-setting	5210-00-278-1248
Key, hex head, 6mm	5120-00-900-9345
Key, hex head, .188-in	5120-00-240-5300
Key, hex head, .125-in	5120-00-240-5292
Wrench, open-end, 1 1/2-in	5120-00-081-9083
Pouch, tool kit	5140-01-297-0613

M157 Smoke Generator . . .

Give Batteries a Boost

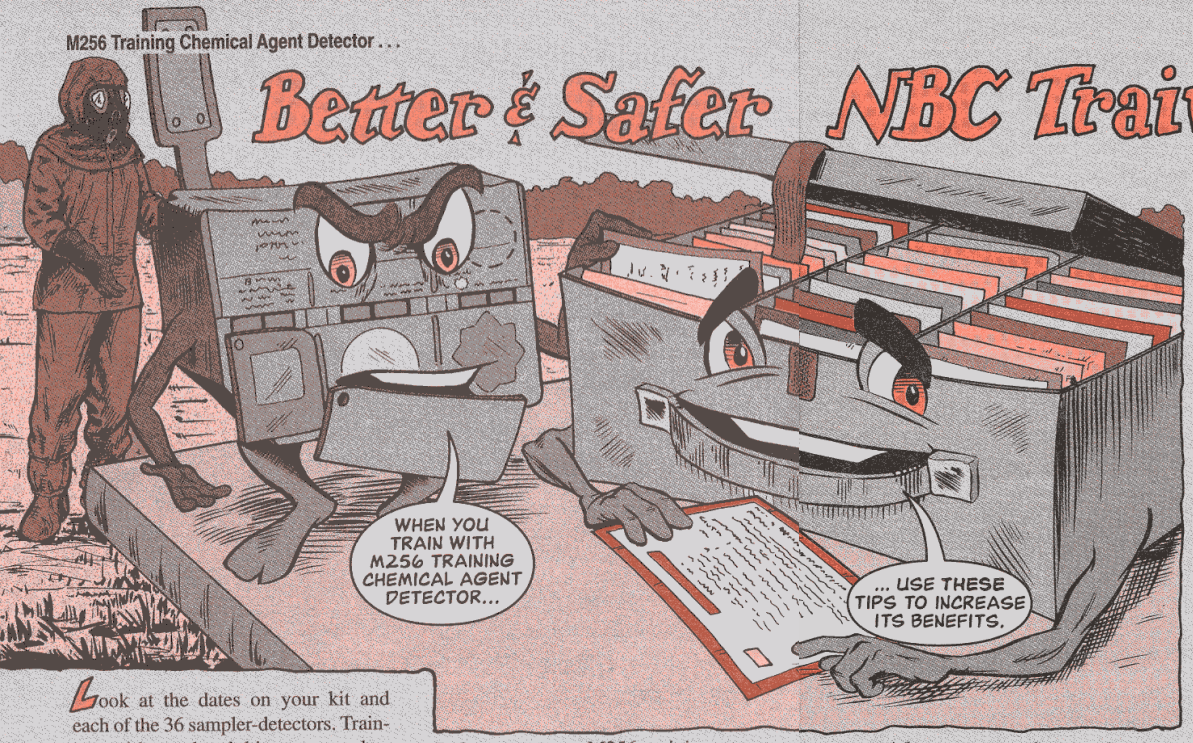
Since the batteries that start your M157 smoke generator belong to the wheeled or tracked vehicle the M157 rides on, smoke crews forget about them. That's OK…as long as the batteries are fully charged and in good condition. But if they won't start the vehicle, you're not likely to do any smoking.

Help your wheel or track friends—and your smoke crew—by adding a battery check to your M157's BEFORE PMCS. See the vehicle -10 TM for battery info. Check for corrosion around the terminals and in the battery box and for loose clamps and holddowns. If you spot problems, let your repairman know.

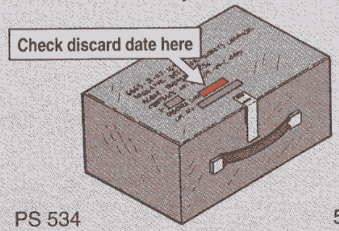


When you're ready to smoke, always start the vehicle **before** you start the M157. The M157 needs 28 volts to start, but if the vehicle's not running, it gets only 24 or less and may not start.

Better & Safer NBC Training



Look at the dates on your kit and each of the 36 sampler-detectors. Training with outdated kits or sampler-detectors may give false results. Kits can be used as training devices beyond the discard date if your unit is OK with the reduced reliability.



Before you start M256 training at night, take the red lens out of your flashlight. A red lens could cause a false negative result.

Always wear your protective mask and gloves when using the M256. In fact, wearing complete MOPP4 will make training more realistic, but that's your CO's call.

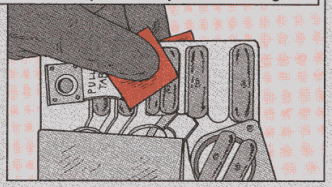
Do the sampling steps in order and for the correct sampling time. Otherwise, the sampler-detector won't work correctly.

After you open the sampler-detector protective bag, hold the detector upwind so that it doesn't pick up vapors from your protective gear. That could cause a false result.

Keep the sampler-detector as dry as possible. Mild humidity should make no difference, but rain or heavy dew could cause false readings.

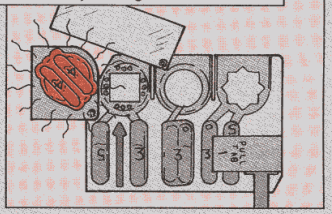
Handle the glass ampoules carefully. Place one heater pad on each side of the ampoule to be broken, then break it as gently as possible. Small pieces of the glass could slice through the plastic and cut your gloves or hands.

Use heater protective pads to break glass



NEVER place the heater pads on the sides of the heater ampoules before breaking them. The heater ampoules produce heat, so make sure to hold the kit away from your face and skin after the ampoules are broken.

Heater ampoules get hot. Be careful!



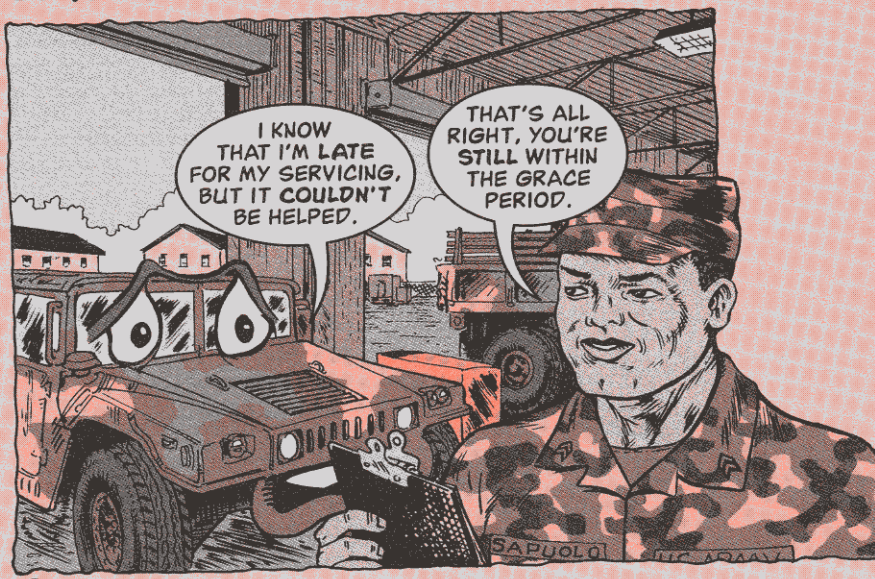
If you are training in the cold, NEVER heat the sampler-detector over flames or high heat, such as engine exhaust, to thaw it. It could explode or ignite.

Wash your hands before eating, drinking or smoking.

If you get any of the training chemicals on your skin, immediately wash with soap for at least two minutes. Then report it.

Maintenance Management . . .

Grace Period for Scheduled Services



One cold, hard fact about 10/20 maintenance standards is that scheduled services need to be performed on time. But the maintenance management folks knew you wouldn't always be able to pull a service when it's scheduled. So they gave you a grace period. (Some services may be too critical to have a variance. The equipment manual will tell you if no variance is allowed.)

Para 3-3 of DA Pam 738-750 gives you a 10 percent variance before or a 10 percent variance after the scheduled services—whether the period is in days, miles, or hours. If you stay within that 10 percent, the service is treated as if you did it on schedule.

For example, the semiannual (180 day) service for your HMMWV is due 2 Oct. But the vehicle is scheduled for extended dispatch 1-15 Oct. Now what?

Figure the grace period! Here's how:

Number of days (180) x the variance (10%) = the grace period (18 days)

That means you can pull this service up to 18 days before or 18 days after the scheduled service date. In our example, the HMMWV's service could be performed as early as 14 Sep or as late as 20 Oct.

The formula also works for hours and miles. Just plug in the number of hours or miles instead of days.

Supply . . .

Picking UP OR Turning IN

Funds are tight these days, so the chance to save on items you need is always welcome. One way to save is to pick up needed items from the Defense Reutilization and Marketing Service (DRMS).

If you surf the Internet, find out what's available by pointing your browser to **http://131.87.1.51** or **http://www.drms.dla.mil**

But remember that all requests for materiel from the DRMS must go through your supply support activity.

No Internet? Or just want more info? Call the DRMS at 1-800-DRMS-RTD (376-7783).

Or write to them at:

Defense Reutilization and Marketing Service
74 North Washington
ATTN: DRMS-SOR
Battle Creek, MI 490177-3092

Excess Materiel Turn-ins

Your excess may be some other unit's shortage. But units are not authorized to directly turn in excess materiel to DRMS.

The word on turn-ins is in Para 2-13 of AR 710-2 in the Unit Supply UPDATE 2-14. Excess materiel is reported up the supply chain, and the word on disposition instructions will come back down.

You either transfer excess accountable property directly to another unit that needs it, or turn it in to your SSA. That way, the Army avoids buying more of something while units are sending the same thing to DRMS.

Make Filters Priority

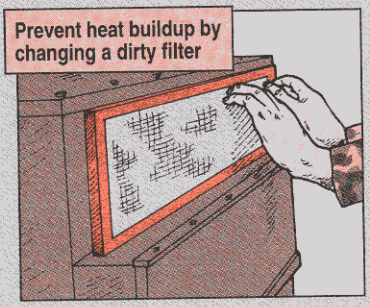
Filter care for your AN/TYQ-33(V), Tactical Army Combat Service Support Computer System (TACCS) should top your preventive maintenance priority list.

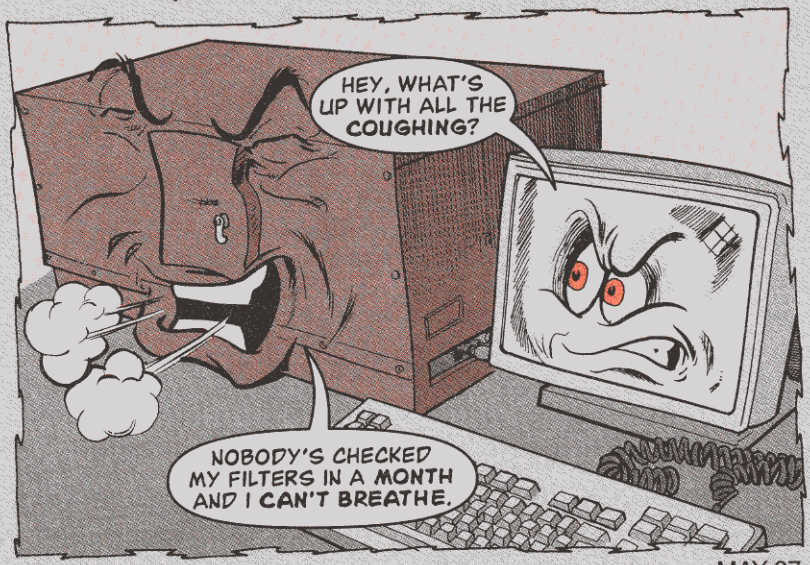
A dirty filter keeps air from circulating, causing heat buildup that makes your TACCS conk out.

Eyeball the three filters daily for dirt and damage. If they're dirty or damaged, replace them with these NSNs:

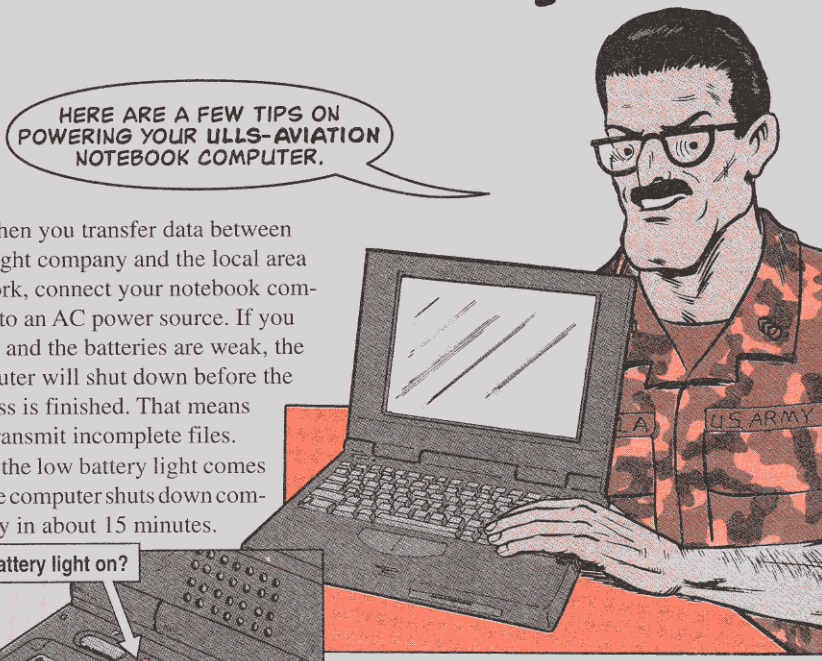
Filter	NSN
Logic module	4130-01-271-2890
Printer	4460-01-264-4035
Remote logic module	4130-01-271-1966

If you don't have a new filter handy, rinse out the dirty one with warm water. Let the filter air dry completely before putting it back in the equipment. Never operate your TACCS without filters. That lets dirt in that wrecks your system.



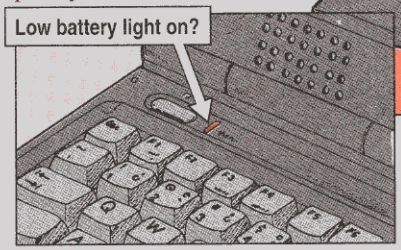


Power to the Computer



✔ When you transfer data between the flight company and the local area network, connect your notebook computer to an AC power source. If you don't, and the batteries are weak, the computer will shut down before the process is finished. That means you transmit incomplete files.

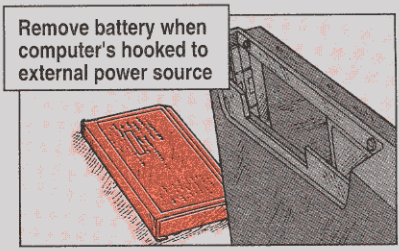
✔ If the low battery light comes on, the computer shuts down completely in about 15 minutes.



✔ If battery temperatures reach 35°C or 95°F while they're being charged, charging stops. When that happens, turn off the computer, disconnect it from the AC power source, and let the batteries cool down for at least 15 minutes before reconnecting.

✔ If your notebook computer is always connected to an external power source, such as an AC adapter, docking station, or car adapter, remove the batteries.

The batteries must be charged and discharged regularly to maintain battery capacity. Constant charging for extended periods without discharge will eventually cause permanent damage to the batteries.



Folding Leg Fix

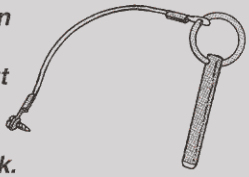
Dear Editor,

When you move field table, NSN 7105-00-710-0210, the legs can swing free at any time. Anyone carrying the table could be injured.

I've come up with an inexpensive fix that holds the legs in place.

You'll need a quick-release pin, NSN 5315-01-424-3850, and a self-tapping screw, NSN 5305-00-432-4170.

Order the pin on a DD Form 1348-6 and put "NSN not on AMDF" in the Remarks block.



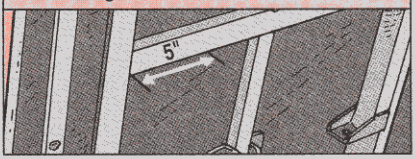
The drill and bits come from the Common shop sets.

Here's the fix:

1. Lay the table on its top with the legs in the stored position. Measure five inches in from where the legs are joined to the table. Mark the table frame.

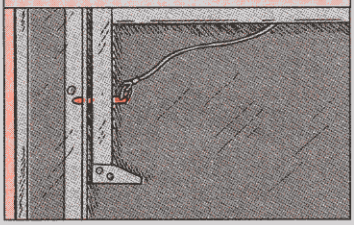
2. Drill a 1/4-in hole through both the table frame and the leg.

3. Measure five inches from the table leg onto the leg cross bar.



4. Drill a 5/32-in hole through the cross bar. Insert the self-tapping screw through the ring on the quick release pin's lanyard. Screw the self-tapping screw into the 5/32-in hole in the cross bar.

5. Put the quick-release pin through the hole in the frame and table legs.

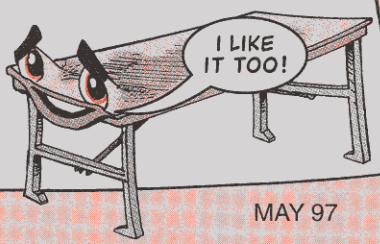


Repeat this procedure for the other set of legs.

SGT Roberto Rivera
502d Med Co (DS)
Ft Hood, TX

FROM THE DESK OF THE Editor

You saw a problem and came up with a solution. Good job, Sergeant.



Concertina Wire . . .

Don't Fence Me In

Gathering the things you need to put up concertina wire, NSN 5660-00-921-5516, can be frustrating.

That's because screw pickets are no longer available. They've been replaced by slotted posts. Get the ones you need with these NSNs:

Post	NSN 5660-00-270-
5-ft with 4 slots	1587
2-ft with 1 slot	1588
32-in with 2 slots	1589

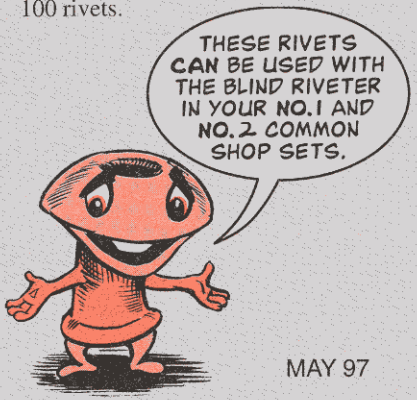
Protect your hands by using barbed wire gloves, NSN 8415-00-926-1674. CTA 50-900 is your ordering authority. Then, follow the instructions in FM 5-34 for putting up concertina wire.

Hardware . . .

Pop Goes the Rivet

Grip length (inches)	Diameter (inches)	NSN 5320-00-
1/16–1/8	1/8	510-7823
1/8–3/16	1/8	904-4136
1/4–5/16	1/8	052-1972
5/16–3/8	1/8	903-8778
3/8–1/2	1/8	824-4760
1/16–1/8	3/16	408-6073
1/8–1/4	3/16	493-4101
1/4–3/8	3/16	409-6841
3/8–1/2	3/16	408-9928
1/2–9/16	3/16	753-3809

Stop rummaging through leftover parts to find the pop rivets you need to finish a maintenance task. Use this list instead. Each NSN brings 100 rivets.



Frayed rope ends got you frazzled? Here's a quick treatment that keeps ends neat.

Before cutting a new length of rope, or to repair a rope that's already fraying, paint 1-in wide bands of plastic coating compound around the spot where the ends will be. You can get a supply of 144 throw-away brushes with NSN 7920-00-514-2417.

Let the compound dry overnight. Then cut through the middle of the bands.

Once the rope is cut, dip about two inches of each rope end into the coating compound. Let them dry overnight, too.

Your rope, with new neat ends, is now ready for service.

Coating compound comes in different colors. Order the colors you want with the following part numbers and CAGE code 0B629:

Coating Compound	
Color	Part Number
Red	11601
Yellow	11602
Black	11603
Blue	11604
Hunter Green	11606
White	11607

Binders for PS

Dear Half-Mast,

Three-ring binders, NSN 7510-00-187-6486, are the right size for PS magazines. A binder holds six copies.

But this means punching holes in the magazine…not easy to do, plus the holes sometimes take out good information.

How can I protect my PS collection without punching holes in them?

SGT S.M.C.

Dear Sergeant S.M.C.,

There are two ways:

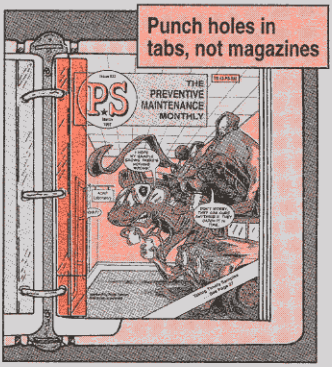
1. *Order clear, pressure-sensitive tabs, NSN 7510-00-147-8462. This NSN gets 10 tabs, each six inches long. Punch holes in the tabs to match the binder rings. One tab is not long enough for three holes. Add a small section from another tab for the third hole.*

2. *Make your own PS holder using file dividers, NSN 7530-00-988-6515. Here's how:*

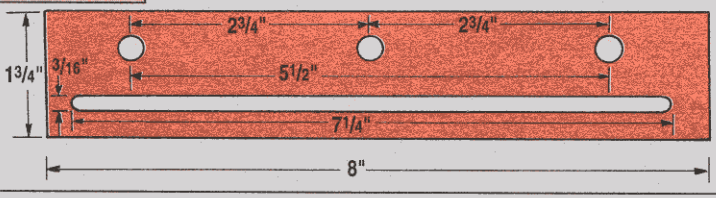
a. *For each issue, cut a 1 3/4 x 8-in strip from the divider.*

b. *Punch three holes along one side of the strip and a 7 1/4-in slot along the other side.*

c. *Slip the magazine through the slot. To label your binders, use typing correction fluid ("whiteout"). It dries fast and is permanent.*



Homemade holder



Half-Mast

Make the Switch Now!

Painting guide marks and warning lines inside your motor pool makes good safety sense—unless you're using the wrong paint.

Yellow paint, NSN 8010-00-900-3648, has been the paint of choice for years. Unfortunately, it's flammable and pollutes the air.

Paint thinner is also needed for proper cleanup. Both leftover paint and paint thinner are hazardous waste.

So, switch to yellow paint, NSN 8010-01-019-1776. It's a water-based latex that's easy to clean up. The paint is non-flammable and presents fewer health and safety hazards.

Before disposal, though, check with your environmental safety office for state or local regulations on latex paint waste.

Homemade O-rings

Having trouble keeping enough O-rings on hand? The solution may be to make your own with two new O-ring splice kits.

Kit, NSN 5180-01-329-8736, comes with low-temperature O-ring material good for applications up to 200°F. Kit, NSN 5180-01-329-8737, has high-temperature material good for applications above 200°F. Each kit comes with adhesive, instructions, and a splicing tool. These NSNs are not on the AMDF. Order them on a DD Form 1348-6 from GSA.

Use the O-rings on pumps, electric motors, vehicles and a variety of equipment. **Do not** use them on aircraft, missile components, or any safety-related applications.

If you use one in a high-pressure hydraulic line, replace it with a manufactured O-ring as soon as you can.

Turn in Engine ECM

If you replace the engine electronic control module (ECM) on your M1074/M1075 PLS, M1070 HET or M915A2/M916A1 trucks, turn in the failed ECM to supply as an unserviceable (condition code F). Your unit will get credit, and you'll help restock the supply system. Here are the ECM NSNs:
M1074/M1075—NSN 2920-01-337-4100
M1070—NSN 2920-01-382-0150
M915A2/M916A1—NSN 2920-01-337-4099

HEMTT Wheel Bearing Wrench

If using a brass punch and hammer to remove HEMTT wheel bearing locknuts has ruined one too many locknuts, here's help. Use wheel bearing wrench, NSN 5120-01-279-4789. It is listed as a special tool in TM 9-2320-279-20P, but it must be ordered from Oshkosh. Local purchase it using CAGE 45152, part number 409GX.

HMMWV Brake Cable

Use NSN 2590-01-265-3185 to get the left-hand parking brake cable for your HMMWV. The part number and NSN listed for Item 3 of Fig 130 in TM 9-2320-280-24P-1 gets a cable that is too long. Make a note until the TM is updated.

Bradley Cookoff Criteria

The note on Page 2-319 of TM 9-2350-252-10-2 and Page 2-337 of TM 9-2350-284-10-2 says the Bradley's 25mm gun is hot enough to cause cookoff if 100 rounds have been fired within 15 minutes. Actually, the gun is hot enough to cause cookoff if *any* rounds have been fired—even one round. Make a note of this change until the TM can be updated.

Bradley V-Belt

NSN 3030-01-115-2682 gets a V-belt for the M2A2/M3A2 Bradley. The NSN listed for Item 273 in Fig 86 of TM 9-2350-284-24P-1 (Jul 94) is wrong. Make a note until the TM is updated.

Battery Maintenance Video

If you need a little help keeping your unit's lead-acid batteries in good shape, stop by your local Training and Audiovisual Support Center (TASC) to get a videotape on battery maintenance for operators and unit mechanics. The PIN is 710883.

5-Ton Stud Nut Torque

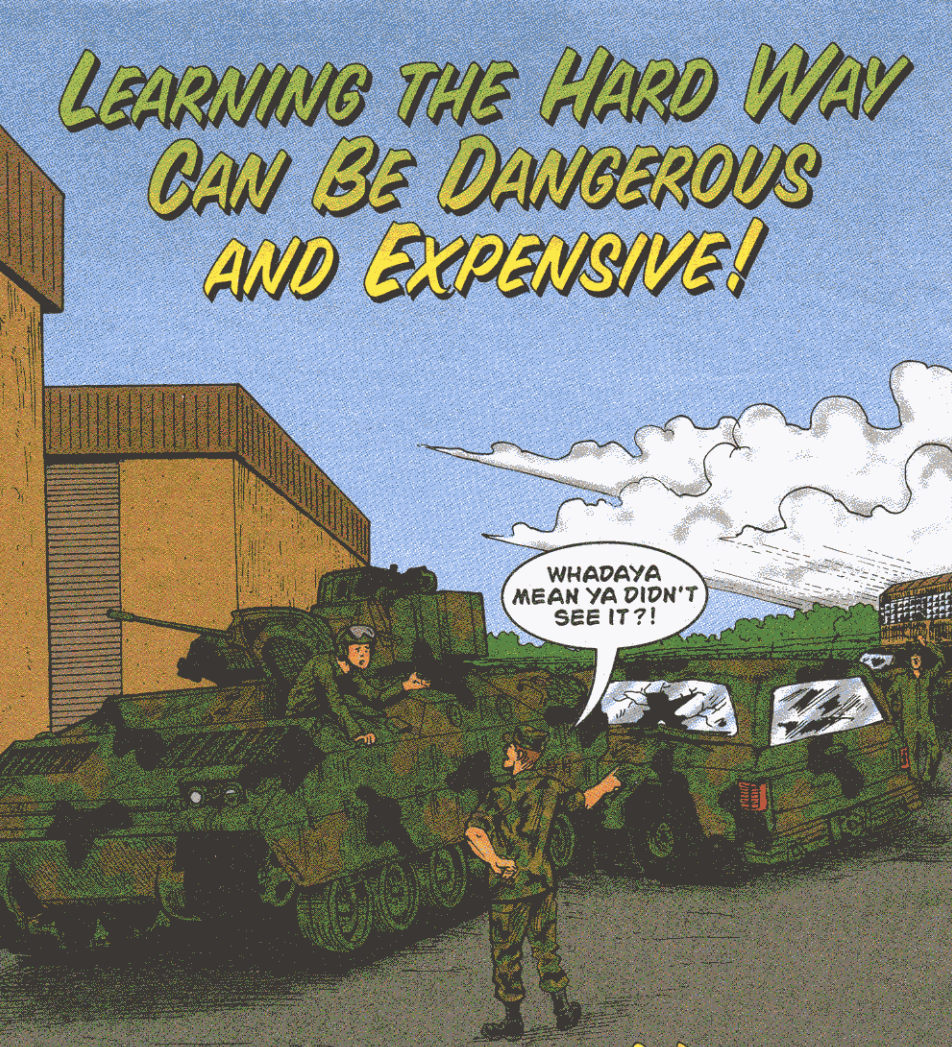
To keep your M939/A1/A2-series truck's wheels turning, stick to 450-500 lb-ft for all stud nuts on the front and rear wheels. The word in your TMs is confusing.

DISTRIBUTION: To be distributed in accordance with the initial distribution number (IDN) 340312, requirements for TB 43-PS-Series.

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

☆ U.S. Government Printing Office: 1997—549-074/20029

Learning the Hard Way Can Be Dangerous and Expensive!



Always Use Ground Guides!