

Issue 470

PS

January
1992

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-470

BY ZEROING IN ON
OUR COST REDUCTION,
WE CAN ACHIEVE
OUR GOAL!

A
Farthing
a Day

... See Page 27

Approved For Public Release; Distribution is Unlimited

Ugh and Yuck

Right now . . . right this very minute . . .
Even while you're reading this . . .
Corroded dry-cell batteries are damaging
your equipment!
Somewhere, electrolyte is seeping,
leaking and oozing out of those
batteries, corroding all the
metal it touches . . .
It's eating away sensitive
contact points and making
a mess of everything else!
Listen . . . and
you can hear that
sinister sizzling,
that fatal fizz.

So, right now . . .
Right this minute . . .
Check your stored equipment
and pluck out those batteries!
You'll find them in:
Radios, telephones, switchboards,
night vision devices,
mine detectors, radiac sets,
nuclear soil testers, flashlights,
public address sets, multimeters,
ground sensors, lie detectors,
cameras, aiming circles
and chemical agent alarms.

JAN 92

PS THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-470, 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 for 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 470 JANUARY 1992

FIREPOWER

TOW 2 Missile	2-3	M183A1, M167A1 Vulcan	7
M901A1 ITV	3,4	MLRS	8
Mortars, Cannons	5	M2/M3 Bradleys	8,9
M240-Series MG	6-7	M1/IPM1 Tanks	9

GROUND MOBILITY

M939-Series Trucks	10-11,12	ST255 Radiator Test Kit	14-15
M939A1-Series Trucks	10-11	CUCV	16,17
5-Ton Trucks	11	Window Care	19
Convoy Operations	13		

TROOP SUPPORT

Dolly Trailers	18-19	Lubricating and Servicing Unit	50
Fuel Pods	20	350 GPM Pumping Assy	50
F5070 Dump Truck	21	Aluminum Frame Tent	51
M870 Semitrailer	21	Latrine Screen	51
Graders	22-23	Immersion Heaters	52-53
10,000-lb Forklift	24	Fiche Reader Supplies	54-55
D7, D8 Dozers	25	MOPP Gear	56-57
SEE and HMMH	25	M157 Smoke Generator	59
New Pubs, SOUs	26		
A Farthing a Day	27-34		

AIR MOBILITY

Aircraft Weighing Kit	35	T700/T701 Engines ECU	38-39
AGPU PM	36-37	Aviation Messages	39
Apache APU Enclosure	37	Flammables Storage	40-41

COMMUNICATIONS

AN/UHQ-43 Computer	42-45	AN/UXC-7 Fascimile	48
RL-31 Reel Unit	46-47	1/2- to 6-HP Mil Std Engine	49
AS-1729 Antenna	48		

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

MSG Half-Mast
The Preventive Maintenance Monthly
Lexington, KY 40511-5101
FAX: DSN 745-3855 or Comm 606-293-3855

By Order of the Secretary of the Army:

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

Official:

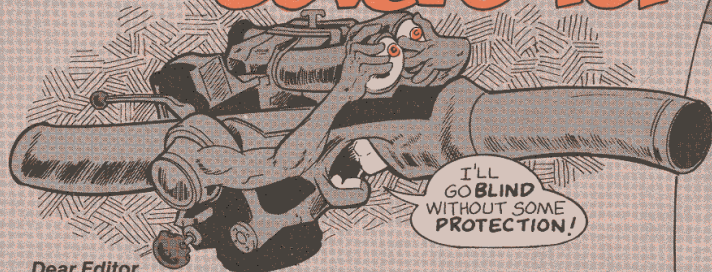
Milton H. Hamilton

MILTON H. HAMILTON
Administrative Assistant to the Secretary of the Army
00145

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Covers for Sights



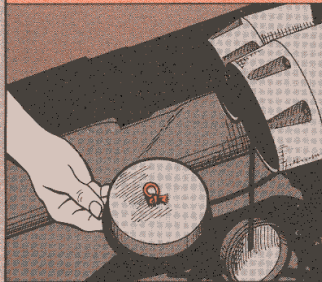
Dear Editor,

The TOW optical sight has no covers for its lenses. In windy, sandy areas the lenses can be scratched by blowing sand. Eventually, the expensive lenses have to be replaced.

We've found there are cheap plastic covers in the system that fit the op sight perfectly and do a good job of protecting the lenses. NSN 5340-01-121-8776 brings the larger cover, NSN 5340-00-855-7993 the smaller, and NSN 5935-01-087-1298 gets the eyepiece cover.

NSN 5340-01-121-8776 and NSN 5935-01-087-1298 are not on the AMDF, so order them on a DD Form 1348-6 and put "not on AMDF" in the Remarks column.

To keep the covers from disappearing, poke a small hole in the center of each cover just big enough to thread a piece of string through.



2

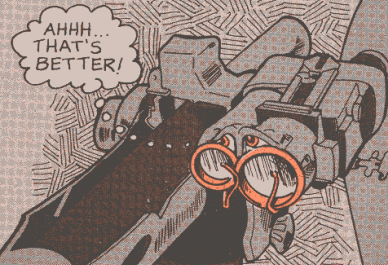
Put one end of a piece of string through the cover's hole and the other through a small hole in the lens' shield (support may need to drill one for you).



The hole needs to be far enough back so it doesn't interfere with the cover. Knot each end of the string several times so the string doesn't slip out of the cover or shield.

When you fire, just flip the covers off and let them dangle out of the way.

Gary Cope
Ft Campbell, KY



(Editor's note: Your suggestion covers the problem nicely and shows good insight. Thanks.)

M901A1 Improved TOW Vehicle...

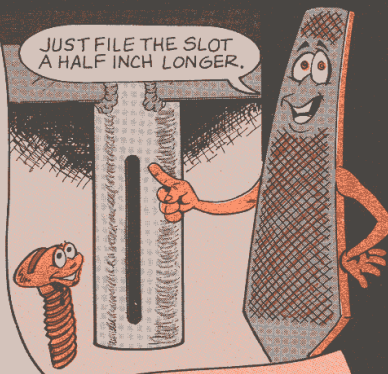
Stop Stop Screw Breaking

Dear Editor,

M901 crews like to set the gunner's seat as low as possible. The problem is that when they have to stand on the seat the extra weight causes the edge of the screw slot to snap the screw. Then the seat can turn around, making it hard to get the adjusting pin in the hole.

We've found that filing the slot 1/2 inch longer saves screws. That extra 1/2 inch lets the floor—not the screw—stop the seat.

SPC Freddy Correamanrique
Ft Carson, CO



(Editor's note: Your screw solution certainly deserves filing. Don't stop with the good ideas.)

JAN 92

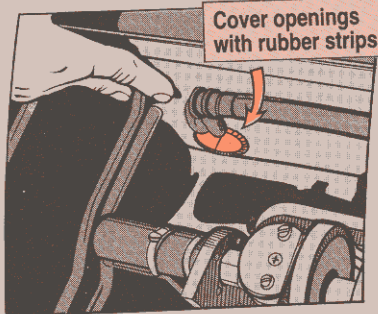
3

RADically Good PM

Dear Editor,

During operations, dirt builds up on the bearing of the M901's remote arming device (RAD). That makes the RAD motor work too hard and it burns up. The RAD won't seat in the launcher and the TOW can't be armed.

We've found you can seal out much of the dirt if you glue pieces of rubber—like old innertube—over the openings in the RAD box for the cables and hydraulic line. Just fit the rubber around the cables and lines.



Of course, that's not going to shut out all dirt. After operations, you still need to pull the RAD cover and clean the RAD, especially around the bearing. A clean paint brush and 30 PSI air do the job the best.

SPC Jerry Martelli
Ft Carson, CO



(Editor's note: Foam insulation or RTV caulking would also be good ways to plug the holes.)

Fill in New One First

You armorers and repairmen can save yourselves and your support a lot of trouble by remembering one simple rule:

Transfer all info from the DA Form 2408-4s you keep on your unit's mortars and cannons to new 2408-4s before you send in the old forms to Watervliet Arsenal.

If you lose that info, your support's hands are tied when it comes to repairs. Without knowing how many rounds the weapon has fired or when it was last borescoped, they can do nothing. And you are out a mortar or cannon until you can dig up that info.

TRANSFER
THE INFO FROM THE
OLD FORM BEFORE
YOU SEND IT
OFF!

WEAPON RECORD DATA										EFFECT CONTROL SYMBOL	
For use of this form, see DA Pamph 738-750 and 738-751; the proponent agency is DCSIG-OG										BCSLD-1081	
1. TUBE SERIAL NO.		2. CANNON TYPE, MODEL OR SERIES		3. ORGANIZATION		4. SPECIAL LIFE DATA		5. DUAL CORRELATION		6. CRITERION 1000 EFC	
9799		105MM M68		CO A, 1ST BN 25TH ARMOR		FSDS-T EFC = 1.0 AMBIENT TEMP APDS-T EFC = 1.0 ABOVE 100°F HEAT-T EFC = 1.0 EFC FACTOR WP-T EFC = .5 DOUBLES		BORESCOPE PULLOVER GAGE EVERY 200 EFC RDS BREECHING LIFE 5000 EFC RDS		READING .056	
7. END ITEM IDENTIFICATION		8. RETUBINGS		9. REBUSHINGS		10. REMAINING LIFE (EFC RDS)		11. REMARKS: Rascal Exercise (RE), Gross or Velocity Read, and Safety Inspection (SI)		12. SIGNATURE	
TANK, COMBAT M60A3 SN7666		1		1400		500 400		600		Bore Scope and PD GAGE (0.018)	
7. CANNON SERIAL NO.		1751 (BREECHING)								EFC RDS 645 IMAR88 RE - 25 FEB 88 SM - 2 DEC 87	
13. Date	14. Projectile Type	15. Zone or Charge	16. Rounds Fired	17. EFC RDS Fired	18. Cumulative RDS Fired	19. Cumulative EFC RDS	20. Remaining Life (EFC RDS)	21. Remarks	22. Signature		
10 APR 88					500	400	600				
15 APR 88											
21 APR 88	HEAT-T M456			12	12	512	588			Bore Scope	
28 MAY 88	HEP-T M393A2			8	4	520	584			Bore Scope	
10 OCT 88								10 OCT REPORT NEW FORM INITIALIZED			

DA FORM 2408-4
1 JAN 79

CONTINUE ON REVERSE
EDITION OF 1 DEC 77 WILL BE USED.



It's the

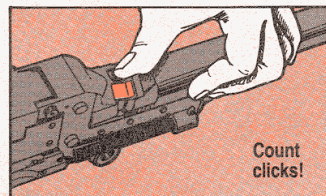
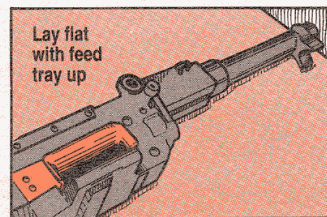
THESE
LITTLE THINGS
WILL HELP ME ROAR
IN THE FIELD.

Also lay it on the side opposite the feed tray to protect the tray from bumps. And keep the feed tray cover closed. One good jolt bends the cover pin. The cover won't close correctly and you have feeding problems.

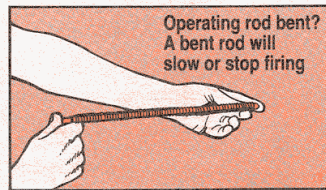
Count clicks when you lock in the barrel. If it takes fewer than two or more than seven clicks of the barrel release to lock in the barrel, head-spacing's bad. It would be dangerous to you and your M240 to fire it like that.

It's often the little things that make the difference between an M240 that roars and one that only meows. Take aim at these points to keep your M240 roaring loud and clear:

Lay your M240 flat for transport when it's not mounted. If you stand it on end, it falls. Just a small dent in the receiver extension can cause the operating rod to bind and the M240 to slow way down or stop.

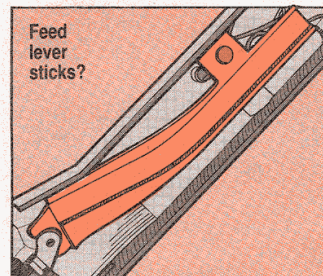


Add these checks to your BEFORE PMCS.



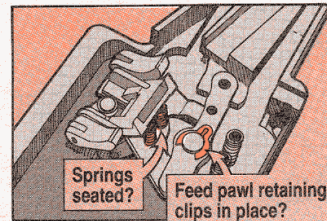
Little Things

Feed lever doesn't move freely? The feed pawl rollers are sticking and will cause feeding problems.

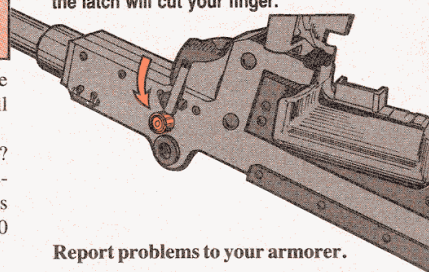


Any feed pawl and cartridge guide springs not seated? A loose spring will cause feeding problems.

Feed pawl retaining clips missing? They're often forgotten during reassembly. Without clips, the feed pawls will get out of position and your M240 will jam.



Barrel locking latch cover splitting or working off? Without the cover, the latch will cut your finger.

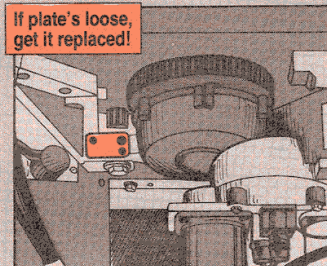


M163A1, M167A1 Vulcan...

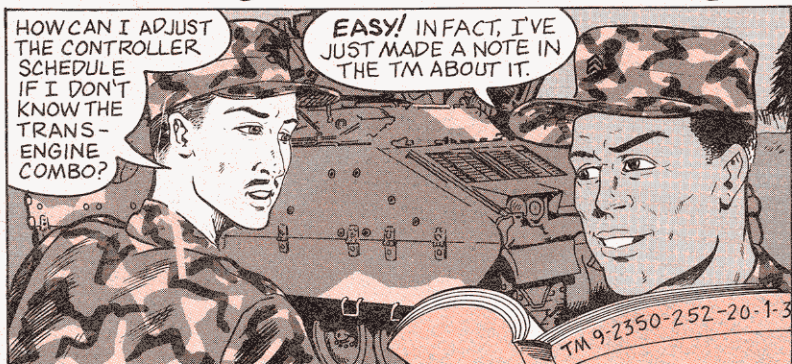
Give Azimuth a Good Foundation

Vibration, bumps, and the continual turning of the turret wear the screw holes in the -A1's azimuth assembly mounting plate. Then the plate fits loosely. The azimuth gears do not mesh. They get chewed up.

That's why you need to eyeball the plate weekly. If the screw holes start to round out, report it. Your repairman can replace the plate, NSN 1005-00-857-2817, in a snap.



Trans-Engine Combo Change



You Bradley and MLRS mechanics who make controller schedule adjustments need to know about an engine-transmission combination that changes RPM requirements in the TMs.

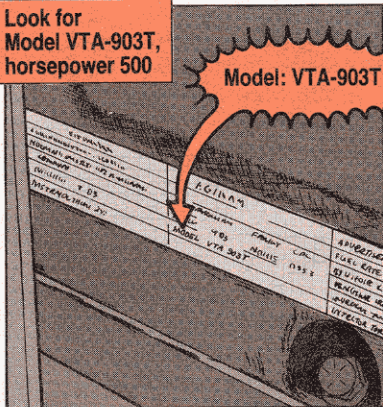
The HMPT 500-3 transmission and 500-HP engine combination requires 2425-2525 RPM in schedule adjustment procedures, instead of 2350-2450 RPM used for other trans-engine combinations.

You mechs can identify the HMPT 500-3 transmission by a label beside the oil dipstick. The 500-HP engine

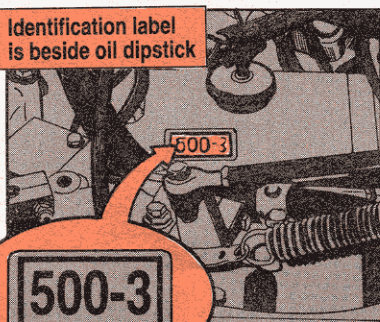
can be identified by checking the ID plate on the rocker arm cover.

**Look for
Model VTA-903T,
horsepower 500**

Model: VTA-903T



**Identification label
is beside oil dipstick**



Make a note on the following TM pages until changes pick up this new info:

M2/M3, M2A1/M3A1—

Page 6-577, TM 9-2350-252-20-1-3

M2A2/M3A2—

Page 6-808, TM 9-2350-284-20-1-3

MLRS—

Page 6-482, TM 9-1450-646-20-3

Avoid Ammo Chute Damage

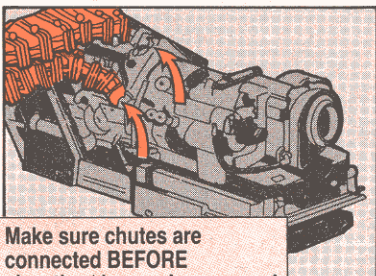
Kkeep all ammo chutes connected on your Bradley when the cannon is installed.

Loose ammo chutes get banged up when the cannon is raised or lowered. The chutes also cause damage to cables and wires when they're loose. They can even lock up a turret during traversing.

Keep the chutes connected, remembering that the easiest way to attach them is to attach the bottom one first.

If you already have damaged HE and AP ammo chute exit end fittings, hang

on to them when you install new ones. The fittings are repairable with kit, PN S259008, CAGE 98459, RIC B14.



M1/IPM1 Tanks...













New Round Takes Instruction Plate

Now that the M900 APFSDS-T cartridge has been stocked, you M1 and IPM1 tankers need a new instruction plate for the computer control panel.

The plate, NSN 9905-01-314-1566, replaces the one inside the control panel door. The new plate adds the M900 cartridge under SABOT and gives it the SUBDES of "O". That's the same as the M735 cartridge, because both have similar ballistic solutions.

Info on how to install the plate is on Pages 9-105 and 9-106 of TM 9-2350-255-20-2-4

JAN 92

SELF TEST		AMMO TYPE CODES	
MAKE SURE THAT PALM SWITCH IS CLOSED DURING SELF TEST AND SYSTEM IS IN NORMAL MODE		<div style="border: 2px solid red; border-radius: 50%; padding: 10px; display: inline-block;"> SABOT M900 M735 </div>	
IF NO GO LAMP LIGHTS AND KEY FLASHES, TEST WILL STOP FAILURE NUMBER WILL DISPLAY (BELOW)			
2' CANT SENSOR	4' TURRET DRIVE (AZ)	M39244	2'
3' CROSSWIND	8' LRF	M726	3'
IF NO GO LAMP LIGHTS AND KEY DOES NOT FLASH FAILURE NUMBER WILL DISPLAY FOR 10 SECONDS		50 CAL TRAINER	50'
1' COMPUTER	6' GUNNERS RETICLE SERVO	-HEAT	
5' SIGHT STBLM (EL)	7' SIGHT GUN LINK	M456	0''
		M490	0''
		50 CAL TRAINER	50''
MANUAL INPUT RANGES			
CROSSWIND 45 TO 0 TO +45 MPH			
- LEFT TO RIGHT   - RIGHT TO LEFT  		-HEP	
-CANT -15" TO 0" TO +15"		M393A2	0''
- RIGHT SIDE DOWN   - RIGHT SIDE UP  		M393	1''
-LEAD AZ -35 TO 0 TO +35 MILS/SEC		50 CAL TRAINER	50''
- LEFT TO RIGHT   - RIGHT TO LEFT  			
-RANGE 200 TO 4000 METERS (MAIN GUN)			
25 TO 4000 METERS (COAX)			
-BATTLE RANGE 200 TO 4000 METERS (MAIN GUN)			
25 TO 4000 METERS (COAX)			
-AIR TEMP -40" TO +149°F			
-BARO PRESS 19.68 TO 33.46 IN HG			
-AMMO TEMP -40" TO +149°F			
-TUBE WEAR 0 TO 0.075 IN			
		-COAX 1 62mm 0''	

Get updated instruction plate for new cartridge

Surge Tank

Surge tank straps on these 5-ton trucks flex and break under the stress. The tank support strap is connected to the engine. Engine vibration cracks the strap, leaving the surge tank with no support.

Keep the strap from cracking and breaking by replacing the nut on the engine strap mounting bolt with a special self-locking nut, NSN 5310-00-984-3806.

Screw on the nut until 1 or 2 threads stick out past the locking end of the nut.

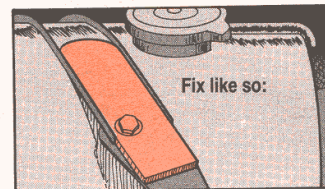
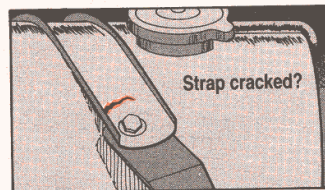
The screw will be loose enough for you to turn it with your fingers—and the strap will be loose enough to absorb the vibrations, but the self-locking nut will keep the bolt from falling out.



Strap Fix

If the strap is already broken, you can fix it like this:

- Get some rubber material, like an old mud flap or splash shield, NSN 2450-00-715-7407, and epoxy adhesive, NSN 8040-00-109-2481.
- Remove the broken strap without breaking the spot weld on the tank.
- Use it as a pattern to measure and drill the rubber material. Add 2 inches to the length before cutting out the strap.
- Drill a 1/2-in hole in the strip that matches the hole in the old strap.
- Glue the undrilled end of the strap—overlap it 2 inches—to the remaining surge tank strap with epoxy adhesive. Let the adhesive cure.
- Bolt the support strap to the strap and you're done.



The rubber strap absorbs the vibrations and doesn't crack under stress.

Stop Hydraulic Tank Leaks

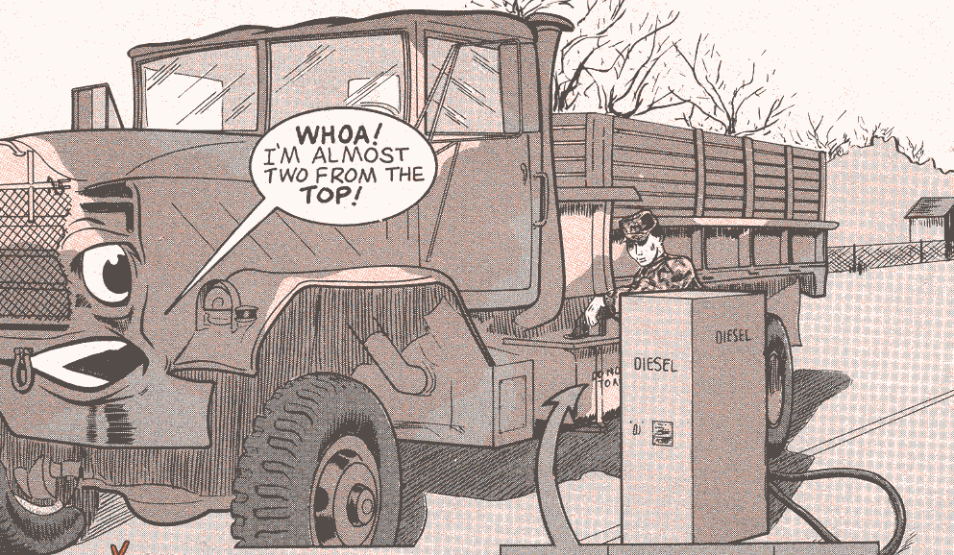


Dear Editor,
Most of our M939-series trucks with winches have come up with leaking hydraulic tanks. We find vibration cracks the welded seams of the tanks. We stopped the cracks by adding rubber washers, NSN 5310-00-333-7528, between the mounting brackets and the tanks. These rubber buffers absorb the vibrations. Result—no more cracks or breaks. Thought you might want to pass the word.

Armin Herbach
APO New York

(Editor's note: Consider the word passed.)

Easy on the Fill-up

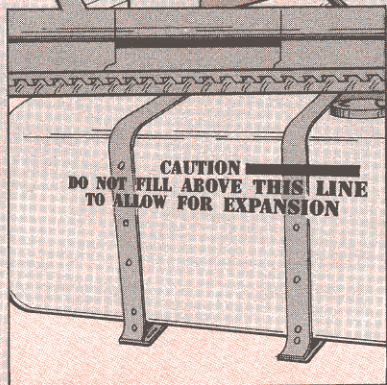


You drivers can do your 5-tonners a favor by not topping off the fuel tank. Instead of filling up to the brim, leave about 2 inches of air space below the filler neck.

The extra fuel in the M939-series truck's tank gets sucked into the fuel vent line that goes into the engine air intake system. Fuel clogs the air filter.

Worse yet, diesel fuel sucked thru the air cleaner can cause engine run-away. Fuel leaks past the piston rings into the engine oil. When it does, it dilutes the oil. Oil can't do its job of protecting moving parts. Parts wear out by grinding themselves to bits.

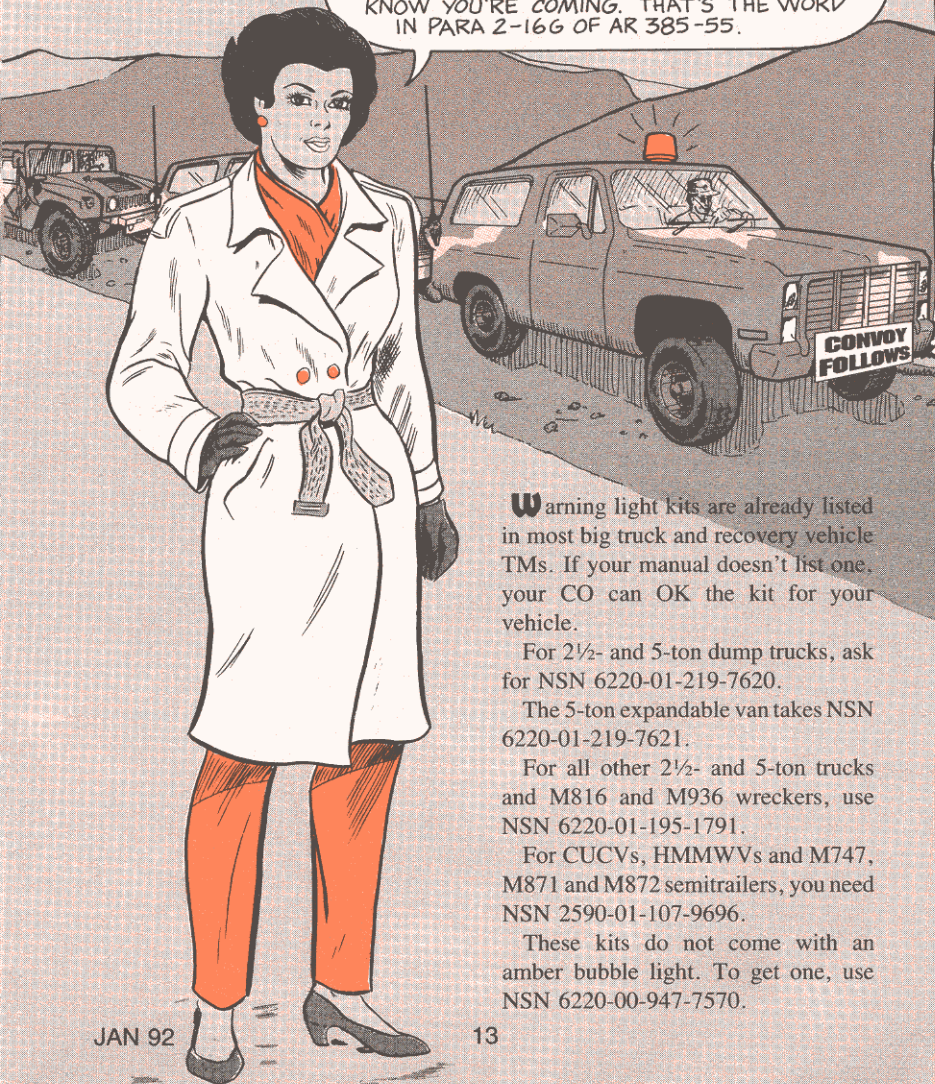
So-o-o-o, when you top off your tank, be sure to leave about 2 inches below the fill neck for expansion room.



Better yet, have your mechanic paint a line 2 inches down and stencil "CAUTION: Do not fill above this line to allow for expansion" in 1-in black letters. This info is in Fig 20 of TB 43-0209.

Follow the Flashing Light

WHEN YOU'RE THE FIRST OR LAST VEHICLE IN A CONVOY, YOU NEED A FLASHING AMBER WARNING LIGHT TO LET OTHER DRIVERS KNOW YOU'RE COMING. THAT'S THE WORD IN PARA 2-16G OF AR 385-55.



Warning light kits are already listed in most big truck and recovery vehicle TMs. If your manual doesn't list one, your CO can OK the kit for your vehicle.

For 2½- and 5-ton dump trucks, ask for NSN 6220-01-219-7620.

The 5-ton expandable van takes NSN 6220-01-219-7621.

For all other 2½- and 5-ton trucks and M816 and M936 wreckers, use NSN 6220-01-195-1791.

For CUCVs, HMMWVs and M747, M871 and M872 semitrailers, you need NSN 2590-01-107-9696.

These kits do not come with an amber bubble light. To get one, use NSN 6220-00-947-7570.

Some Cool

A leaking radiator, cracked hose or worn gasket can put your vehicle's cooling system out of business. Then you're not going ANYWHERE!

But a little preventive maintenance will keep you out of HOT WATER!



Use ST 255 Radiator Testing Kit, NSN 4910-00-728-8227, to test the radiator cap and the entire cooling system.

The kit is listed in TM 750-254, Cooling Systems: Tactical Vehicles. But the TM doesn't give any instructions on how to use it.

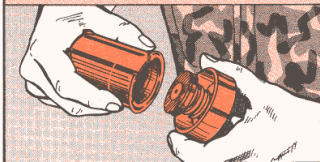


Radiator Cap

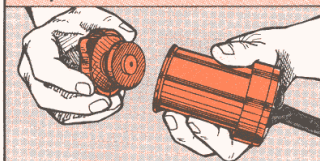
Start by testing the radiator cap to make sure the gasket is not cracked or torn and no pressure is leaking out.

✓ Get an adapter from the testing kit that will fit your radiator cap.

✓ Attach the adapter to the pump's nozzle.



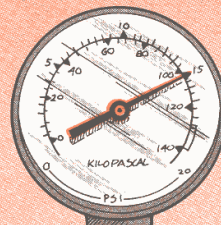
✓ Attach the radiator cap to the adapter.



Moisten the gasket on the cap with water or antifreeze, the way it would be under normal operating conditions.

PM Checks

✓ Work the pump until the gage shows the required pounds per square inch (PSI). The PSI is stamped on the radiator cap.



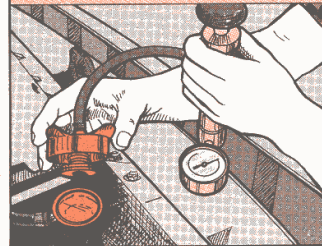
✓ If the cap's good, the needle on the gage will hold at the required PSI. If the needle doesn't hold, the cap's losing pressure. Time for a new cap.

Cooling System

You'll also need to test the entire cooling system for leaks. Follow these steps:

① Make sure the engine's cool before testing.

② Remove the radiator cap and attach the pump's nozzle to the neck of the radiator.



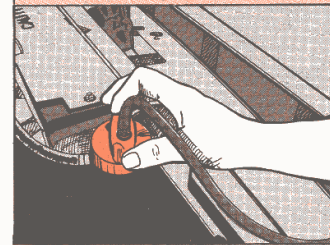
③ Work the pump until the gage shows the required PSI.

④ Keep an eye on the gage. If the pressure's dropping, there's a leak in the cooling system. Listen for escaping air. Look for coolant leaking out at these places:


Hoses	Radiator
Hose connections	Freeze plugs
Water pump	

Also look for hoses that swell or bulge. They probably need to be replaced.

⑤ After making your inspection, gradually release the pressure on the pump's nozzle so that coolant doesn't gush out. Remember, the coolant's under pressure.



No Brake Warning Light? NMC!



HEY,
YOU'RE NOT
GOING ANYWHERE
UNTIL MY BRAKE
WARNING LIGHT
IS WORKING
PROPERLY!

Dear Half-Mast,
TM 9-2320-289-10's PMCS Item 5 f
says a vehicle is not ready/available if
the brake warning light stays on after
the engine starts and the parking brake
is released.

What if the light doesn't come
on at all?

SSG T.A.F.

Dear Sergeant T.A.F.,
The CUCV is NMC.

That light is a safety device to
let you know of any failure in the
braking system. If it doesn't come
on when the ignition is switched
on, it can't do its safety thing.

The headshed will add this
check to the PMCS when the -10
manual is revised.

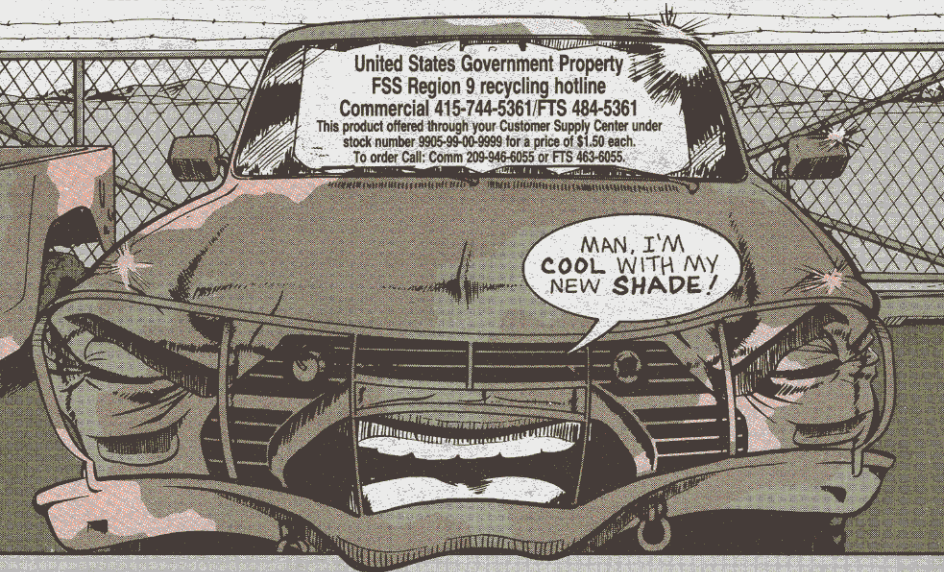
Half-Mast

CUCV...

Windshield Visor

Sunlight causes the vinyl dashboard on your CUCV to fade and crack. Save that dashboard from falling apart with the help of a windshield visor.

The visor comes with NSN 9905-99-000-9999 for \$1.50. Order from GSA.



Drivebelts...

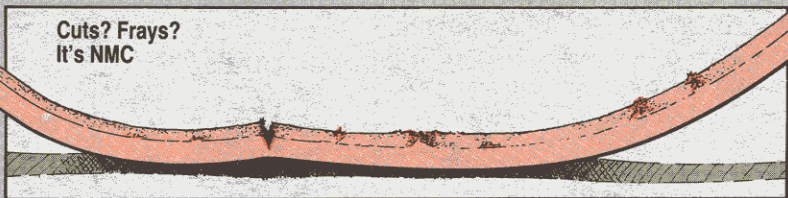
Cut? Frayed? What's NMC?

Everyone agrees that a cut or frayed drivebelt makes a vehicle NMC. The vehicle's PMCS chart says so, too.

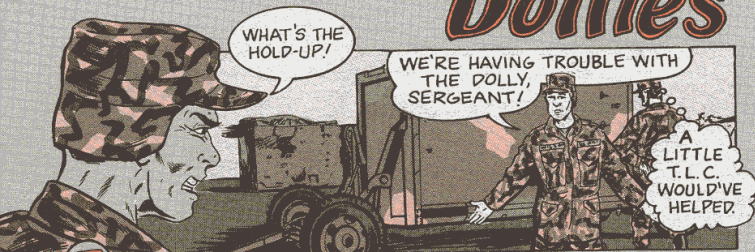
But just how bad does a cut or fray have to be to deadline a vehicle? Some -10 TMs do not say. Here's the word:

"A vehicle is not mission capable if any drivebelt is missing, broken, cracked to the belt fiber, has more than 1 crack ($\frac{1}{8}$ inch in depth or 50 percent of belt thickness) or has frays more than 2 inches long."

Cuts? Frays?
It's NMC



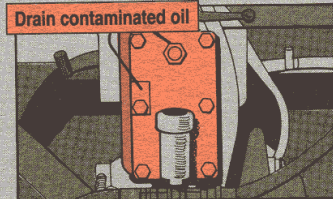
Dollies



Those front and rear dolly trailers have a few quirks that you need to know about. So that with a little tender loving care from you, the truck driver, the dollies will have no trouble getting your load—like a MUST U-pack—on the road and to the field.

Sometimes an M829, M832 or M689-series dolly will stop while you're lowering it to hook onto the U-pack. The hydraulic cylinder may stick. Help the dolly go all the way down by putting your weight on it.

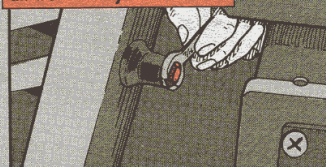
Or the hang-up could be caused by moisture in the hydraulic pump. This is



especially true on cool nights after hot days when condensation forms. Get your mechanic to drain the contaminated hydraulic oil and refill. Make sure the fill plug's screwed in tight. Otherwise, water can seep in the pump.

The hydraulic bleed valve has a nasty habit of breaking off when you turn it to bleed air from the system. Always use the right tool to bleed—a 7/16-in open-end wrench. Never use an adjustable wrench or a pair of pliers.

Easy does it when bleeding air from the system



The air and electrical lines get damaged when they hang down.

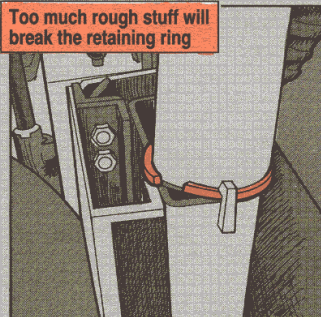
Coil and strap lines up out of the way



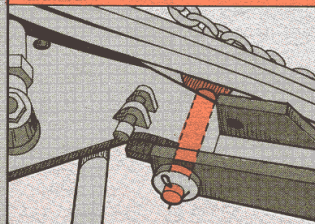
Need T-L-C

Back off the muscle when putting the telescoping bar on the rear axle assembly.

Too much rough stuff will break the retaining ring



Careful when you back a loaded dolly. You'll break the locking pin or drawbar



Read all cautions called out in the TM about backing up the dolly set. Always use ground guides, especially when operating in confined areas.

Tactical Vehicles...

Doing Windows

For yellowed, discolored or scratched plastic windows, wash with soap, water and a soft clean cloth.

Rinse with clean water and let dry. Apply hand cleaner, NSN 8520-00-782-3509, with another soft, clean cloth.

Finally, wipe it off with a clean, dry cloth.

HMMWV Ballistic Glass

Ballistic glass in an armored HMMWV needs special attention.

Wash and dry it the same way you would a plastic one.

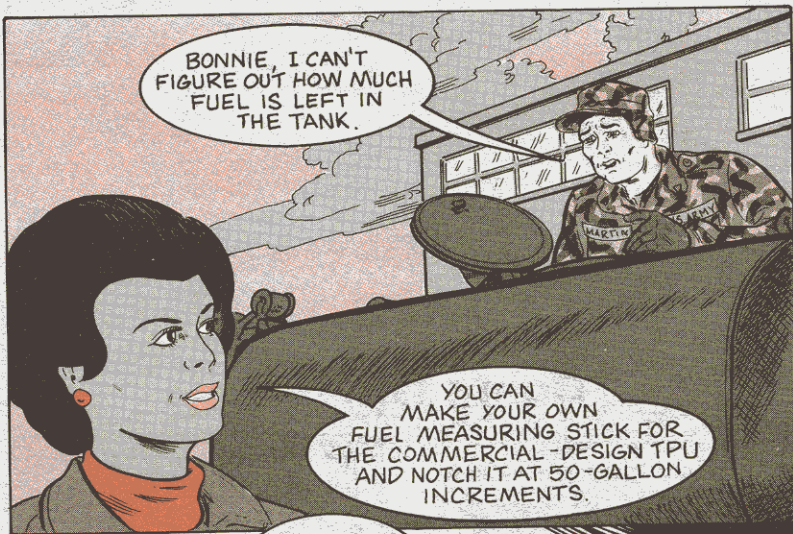
Finish up with plastic polish, NSN 7930-00-935-3794, to clean and remove light scratches. Again, wipe off the excess with a soft, clean cloth.



Dipstick Keeps Track of Fuel

If you can't figure out how much fuel's left in the 600-gal fuel pod on your Mil-design tank and pump unit (TPU), NSN 4930-00-426-9960, get a fuel measuring stick, NSN 5210-01-083-2926. It'll show you how much fuel you have in gallons or liters.

The dipstick won't work on the commercial-design TPU, like the Highland Industries Model 2000, NSN 4930-00-877-8678—the tank's shaped differently.



HERE'S HOW TO MEASURE THE FUEL:

1. Begin with an empty pod.
2. Park your TPU on a level surface.
3. Pour 50 gallons of fuel in the pod.
4. Take any long wooden stick (you can even use the Mil-design fuel measuring stick) and mark it for the 50 gallons. Use a knife or anything sharp enough to nick the wood.
5. Keep adding 50 gallons of fuel at a time. Make a notch on the stick after each addition.

F5070 Dump Truck...

Light It Up Right

If you need the marker lights for the dump body of your 20-ton CCE dump truck, you won't find them listed in TM 5-3805-254-20P. And the dump body reflectors aren't called out right in Fig 45 either.

Here are the NSNs for the lights and the reflectors, and also where they go:

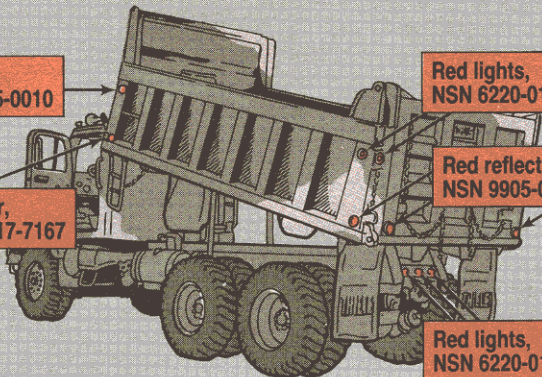
Amber light,
NSN 6220-01-095-0010

Red lights,
NSN 6220-01-095-0011

Red reflectors,
NSN 9905-00-917-7168

Amber reflector,
NSN 9905-00-917-7167

Red lights,
NSN 6220-01-095-0011

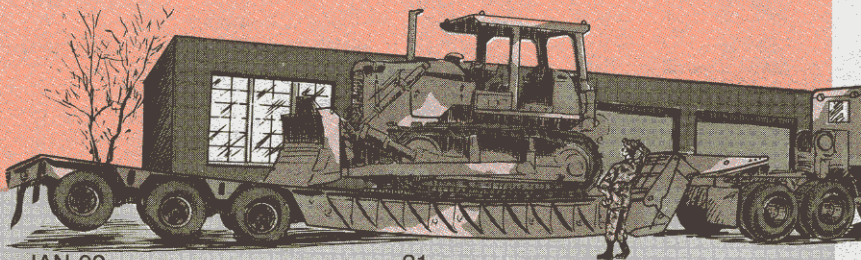


M870-, A1-Semitrailers...

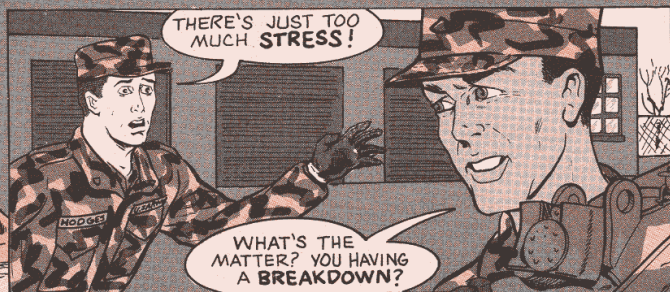
Saggin' Wagon Still Draggin'

You get cracked frames, busted welds, and other problems when you haul a D8K tractor on your M870 semitrailer. The D8K is too heavy for the M870 semitrailer.

Do yourself and your M870 semitrailer a favor by lightening the load. Take off the dozer blade and rollover protective structure and haul them separately. If your tractor has a ripper, take it off and haul it separately, too. Shed extra pounds by cleaning caked dirt and dried mud off the tractor before loading.



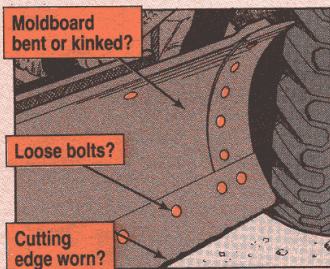
Cut Down on Cutting



The cutting edge on your grader can stand only so much stress, strain and wear—and then it suffers a physical breakdown!

You can help prevent cutting edge failure by learning what causes it to break down and wear:

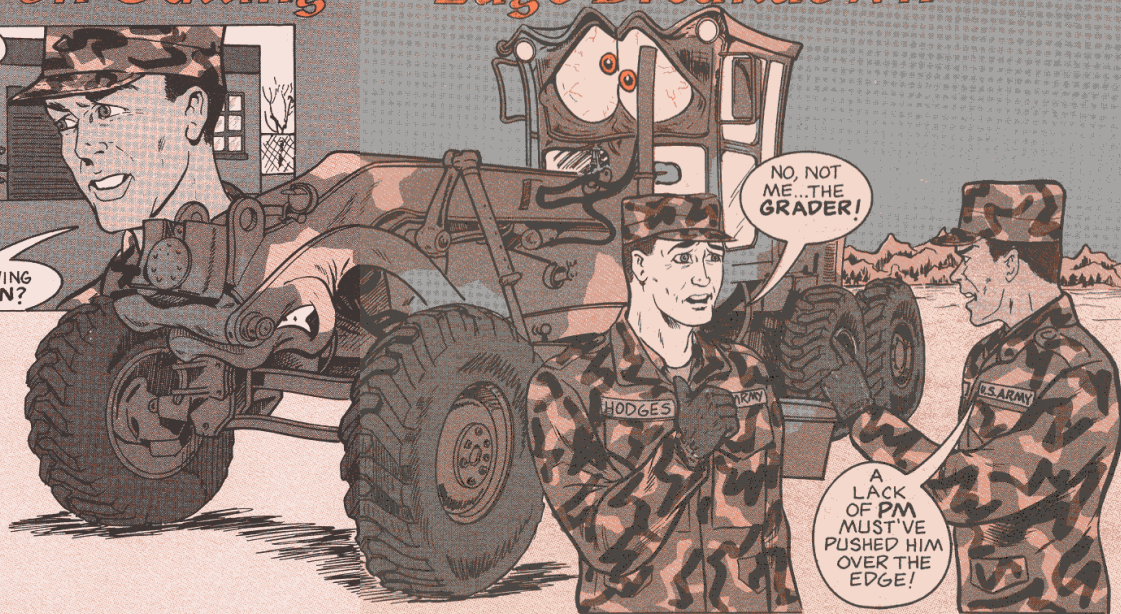
- **Loose bolts**—Just one loose bolt can cause cutting edge breakage. Always use the heat-treated bolts and nuts called for in your parts TM, and make sure they're tight. Start tightening bolts from the center of the moldboard toward the ends. This ensures the cutting edge will stay put.



- **Bent or kinked moldboard**—Bends and kinks put a lot of stress on cutting edges, and they break. Eyeball the moldboard every day before you start operating to make sure the moldboard is straight.

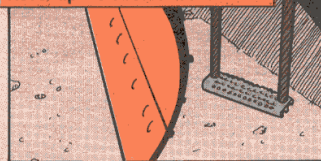
- **Worn cutting edge**—Watch to make sure the cutting edges are not worn to the bottom edge of the moldboard. Worn cutting edges will ruin the moldboard. To get more life out of the cutting edge, reverse it—or get a new one installed.

Edge Breakdown



- **Wrong moldboard angle**—Never tip the moldboard too far back. This puts too much stress on the cutting edge. Tip the moldboard forward at a 90° angle. That will reduce breakage and keep a sharper cutting edge.

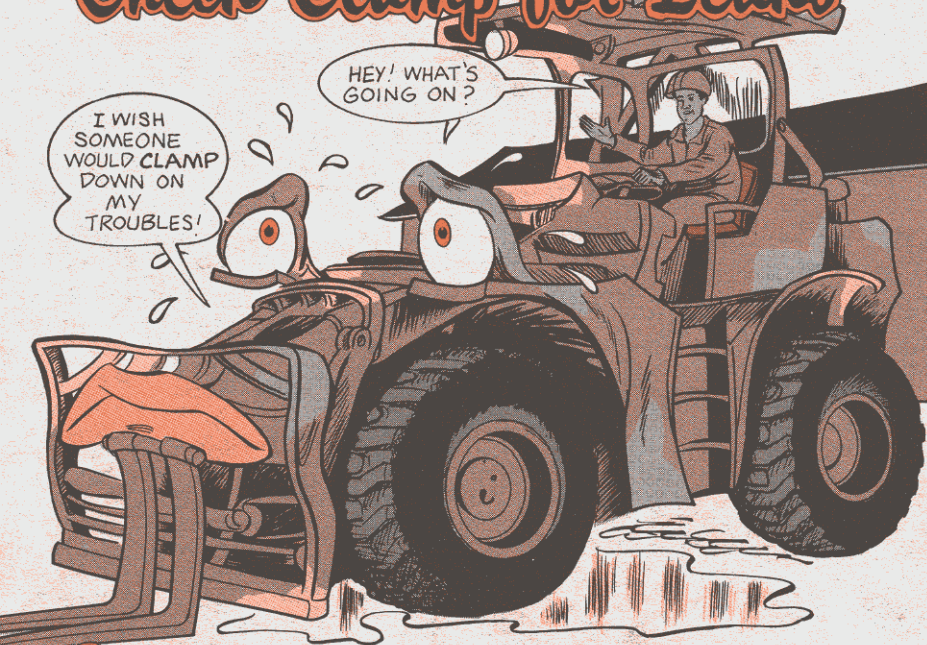
Never tip moldboard too far back



- **Cutting torches vs blades**—Heat makes the cutting edge brittle and easy to break. Only qualified welders are authorized to use a cutting torch to cut bolts from the cutting edges. Never use an acetylene torch to cut a bolt off a reversible cutting edge.

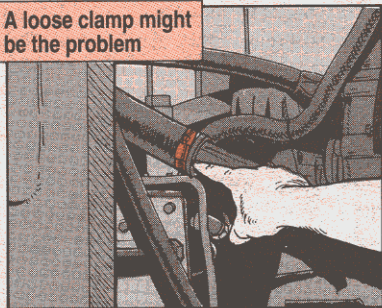
- **Road hazards**—Watch for man-hole covers, bridge expansion plates, railroad tracks or other solid objects. If you hit one with the grader cutting edge, the cutting edge, moldboard, circle, circle drive, drawbar and all related parts will break.

Check Clamp for Leaks



Could be that leak at the hydraulic reservoir on the 10,000-lb forklift is caused by a loose clamp.

A loose clamp might be the problem



So, before you send your forklift for a reservoir repair job, do this...

♦ Clean the leaking area with hot, soapy water.

♦ Start the engine and engage the hydraulic pump.

♦ Let it run 2–3 minutes.

♦ Eyeball the hose connection for a leak.

♦ If you see a leak, shut down the engine and tighten the clamp hardware.

Wait 5 minutes, start the engine and engage the pump again. Eyeball the area for leakage again. No leak? The problem's solved.

If you still see a leak, it's probably a hydraulic reservoir leak. Send the forklift to DS.

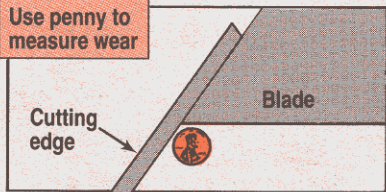
Keep a Keen Edge

Keeping a good edge on your dozer's moldboard is a sign of a sharp operator!

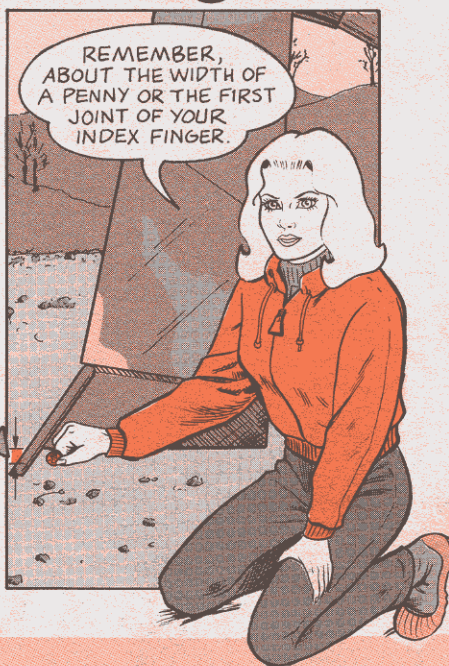
The cutting edge protects the moldboard. If the edge wears down too far, the blade is damaged . . . and has to be replaced or sent to DS for repair.

Eyeball the blade's cutting edge before starting the day's operation. If the edge is worn to less than $\frac{3}{4}$ inch—that's about the width of a penny laid on its side, report it.

Use penny to measure wear



Your mechanic can reverse the edge—or replace it if it can't be reversed.



SEE/HMMH...

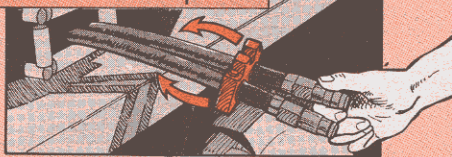
Hand Tool Winter Operation

It's almost impossible to connect the two auxiliary hose quick-disconnect couplings together on the SEE and HMMH's hose reel. That's because the hose bracket is too close to the couplings.

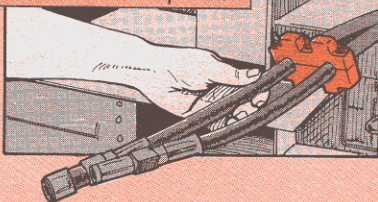
To put the couple back in those couplings, loosen the nuts on the hose bracket, move it about 4 inches toward the reel, then tighten the nuts.

Now you've got enough free hose to couple the two auxiliary hose reel ends to preheat the hydraulic oil.

Bracket—"Before" position



Bracket—"After" position





This is a selected list of recent pubs of interest to organizational maintenance personnel. This list was made from a computer printout provided by the Adjutant General's Office.

TM 5-3805-260-24 Mar
Tractor scraper, models
613BSS, 613BSS1,
613BSNS and 613BSNS1

TM 9-1025-200-12&P
Sep M114A1 towed howitzer

TM 9-6920-600-14 Aug
Patriot air defense guided missile system

TM 10-1670-294-23&P
Jul Cargo parachute: 35 ft dia, ribbon extraction parachute

TM 11-1520-237-23-4
Mar Fault isolation for UH-60A

TB 1-1520-238-20-23
Jun Uncommanded Hellfire launches on AH-64A

TB 1-1520-238-20-25
Jun Inspect AH-64A nut torque on tail rotor forward and aft hanger bearings

TB 1-1520-244-20-35
Sep Inspect AH-1 MS nuts for cracking

TB 11-6605-300-35 Oct
AN/ASN-143 heading attitude reference set

TB 55-1520-240-20-56
Apr Fatigue life for CH-47D aircraft

Maintenance Advisory and Safety-of-Use Messages

AMCCOM SOU MSG 91-16—Advisory, Safety procedures while training with smoke, AMSMC-SFS 221940Z Jul 91.

AMCCOM SOU MSG 91-17—Advisory, Check for improper routing of intercom wiring harness on M109A2/A3/A4/A5 self-propelled howitzer, AMSMC-MAE-WF 022030Z Aug 91.

AMCCOM SOU MSG 91-19—Operational, Prohibits using backup computer system (BUCS) for M483A1 projectile, AMSMC-MA 101600Z Oct 91.

TACOM SOU 91-10—Operational, Replace push-pull headlight switch on 1986 model CUCVs, AMSTA-MTA 181030Z Sep 91.

TACOM SOU MSG 91-16—Limited One-Time Inspection, Inspect for cracks in front spring clips on M939A2 series 5-ton vehicles, AMSTA-MTB 141400Z Aug 91.

TACOM SOU MSG 91-18—Advisory, Operational, Keep the maintenance switch in the POWER-ON position on M992 FAASV crew/engine automatic fire extinguishing system, AMSTA-MCC 192330Z Aug 91.

TROSCOM SOU MSG 16-91—Operational, Gives proper operating procedures for the M-59 field range outfit, AMSTR-M 241830Z Sep 91.

TROSCOM SOU MSG 20-91—One-Time Inspection, Limited, Inspect internal main electrical power cable on Airtacs Corp 18,000 BTUH air conditioner, AMSTR-ME 291300Z Oct 91.

TROSCOM Maintenance Advisory 91-37—Setting up large area maintenance shelters (LAMS) manufactured by Clamshell Buildings, Inc, AMSTR-ME 171630Z Oct 91.

TROSCOM Maintenance Advisory 91-32—Adapters to use on open circuit military scuba system, AMSTR-ME 161930Z Oct 91.

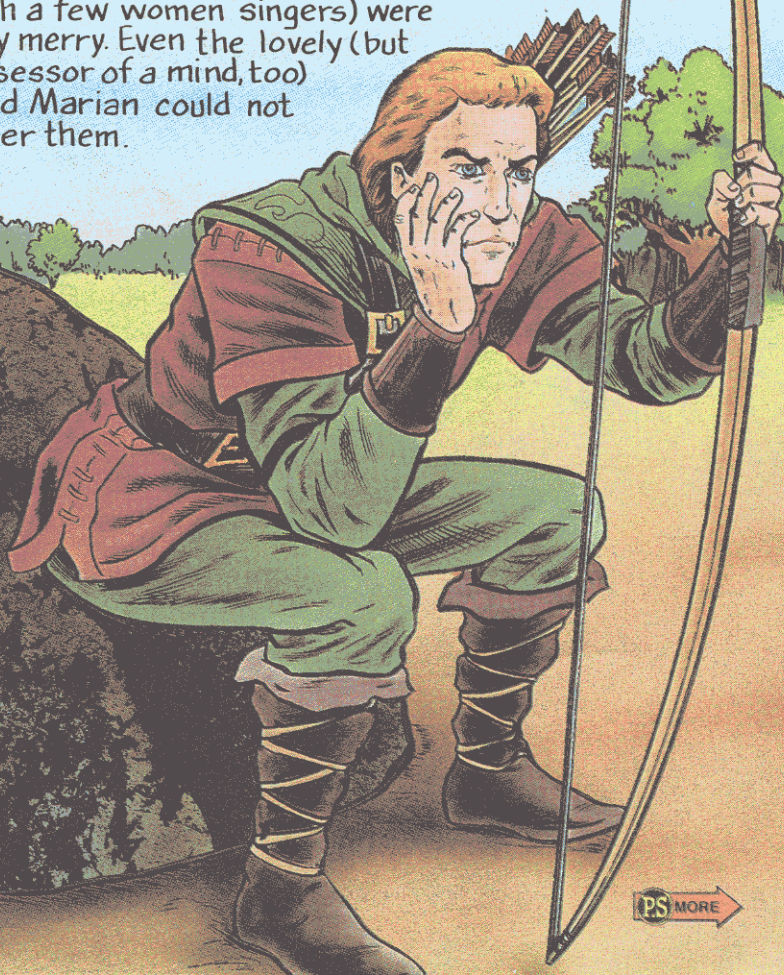
TROSCOM Maintenance Advisory 91-35—Advises divers using KMB-10, 28 Bandmask, Heliox-18, DS1-18 Bandmask, Superlite 17A or Superlite 178 Helmet of underwater explosion possibility, AMSTR-ME 161900Z Oct 91.

USAGMPA Petroleum Technical Advisory MSG 10-46—Gives guidelines for inspecting cooling systems on equipment returning from Saudi Arabia, STRGP-FT 291900Z Oct 91.

Your Direct Support or Logistics Assistance Office (LAO) can provide you with more information.

A Farthing a Day

It was a dark and stormy century somewhere around 1100 A.D. (give or take a couple of hundred years). Deep in the hidden recesses of a mist-shrouded glen under the mighty oaks of the forest known as Sherwood, neither Robin Hood (seeker of Truth, Justice and the English way), nor his band of men (with a few women singers) were very merry. Even the lovely (but possessor of a mind, too) Maid Marian could not cheer them.



FORSOOTH, ROBIN, WHY SO GLUM? YOUR
MERRY BAND BLOWS ONLY
SOUR NOTES.



DEAR
MARIAN,
YOUR HUMOR
FALLETH FLAT
FOR I AM SORELY
PERPLEXED.



WE HAD A TERRIFIC
YEAR OF **ROBBING**
FROM THE RICH,
BUT...

...A TERRIBLE
YEAR OF **GIVING**
TO THE **POOR**. AND
BELIEVE ME... THE
POOR DON'T LIKE IT!

ALL THE FARTHING'S SEEM TO BE
SPENT BY JUST RUNNING THE **FOREST**
AND EQUIPPING THE **MEN!**



HOW
MUCH DO
THE **POOR**
NEED?

TO MAKE ALL THE POOR NOT
POOR TAKES **365 FARTHINGS**
A YEAR.

HMMM...
THAT'S JUST
A FARTHING
A DAY.

IT
DOESN'T
SEEM LIKE
MUCH. LET'S
TAKE A LOOK
AT HOW YOU
CONDUCT THIS
BAND. MAYBE
WE CAN **SAVE**
THAT FARTHING.

WHAT'S
LITTLE JOHN
UP TO?

I'M GETTING A
NEW BOW. THE STRING'S
BROKEN ON THIS ONE.

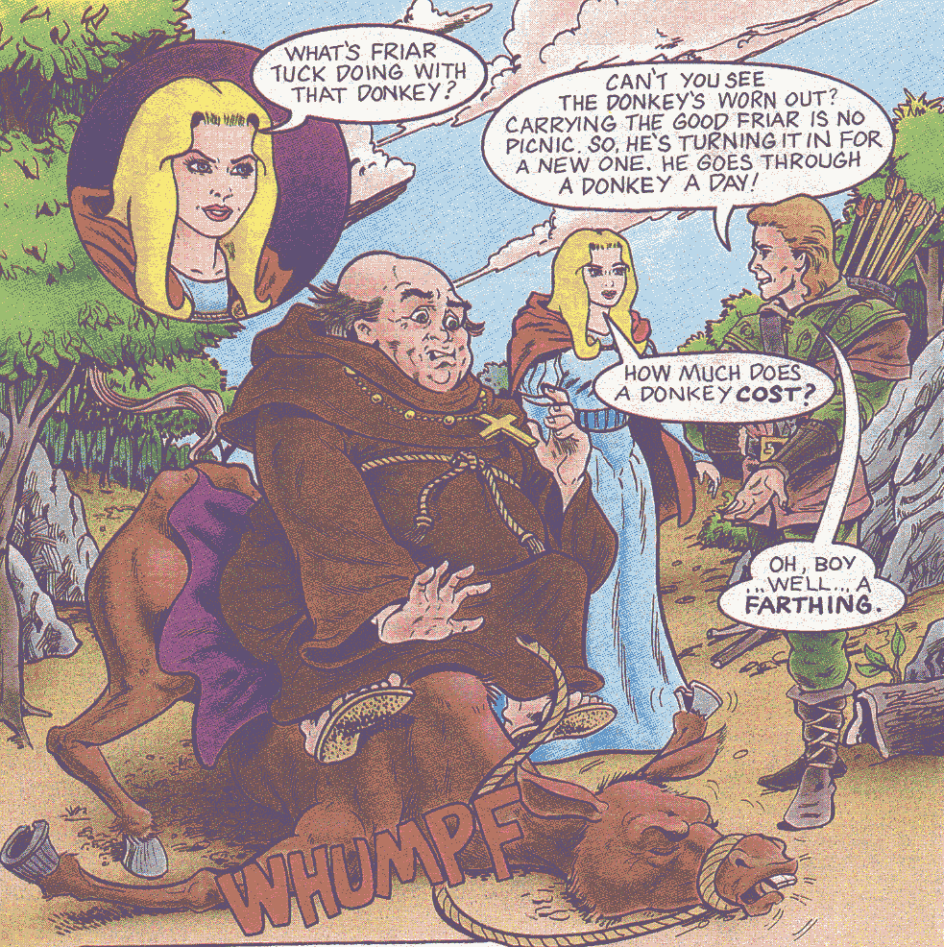
HOW
MUCH
IS A
NEW BOW?

TWO
FARTHINGS.

HOW
MUCH IS
JUST A
STRING?

GULP!
AHH... ONE
FARTHING.

YOU
SHOULD
CHECK ALL YOUR
EQUIPMENT BEFORE YOU
REPLACE IT. IT MAY BE YOU
ONLY NEED TO REPLACE
PARTS INSTEAD OF
END ITEMS.



WHAT'S FRIAR
TUCK DOING WITH
THAT DONKEY?

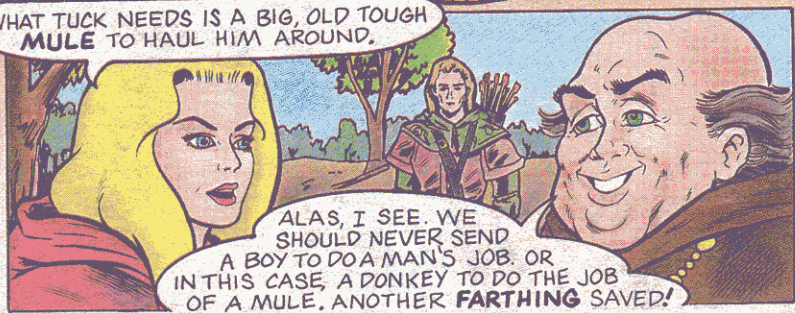
CAN'T YOU SEE
THE DONKEY'S WORN OUT?
CARRYING THE GOOD FRIAR IS NO
PICNIC. SO, HE'S TURNING IT IN FOR
A NEW ONE. HE GOES THROUGH
A DONKEY A DAY!

HOW MUCH DOES
A DONKEY **COST**?

OH, BOY
...WELL... A
FARTHING.

WHUMPF

WHAT TUCK NEEDS IS A BIG, OLD TOUGH
MULE TO HAUL HIM AROUND.



ALAS, I SEE. WE
SHOULD NEVER SEND
A BOY TO DO A MAN'S JOB. OR
IN THIS CASE, A DONKEY TO DO THE JOB
OF A MULE. ANOTHER **FARTHING** SAVED!

ZOWEEEE!

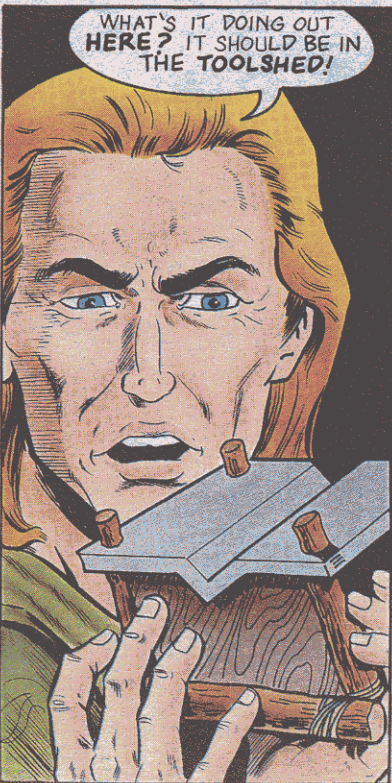


WHAT'S
WRONG,
ROBIN?



I JUST
STUBBED
MY TOE ON THIS
ARROWHEAD
MAKER.

WHAT'S IT DOING OUT
HERE? IT SHOULD BE IN
THE TOOLSHED!



HOW MUCH DOES THAT COST?

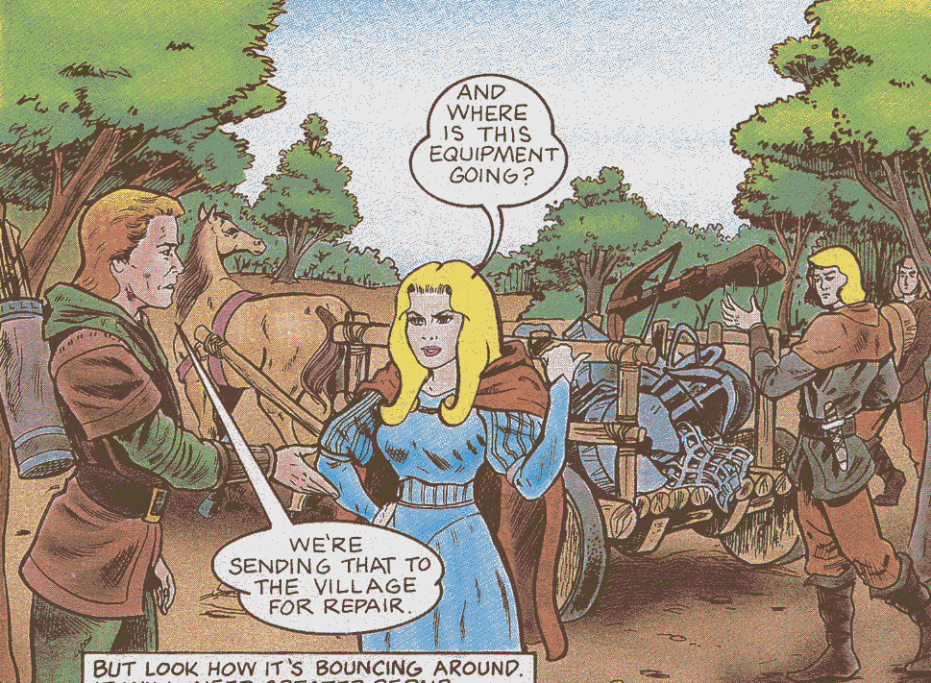
HMMM... A FARTHING?

RIGHT, KEEPING TABS ON TOOLS AND EQUIPMENT WILL PUT EXTRA FARTHING IN YOUR POCKET.

LOOK OVER THERE.

GADZOOKS! EQUIPMENT ABUSE!

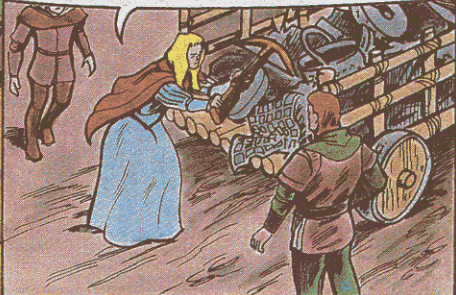
ABUSED EQUIPMENT OR EQUIPMENT USED FOR JOBS OTHER THAN WHAT IT'S INTENDED FOR WEARS OUT FASTER AND **ROBS** YOU OF FARTHINGS!



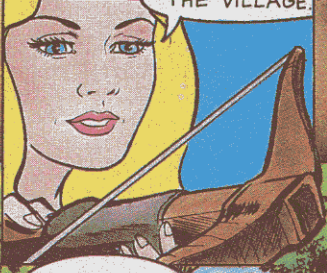
AND WHERE IS THIS EQUIPMENT GOING?

WE'RE SENDING THAT TO THE VILLAGE FOR REPAIR.

BUT LOOK HOW IT'S BOUNCING AROUND. IT WILL NEED GREATER REPAIR...



...OR EVEN REPLACEMENT BY THE TIME IT REACHES THE VILLAGE.



SO CAREFUL PACKING AND SHIPPING SAVES FARTHINGS, TOO!

FORSOOTH, ROBIN!



AND LET'S NOT FORGET PREVENTIVE MAINTENANCE.

SOMEHOW I KNEW YOU WERE GOING TO SAY THAT.

STOPPING PROBLEMS BEFORE THEY START SAVES TONS OF FARTHINGS.

IT ADDS UP TO BIG SAVINGS.

SAVING A FARTHING A DAY TAKES EVERYONE, EVERYDAY, LOOKING FOR WAYS TO SAVE.

THIS GOOD NEWS WILL MAKE MY MEN MERRY AGAIN!

And so it was that by the end of the year all the poor were taken care of and enough was left over for a really swell party. The moral of the story is that every unit can save a dollar a day. And those extra dollars will ensure that you continue to have "the world's best equipment."

It's a Matched Set

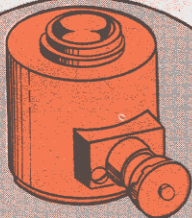
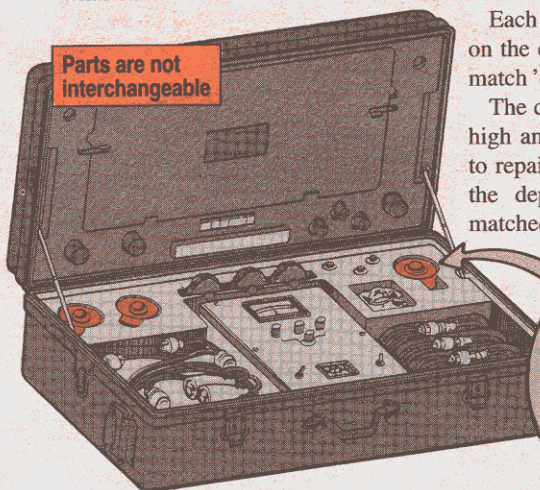


Identical does not mean interchangeable. Each A/S 37M-1, Aircraft Weighing Kit, looks like any other A/S 37M-1 and does the same job—weigh and determine the center of gravity of an aircraft.

But some of you think that since the parts to a kit look the same, they're interchangeable from kit to kit. They are not. Every kit is a matched set. What came with the kit must be used as a kit. When the kit's turned in for repair, what came with it must be turned in.

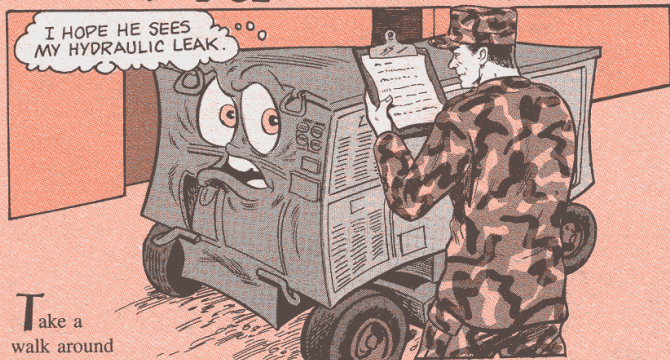
Each component's serial number is on the component and the kit lid. Just match 'em up before you send 'em off.

The demand for the weighing kits is high and the supply is short. In order to repair and process the kits quickly, the depot must have all the right matched parts.



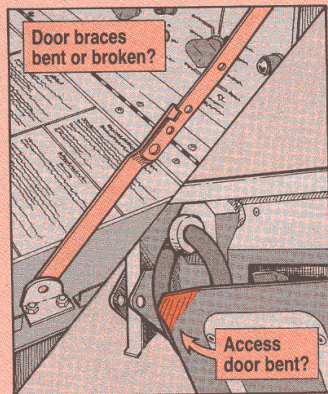
The wrong load cell won't be compatible with other parts

Walk Around Your AGPU

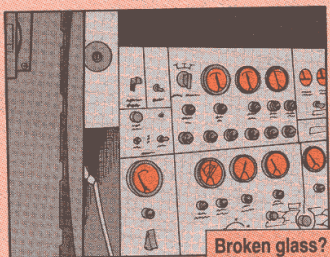


Take a walk around your Aviation Ground Power Unit (AGPU) and spot small problems before they become big troubles:

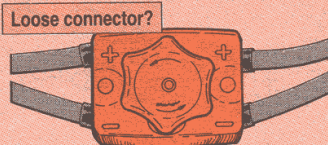
Frame and Housing—Dents, cracks, punctures, corrosion, damaged hinges or broken latches on doors? Access door bent? Door braces broken or bent?



Control Panel—Meter or gage glasses broken or cracked? Missing parts? Corroded?



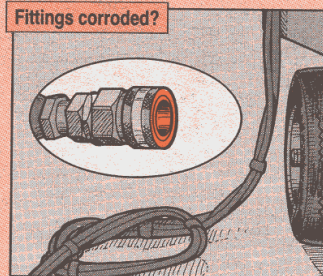
Battery—Holddown or guide loose, corroded? Vent drain tubes missing or damaged? Cables and connectors loose? Electrolyte level low?



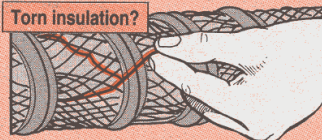
Walk Around Your AGPU

Engine Compartment—Oil or fuel leaks? Air intake duct corroded? Loose or missing bolts? Damaged hoses?

Hydraulic Compartments—Fluid level low? Missing or loose? Cracked glass on gages? Damaged or corroded fittings? Leaks?



Cables and Hoses—Insulation torn or worn? Clamp loose? Spiral wrap and netting missing?

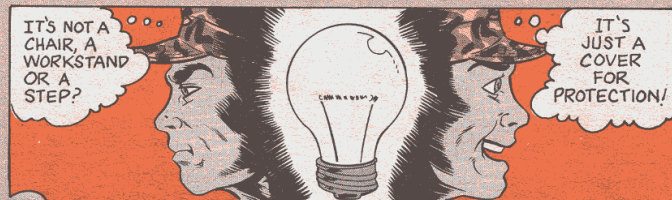


Propulsion System—Oil leaks? Worn or underinflated tires? Missing wheel lug nuts? Brake cable damaged? Missing or loose fasteners? Bent or broken springs? Broken or loose terminals? Loose or missing brush covers?

Now that you have your list of small AGPU problems, follow TM 55-1730-229-12 to fix those problems you can and report the rest.

Apache APU Enclosure...

Don't Tread on Me!



The Apache's APU enclosure provides a little, just a little, protection for the auxiliary power unit (APU).

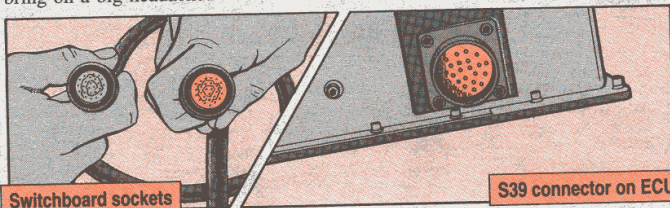
One unit's mechanics used the enclosure for a chair. The enclosure rubbed the APU fuel line and cracked it. The crack became a hole... fuel leaked... and ignited!

So, when you're working around the APU with the enclosure exposed, think of the enclosure as part of the APU, not part of your aircraft's frame. **And stay off it!**

Making a



Hooking up the circuit continuity switchboard to the S39 connector on the Electrical Control Unit (ECU) to troubleshoot the T700 or T701 engine can bring on a big headache.



Switchboard sockets

S39 connector on ECU

The problem is it's real easy to bend the pins on the S39. Here's why:

- You can't see the connection, so you have to make the hookup blind;
- The switchboard socket is straight, so you don't have a good angle to make the connection like an elbow would give you;
- The socket well is not deep enough to let you guide in the pins;
- And the switchboard socket can come with either a hard, black seal, with deeply recessed holes; or, a soft, red seal, where the holes are not deeply set. The soft, red seal grabs the pins before they seat and as you try to make the connection the pins bend and break.

Good Connection

TO MAKE THE CONNECTION AND SAVE THE PINS, REMEMBER THESE THREE P's:

Patience

—you can't do this in a hurry.

Push

—when you feel you're lined up, push in gently, don't twist. If you twist, the seal grabs the pins and they twist.

Pull back

—if you don't hit the mark the first time, don't search by wiggling or turning. Pull back and try again.



Aviation Messages

If your unit has not received a message you have an interest in, check with your next higher headquarters.

CAT 1 EIR Phone:
DSN 693-2066
(24 HOURS)

OH-58-91-ASAM-15, Maint Mand, OH-58A/C, Revision to OH-58-91-ASAM-14, inspect MS nuts for cracking, 042100Z Sep 91.

AH-64-91-ASAM-18, Maint Mand, AH-64A, Expanded inspection criteria and procedures for main landing gear mount, 121600Z Sep 91.

UH-1-91-ASAM-17, UH-1 and EH-1, Numbering of Safety of Flight messages UH-1-91-01 and UH-1-91-02, 161830Z Sep 91.

OH-58-91-ASAM-16, Maint Mand, Inspect OH-58D engine cowl and duct, 192130Z Sep 91.
UH-1-91-02, SOF, UH-1H/M/V and EH-1H/X, Inspection of tail

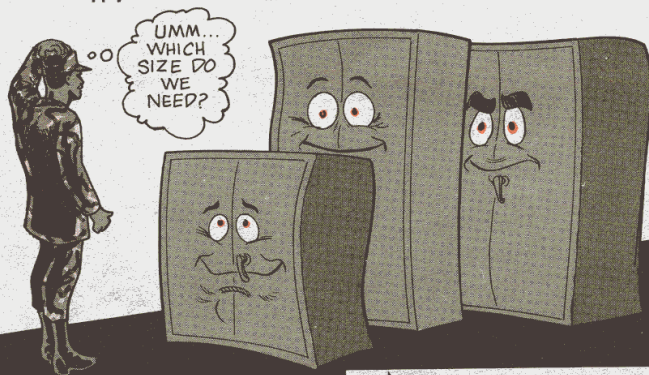
rotor yoke assembly for specific serial numbers, TB 55-1520-242-30-01 is superseded by TB 1-1520-242-30-02, 091630Z Sep 91.

AH-64-91-05, SOF, Tech, AH-64A, Inspection of vertical stabilizer barrel nuts and bolts, 122100Z Sep 91.

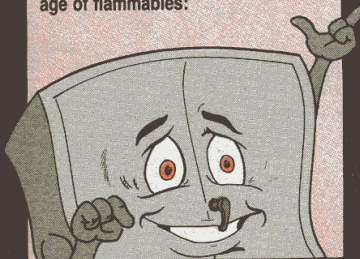
Safe Storage

If you store flammables, you're authorized flammable storage cabinets by Table 60 of CTA 50-909.

You'll find a wealth of cabinets—all shapes, sizes and colors—listed under Federal Supply Class 7125 on the Federal Item Identification List.

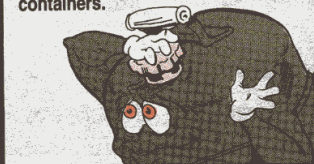


Here are a few tips about safe storage of flammables:



▶ Although there is no requirement to ground storage cabinets, you must ground and bond containers of flammables when you're pouring from one container to another.

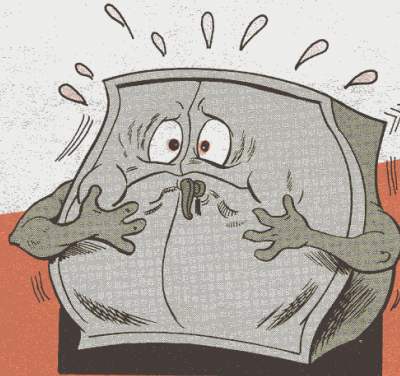
▶ Make sure all lids are on containers.



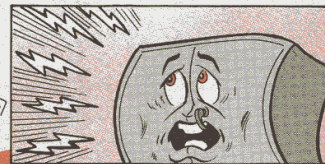
Remove and repair leaky containers immediately.

for Flammables

▶ Don't exceed the maximum storage capacity of a cabinet. A cabinet's capacity is determined by safety, not by the number of containers it will hold.

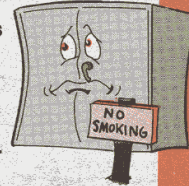


▶ Cabinets indoors should be located away from areas where spark-producing tools or equipment are used and where heat, fumes and gases build.

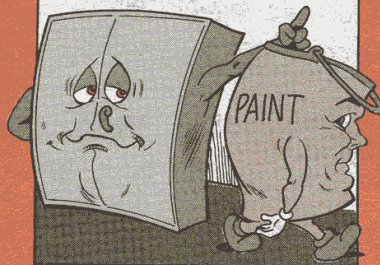


▶ Cabinets outdoors should be located at least 50 feet from combustible structures.

No smoking signs should be posted and enforced. The area should be kept clean of weeds and debris.



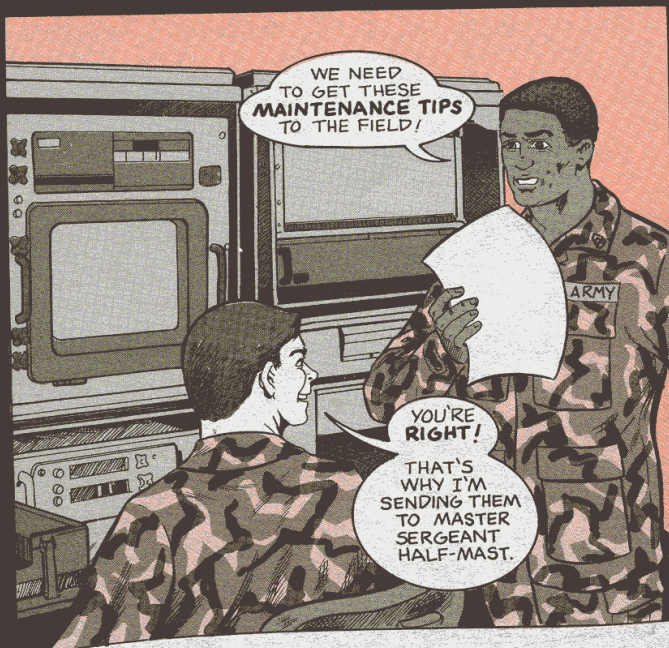
▶ Paint should not be stored in the same cabinet with petroleum, oil or lubricants. Give paint its own cabinet. Some units store paints in inside cabinets and petroleum products in outside storage.



Before your new cabinet arrives, bone up on the info in the National Fire Code 30, Flammable and Combustible Liquids, and AR 420-90. Your safety office will have copies as well as be able to tell you about local regulations.



Maintenance Tips



DEAR MSG HALF-MAST,

HERE ARE SOME SOLUTIONS TO MAINTENANCE PROBLEMS THAT SURFACED DURING FIELDING OF THE AN/UYQ-43 (V)1 AND (V)2 TACTICAL COMPUTERS. WE'D LIKE TO SHARE THEM WITH YOUR READERS.

MANEUVER CONTROL SYSTEM-
NEW EQUIPMENT TRAINING TEAM
FT LEAVENWORTH, KS



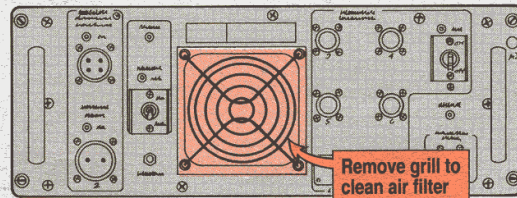
1. CLEAN THE AIR FILTER.

Your power conversion equipment cannot operate right if the air filter is dirty.

Check the air filter every week. Of course, if your workplace is dusty, you'll need to check the air filter more often.

If the air filter is dirty, clean it using these instructions:

- Turn off computer power using procedures in Para 2-24.2 in TM 11-5895-1348-12-1 for the Tactical Computer Processor (TCP) and Para 2-21.2 in TM 11-5895-1371-12-1 for the Analyst Console (AC).
- Remove the four screws, lockwashers and flat washers from the fan grill.
- Remove the grill and filter from the front panel.



- Clean the filter with detergent, NSN 7930-00-926-5280.
- Rinse the filter with clean water and let it dry.

Make sure the filter is completely dry before you put it back in the equipment. Moisture does a number on computer circuits.

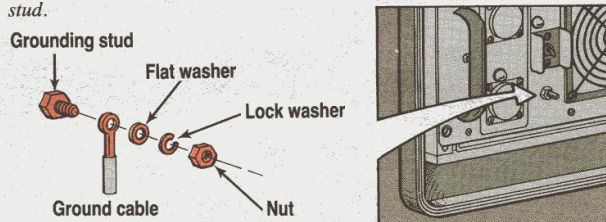
- Replace the grill securely with the four screws, lockwashers and flat washers.

2. MAKE SURE EQUIPMENT IS GROUNDED.

If the power conversion unit's not grounded, the whole computer's not grounded. Generator surges or nearby lightning strikes can enter your commo and destroy the equipment—or you.

To ground the equipment, remove the nut, lockwasher and flat washer from the ground stud on the front panel of the power conversion equipment.

Connect ground cable, NSN 6145-00-066-8640*, to the grounding stud.

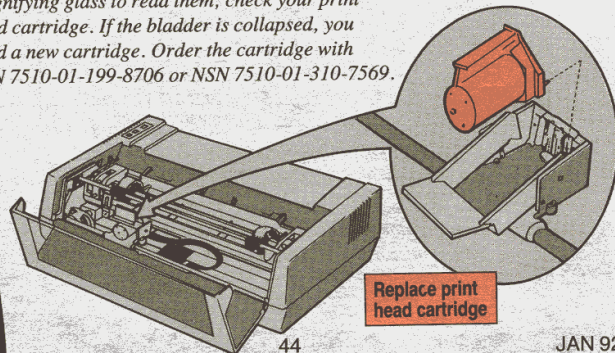


Replace the flat washer, lockwasher and nut on the stud and tighten nut. Connect the other end of the grounding cable to the clamp on ground rod, NSN 5975-00-224-5260. Procedures for grounding are covered in Para 2-7.1 in TM 11-5895-1348-12-1 (TCP) and Para 2-7.1 in TM 11-5895-1371-2-1 (AC).

*NSN not on AMDF. Order replacement cable on DD Form 1348-6 from S9I.

3. REPLACE PRINT HEAD CARTRIDGE WHEN NEEDED.

If your printer copies are so light that you need a magnifying glass to read them, check your print head cartridge. If the bladder is collapsed, you need a new cartridge. Order the cartridge with NSN 7510-01-199-8706 or NSN 7510-01-310-7569.



Follow the instructions in Para 3-9.4 of TM 11-5895-1348-12-1 (TCP) and TM 11-5895-1371-12-1 (AC) to remove the cartridge. The instructions for installing the new cartridge are in Para's 3-9.5 and 3-9.6 of the same TMs.

BE CAREFUL! The ink on the cartridge contains diethylene glycol. If you get ink on your hands, keep them away from your eyes and mouth.

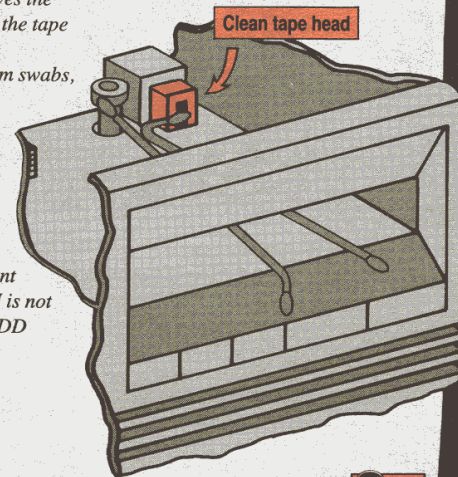
4. KEEP TAPE UNIT HEAD CLEAN.

Your computer's tape drive needs to be cleaned weekly to stay in shape. Clean it more often if you keep getting data errors.

Paragraph 3-10.4 of TM 11-5895-1348-12-1 (TCP) and TM 11-5895-1371-12-1 (AC) gives the cleaning instructions for the tape head and capstan.

Be sure to use only foam swabs, NSN 4920-01-243-0571, to clean the tape head. Cotton-tipped swabs or facial tissues can scratch the tape heads.

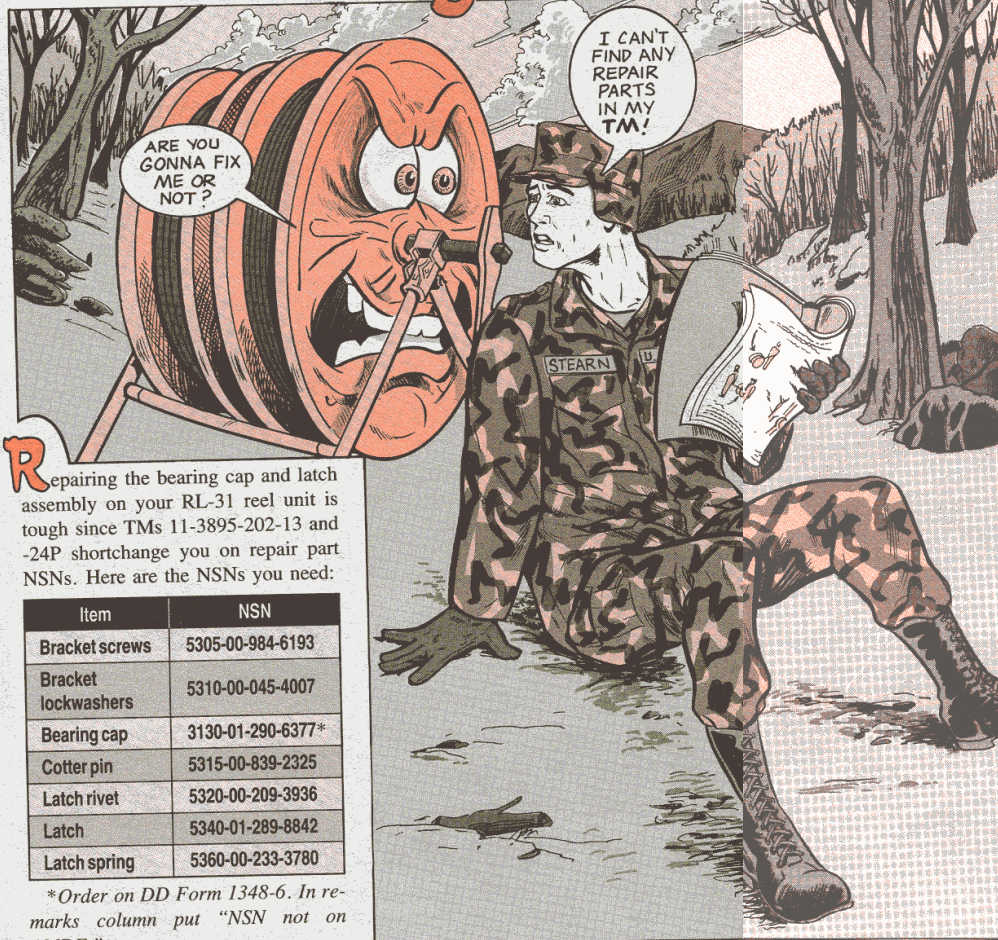
Use only cleaner, NSN 5835-00-885-3818, on the tape head to prevent contamination. This NSN is not on the AMDF. Order on DD Form 1348-6 from S9E.



AN/PRC-127 Battery Pack NSN

Use NSN 6140-01-274-0835 to get the nickel cadmium battery pack for the AN/PRC-127 radio set. The NSN is wrong in Appendix D of TM 11-5820-1048-24&P.

Missing NSNs Uncovered



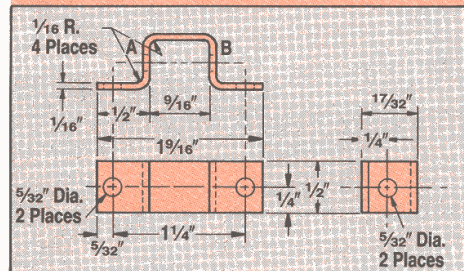
Replacing the bearing cap and latch assembly on your RL-31 reel unit is tough since TMs 11-3895-202-13 and -24P shortchange you on repair part NSNs. Here are the NSNs you need:

Item	NSN
Bracket screws	5305-00-984-6193
Bracket lockwashers	5310-00-045-4007
Bearing cap	3130-01-290-6377*
Cotter pin	5315-00-839-2325
Latch rivet	5320-00-209-3936
Latch	5340-01-289-8842
Latch spring	5360-00-233-3780

*Order on DD Form 1348-6. In remarks column put "NSN not on AMDF."

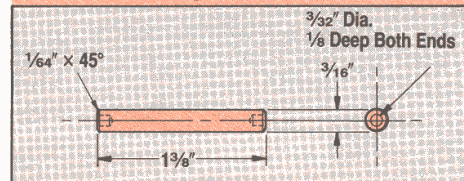
There is no NSN for the bracket, the hinge pin or the bracket rivet, but you or your support can make them.

For the bracket, use a piece of $\frac{1}{16}$ -in thick $\times \frac{1}{2}$ -in wide steel that's 3 inches long. Here's how to make it:



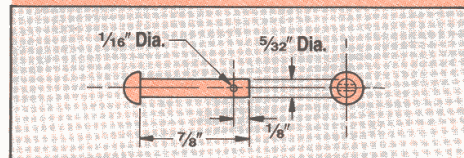
When finished, cut off any excess length.

For the hinge pin, use a piece of $\frac{3}{16}$ -in diameter steel rod $1\frac{3}{8}$ -in long. Here's how to make it:



For the bracket rivet, order a $\frac{5}{32} \times \frac{7}{8}$ -in rivet, NSN 5320-00-209-3936.

Drill a $\frac{1}{16}$ -in diameter hole through the rivet $\frac{1}{8}$ inch from the headless end.



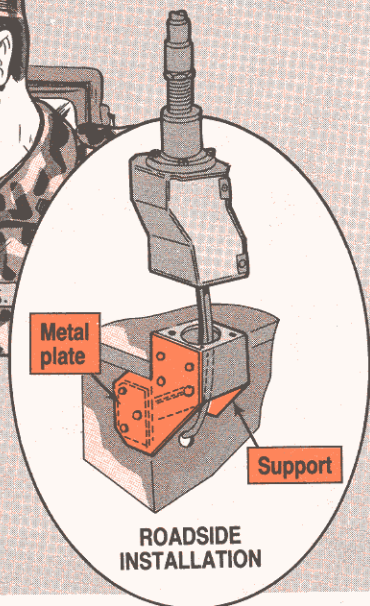
Mount Support Needed



It cracks under pressure when the antenna is tied down.

The solution is an antenna support. You need support, NSN 5985-01-312-3028, and metal plate, NSN 9535-01-302-0068.

The antenna support works for either roadside or curbside installation.



Drum Security

The AN/UXC-7 lightweight digital facsimile is used to transmit both classified and unclassified info. But the message is printed on the drum when you put carbon paper directly on the drum assembly. That means prying eyes have easy access.

Keep classified info out of the wrong hands by always making sure there's paper between the carbon sheet and the drum surface.

If you accidentally print a classified message on the drum, check with your security folks on how to send it to support for cleaning.



Strike It Rich

Generally when you spot fuel in the engine crankcase, you think of a leaky diaphragm in the fuel pump. But that's not necessarily the case with small 1/2- to 6-HP military standard engines.

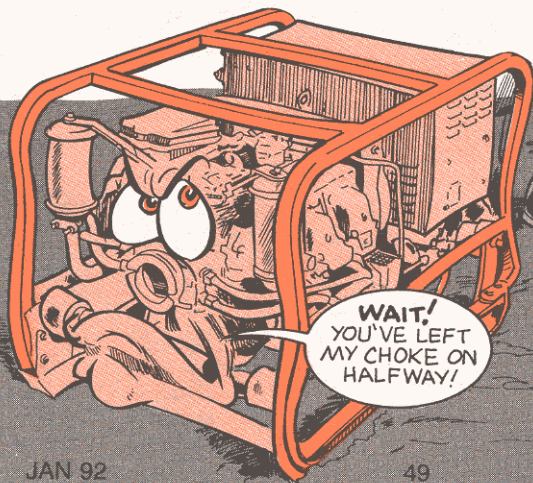
A lot of operators forget and leave the choke on halfway. Even though the engine sounds fine, it runs rich. That means a lot of unburned fuel ends up in the crankcase.

So, the operator notices fuel in the oil during routine PMCS and reports it. A good mechanic suspects the fuel pump. But before you replace the pump, drain and replace the oil. Start the engine and let it run for a half hour or so.

If the engine doesn't run smoothly on open choke after the engine is warmed up, adjust the carburetor. Your engine TM gives the complete instructions on how to adjust the carburetor.

After you shut down, check the oil. If you spot bubbles or smell fuel, replace the fuel pump.

If there's no smell or bubbles, the engine's good to go.



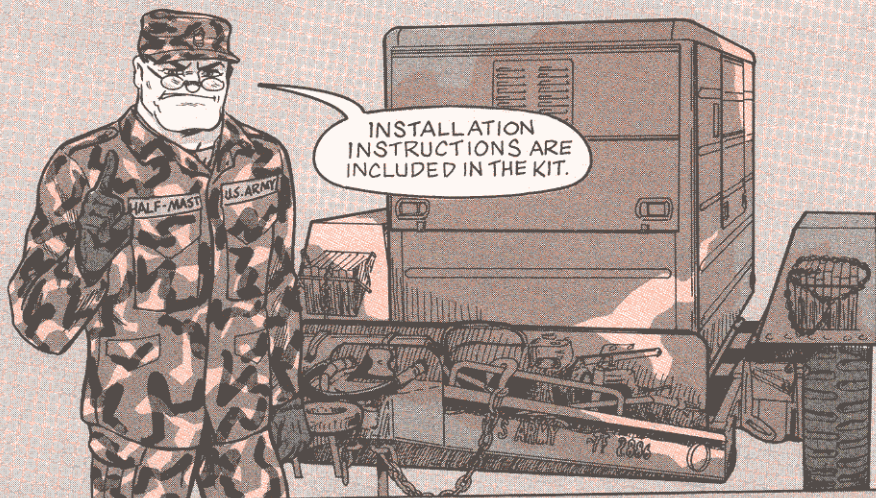
Alternate to Alternators

When the generator on the engine of your lubricating and servicing unit goes bad, you can't get another generator. It's obsolete and no longer available.

Replace bum generators with an alternator kit.

For lube and service unit, NSN 4930-00-935-4451, use alternator kit, NSN 2920-01-266-0709.

On lube and service units, NSN 4930-00-548-2766 and 4930-00-842-8315, use alternator kit, NSN 2920-01-271-6205.

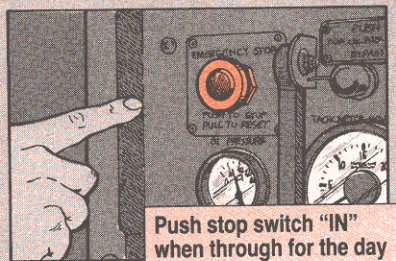


350 GPM Pumping Assembly...

Stop Switch Off?

The 350 GPM pump has no light to indicate when the emergency stop switch is ON. When the switch is pulled out—it's ON. If you shut down and leave the switch ON, the battery will run down!

So always check the emergency stop switch when you're through for the day. If it's pushed in, it's OFF!



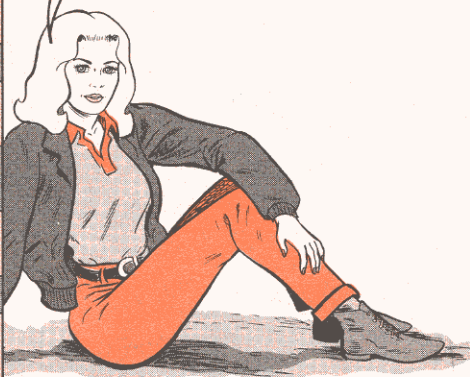
Rivet Repair

Tentage repair kit, NSN 8340-00-262-5767, doesn't have everything you need to repair the aluminum frame tent, NSN 8340-00-951-6419.

Here's what you need:

Item	NSN	Qty
Wrench, box and open end	5120-00-228-9505	1
Punch, drift	5120-00-240-8898	2
Tweezers, craftsman	5120-00-293-0149	2
Screw, hexagon head	5305-00-068-0501	50
Nut, plain, hexagon	5310-00-761-6882	50
Washer, lock	5310-00-582-5965	50
Pin, quick release	5340-01-237-7685	10

USE
APPENDIX A
OF CTA 50-970 AS
THE AUTHORITY TO ADD
THESE ITEMS TO BRING YOUR
TENTAGE REPAIR KIT
UP TO SPEED.



Latrine Screen Scene



There is no manual covering the latrine screen, but the components are available.

Here are the items that make up the screen:

Qty	Item	NSN 8340-00-
1	latrine screen	237-8749
16	16-in wood tent pins	261-9750
1	7-ft ridge pole	188-8393
2	9-ft ridge poles	188-8394
7	7-ft tent poles	188-8407

Rustproofing

Pays Off



Immersion heaters tend to rust during storage.

Here's how to rustproof them before you store them:

- Wipe away any grease or moisture.
- Scrape off loose paint with a wire brush.
- Use touch-up paint on exposed areas. Paint only the parts listed in your heater's technical manual—either TM 10-4500-200-13 or TM 5-4540-202-12&P. Get a 5-gal can of primer with NSN 8010-00-161-5718 and a gallon of olive drab paint with NSN 8010-00-297-0585.
- Use solvent, NSN 6850-00-664-5685, to clean the heater body, hanger, hanger screws, and the outside of the fuel tank. After the solvent dries, apply corrosion preventive compound. Get a gallon of compound with NSN 8030-00-251-5048.

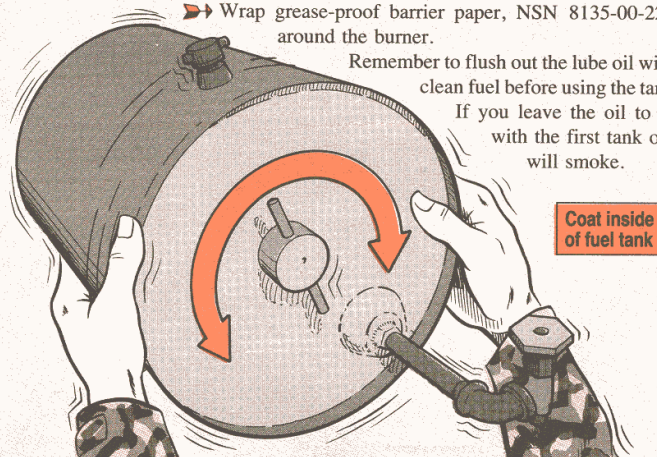
➤ Coat the inside of the fuel tank with lubricating oil, NSN 9150-00-111-3199. That NSN brings a 5-gal can. Pour about 8 ounces of oil into the empty tank. Cap the tank and gently shake to spread the oil evenly around. Drain the excess oil.

➤ Use lube oil on the smoke pipe.

➤ Wrap grease-proof barrier paper, NSN 8135-00-224-8885, around the burner.

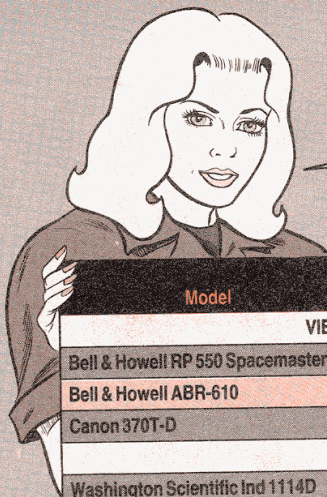
Remember to flush out the lube oil with a little clean fuel before using the tank again.

If you leave the oil to burn off with the first tank of fuel, it will smoke.



Microfiche

Reader Supplies



USE THIS LIST TO
ORDER LAMPS AND PUBS
FOR YOUR MICROFICHE
READERS.

Model	NSN 6730-	Manual DGSC-6730-	Lamp NSN 6240-
VIEWERS/PRINTERS			
Bell & Howell RP 550 Spacemaster	00-116-1620	7	00-409-8295
Bell & Howell ABR-610	00-116-1620	13	00-409-8295
Canon 370T-D	00-116-1620	16	00-409-8295
VIEWERS			
Washington Scientific Ind 1114D	00-116-1618	3	00-449-6003
Micro Design 1200	00-116-1618	6	00-409-8295
Micro Design 990	00-116-1618	9	01-084-3571
Eye Communication System Inc COM4000	00-116-1618	26	01-270-5998
MPF Co 4601-01FPG	00-116-1618	29	01-289-2805*
Topper Micrographics FNT 14	00-116-1618	20	01-200-0797
Bell & Howell Commuter Model**	01-080-7932	None	00-389-4822
Bell & Howell Commuter Model with Battery Pack (Discontinued)	01-080-7933	None	00-389-4822
Bell & Howell Commuter Model 1379 (Overseas use only)	01-055-5066	23	00-389-4822
Micron XL-10	01-080-1188	28	01-270-5998
Micron 700	01-080-1188	12	01-115-3067
Micron 750	01-080-1188	12	01-115-3067
Topper Micrographics COM 75X	01-080-1188	19	PN 80204 DJT
Northwest Microfilm Inc 14	00-116-1618	10	PN 55426 5542
Opticon 24-48	00-116-1618	14	PN 80204 EWJ

Use these NSNs to get toner and paper for your viewer/printer.

Model	Toner NSN	Paper NSN
Bell & Howell RP 550 Spacemaster & ABR-610	6850-01-011-4937 (1-qt bottle)	7530-01-009-5861 (11-in wide roll)
Canon 370T-D	6850-01-135-3125 (six 1-qt bottles)	6750-01-135-5599 (8½ x 11-in sheets) (1000 sheets per box)

CTA 50-909 is your authorization to order viewers or viewer/printers.

Get the TMs by writing to . . .

Commander
DGSC
ATTN: DGSC-SDA
Richmond, VA 23297-5000

*Lamp, NSN 6240-01-289-2805, is not on the AMDF. Order it on DD Form 1348-6 using RIC S9G.

**Local purchase item. If not obtainable through local purchase, order from S9G on DD Form 1348-6.



Overshoes Give

THE GREEN VINYL OVERSHOES (GVO) YOU WEAR TO PROTECT YOUR FEET FROM MUD AND WATER ALSO PROTECT YOUR FEET FROM NBC THREATS. CHECK THESE ADDED ADVANTAGES OVER THE CHEMICAL PROTECTIVE FOOTWEAR COVER.

- ✓ Better protection
- ✓ More durable
- ✓ Better fit
- ✓ Easier to put on and take off
- ✓ Less likely to snag on brush and

such

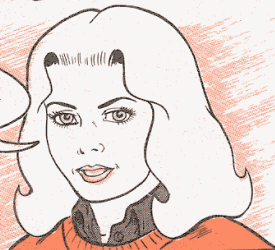
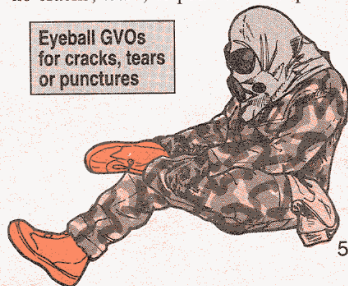
But there are a few things you need to remember if you wear GVOs for NBC protection:

✓ You can't use the same GVOs for foul weather protection that you use for NBC protection. The NBC GVOs must be kept in like-new condition if they're to be effective. Get a second pair for bad weather.

✓ GVOs provide at least 12 hours of protection after NBC contamination. You can wear them up to 24 hours, but with slightly less protection.

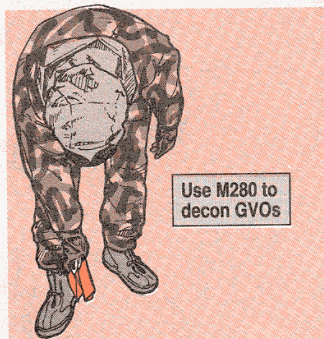
✓ GVOs can be worn up to 14 days and still provide protection during NBC attack... as long as they have no cracks, tears, or punctures. Inspect

Eyeball GVOs for cracks, tears or punctures



them daily for problems. If you find any, replace the GVOs as soon as possible. But keep wearing the old ones until you get replacements. Damaged GVOs still provide some protection.

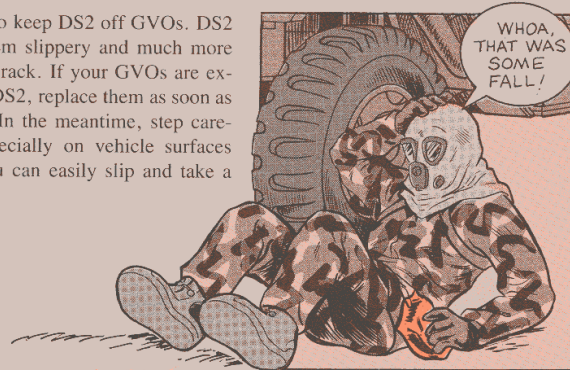
✓ Use the M280 individual equipment decon kit to decon GVOs. But



even then you may not be able to decon them completely. Have the GVOs checked with a Chemical Agent Monitor, M8A1 alarm, or M9 detector paper before you take off your MOPP gear. If they're still contaminated, decon them as best you can before you take off your MOPP gear.

NBC Protection

✓ Try to keep DS2 off GVOs. DS2 makes them slippery and much more likely to crack. If your GVOs are exposed to DS2, replace them as soon as possible. In the meantime, step carefully, especially on vehicle surfaces where you can easily slip and take a long fall.



GVO NSNs

YOUR NBC NCO CAN ORDER GVOs WITH THESE NSNs.

CHEMICAL BOOT LACES COME WITH NSN 8335-01-107-6998

Size	NSN 8430-01-
3	048-6305
4	048-6306
5	049-0878
6	049-0879
7	049-0880
8	049-0881
9	049-0882
10	049-0883
11	049-0884
12	049-0885
13	049-0886
14	049-0887

Optical Insert Care

A soldier who can't see well enough to tell friend from foe will not last long on the battlefield. And that's the fix the guys with bad eyes will be in if you NBC NCOs don't keep your eye on these M17 optical insert requirements.

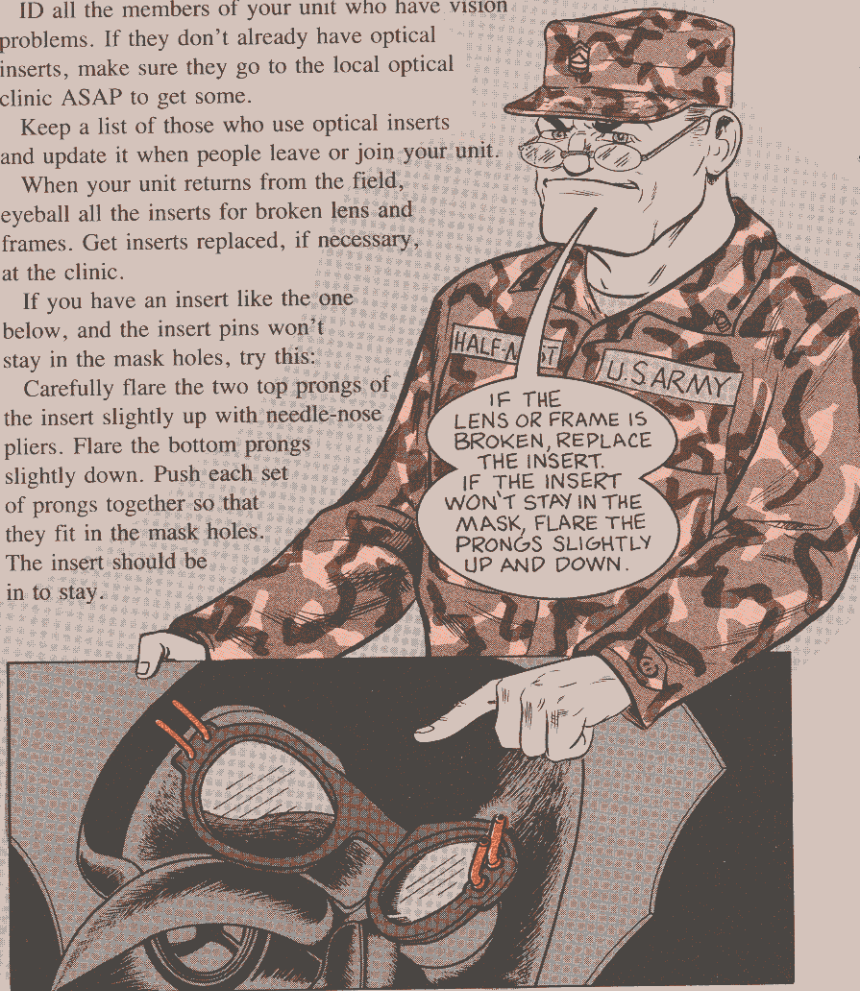
ID all the members of your unit who have vision problems. If they don't already have optical inserts, make sure they go to the local optical clinic ASAP to get some.

Keep a list of those who use optical inserts and update it when people leave or join your unit.

When your unit returns from the field, eyeball all the inserts for broken lens and frames. Get inserts replaced, if necessary, at the clinic.

If you have an insert like the one below, and the insert pins won't stay in the mask holes, try this:

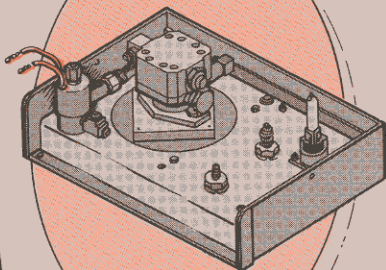
Carefully flare the two top prongs of the insert slightly up with needle-nose pliers. Flare the bottom prongs slightly down. Push each set of prongs together so that they fit in the mask holes. The insert should be in to stay.



Parts Smarts



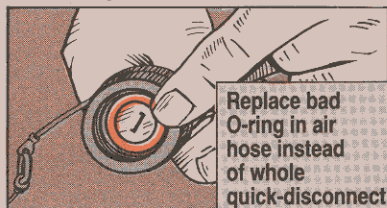
Solenoid wires too short?



Fabricate new ones with these parts:

Part	NSN
Terminal	5940-00-283-5280
Splice	5940-00-186-2877
Sleeve, insulated	5970-00-954-1622
Wire, electrical	6145-00-161-1609

If the O-rings go bad in the quick-disconnects for the air compressor hoses, there will be a bad seal and the air compressor won't shut off. Instead of ordering new quick-disconnects, order new O-rings, NSN 5330-00-702-7217.



The fog oil hose is too heavy. Its weight causes it to kink and cut off oil to the generator. You can order an elbow to support the hose with NSN 4730-00-023-5163.

Wiring Help

If you're having trouble understanding the wiring diagrams in TM 3-1040-279-12&P, help is available in a pamphlet, "System Explanation by Wire Schematic." If you need a copy, write Half-Mast.



Supply Excellence Awards

Here are the winners and runners-up of the FY91 Army Chief of Staff supply excellence competition:

ACTIVE ARMY TO&E UNITS

Company

Winner--536th Maint Co (DS), USARPAC, Schofield Barracks, HI

Runner-Up--2d Maint Co (TMDE), USAMC, Waegwan, Korea

Battalion

Winner--307th Sig Bn, USAISC, Waegwan, Korea

Runner-Up--25th S&T Bn, USARPAC, Schofield Barracks, HI

ACTIVE ARMY TDA ORGANIZATIONS

Company

Winner--Electronic Proving Ground, USAMC, Ft Huachuca, AZ

Runner-Up--HQ, Korean Svc Corps, Eighth Army, Seoul, Korea

Battalion

Winner--10th Area Spt Gp, USARPAC, Torii Station, Okinawa

Runner-Up--701st MP Bn, TRADOC, Ft McClellan, AL

ARMY RESERVE TO&E UNITS

Company

Winner--HHC, 172d Spt Gp, Fifth US Army, Broken Arrow, OK

Runner-Up--HHC, 332d Civ Affairs Gp, USARPAC, Ft DeRussy, HI

Battalion

Winner--3d Bn, 75th FA, Fifth US Army, Springfield, MO

Runner-Up--478th Eng Bn (CBT) (CORPS), Second US Army, Ft Thomas, KY

ARMY NATIONAL GUARD TO&E UNITS

Company

Winner--3622d Maint Co, PAARNG, Lancaster, PA

Runner-Up--696th Maint Co, NCARNG, Kingston, NC

Battalion

Winner--4th Bn, 178th FA, SCARNG, Georgetown, SC

Runner-Up--3d Bn (CHAP) 200th ADA, NMARNG, Belen, NM

TDA Company

Winner--East ARNG Avn Tng Site, PAARNG, Ft Indiantown Gap, PA

Runner-Up--HQ, WV STARC (-), WVARNG, Charleston, WV

CUCV, HMMWV Hose Clamp

The fuel injector fuel return hose clamp you need for your truck is NSN 4730-00-150-6118. It replaces NSN 4730-01-163-7194. Make a note until Item 2 in Fig 9 of TM 9-2320-280-20P; and Item 12 in Fig 16 and Item 2 in Fig 8 of TM 9-2320-289-20P are updated.

M901A1 ITV Lens Adapters

Here are the NSNs you need to get the tank periscope lens adapters shown on Page 5-158.1 of TM 9-2350-259-20:

NSN 6650-01-343-4169--night sight lens adapter

NSN 6650-01-343-4170--day sight lens adapter

These adapters have connectors that let you secure them to the launcher assembly so they don't get lost as easily. Make a note of these NSNs until the M901A1 ITV parts manual is updated.

Fire Extinguisher Pin, Chain

Use P/N 35654 to get the pull pin and chain assembly for 5-lb fire extinguisher, NSN 4210-00-270-4512. Order the assembly on DD Form 1348-6 by part number using CAGE 99539 from RIC S9C.

T158 Track Pad Kit Info

To get the 2-pad, 2-nut track pad kit for T158 track for M1-series tanks, use NSN 2530-01-295-3112. Fig 239 of TM 9-2350-264-24P-1 and Fig 234-1 of TM 9-2350-255-24P-1 both lead you to the NSN for the end connector kit, which is not what you need to replace worn-out pads. Make a note until your parts manuals are updated.

Aircraft Battery Box NSN

Order the battery box for Ni-Cad battery, BB-433/A, NSN 6140-01-046-1116, with NSN 6140-01-220-9344. Order the battery box cover with NSN 6140-01-221-9420.

RL-31 Cross Brace

The brace assembly is no longer available for the RL-31, RL-31B or RL-31C reel units. When the old cross brace breaks, check the can point for one. No luck? Order an RL-31E cross brace assembly, NSN 3950-00-127-1051, and frame assembly, NSN 3895-00-127-1040 to put the old components on.

M3 Bolt Locating Plate NSN

Armors can now order the M3/M3A1 submachine gun locating plate with NSN 1005-00-535-1195. The locating plate is shown between Items 1 and 2 in Fig C2 in TM 9-1005-229-12 (Nov 69).

Ambulance Decal NSN

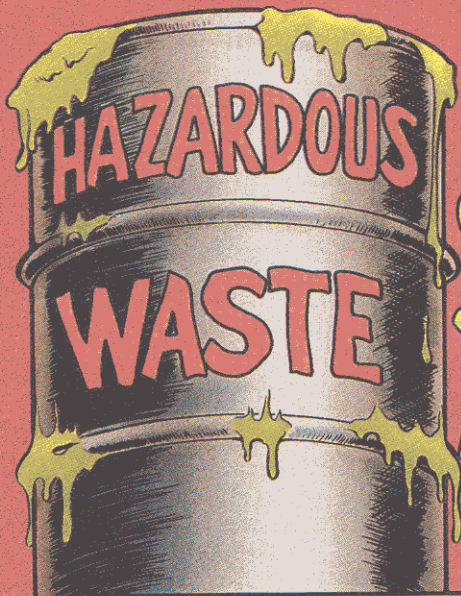
NSN 7690-00-138-5788 gets the M996 and M997 ambulance's caduceus decal. The NSN in the -20P TM is wrong.

Stock Funding HOTLINE

Managing your unit's stock fund dollars will soon be a way of life. Major assemblies will no longer be "free-issue" to field commanders. If you have questions on setting up the new Stock Funding of Depot Level Repairable (SFDLR) program in your unit, call the Customer Assistance Center on 1-800-343-4994.

Distribution: To be distributed in accordance with DA Form 12-34-C-R, for TB-43-Series

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