

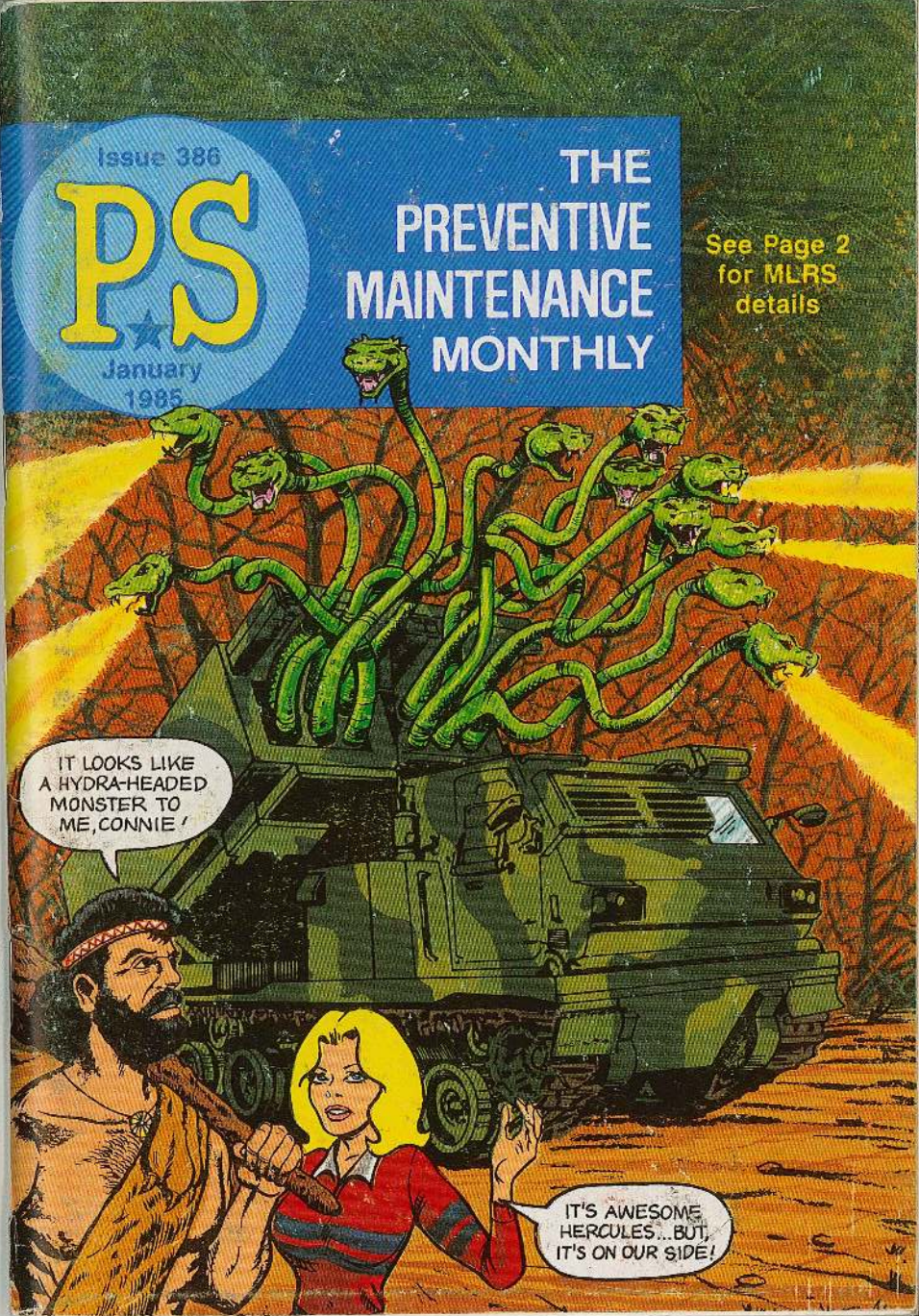
Issue 386

PS

January
1985

THE PREVENTIVE MAINTENANCE MONTHLY

See Page 2
for MLRS
details



IT LOOKS LIKE
A HYDRA-HEADED
MONSTER TO
ME, CONNIE!

IT'S AWESOME,
HERCULES...BUT,
IT'S ON OUR SIDE!



Published by the Department of the Army for the information of all soldiers assigned to combat and combat support units, and all soldiers with organizational maintenance and supply duties.
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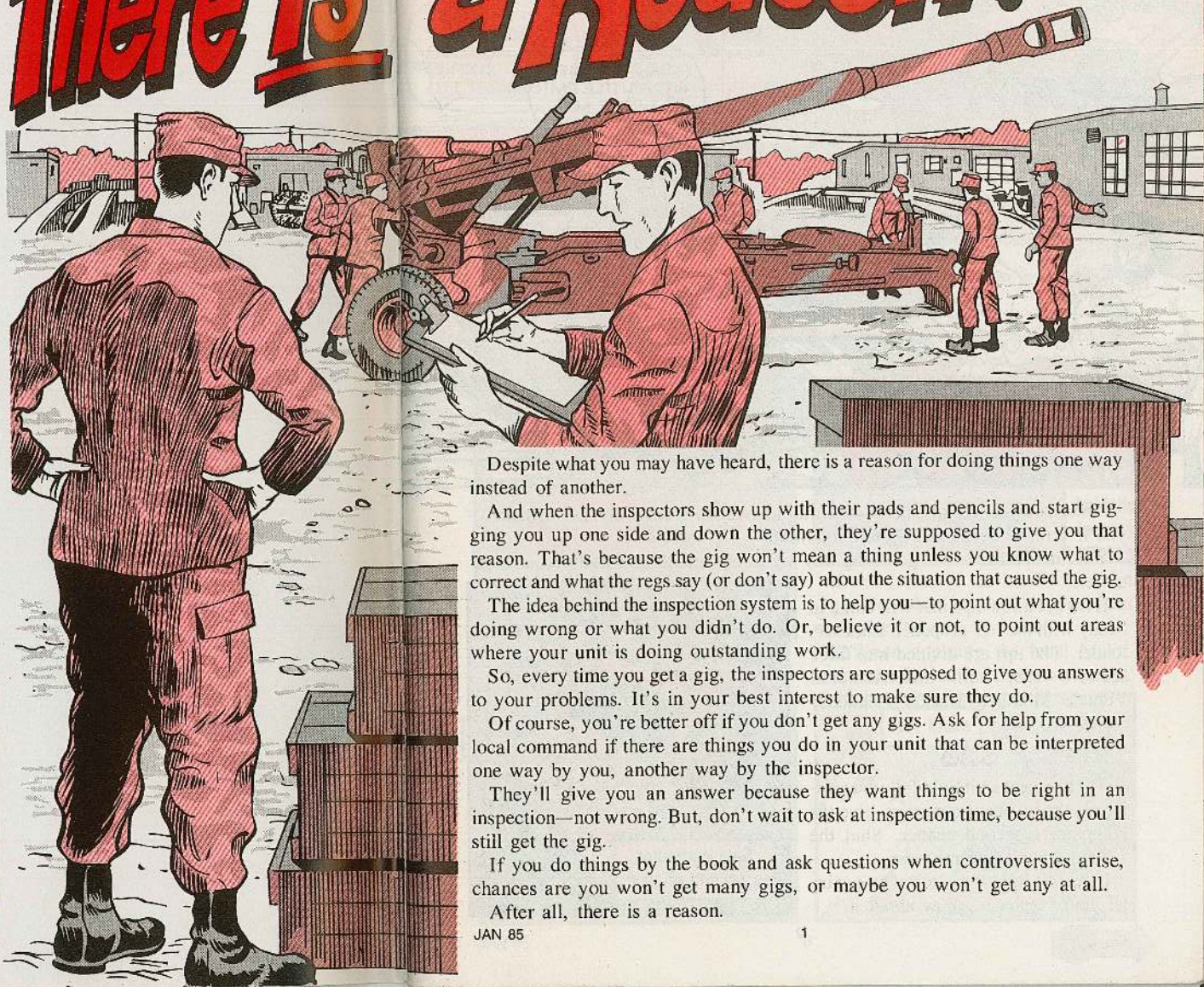
PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

MSG Half-Mast
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For Everything (Including Gigs)...

There is a Reason!



Despite what you may have heard, there is a reason for doing things one way instead of another.

And when the inspectors show up with their pads and pencils and start giging you up one side and down the other, they're supposed to give you that reason. That's because the gig won't mean a thing unless you know what to correct and what the regs say (or don't say) about the situation that caused the gig.

The idea behind the inspection system is to help you—to point out what you're doing wrong or what you didn't do. Or, believe it or not, to point out areas where your unit is doing outstanding work.

So, every time you get a gig, the inspectors are supposed to give you answers to your problems. It's in your best interest to make sure they do.

Of course, you're better off if you don't get any gigs. Ask for help from your local command if there are things you do in your unit that can be interpreted one way by you, another way by the inspector.

They'll give you an answer because they want things to be right in an inspection—not wrong. But, don't wait to ask at inspection time, because you'll still get the gig.

If you do things by the book and ask questions when controversies arise, chances are you won't get many gigs, or maybe you won't get any at all.

After all, there is a reason.

IT'S MLRS TIME!

NO SWEAT—IT'LL JUST TAKE A MINUTE TO MOVE THIS CAMOUFLAGE NET!

MAKE SURE THERE'S NOTHING PILED ON TOP BEFORE YOU LIFT THE CAB!

YEAH...CONNIE, AND A LITTLE PM WILL KEEP ME THAT WAY!

CONNIE, I DON'T UNDERSTAND THIS BEAST!

YOU WILL, BIG GUY, THE MLRS IS THE HOTTEST THING IN THE ARMY!

Now that you've got the new Multiple Launch Rocket System (MLRS), you'll want to keep it in tip-top condition.

Your maintenance will go a long way in making sure those rockets reach their targets.

Here are a few tips that will come in handy with the self-propelled launcher-loader. The tips are divided into three sections—cab, hull, and Armored Vehicle Mounted Rocket Launcher (AVMRL).

CAB

☑ If you get a bit light failure warning on the on-board computer, give the computer a second chance. Shut the system down, then repower.

If the bit light does come on again, let your mechanic know about it.

Give computer a second chance

☑ Before you raise the cab:

- ① Remove anything you may have piled on top, such as camouflage nets.
- ② Open both cab doors and lock 'em.

Lock the door

Lock ballistic louvers

③ Set brake. If the handle is down when the cab is lowered, it'll get bent or broken.

④ When applying the hand brake, make sure the transmission is in neutral.

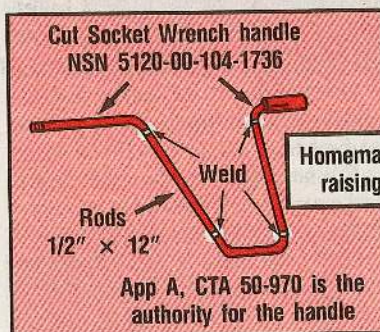
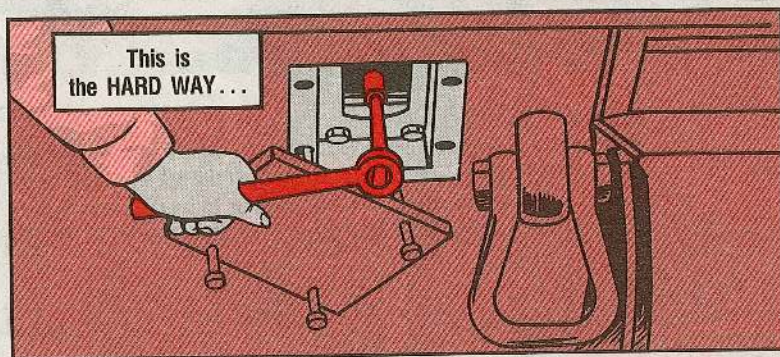
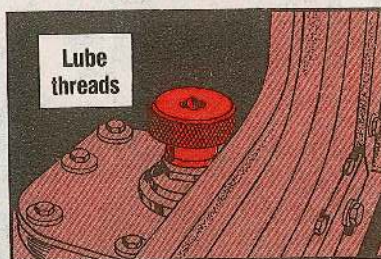
Radios secure?

Set brake

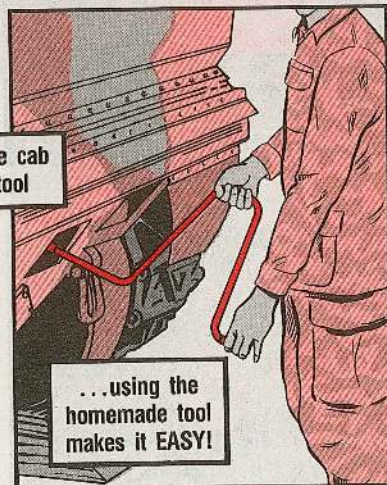
☑ There's a pawl in the mechanism to keep the parking brake from engaging if the transmission is in gear, but strong-arm tactics can break the brake mounting bolts.

☑ Cab lock-down bolts can bind. Keep the threads clean...don't cross-thread them...and put a little oil on them from time to time.

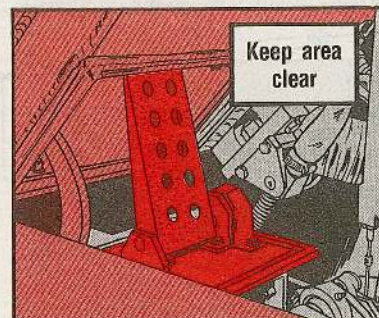
☑ Raising the cab with the tools provided (ratchet and extension) causes the cab to jerk and bounce a lot. Because of the close clearances, you are likely



to scrape your knuckles. Make the job easier for you and the lifting jack by using a little ingenuity. This homemade tool saves your knuckles and reduces or minimizes the jerks and bounces.



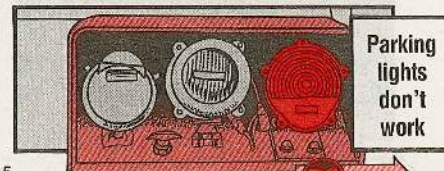
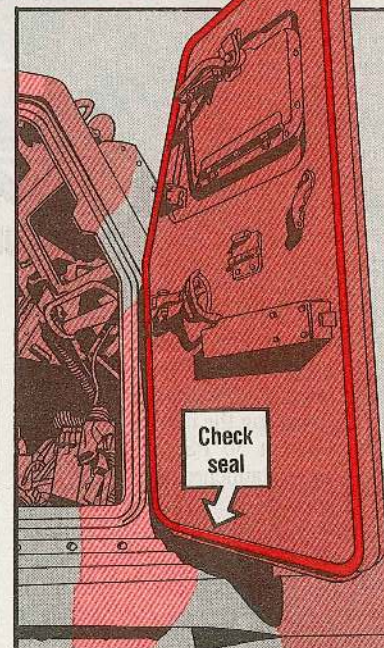
☑ Keep loose items away from the accelerator and brake pedals when lowering the cab. Anything that gets in the way will be crushed and the control linkage can be damaged.

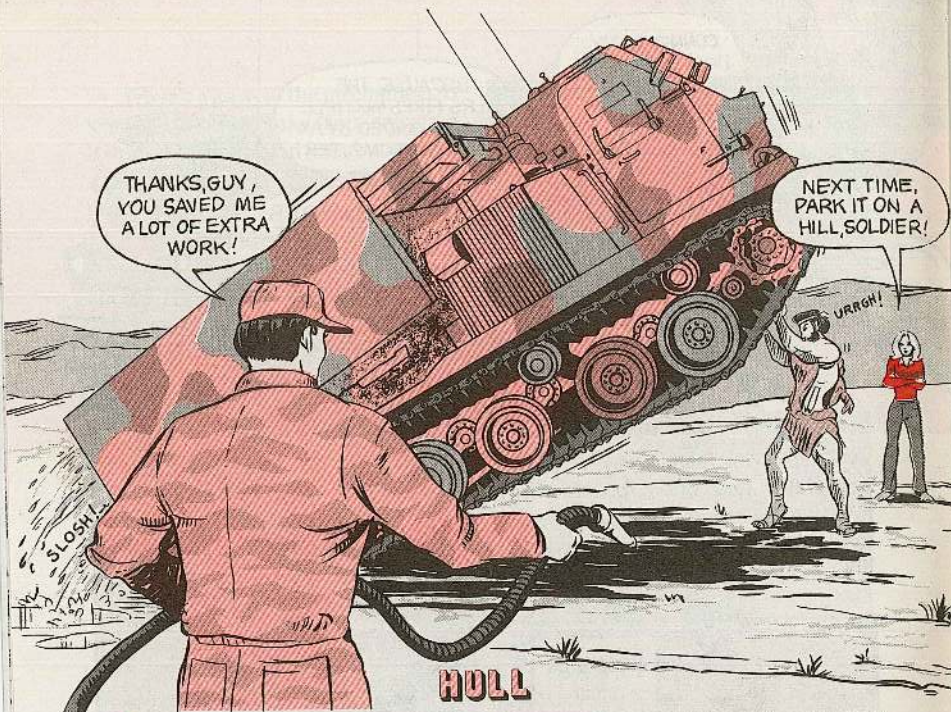


☑ The cab is pressurized during firing. If the door seals aren't good enough to insure pressurization, rocket exhaust gas can enter the cab when firing.

Doors may need latch adjustments now and then. Check the rubber seals. When they get dry or brittle, replace 'em.

☑ The front parking lights **do not** work. They weren't wired up during manufacture.



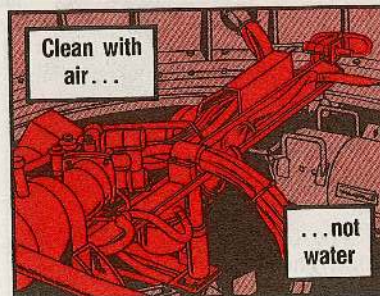


✓ Washing the vehicle requires patience. Don't get any water on the electronic unit in the hull. Don't use high-pressure water on anything other than the track components.

For cleaning the rest of the vehicle, use water at 50 PSI or less. When cleaning the launcher, elevate the front of the vehicle (park on a slope) so the water drains to the rear and out drain holes in the launcher. When cleaning the engine compartment, elevate the rear of the vehicle so the water drains to the front.

✓ Dust, dirt and mud will build up inside the base area and cause the launcher drive system to overheat. Keep the area clean with low pressure air (under 30 PSI).

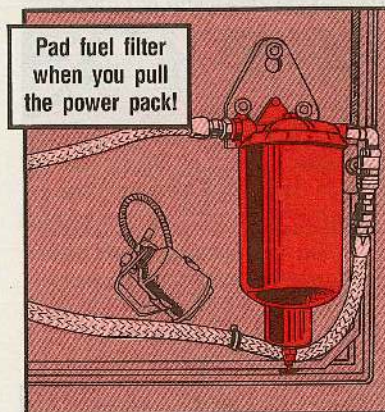
Break up the mud with a stick or rod.



✓ Keep the vacuum break valve on the fuel filler neck clean. Use solvent to clean it. If it clogs, the fuel filter clog light will flash.



✓ When pulling the powerpack, don't put the fuel filter on top of the radiator without padding. You don't need a dented, holey radiator.



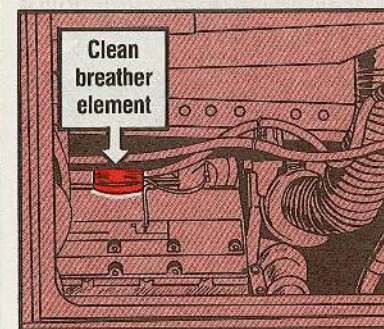
✓ Powerpack removal and installation are pretty simple if you've got the sling rigged right. Rig according to Pages 6-56 and 6-57 of TM 9-1450-646-20-4. Set up your lifting equipment so you can guide the pack straight into



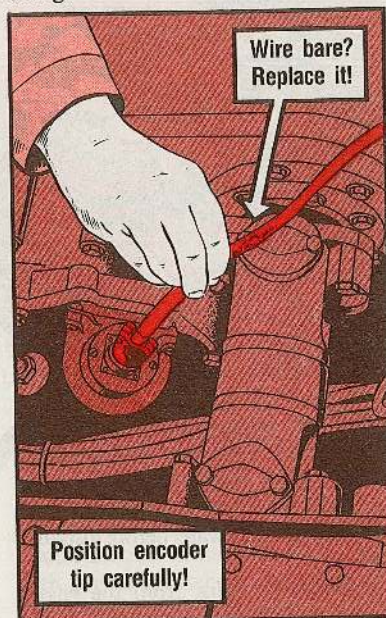
or out of the hull. Make sure the vehicle and the lifting equipment are on level ground, as near level in relation to each other as possible.

✓ When replacing the inner roadwheel seals, don't touch the seal surfaces. They'll leak. Handle the seals by the edges only. If you touch a seal, wash it in warm soapy water before installing it.

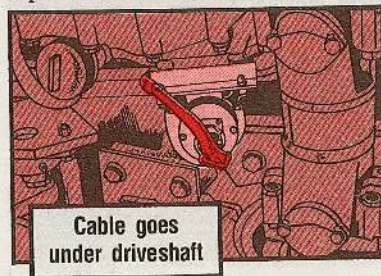
✓ When oil drips from the engine valve cover breather, it's time to clean the element. Clean it in solvent and re-install it.



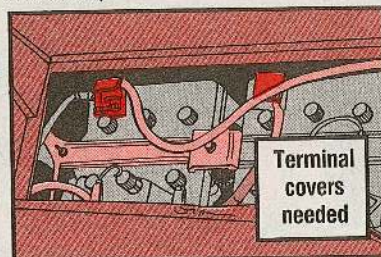
✓ The encoder drive tip (part of the position determining system) must be placed carefully in the final drive or it'll get chewed up. You have to do this by feel, because you can't see what you're doing.



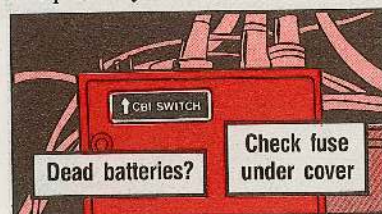
✓ The power cable for the encoder, W80, needs to be rerouted so it won't wear out against the driveshaft. Run it under the encoder instead of over the top.



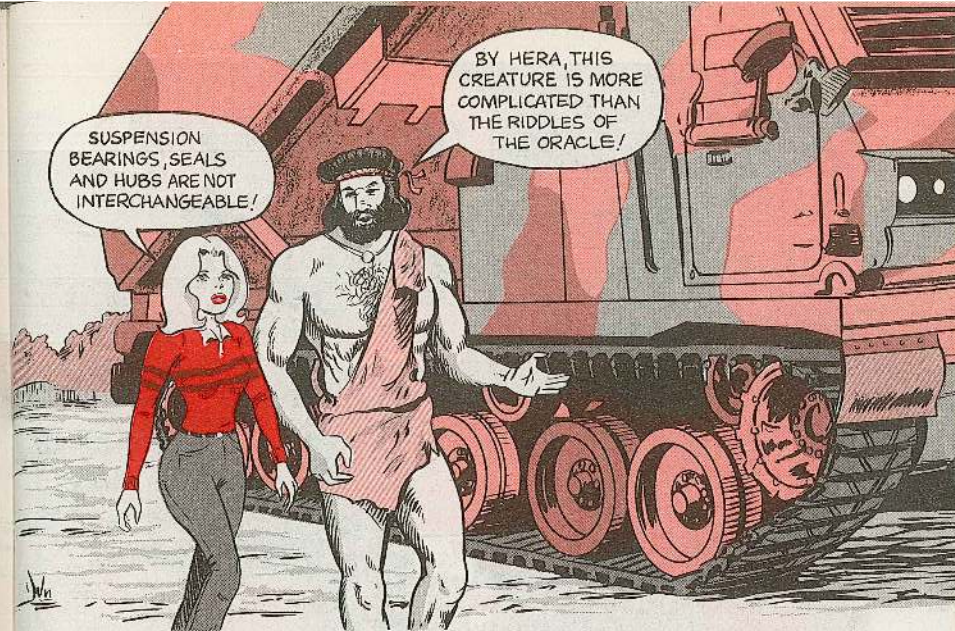
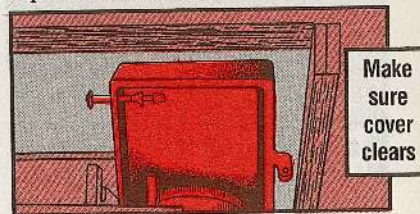
✓ If your engine battery box has a rubber sheet over the batteries, and the battery terminal connectors also have rubber boots covering them, remove the rubber sheet. It's not required any more. (There are two boxes, one with four batteries for the cab/engine and another with six batteries for the launcher.)



✓ If you have trouble with lots of dead batteries in the launcher, check the 400-amp fuse in the box under the cab. It's probably burned out.



✓ If the fuel filler cap cover won't open with the launcher stowed, have your DS grind off the edge of the fuel cap cover until the cover clears. Seal and repaint as necessary.

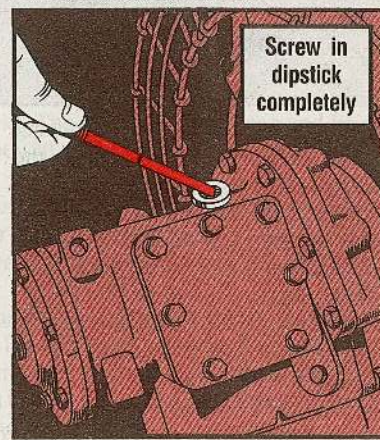
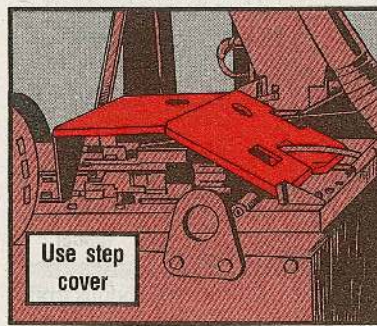


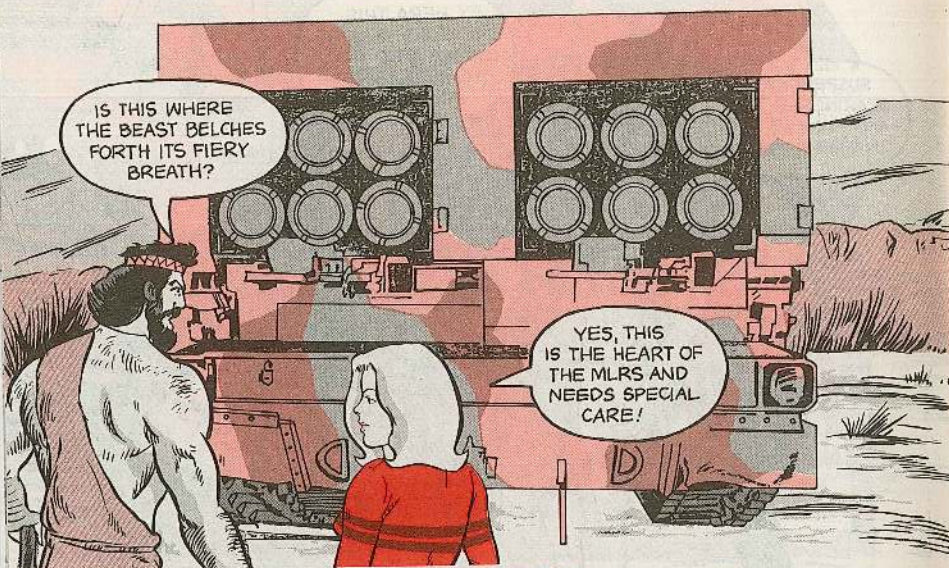
✓ Bearings, seals and hubs for the roadwheels, compensating idler wheel and both the single and dual support roller wheels **are not** interchangeable. Make sure you're using the right parts for the right components.

✓ The step cover over the transmission linkages is made of light metal. So keep track of all mounting hardware when you remove the cover...and put it all back. If you don't use all the hardware, especially the washers, the

mounting tangs will soon break off and the step cover could tilt and damage the shift, steering and throttle linkage.

✓ When you check the oil level in the fan tower gearbox, make sure you screw the dipstick in all the way. You'll get a false reading if you don't. You could add too much oil.





LAUNCHER

☑ Check the elevation drive shaft U-joints. If they don't have grease fittings, remove the plugs and install fittings. Add the lube fittings to your list of points to grease annually.

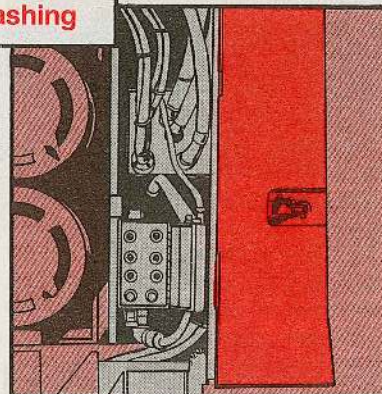
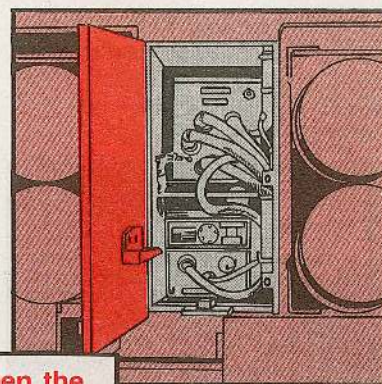
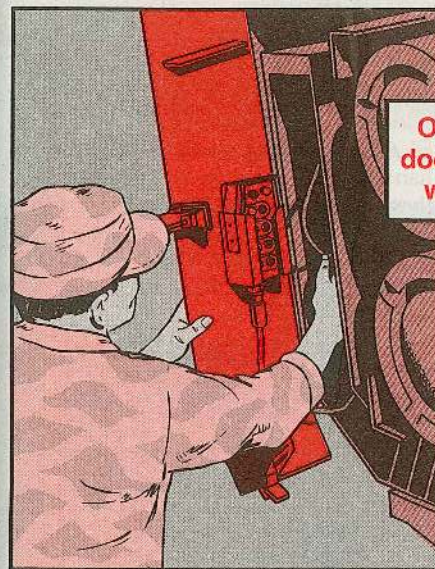


☑ The launch pod/container latching handle safety chain can hang up on the fender and rip up the fender when the module is elevated and slewed. Make sure the chain is secured.

☑ Don't shut down the system until the launcher has completely "relaxed" after stowing. Wait 30 seconds after the stow prompt light comes on before turning off system power. That will let the pressure off in the hydraulic system. Otherwise, you'll put tremendous strain on the launcher drive system, which could cause damage.



☑ Be even more careful with wash water near the electronics units in the launcher than you are around the rest of the vehicle. Elevate the module to 200 mils and open the three rear doors. If you don't open the doors, water will collect in the electronic units stored behind those doors.



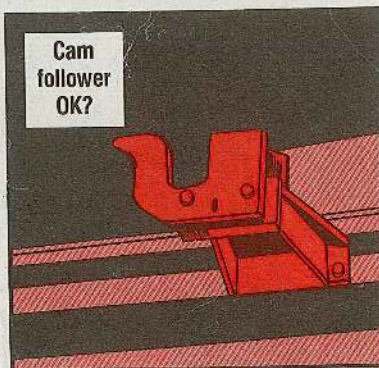
☑ Don't mix up oil and lubricating fluid. The engine, transmission and final drives use the same type of oil, OE/HDO-30 or OEA as called for by weather conditions.

The elevation actuators and elevation angle drive use MIL-L-2015 Grade 75W, NSN 9150-01-035-5391. The hoist gear box uses synthetic lube, MSC-1915, NSN 9150-01-163-1213. The azimuth gear box uses special lube SHC 634, NSN 9150-01-149-9166.

☑ If the module fails to stow and lock or if the stabilization reference package fails to align during start-up, have your DS check out the down limit switches.

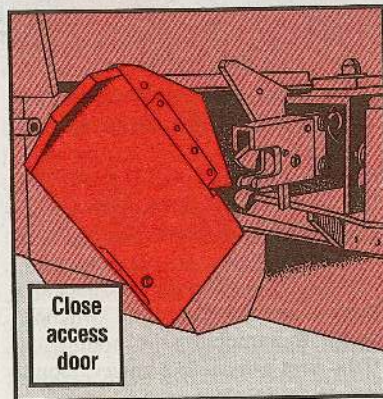
☑ Be careful when handling the jury strut used to immobilize the module for repair. The sharp clips that hold the bar to the strut can cut like knives. Don't operate the fire control system when the struts are in place.

✓ When the module is elevated, don't run the loader boom in and out. The boom can break the cam follower. That means lots of lost time while DS replaces the cam follower.

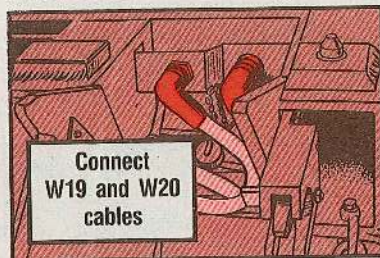


✓ Before booming in, check the boom-in limit switch connector and cable. Make sure it's in place and secure. The connector can be broken if it's not tight.

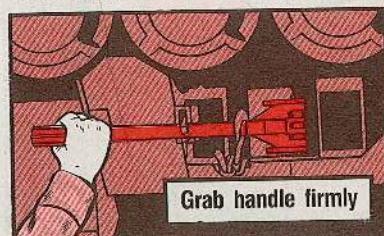
✓ When reloading from a resupply vehicle, make sure the umbilical cable access door is closed. It'll get bent if the module is elevated too high.



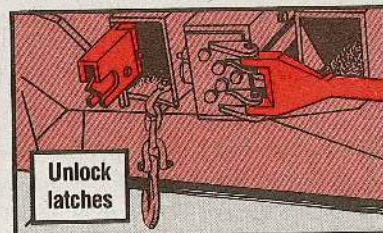
✓ After loading the LP/C, make sure the W19 and W20 umbilical cables are connected to the LP/C. Otherwise, you won't be able to launch any rockets.



✓ Get a good grasp on the LP/C latch handles before locking or unlocking them. There's very little pressure for about the first two inches of travel. Then there's a lot of pressure on the handles and they kick like mules if you let them go.



✓ The LP/C latches must be unlocked before lifting the LP/C. Otherwise, you'll damage the boom assembly or the cable will break.

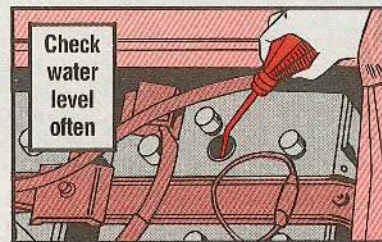


✓ Make sure all electrical cable and hydraulic hose hook-ups are made right and tight. You don't need broken pins or leaks.

✓ There's a boot available for the short/no-voltage tester (SNVT) to protect it from damage. Order NSN 5930-00-892-9026 directly from US Army MICOM, ATTN: AMSMI-SNLPM, Redstone Arsenal, AL 35898-5230.

✓ Battery power is vital to the system. Because of the large use of battery power, check the battery water level often. Boil-out and evaporation will cause a lot of water loss.

✓ If possible, run the vehicle engine at high (1,000-1,500) RPM when using the launcher drive system or the booms and hoists. The LDS uses so much power that, unless conditions dictate otherwise, the engine should be running.



Good PM Keeps You Bridging

BOY! THIS
SURE IS A
SMOOTH
OPERATION!

A damaged PTO shaft or an unlubed pump drive shaft U-joint keeps your M48A5 or M60A1 armored vehicle launched bridge out of the bridging game.

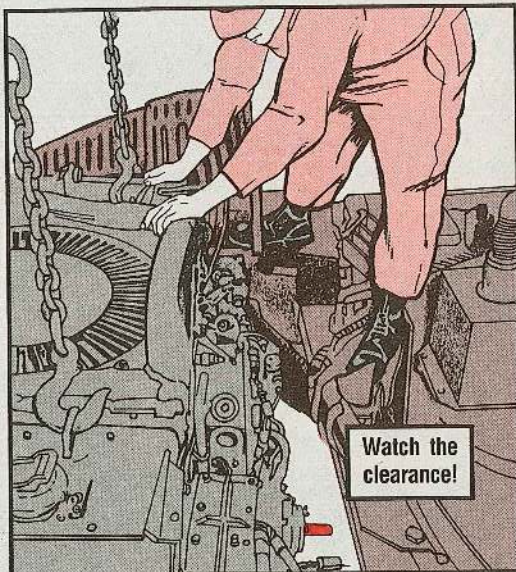
PTO Shaft

Installing the power pack in an M48A5 or M60A1 AVLB chassis calls for a steady hand and a sharp eye.

There's no spare room between the PTO shaft on the front of the pack and the hole it goes thru in the hull.

If the pack swings a little bit to either side, the shaft gets bent. That means your AVLB goes to DSU to get the PTO replaced.

Take it slow and easy as you position the pack. Keep a close eye on the PTO clearance. Use a tanker's bar to keep the pack steady and guide the shaft into the hole.



Watch the
clearance!

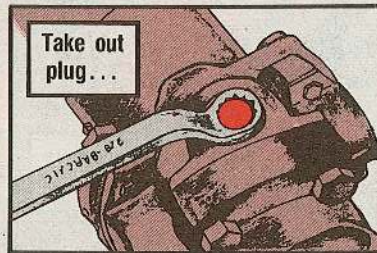
U-Joints

Unlubed PTO shaft U-joints can fail when you try to launch or recover the bridge.

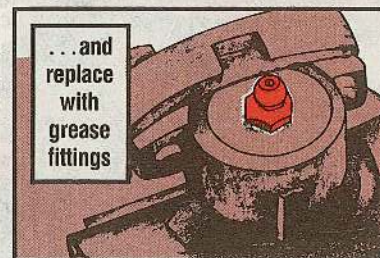
Any time you pull the pack, give the grease fittings a shot of GAA.

If your U-joints have plugs, remove the plugs and install grease fittings. Use

Take out
plug...

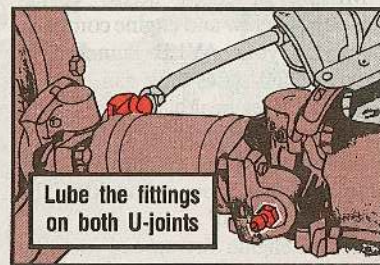


...and
replace
with
grease
fittings



Lube both U-joints. Just lubing one won't cut it. Use the starter to turn the shaft so you can get to the fittings.

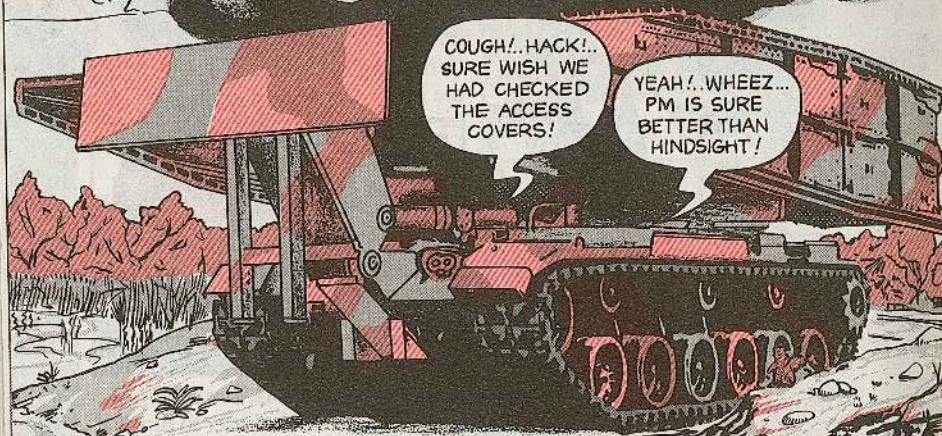
Lube the fittings
on both U-joints



Wipe off the extra grease when you finish. Leave the fittings installed. There's plenty of clearance between the fittings and the cover.

fittings, NSN 4730-00-050-4208, from the No. 1 Common shop set.

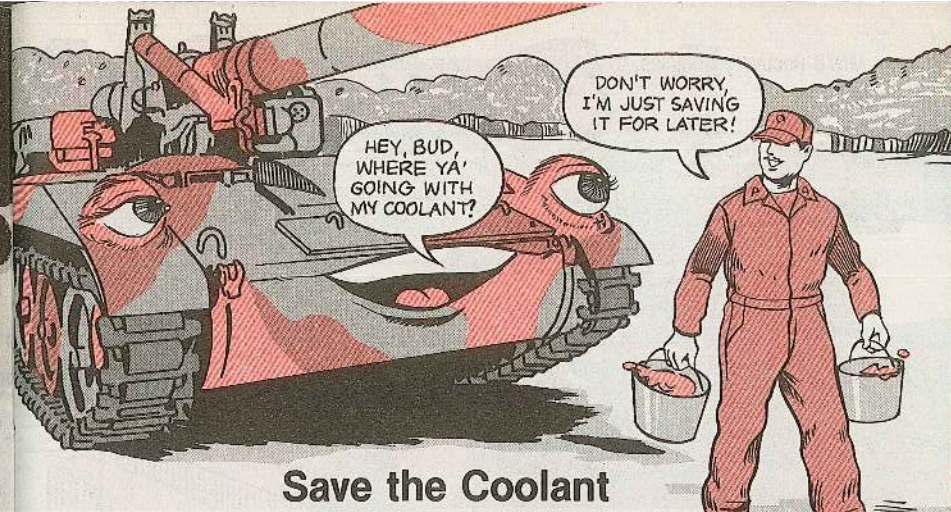
Keep Fire and Gases Out!



Missing or loose access covers between the crew and engine compartments on your AVLB launcher or M48A5/M60-series tank can be hazardous to your health.

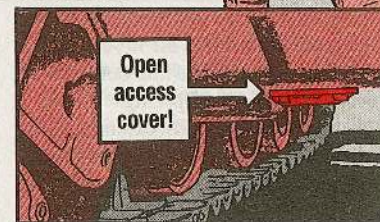
- ✖ Loose or missing covers can:
- ✖ Let exhaust gases get into the crew compartment. Carbon monoxide in the gases can kill you!
- ✖ Let an engine fire spread into the crew compartment before you have a chance to get out.

Make sure the covers are there and tight. Replace any missing or damaged gaskets, too.



Save the Coolant

On your M110A2 SP howitzer or M578 recovery vehicle, don't just let the coolant go to waste when you have to drain your radiators. Save it and reuse it. Before refilling the system next time, replace the old drain cocks with new drain cocks, NSN 4820-00-845-1096. Get a couple of pieces of ordinary 1/4-inch ID hose, about four-to-six inches long, and attach them to the spouts. Then you can drain coolant out the access covers under the radiators and catch it in a clean container. Of course, if the coolant has outlived its usefulness, replace it. TB 750-651 has the details.



Cargo Carrier Wiring Fix

Got electrical problems on your M548/M548A1 cargo carrier? There are errors in the battery connections and electrical lead routing shown in TM 9-2350-247-20 and -20P. The batteries are shown in the wrong position and some wiring is routed and connected wrong. For the right way, see Para 2-7e of TB 43-0001-39-2 (Jul 84).



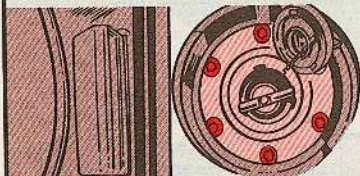
Drain-Out Not Needed



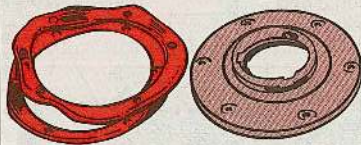
You don't need to drain your vehicle's hydraulic reservoir if you have to replace any hydraulic line between the reservoir and the slip ring.

Save yourself from catching 140 gallons of oil in a very large container by sealing off the reservoir bottom like so:

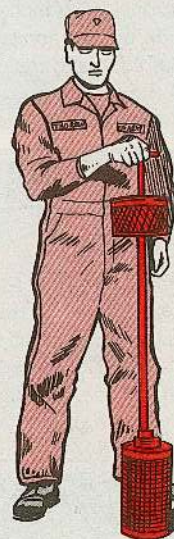
1. Remove the six screws and washers mounting the filler neck



flange to the reservoir. Remove the flange and two gaskets. Be careful with the gaskets or you'll have to replace them. If you need them, use NSN 5330-00-991-8401.

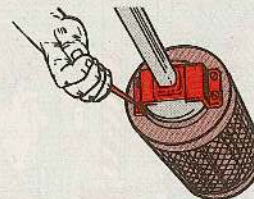


2. Open the reservoir filler cap and turn the T-handle several turns counterclockwise.

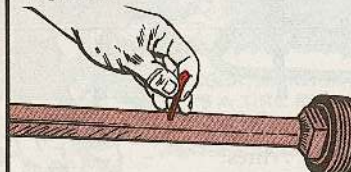


Then pull the T-handle straight up and the whole strainer/filter assembly will come with it.

3. Get a screwdriver and remove the screws and bracket to detach the filter from the rest of the assembly.



4. Take out the cotter pin that keeps the inner and outer handles together.



Pull up on the inner handle until the whole thing is as long as it was before you took the filter off.

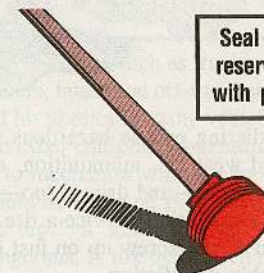


5. Keep it at that length by putting the cotter pin back to lock the inner and outer handles together.

Instead of the cotter pin, some handles have a spring-loaded stop. Work the stop by pressing the button and sliding the handles to the maximum lock position.

6. Lower the entire assembly back into the reservoir and turn the handle clockwise to screw the threaded plug into the threads at the bottom of the reservoir.

Seal off reservoir with plug



The plug keeps the hydraulic oil in the reservoir so oil lines between the reservoir and the hydraulic pump can be changed with as little leakage as possible.

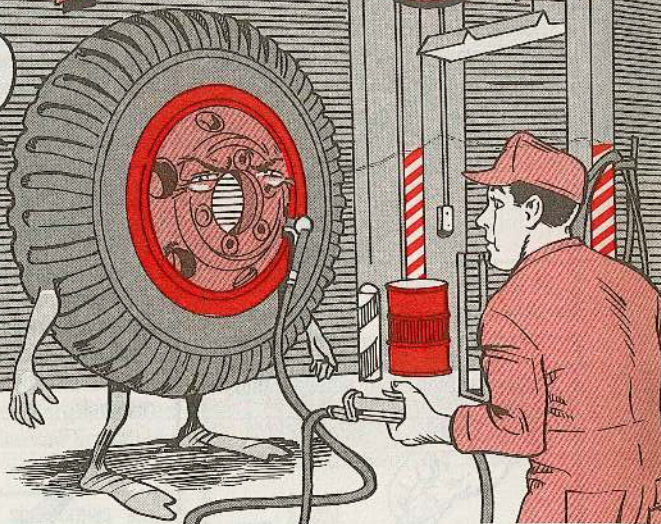
After you've installed the new line, reverse these procedures, put the filter back on the outer handle and screw the assembly back into place.

Now that's a lot easier than moving 140 gallons of hydraulic oil twice, right?

Training Required for Safety!

Tire & Rim Servicing...

GO
AHEAD...
MAKE MY
DAY!



Soldiering can be hazardous duty even in peacetime—especially if you're around weapons, ammunition, explosives or... tires!

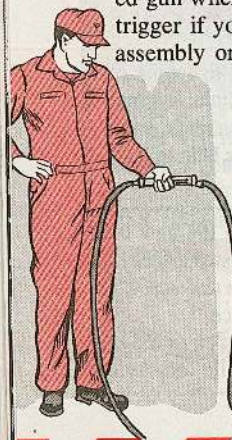
Mechanics—and drivers too—are handling what amounts to a loaded, cocked gun when they service a tire on a multi-piece rim. This "gun" has a hair trigger if you screw up on just one tiny detail during deflation, disassembly, assembly or inflation.

You can be killed!

A fully inflated truck/bus tire rams tons of pressure against the rim lock ring. If the lock ring blows off, it travels with tremendous force... and sometimes over a surprising distance. If it misses you, it can take out a bystander in the "area of trajectory."

That's why one of the first rules in your training is:

Always inflate the tire in a safety cage!



Warning!

Never—but NEVER—go by this instruction found in some TM's:

"...if safety cage is not available, ... lay tire flat, with ring down, and reach through wheel to apply air chuck."

True, if the lock ring blows off, it will go down—but the tire and rim will go up, like a shot out of a cannon. You may be lucky and survive with serious injuries.



There's even danger in tires on single piece rims. A tire explosion can blast you with the force of a bomb!

OSHA Standard Applies

Servicing tires—especially those on multi-piece rims—is no job for the untrained... or for the foolhardy. Your first mistake can be your last!

If you service certain types of tires and rims, you must be trained under Standard 1910.177 of the US Department of Labor's Occupational Safety

and Health Administration (OSHA). This covers "servicing multi-piece and single piece rim wheels... used on



large vehicles such as trucks, tractors, trailers, buses and off-road machines."

This applies to many vehicle drivers and other equipment operators as well as to mechanics who disassemble and assemble tires and rims. Simply "airing up" a soft tire can be very dangerous. A tire that's been rolling on only 80 percent of its specified pressure can be a fuzed bomb. The lock ring may have shifted and can blow off when air is added to the tire!

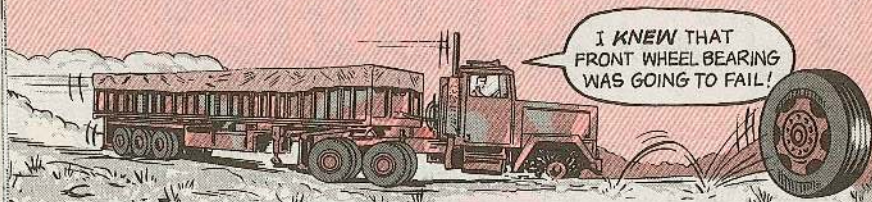
Training for mechanics includes use of two charts:

- Safety Precautions for Mounting and Demounting Tube-Type Truck/Bus Tires

- Multi-Piece Rim Wheel Matching Chart

The OSHA standard tells how to get these charts.

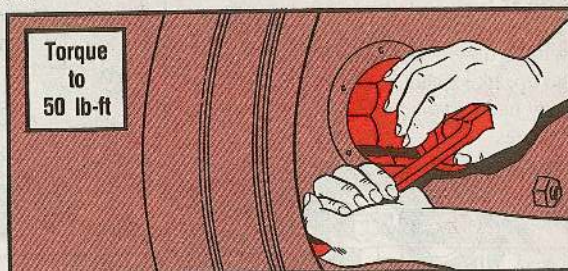
Seat of the Problem



Failure of front wheel bearings can come from faulty seating of the bearings and bearing cups. This, in turn, can lead to hub and axle damage...and loss of a wheel...and an accident!

Adjust bearings as spelled out on Page 10-44 of TM 9-2320-273-20. But add a couple of important details:

- ✓ Rotate the wheel back and forth while torquing the adjusting nut to 50 lb-ft. This is how you make sure the bearings and cups are not cocked off in the hub.
- ✓ Back off the adjusting nut 1/16 to 1/4 turn. Then install the rest of the hardware like the TM says.



Cat Walk Safety

Protect your truck's air hoses and electric cables—and, maybe your health—by extending the cat walk deck plate on your M915 or M916 truck.

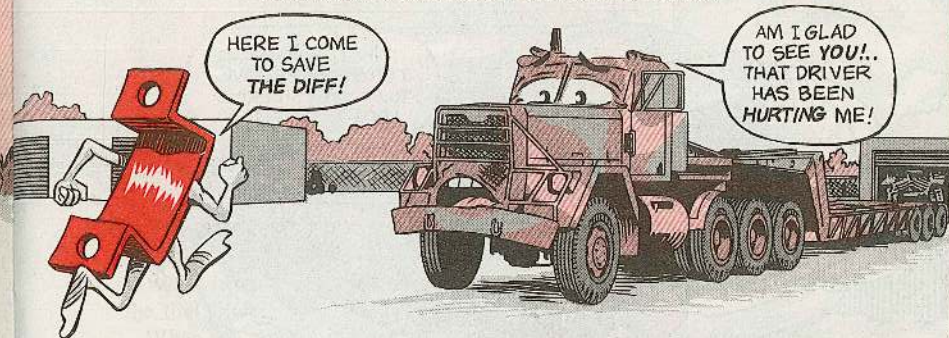


Order the deck plate with PN MC 207-20069, FSCM 34623. The cost is about \$140.

For installation, you need four J-bolts, FSCM 34623, PN MA25-21241; four washers, NSN 5310-01-119-1024; and four nuts, NSN 5310-01-119-3668. For non-NSN items, OCONUS units use RIC of S9C; CONUS units write "Request local purchase" in the Remarks block of the DD Form 1348-6.

The plate is installed the same way as the plate already there.

Cover Saves Differential



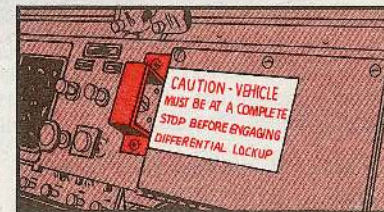
Maybe it happens accidentally...or maybe some drivers don't pay attention. But whatever the reason, differentials are still being damaged by drivers switching the inter-axle differential to LOCK while the truck's moving.

TM 9-2320-273-10 makes it clear on Page 2-11:

"Do not place switch in the LOCK position while the truck is moving or any wheel is spinning."

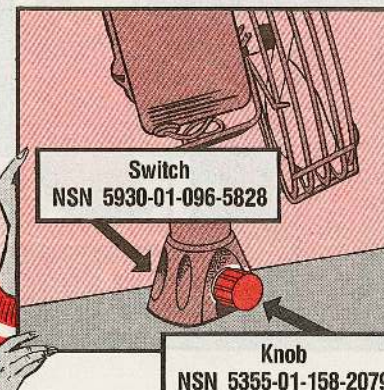
One way of driving this message home was suggested in PS 352. It involves the addition of a switch cover and a caution note.

Use 0.125-in thick metal, NSN 9515-00-846-3347, and self-tapping screws, NSN 5305-00-883-0633. Drill 1/8-in holes in the dash to mount the cover.



M915-Series Fan Fare

HERE ARE A COUPLE OF PARTS YOU MAY NEED TO KEEP THE DEFROSTER FANS, NSN 2540-01-104-8948, WORKING IN YOUR M915-SERIES TRUCK!

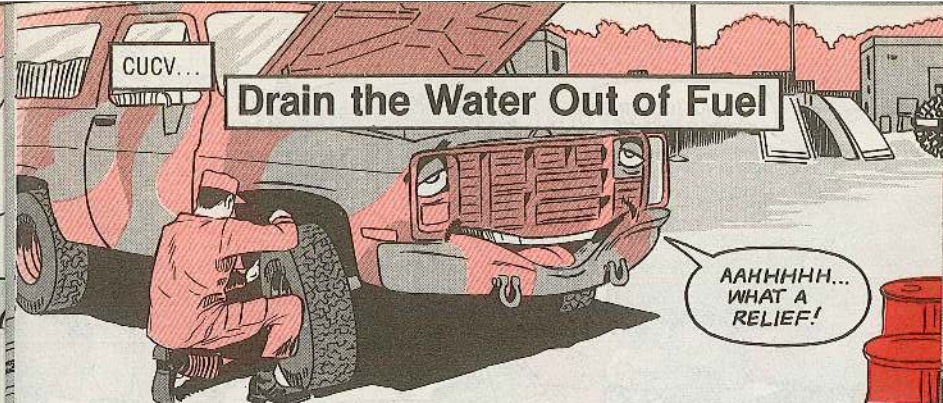
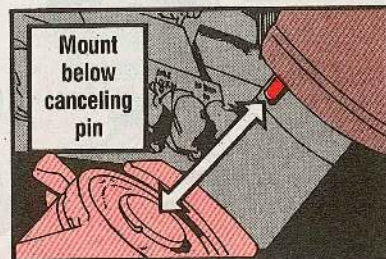
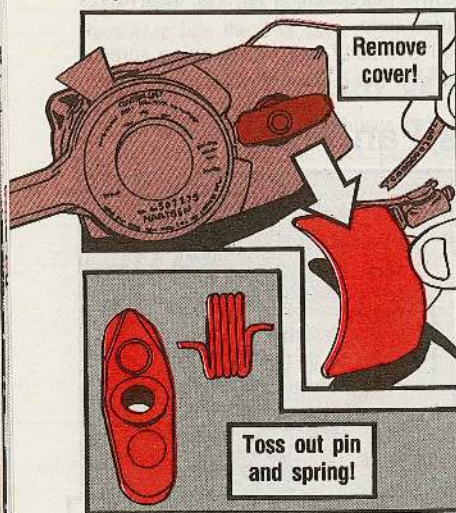


Turn for the Better



Head off possible steering wheel lockup on your M939-series 5-ton truck.

Get your mechanic to take the pin and spring out of the turn signal self-cancelling assembly—Item 2 on Page 5-139 of TM 9-2320-272-20-1. The mech may need to lower the control on the steering column to lift the cover. The control will no longer be self-cancelling, but it'll be safer. If you need a new control, don't order the self-cancelling control, NSN 6220-01-089-3049, in TM 9-2320-272-20P. Instead, get NSN 6220-00-808-6072. It's not self-cancelling and it's a lot cheaper. It's got to be mounted below the cancelling pin—Item 3 on Page 5-139 in the -20-1 TM.



Drain the Water Out of Fuel

Water in the diesel fuel in your CUCV can damage the engine if it gets past the fuel filter.

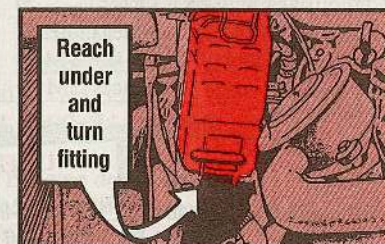
When the "Water-in-Fuel" light comes ON, it means the water trapped in the filter needs draining. If you drivers don't drain the filter, it'll fill up and water will get into the engine. Water will ruin the fuel injectors and injection pump.

Drain the filter any time the warning light comes on. You also drain the filter during your Weekly PMCS. The drain petcock is the thumbwheel with the rubber hose on the bottom of the filter.

TM 9-2320-289-10 is short on the way to drain the filter, tho.

Here's how:

- Remove the fuel tank cap. This breaks the vacuum in the sealed system to let the fuel drain.
- Get a buddy to hold a clear container under the fuel drain hose. It's the rubber hose sticking out inside the right front wheel well behind the axle by the spring shackle.
- Open the drain fitting on the bottom of the filter ½ to one turn.



- Start the engine. When your buddy sees only fuel coming out, shut down the engine. Water shows up as a clear or gray layer under the fuel.
- Close the drain—finger tight, only! Too much force will break the fitting. If you can't get the fuel shut off, call your mechanic. Don't use pliers on the fitting.
- Replace the fuel tank cap.
- Don't use the plug on top of the filter to drain water. That plug is used to bleed air from the fuel system.



Head Off Tire Rustlers!

With your command's OK, you can use stick-on "brands" to identify your tires as US Government property and discourage stealing.

The "US GOVT" labels, with buffing solution and vulcanizing fluid, come in a kit along with instructions. The label goes on the tire sidewall.

The label is yellow, so it's up to your local command to decide whether it goes on the outer or inner sidewall. Camouflage may be a factor.

Here are the kits and other material that'll be listed in the new tire TM 9-2610-200-24 when it replaces TM 9-2610-200-20.



Label government property

IF YOU ONLY NEED THE LABELS USE THESE NSN'S!

COMPLETE KIT	
Kit	Label
NSN 2640-01-	Quantity
109-4377	100
109-4378	500
108-7260	1,000
109-4379	5,000

LABELS ONLY	
NSN 2640-01-	Quantity
108-7256	100
108-7257	500
108-7258	1,000
108-7259	5,000

NSN 2640-00-242-3467 gets an 8-oz can of vulcanizing fluid, and NSN 2640-00-138-8324 gets a 16-oz can of buffer.

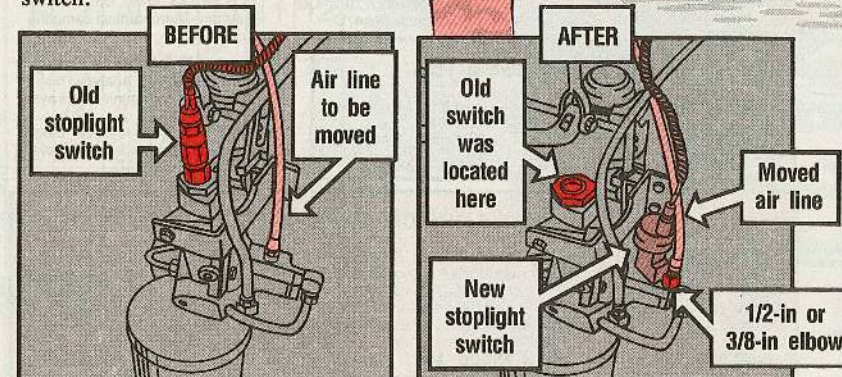
Stoplight Switch Switched

LOOK HERE... I'VE GOT A NEW STOPLIGHT SWITCH FOR YOU!

DID YOU GET A CONVERSION KIT, TOO?

So you've traced stoplight trouble to a bad switch on the brake air/hydraulic cylinder—and you're going to order a new switch, NSN 5930-00-789-6192.

Hold it! That NSN will not get you the old type switch shown in Fig 65 of TM 9-2320-209-20P. You'll get a new type switch that you can't use unless a conversion kit has been installed. In fact, the kit includes the new type switch.



Info on the conversion kit, NSN 2530-01-105-5025, is in Para 2-10b of TB 43-0001-39-8 (Jan 84) and on Page 21 of PS 375.

But add these details:

The 1/2-in elbow in the kit does not fit some deuce-and-a-halves. You may need a 3/8-in elbow, NSN 4730-00-289-0155. Check your truck before you order the kit—and order the 3/8-in elbow, if needed, at the same time.

2 1/2-Ton Truck Jack

If you're carrying a 3-ton hydraulic jack on your 2 1/2-ton truck, you've got the wrong jack. You should have an 8-ton jack, NSN 5120-00-595-8396. This is the same jack listed in BIIL's (Basic Issue Items Lists) for 5-ton trucks. TACOM Msg DRSTA-MTB 212000Z Aug 84 has the word.

Pubs

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.

Miscellaneous

SB 3-30-2 Nov Chem-bio canisters and filters
STP 5-51B12-SM Jan 85 51B, carpentry and masonry specialist
STP 5-51C12-SM Jan 85 51C, structures specialist
STP 5-81B12-SM-TG Nov 81B, technical drafting specialist

Technical Manuals

C2, TM 5-1940-277-20P Oct
Twin-jet bridge boat
TM 5-3810-300-24&P3 May
Grove Model crane, TMS-300-5
C7, TM 9-1430-655-20-4 Aug
Guided missile air defense system, AN/TSQ-73
TM 9-1440-2585-20-3 Jun Chaparral launching station, M54A2
TM 11-5805-731-14&P Aug 83
Fiber optic communications sets, AN/FAC-2A(V) and AN/FAC-2B(V)
TM 11-5820-863-13 Jul AN/FRC-170/171/173-series radio sets
C3, TM 55-1520-227-10-2 Oct
Operator's manual CH-47C

AUDIO-VISUAL STUFF

Available at battalion or post Learning Center

TV Tapes

TVT 3-6268 Chemical reconnaissance techniques
TVT 9-28 Army Oil Analysis Program—Non-aeronautical sampling procedures
TVT 9-29 Army Oil Analysis Program—A tour of the laboratory
TVT 9-30 Army Oil Analysis Program—The AOAP team
TVT 46-125 Army Oil Analysis Program—Aeronautical sampling procedures

TEC Lessons

102-113-5535-A Analyze block diagrams of communications systems of OH-58C
102-113-5538-A Analyze block diagrams of communications systems of CH-47, C&D

SMART! Messages

SMART! Msg #42—Change to Bil for M60, M48A5 and M88-series vehicles, DALO-PLR 131845Z Sep 84.
SMART! Msg #43—Elimination of MAD report, DALO-PLR 051156Z Oct 84.

Maintenance Advisories

AMCCOM MA 84-23—Detector Cell, NSN 6665-00-198-5687 (Component of M43 Chemical Agent Detector, NSN 6665-00-859-2201), AMSMC-MAR-C 251640Z Oct 84.

AMC SOU—Operational, Bradley Fighting Vehicles, M2/M3 (water barrier mod problem), AMCSF-E 231730Z Oct 84.

AMC SOU—Brake Burnishing

Procedures, M818, M52, M52A1, and M52A2 5-Ton Tactical Tractors, AMCSF-E 161200Z Oct 84.

MICOM SIL (Supply Information Letter) 3-84—Missile Materiel, AMSMI-SS Sep 84.

MICOM METL (Maintenance Engineering Technical Letter) Missile Materiel, AMSMI-SN Jul 84.

TROSCOM SOU-MES-84-11.

Technical, Test Set, Electrical (Load Bank 30 KW) Models A427, A427A and A427B, NSN 6625-00-730-4368 and NSN 6625-01-106-9373, AMSTR-MES 231300Z Oct 84.

If you need a maintenance advisory, contact your direct support unit or your local Logistics Assistance Office (LAO).

Forget Lithium Explosions

The BA-5598 battery that powers your backpack radio isn't a hand grenade. It won't explode.

It will vent—give off toxic gases—though. In rare cases, it'll vent violently. Still, the biggest danger to you is the gas, not a blast.

If you feel the battery box getting warm, hear a hissing sound or smell the pungent, nose burning odor of sulfur dioxide, leave the radio and the area. Wait 60 minutes before handling the radio again.

Above all, never test the battery with the U-410 adapter you use for the BA-4386 or any other device. That may start the battery venting.

✓ 1985 CALENDAR CHECKLIST ✓

- ☐ Command SOP up-to-date and distributed?
- ☐ Maintenance facilities up to par? Enough space provided? (DA Pam 750-1)

PULL THIS SECTION OUT FOR A READY REFERENCE!

JANUARY 1985

S	M	T	W	T	F	S
		1	2	3	4	5
		1	2	3	4	5
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27	28	29	30	31		

FEBRUARY 1985

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					32	33
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34	35	36	37	38	39	40
41	42	43	44	45	46	47
48	49	50	51	52	53	54
24	25	26	27	28		
55	56	57	58	59		

- ☐ Review DA Cir 750-84-5 for the Chief of Staff Maintenance Award.
- ☐ Encourage ideas and suggestions. (AR 672-20, Project SMART)

- ☐ Provide OJT, refresher and cross training as needed. (DA Pam 750-1)
- ☐ Put the right soldier in the right job. Match job assignment to MOS.

EMPHASIZE
A FEW GOOD
POINTS EACH
MONTH!

MARCH 1985

S	M	T	W	T	F	S
					1	2
				60	61	
3	4	5	6	7	8	9
62	63	64	65	66	67	68
10	11	12	13	14	15	16
69	70	71	72	73	74	75
17	18	19	20	21	22	23
76	77	78	79	80	81	82
24	25	26	27	28	29	30
83	84	85	86	87	88	89
31						
90						

APRIL 1985

S	M	T	W	T	F	S
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	91	92	93	94	95	96
7	8	9	10	11	12	13
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14	15	16	17	18	19	20
104	105	106	107	108	109	110
21	22	23	24	25	26	27
111	112	113	114	115	116	117
28	29	30				
118	119	120				

- ☐ SF 368's being sent in?
- ☐ Prescribed Load List (PLL) current? All authorized items on hand or on order? (AR 710-2, DA Pam 710-2-1, TM 38-L32-11)

- ☐ TM's up-to-date? Changes posted? (DA Pam 310-1)
- ☐ Allow enough time for maintenance. (DA Pam 750-1)

NEED HELP?
CALL YOUR
MAIT!

MAY 1985

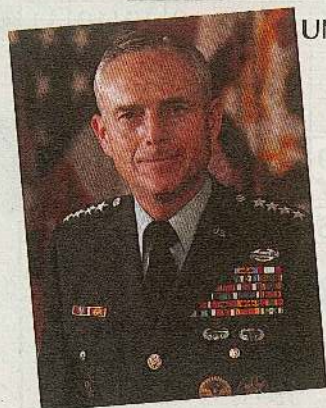
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			121	122	123	124
5	6	7	8	9	10	11
125	126	127	128	129	130	131
12	13	14	15	16	17	18
132	133	134	135	136	137	138
19	20	21	22	23	24	25
139	140	141	142	143	144	145
26	27	28	29	30	31	
146	147	148	149	150	151	

- ☐ Emphasize PM. Make sure PMCS's are carried out. (AR 750-1, DA Pam 738-750, DA Pam 738-751)
- ☐ Recognize top performers with incentive awards. (AR 672-5-1)

JUNE 1985

S	M	T	W	T	F	S
						1
						152
2	3	4	5	6	7	8
153	164	155	156	157	158	159
9	10	11	12	13	14	15
160	161	162	163	164	165	166
16	17	18	19	20	21	22
167	168	169	170	171	172	173
23	24	25	26	27	28	29
174	175	176	177	178	179	180
30						
181						

**GOOD MAINTENANCE MEANS
GETTING INVOLVED...
AT EVERY LEVEL OF COMMAND!**



UNITED STATES ARMY
THE CHIEF OF STAFF

***I don't know much about
this thing called logistics.
All I know is that I want some.***

**Anonymous General
World War I**

THE CHALLENGE:

We have come a long way since the days when entering the logistical net meant asking the supply sergeant, "Got any?" "Gonna get any?" However, even though our forces have become more capable and our equipment more sophisticated, today we are faced with the prospect of highly accelerated consumption of supplies and attrition of equipment on the battlefield.

These projections challenge our logisticians to provide support to sustain our Army under any future warfighting scenario. Not only must our logistics system be able to transport, supply, and maintain rapidly, it must operate well forward and be flexible and responsive to our tactical commanders.

THE RESPONSIBILITY:

To accomplish our missions, the nation entrusts to our care its youth and its resources. There can be no greater responsibility. As stewards of the Army's assets, we must be alert for ways to improve the efficiency, effectiveness, and safety of all our operations. This is both a leadership and a management responsibility. If we fail in this important endeavor, we will waste valuable resources we may need one day to fight and win. The very serious responsibility for maintaining what we are given is based on the hard reality that we will never have all the equipment, supplies, facilities, and funds we require. On the battlefield, we will be short because of combat losses, accidents, interruptions in

the supply system, or just insufficient resources to fill all needs. Thus, a well-trained soldier must be taught to maintain and conserve what he has — in peace and in war.

Maintaining takes on several dimensions for the soldier. It is his responsibility to assure his performance is not hindered by equipment failure. It is his commander's responsibility to provide the time, material, and training to allow him to maintain his equipment. And, it is the Army's responsibility to provide him the best "tools of the trade" that technology can offer.

THE START POINT:

Successful maintenance begins at the unit level. That is where a positive program of preventive maintenance keeps equipment operational and detects faults.

The cornerstone of good maintenance is well-trained, motivated, supervised equipment operators who know how to perform before, during, and after operational checks. Then commanders must motivate the operators to perform those checks and take appropriate corrective action when they find faults.

The chain of command must be the supervisors of an effective maintenance program — and they must be completely knowledgeable about their equipment and the maintenance system. To do so, they must be trained. The first-line supervisor is the key to good operator maintenance but supervision does not stop here. All members of the chain of command have a responsibility to be active in the field and the motor pool.

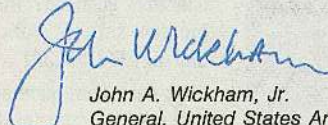
THE BOTTOM LINE:

The key to good maintaining is to change the way we think about maintenance. We have grown up, by and large, in a peacetime Army where we have separated training from maintaining. We go to the field, train for four, five, six days, and then we come back in, stand down, and we maintain.

We cannot separate training from maintaining. We cannot stand down to maintain at the National Training Center. We could not stand down in Grenada, and we cannot stand down if we are at war. We have to maintain as we go — integrating the maintenance mission into our peacetime training — and train for our wartime mission as we maintain.

We have to change our way of thinking to recognize that training and maintaining must go hand in glove. We have to exercise in the field and at the same time maintain our equipment.

This is the only way we will be able to meet the maintaining challenges before us, building on the substantial improvements already made to better support our soldiers. It will take a dedicated effort from each of us to continue this progress.


John A. Wickham, Jr.
General, United States Army
Chief of Staff

TRAINING

MAINTAINING

LEADING

CARING

JULY 1985

S	M	T	W	T	F	S
	1	2	3	4	5	6
	182	183	184	185	186	187
7	8	9	10	11	12	13
188	189	190	191	192	193	194
14	15	16	17	18	19	20
195	196	197	198	199	200	201
21	22	23	24	25	26	27
202	203	204	205	206	207	208
28	29	30	31			
209	210	211	212			

- ☐ See that safety gear is available and used. (DA Pam 385-3)
- ☐ LAO's and MAIT personnel are there to help. Take advantage. (AR 700-4, AR 750-51)

THERE'S NO SUBSTITUTE FOR BEIN' ON THE SCENE!



- ☐ Drivers and equipment operators licensed? Training program set up? (AR 600-55, FM 55-30)
- ☐ Does each item have an assigned operator/assistant operator? (DA Pam 750-1)

AUGUST 1985

S	M	T	W	T	F	S
				1	2	3
				213	214	215
4	5	6	7	8	9	10
216	217	218	219	220	221	222
11	12	13	14	15	16	17
223	224	225	226	227	228	229
18	19	20	21	22	23	24
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25	26	27	28	29	30	31
237	238	239	240	241	242	243

SEPTEMBER 1985

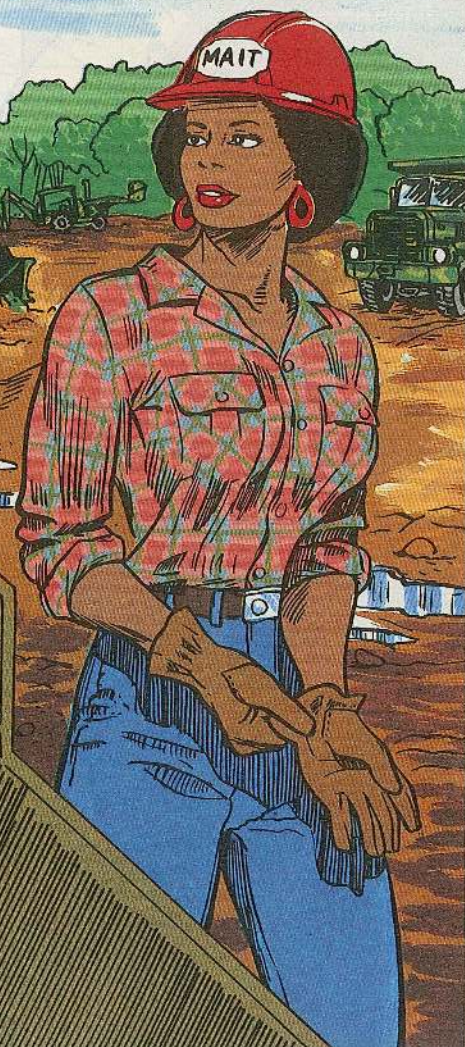
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8	9	10	11	12	13	14
251	252	253	254	255	256	257
15	16	17	18	19	20	21
258	259	260	261	262	263	264
22	23	24	25	26	27	28
265	266	267	268	269	270	271
29	30					
272	273					

- ☐ Mechanics trained on care and use of hand tools? (TM 9-243)
- ☐ All authorized tools on hand and accounted for? (AR 710-2, AR 735-5)

- ☐ Got the latest AMDF and MCRL? DA Pam 310-1 current?
- ☐ Now's the time to update your pubs account and 12-R-Series forms. (DA Pam 310-10, DA Cir 310-84-3)

OCTOBER 1985

S	M	T	W	T	F	S
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6	7	8	9	10	11	12
279	280	281	282	283	284	285
13	14	15	16	17	18	19
286	287	288	289	290	291	292
20	21	22	23	24	25	26
293	294	295	296	297	298	299
27	28	29	30	31		
300	301	302	303	304		



Maintain
Maintenance
Motivation
and
Momentum

- ☐ Make sure TMDE gets used, and calibrated on schedule. (TB 43-180)
- ☐ Equipment records complete and current? (DA Pam 738-750, DA Pam 738-751)

NOVEMBER 1985						
S	M	T	W	T	F	S
					1	2
					305	306
3	4	5	6	7	8	9
307	308	309	310	311	312	313
10	11	12	13	14	15	16
314	315	316	317	318	319	320
17	18	19	20	21	22	23
321	322	323	324	325	326	327
24	25	26	27	28	29	30
328	329	330	331	332	333	334

- ☐ Eliminate parts-hoarding. Turn in extras. (AR 710-2, DA Pam 710-2-1, TM 38-L32-11)
- ☐ Make sure AOAP sampling is done on schedule. (AR 750-22, TB 43-0210, TB 43-0106)

DECEMBER 1985						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
335	336	337	338	339	340	341
8	9	10	11	12	13	14
342	343	344	345	346	347	348
15	16	17	18	19	20	21
349	350	351	352	353	354	355
22	23	24	25	26	27	28
356	357	358	359	360	361	362
29	30	31				
363	364	365				

Vibrex Balancing Kits...

Call Headshed for Shipping Info



DS
COULDN'T
FIX IT...
NOW WHAT?

FIRST,
WE'LL CALL
AVSCOM...

...THEN
YOU'LL NEED
TO FILL OUT
AN SF368!

Got a Vibrex Balancing Kit, NSN 4920-01-040-7816, that needs repair? Of course, you'll send it first to your support folks. But if they can't do the work, they'll return the kit to your unit for shipment to a contractor. But how to do that? TM 55-4920-402-13&P doesn't say.

Don't send the Vibrex off post until you've checked with the Aviation Ground Support Equipment people at the Aviation Systems Command. Call the AGSE Weapon Systems Management Office at AUTOVON 693-1107 or commercial (314) 263-1107.

OVERSEAS
UNITS
SHOULD
WRITE TO...

Commander
AVSCOM
ATTN: AMSAV-WS
4300 Goodfellow Blvd.
St. Louis, MO 63120-1798

Those folks will tell you what you want to do.

When you do ship the Vibrex to the contractor, send a Quality Deficiency Report, SF 368, to AVSCOM, ATTN: AMSAV-QVG, at the same time.

Join the FOD Squad

HERE'S SOME MORE
POD FODDER FOR YOU!

Dear Editor,

FOD collectors are a must on any Army airfield. But sometimes those containers just add to the FOD job if they blow over or aren't nearby when you need them.

We made a FOD pod that doubles as a fuel sample storage area and fire extinguisher point.

You need to weight the drum with some concrete. NSN 5610-00-985-1800 gets a 90-lb bag that should take care of two FOD pods. It's not on the AMDF, so order it on a DD Form 1348-6. The price is \$3.10 and RIC is JGG.

Tilt the drum a bit while the concrete hardens. Then drill a few drainage holes just above the low side of the concrete. That'll keep rain water from collecting.

Reverse the push-top on the receptacle cover, NSN 7240-00-783-1044, so it has to be lifted open. That makes it easier to insert and remove things.

Paint a 5-gal military fuel can yellow and mark it "Contaminated Fuel." It goes inside the FOD pod. Used fuel samples get emptied there, then properly disposed of later.

To hold FOD junk, use an old, topless 5-gal oil can, painted black and marked "FOD." Store the can inside the drum. Even if you fill the can to overflowing, the stuff will stay safely inside the FOD pod.

NSN 4210-00-257-5343 gets a 20-lb Purple K fire extinguisher and mounting bracket for fire protection.

William H. Gibson
Simmons Army Airfield
Ft Bragg, NC

(Editor's note—Great way to keep FOD under cover.)

GREAT! WE
APPRECIATE ANY
CONTRIBUTIONS
TO THE CAUSE!

RECEPTACLE
COVER

FUEL SAMPLE
BOTTLE HOLDER
(.025-IN SHEET
METAL)

FOD
FIRE POINT

CUT-OFF
55 GAL DRUM

DRAINAGE
HOLES

FIRE
EXTINGUISHER

Homemade and Handy

Everywhere I've been stationed it's always the same...when we pull the rotor head and blades, we have to prop them up with pillows or mattresses...or whatever's available, while the rotor system is off the aircraft.

This balancing act becomes costly if the blades, head or transmission fall off the mattress.

An adjustable blade stand lets you hold the whole rotor system. Here's how we built ours.

Blade Stands

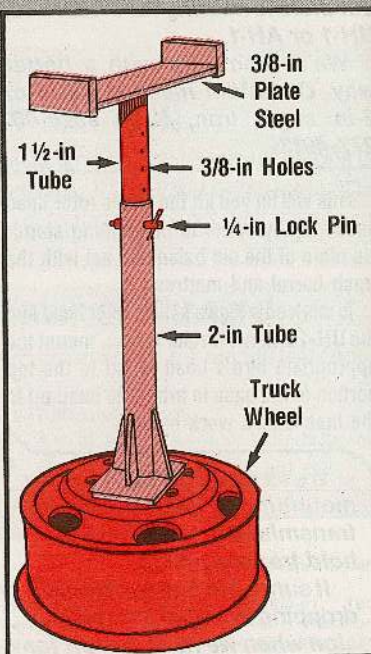
Get a 2½- or 5-ton truck wheel from the can point. Lay the wheel on its side—dish side up. Have your AVIM weld a 24-in piece of 2-in tube steel post to the center. Get a 12-in piece of 1½-in tube steel to go inside the first tube. Weld a piece of ¾-in plate steel to one end of the post. The piece should measure 4 inches by 14 inches for a Kiowa; 4 inches by 21 inches for a Huey; and 4 inches by 41 inches for a Cobra.

To the ends of the steel plate, weld a 1-in x 4-in strip of the ¾-in plate steel.

Wrap the steel plate with cushioning material (foam rubber packing material works well) to protect the blades.

Insert the smaller post into the larger one and drill a series of ¾-in holes an inch apart. That lets you adjust the blade height.

Use a ¼-in lock pin, NSN 5340-00-482-1457, to hold the post at the proper height. The lock pin isn't on the AMDF so you'll have to order using a DD 1348-6. You can use a ¼-in nut and 2½-in long bolt until your lock pin comes in.



The uprights are adjustable, so when setting up the head assembly you can get the 3-in elevation rise on the end of your blades, and you don't have to balance or adjust them when putting them back on your helo!

Rotor Head and Transmission Stands

CH-47's have head stands... but there is nothing for the OH-58, UH-1 or AH-1.

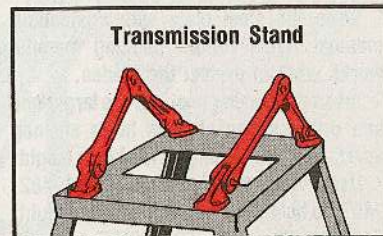
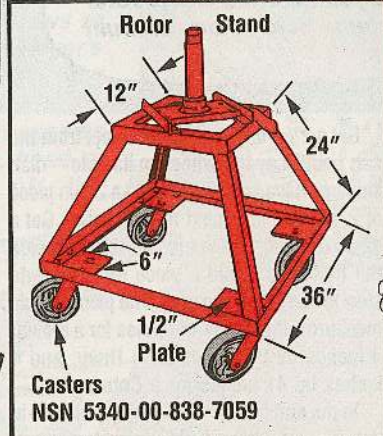
We've come up with a better way. Our AVIM made a stand of 2-in angle iron, NSN 9520-00-277-4913.

This will let you lift the whole rotor head assembly by crane to the waiting stand. No more of the old balancing act with the trash barrel and mattress.

To work on a Kiowa's main rotor head and the UH-1 and AH-1 rotor heads, mount the appropriate bird's head stand to the top portion of the base to bring the head up to the mechanic's work height.

We've modified the stand by mounting a pair of OH-58 transmission mounts to it to hold transmissions.

It sure takes the worry out of dropping the head or transmission when we have 'em off for repair!



(Editor's note—Kudos to SSG J.R. Arnold of Ft. Bragg, NC for these excellent suggestions!)

New Engine Waterwash Unit

There's a new waterwash unit, NSN 2830-01-185-6215, available to clean UH-60A, AH-1 Series, OH-58 Series and UH-1 Series engines.

It replaces the Model 299 wash unit called for in the Black Hawk engine TM, as well as the modified M3 riot control dispenser or any other items locally fabricated to wash engines.

The SC for the AVUM No. 2 shop set is being changed. AVSCOM Msg 251930Z Jun 84 has the word.

CH-47 Chinook...

Chip Detector Nut NSN

Use NSN 5310-00-934-9757 to get a new nut and NSN 5310-00-167-0833 for a washer for the CH-47 engine chip detector, NSN 4730-00-786-2992. The nut and washer don't come with new chip detectors or engines, and they're not listed in the engine parts manual.

SPH-4 Inspection Interval Changed

The bird headshed has increased inspection intervals for the SPH-4 flying helmet from 90 to 120 days.

The change will keep more helmets on-line more often.

A future revision to TM 10-8415-206-13 will show the new schedule.

AVIATION MESSAGES

Cat 1 EIR Phone:
AUTOVON 693-2066
(24 hours)

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

GEN-84-03, SOF Operational, ALQ 144 IR jammer installed on certain AH-1S (MC), AH-1T, UH-1N, EH-1H and UH-60A.

121345Z Sep 84.
OH-6A-84-07, SOF Maintenance Mandatory, One-time inspection of H-6 series helicopters for suspected defective engine power out warning control unit. 131400Z Sep 84.

UH-1-84-09, SOF Maintenance Mandatory, Daily inspection of all series UH-1 (Except C/M Models) concerning clevis of pitch-change link. 141430Z Sep 84.

MIM-AH-1-MEM-84-08 and MIM-UH-1-MEM-84-10, Faulty fuel lines

on UH-1 and AH-1 series aircraft, 192000Z Sep 84.

MIM-OV-1-84-MEM-01, TBO Extension of OV-1 Propellers PN 53051-27 and Propeller control PN 738169-1. 041620Z Sep 84.

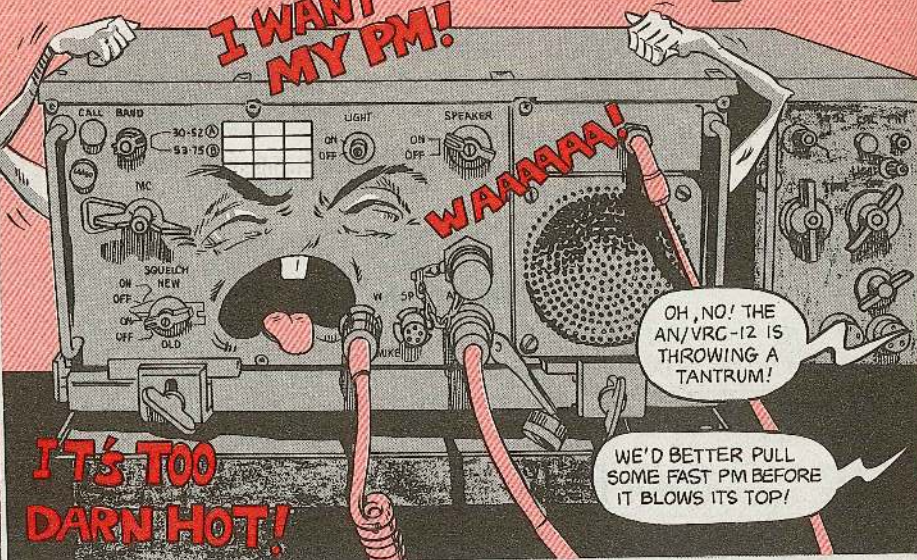
MIM-UH-60A-MEM-84-05, Black Hawk High Speed Shaft Vibration, 041600Z Sep 84.

MIM-T42-MEM-03, T-42 oil-filled propeller hubs, 201600Z Sep 84.

MIM-OV-1-84-MEM-02, Elimination of tail pipe rail seals on OV-1/RV-1, 191930Z Sep 84.

Tune-up Tips

I WANT MY PM!

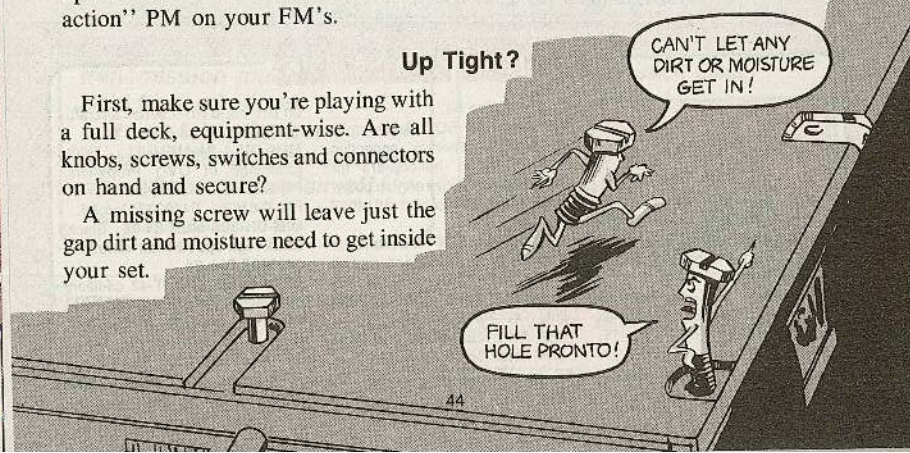


Don't get mad—get busy—when your AN/VRC-12-series radio starts acting up. You can often head off a trip to support by pulling a little “immediate action” PM on your FM's.

Up Tight?

First, make sure you're playing with a full deck, equipment-wise. Are all knobs, screws, switches and connectors on hand and secure?

A missing screw will leave just the gap dirt and moisture need to get inside your set.



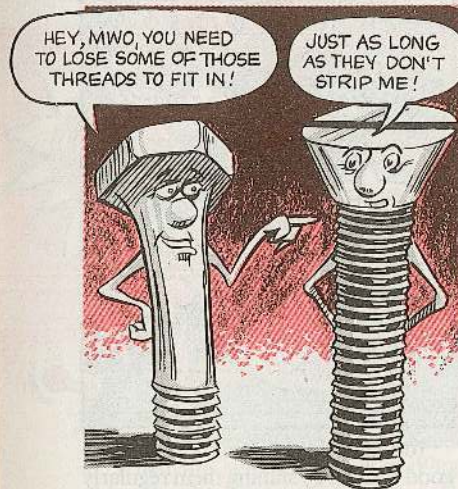
44

for a Troubled-12

You need four different screws to button up your radio:

Screw	NSN 5305-00-
Top	234-6199
Side/rear	957-7033
MWO	764-0071
Front	137-7924

Watch the MWO screw. It's threaded all the way to the top. To get a tight fit, you'll have to file off one quarter inch of the threads starting from the head of the screw.



Make sure all receptacle locknuts are snug, too. Hold the receptacle while you tighten them. If you don't, you might be turning the whole assembly. That

JAN 85

will twist and break inside wiring.

Once locknuts are snug, make sure



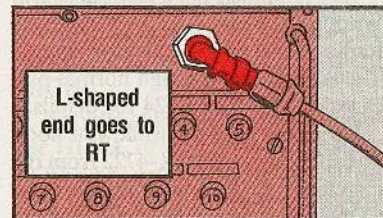
cable connections are correct and secure. Use keys and keyways to line up connections. Turn connectors smoothly until they seat.

Make sure O-rings are in the connectors. A light coat of silicone, NSN 6850-00-880-7616, on the O-ring makes



connections easier and adds life to rubber.

Remember to attach the L-shaped end of the CG-1773 cable assembly to



the radio set. The straight end goes to the matching unit.

45

Use a strain relief on the antenna cable when you use an RC-292 or OE-254 antenna system with your AN/VRC-12. Tie the cable to something solid near the radio set. That way, if something or somebody hits the cable, the sudden yank won't damage the radio or connector.

Power Play

Before applying juice to your radio set mount, make sure you've connected the CX-4720 power cable properly to your vehicle battery.

The black and green wires go to the negative terminal. Red and white wires go to the positive.

Reverse that and you burn out the MT-1029 power receptacle.

Save your radio by keeping it turned off while you install it in the mount. Remember to turn it off before you start or stop your vehicle.



As a reminder, put a DA Label 132, Warning Do Not Start Vehicle While Radio Is On, near the ignition switch. The label comes through normal pub channels. See SB 11-624 for details.

Keep the radio off while you hook up cables, too. The CX-4722 from the matching unit can burn up an ANT CONT receptacle if the set is on.

Be sure the CG-1773 is hooked up to the antenna before transmitting. If not,

high reflected power can damage the transmitter.

Clean Up Your Act

Make sure all that power gets where it's going by keeping things clean.

Connectors for instance. Keep them clean by keeping them covered when not in use.

Most have rubber covers. The MT-1029 mount's power connector covers are NSN 5935-00-933-3752. The junction box cover is NSN 5935-00-911-2323.

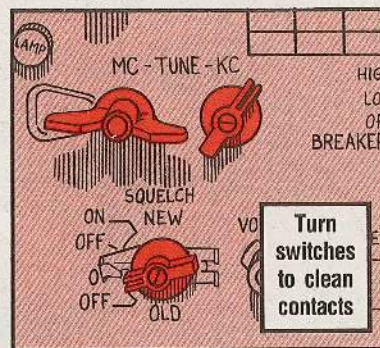
Dumbbell covers for the audio connectors aren't required but can be used. Get 'em with NSN 5340-00-973-1732.



You can help audio connectors make good contact by shining them regularly with a pencil's rubber eraser.

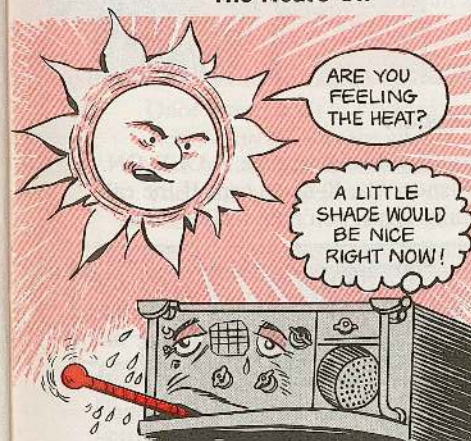
Shine inside contacts by moving the MC-TUNE-KC switches back and forth a few times. On the RT-246, move the band switch from AUTO to A or

B. That insures proper channel switching.



A cover you don't need, tho, is the canvas once required for VRC-12 components. The rugged RT's and receiver don't need the extra heat buildup the canvas gives.

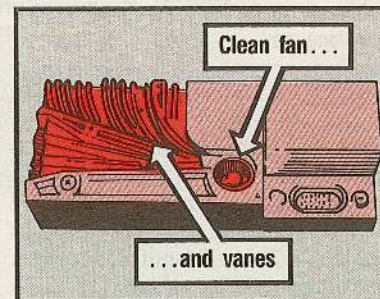
The Heat's On



When the summer sun is making things hot for your radio set, it's up to you to cool things off.

Keep the heat exchanger vanes and power transistor assembly clean. Remove the side and rear panels and

brush the vanes clean. Do it often when operating in a dusty area.



Always replace the panels, too. It may look cooler without them, but the panels direct the cooling breeze from the fan to the vanes where it's needed.

Protect the fan so it'll keep turning, too. Don't set the RT down on its rear panel, for instance, or ram it into its mount. Either can push in the panel far enough to bind the fan.

Another way to keep the heat off is to keep your set operating by the book. Have your org shop test it regularly for reflected power. That power is coming back from the antenna and it heats up the transmitter.

Forward power should exceed reflected by at least three to one.

In too-hot weather, let your set rest. Keep transmissions short and sweet.

Use LOW power for transmissions of less than 15 miles. LOW draws less current—and makes less heat—than HIGH.

If you're going further than 15 miles, use HIGH, of course. Switch back to LOW when you're done. That way you won't forget to do it later for a shorter transmission.

Keep RT's out of direct sunlight if

you can. Shade them with the vehicle's canvas top, a tree or whatever's handy. Rags soaked in cold water do a double cooling job.

Another good coverup is solar heat reflecting paint. See TB 43-0118's Table 7. Whether camouflaging or spot painting, use the paint to add protection from heat buildup.

Solar heat resistant paints	5 Gallons	1 Gallon
	NSN	NSN
Color	8010-00-111	8010-00-111
Sand	-8336	-7988
Olive drab	-8069	-7940
Light green	-8007	-7930
Dark green	-8042	-7938
Forest green	-8010	-7937

Smooth Operator?

Getting the most your tactical radio has to give takes good operation. Here're a couple of things to keep in mind:

- ✓ Pick a good site. That means the highest spot available. Use line of sight if you can. Aim your vehicle in the direction of your target. Keep obstacles, like trees and buildings, out of your signal path.

- ✓ Have DS align your radios at least yearly. With secure gear and digital traffic, your RT's have to be peaked out to communicate.

- ✓ Check for X-mode operation with a look and listen.

Switch on your RT. Turn the light

switch ON and squelch to OLD ON. Remove the X-mode cap. If the call lamp lights, you're in secure mode.



No light could just mean a bad lamp. So, listen. Turn the RT off. Replace the X-mode cap. Set squelch to NEW OFF and turn the RT on. You should hear a rushing sound. Remove the cap and the sound should stop.

If it does, you're in X-mode. If not, turn your set in for adjustment.

GREAT, IT'LL BE A CAMOUFLAGE SUNSCREEN FOR MY RADIO!

A LITTLE BIT OF TOUCH-UP PAINT WILL HIT THE SPOT!



AUTO

(B) 53-75

(A) 30-52

REMOTE HIGH

POWER

Switch band must be on **AUTO!**

Hold **TUNE** when presetting frequencies!

Make sure you're in the same squelch as the rest of your net.

Not getting the right freqs when you punch a button on your RT-246? Be sure you're setting them up right. You must hold the TUNE button each time you preset a frequency. Otherwise, you won't engage the automatic tuning circuits.

When operating, be sure to flip the band switch to AUTO. That's the only setting that lets you use the push-button feature.

Protection, Plus

Once everything's in working order, keep it that way.

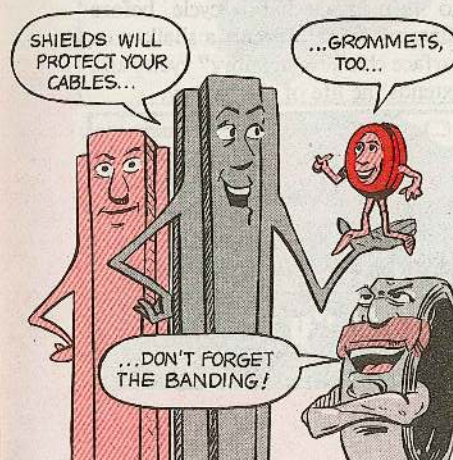
Never carry RT's by the guards. That 50-lb load can snap a guard and let the RT hit the dirt. Remember, too, the RT is a two-person load.

The headshed decided (SMART Message 36) to put MWO handles on all RT-524 and -246's. You can carry the RT by these handles.

Use all the shields, grommets and cable straps called for in your radio installation kits. They keep radio cables out of the way of feet and cargo.

Keep paint off cables and matching units. Before sending your vehicles to the paint shop, remove—or mask—those rubber or plastic surfaces that are in the painter's line of fire.

Finally, keep high-pressure jets of water off your commo gear. The equipment is rain-proof, but a jet of water is bound to find a way inside even the best-buttoned radio set.



G/VLLD Power Boosters

MY COOLANT LEVEL IS SO LOW, I DON'T HAVE THE STRENGTH TO LINE UP A TARGET!

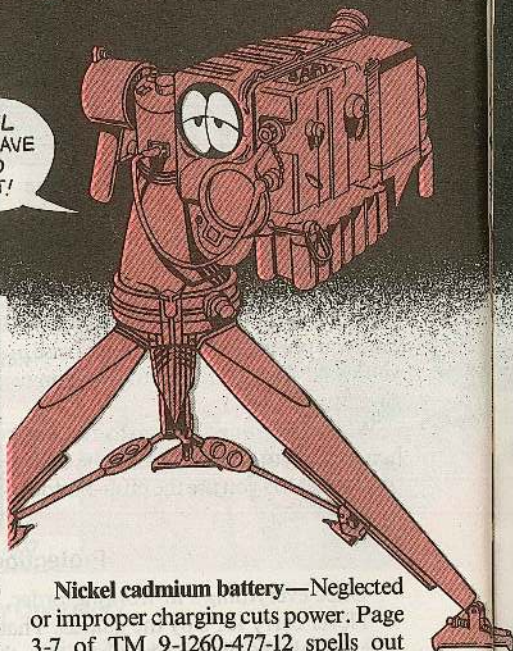
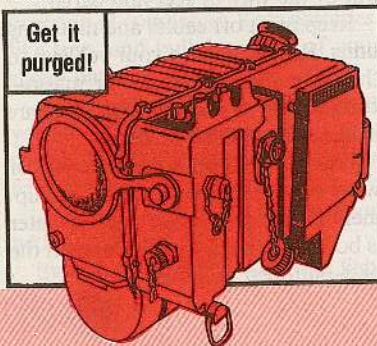
Cut down on power loss and overheating of your AN/TVQ-2 ground/vehicular laser locator designator (G/VLLD) with thorough scheduled maintenance.

Your TM's PMCS will keep your G/VLLD ready.

Here are some trouble areas that can be avoided:

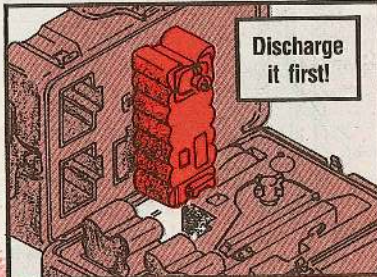
Overheating—Transceiver nitrogen coolant level should be 630 to 670 PSIG. You can't check it, but purging and refilling by your direct support (DS) every 180 days helps keep pressure up in your laser designator/rangefinder (LD/R). Be sure the LD/R gets to DS for scheduled purging. Prevent costly damage from overheating by low or contaminated coolant.

Get it purged!



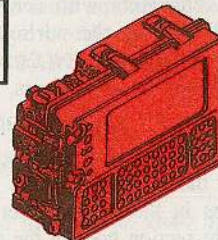
Nickel cadmium battery—Neglected or improper charging cuts power. Page 3-7 of TM 9-1260-477-12 spells out charging conditions and intervals for best performance. The batteries must go thru a discharge cycle before charging. That prevents a shallow or surface charge ("memory" cycle) and extends the life of the battery.

Discharge it first!



Faulty operation—Night sight and AN/PSG-2 digital message device (DMD) operation goes haywire with improperly charged batteries. Charge them right, using info on the PP-7286 charger in TM 11-6130-392-12. Night

Batteries charged?

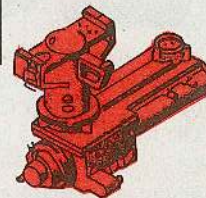


sight charging requirements are in C3 to TM 9-1260-477-12. The word on requirements for the DMD battery is in TM 11-7440-281-12&P.

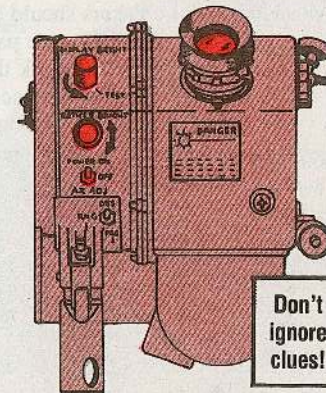
Ignoring BIT clues—BIT (Built-In-Test) info fed you through the LD/R can head off big repairs or shutdown. Para 2-3 of your -12 TM fills you in. If your BIT clues you on a possible malfunction, get it checked out...soonest.

Work pile-up—When your G/VLLD PMCS or troubleshooting checks show that repairs are needed, do them or get the component to DS. Holding repair jobs back and dumping them on DS in one shot causes delays and keeps your G/VLLD down. Get them fixed as needed, and cut downtime.

Collimator needs verification



Night sight misalignment—Unchecked boresight collimators can botch your night sight alignment. Prevent that by getting the collimator to your DS for each semiannual verification. The word's in C3 to your -12 TM.



Don't ignore clues!

Cautions &



Hook-ups and hang-ups are "must" PM when you erect and use your M51 collective protection C-B shelter.

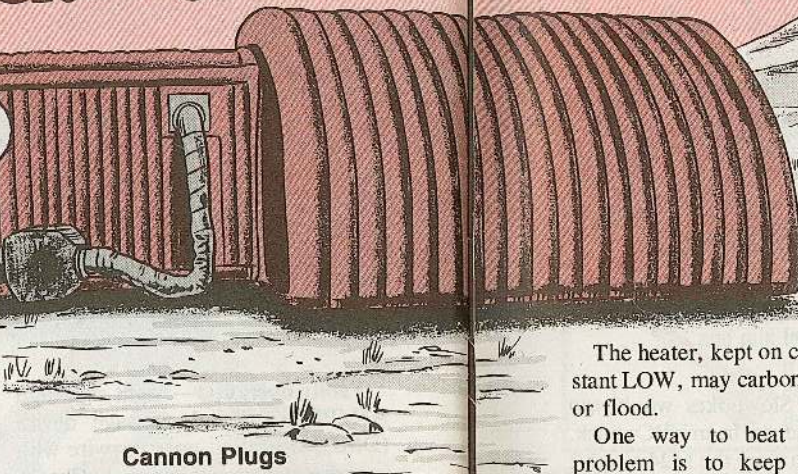
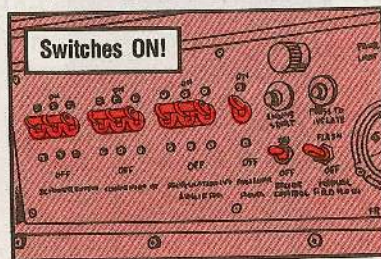
The way you do it can save snarls, snags, temper and damage.

Before you start the gas engine in the trailer, be sure the camouflage netting is clear of the exhaust.

Tighten the netting so that it clears the exhaust by several inches... to prevent the cloth from melting.

Control Panel

All switches and breakers should be on for normal operation. If some part of the system doesn't work, check the control panel switches first. Chances are you forgot to flip something on.



Cannon Plugs

Easy does it when you remove connectors. You can't remove most of them by putting the muscle to them.

Connectors with screw-on sleeves will tear up the wiring if you yank them. First, unscrew the sleeves. Then, pull out the connectors.

Light Setup

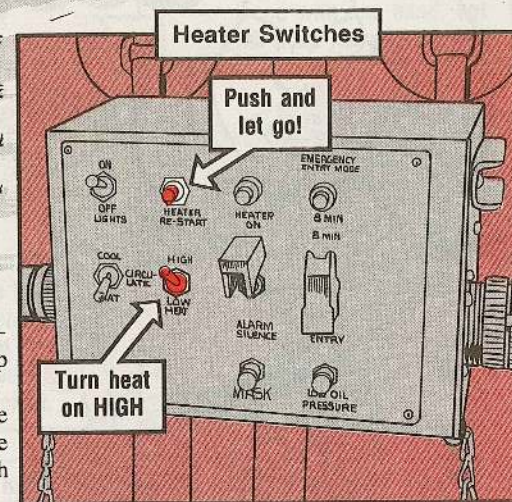
There are 2 sets of light extensions for the shelter. The one with 2 lights goes in the main shelter. The single light section goes in the entrance area (beyond the door).

Both extensions are controlled by the switch on the auxiliary control panel inside the shelter.

Purge Cycle

The push switch on the side of the purge switchbox starts the purge cycle and causes the red or green purge lights to come on. Purge cycle is 5 to 8 minutes.

Connections



The heater, kept on constant LOW, may carbon up or flood.

One way to beat the problem is to keep the HIGH-LOW HEAT switch on HIGH.

The heater burns hotter, turns off faster, doesn't carbon up or flood and you get about the same amount of heat.

Tip for tired thumbs: It isn't necessary to push-and-hold when you hit the heater RE-START switch. Press in hard so it'll make good contact... and let go.

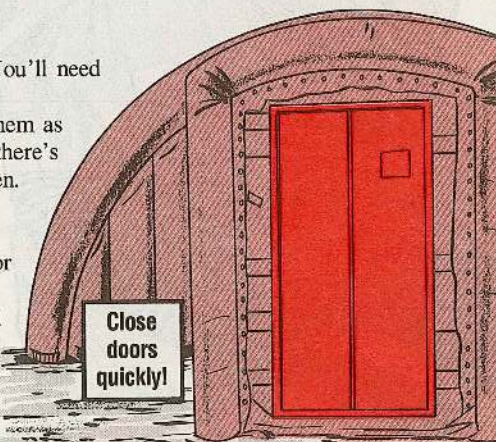
Fresh Air

Keep ventilation areas clean. You'll need good air.

When you open doors, close them as quickly as possible. That's why there's no fastener to hold the doors open. Shut them quickly.

If your shelter gets a lot of traffic, assign someone to monitor the door and/or purge cycles. The idea is, keep the doors open for as short a time as possible.

To be sure of heat, air and power, check the oil level daily in your power supply.



Stow 'em Ready



TIME, TIDE AND *NBC*
ATTACKS WAIT FOR NO ONE!
BE READY WHEN THE
GONG SOUNDS!

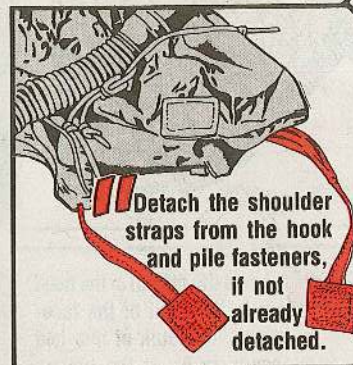
Slowpokes won't win the race in an NBC attack. So store the M24 aircraft and M25/M25A1 tank CB masks with hoods already attached. This saves time and limits exposure.

Pages 2-36 thru 2-38 of TM 3-4240-280-10 show how to attach and adjust the hood. Steps 1 thru 9 are OK. Use this new info to ready the mask with hood for storage:

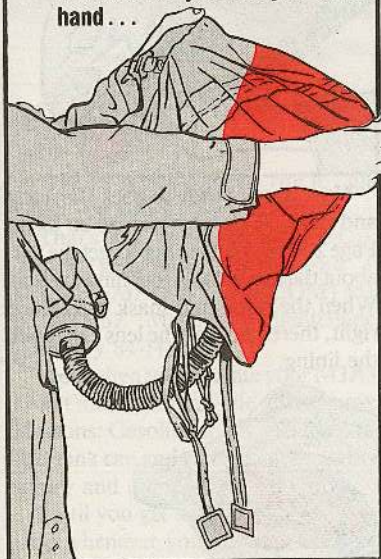
10 Adjust the tab on the neck cord to 2 inches from the cord's end.

Ready

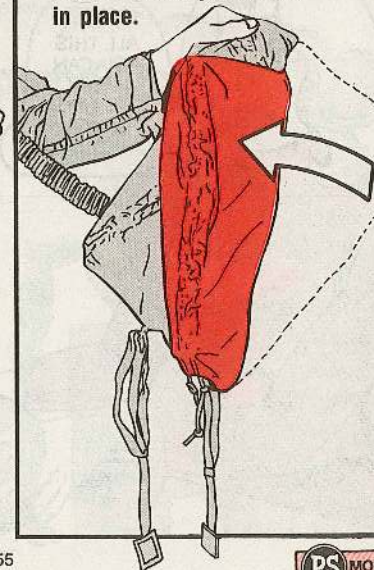
12a Turn the hood inside out. Grasp the top front forehead area of the facepiece with one hand. Let the hood hang freely.

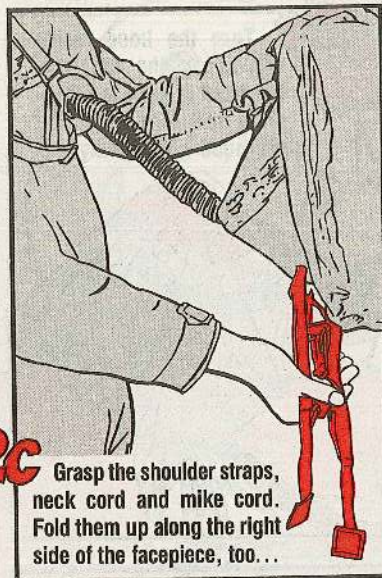


12b Take hold of the hood area farthest from you with your other hand...



...and fold it back to the right side of the facepiece. Your thumb keeps the hood in place.

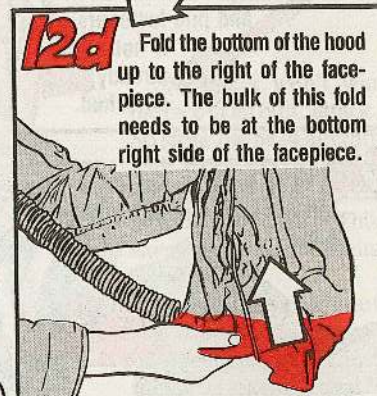




12c Grasp the shoulder straps, neck cord and mike cord. Fold them up along the right side of the facepiece, too...



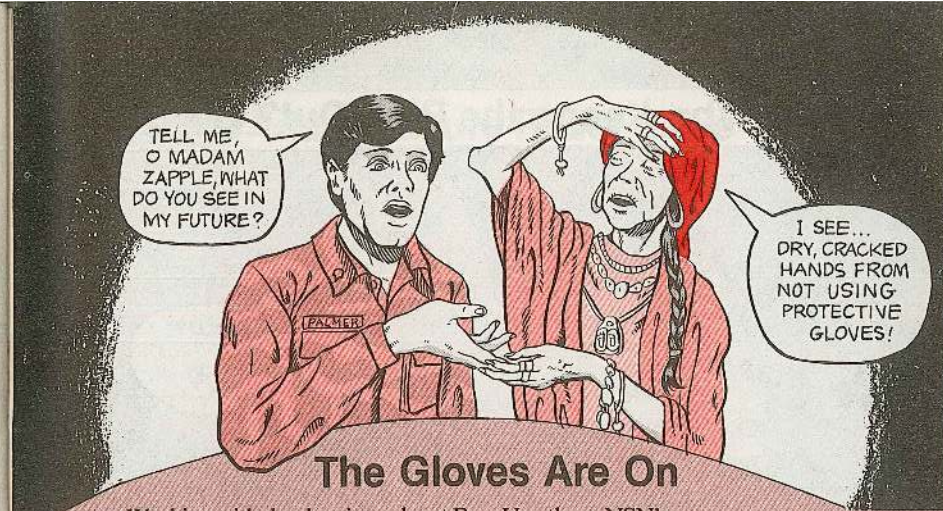
...Use the same thumb holding the fold of the hood to hold the straps, neck cord and mike cord.



12d Fold the bottom of the hood up to the right of the facepiece. The bulk of this fold needs to be at the bottom right side of the facepiece.



Now you're ready to pack the mask and hood in the carrier. Do so as on Page 2-72 of the TM, but forget the part about the fleece lining touching the lens. When the hood and mask are folded right, there's no way the lens can touch the lining.



The Gloves Are On

Working with drycleaning solvent P-D-680? You need protective gloves to keep your hands from drying out and cracking—and maybe getting infected.

The gloves are authorized by CTA 50-900, LIN J69845. For other items of protective clothing and equipment, check out DA Pam 385-3.

Use these NSN's:

NSN 8415-00-823-	Size
7455	9
7456	10
7457	11

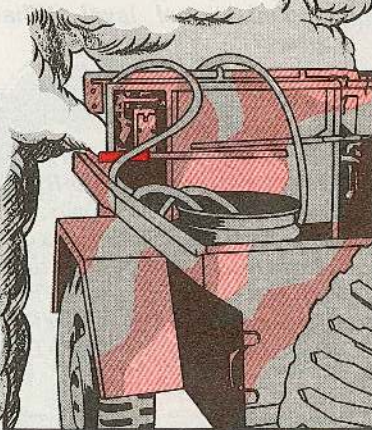
M3A3 Stop and Op

When you roll it, don't run it...and when you run it, don't move it!

That's the word on your M3A3 smoke generator, spelled out in DRSMC-MAO-N (AMCCOM) Msg R 221515Z May 84 (Maintenance Advisory 84-14).

Stop when you operate your M3A3. Don't make smoke while on the move. Reasons: Gasoline could spill from the fuel tank cap and connections, and fire, injury and damage can result.

Until you get a safer smoke maker, stop whenever you have to smoke.



Who Keeps the Rain Out?

Dear Half-Mast,

Our DS canvas repair shop gets a lot of GP small and medium tents for repair. The AMDF maintenance repair code says that the tents are completely repairable at the organizational level. What gives?

SSG W. P.

Dear Sergeant W. P.,

The key to maintenance on general purpose tents is in the Maintenance Allocation Chart in Appendix B of TM 10-8340-211-13. It says organization level is responsible for repairs.

The footnote in the Remarks column, tho, limits organizational work to those repairs possible using the tentage repair kit, NSN 8340-00-262-5767; and those repairs called for in Section VI of Chap 4 of the TM.

The note also says that DS is the lowest level of maintenance that does machine sewing on the tents. So DS makes all the major repairs to the tents.

Half-Mast

OK, HOLD'R
STEADY WHILE
I GLUE ON
A PATCH!

TENTAGE
REPAIR
KIT

Add Pressure Relief Valve

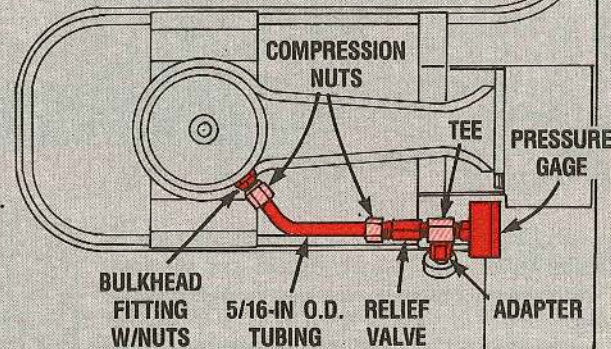
If your M2 or M2A burner unit does not have a safety valve on the fuel tank, it's a good idea to add one.

The safety valve opens if the pressure goes over 60 PSI in the fuel tank. That heads off a possible explosion.

Get the safety valve kit with NSN 7310-01-130-4907. It's

listed as Item 1
in Fig D-7 of
TM 10-7360-
204-13&P.

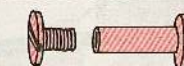
The kit
comes with
instructions
for installing it.



Safety Valve Kit
NSN 7310-01-130-4907

Pubs Binder Posts

Binder posts are real handy for keeping loose-leaf manuals under control. You can add washers to the posts if the holes in your pubs are too big.



NSN 7510-00-634-

0232
0230
0231
0227
0228

LENGTH
(INCHES)

5/8
3/4
1
1 1/2
2

Get added space with the 1/2-inch extension, NSN 7510-00-957-8807.



HERE'S A
LIST OF
USEFUL
SIZES
FROM THE
GSA
CATALOG...

M10A RTFL...

The O-Ring Tells the Tale

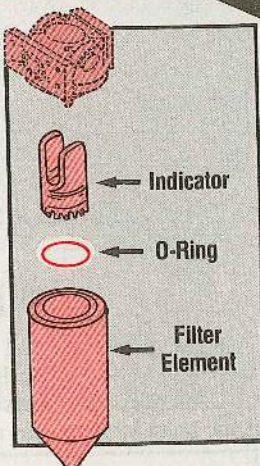


You say you changed the hydraulic oil filter on your M10A rough terrain forklift and the filter warning light stays on—even after the engine warms up?

Chances are it's caused by a damaged or missing warning light indicator O-ring.

The indicator moves up and down inside the filter element. The O-ring seals the space between them. If the O-ring is missing or damaged, the indicator drops to the bottom of the element, and the light stays on.

When you replace the element, check the indicator O-ring. If it's bad, get a new one with NSN 5330-00-442-9770. It's shown as Item 3 in Fig 38 on Page 32 of Section 8 in TM 10-3930-643-14&P.



H446, H446A Hanson Cranes...

Wind Up a New Hoist Cable

When you need to replace the hoist cable on your Hanson crane, order wire rope, NSN 4010-00-272-8848.

This NSN will get a 1,000-ft roll. You can cut five 200-ft hoist cables from a roll. The NSN is not listed in your manual. Make a note of the number. The cable is Item 9 in Fig 117 of TM 5-3810-233-20P for the H446. For the H446A, the cable is Item 1 in Fig 40 of TM 5-3810-290-20P.

While you're at it, make a note that the SMR code should be PAOZZ.

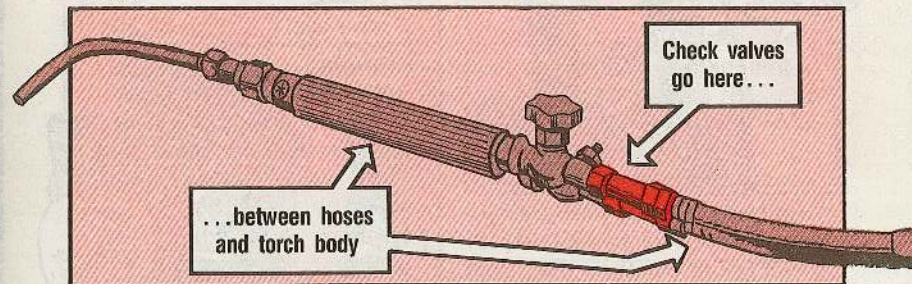
Gas Welding Outfits...

Check Valves Pinned Down

Everyone agrees that check valves in gas welding outfits prevent flames from traveling back up the hoses to the regulators.

Not everyone agrees where to put the check valves, tho. Some want to put the valves between the regulators and the hoses. Others want to put them between the torch body and the hoses.

Now, the torch top shop says to put the valves between the torch body and hoses.

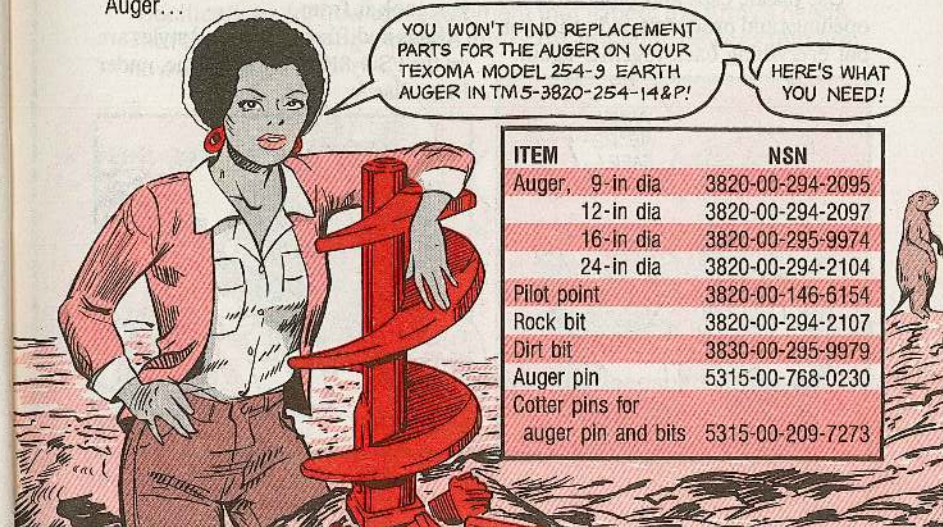


New torch outfits made by the Victor Corporation come with check valves built into the torch body. There's no need for separate check valves.

To see if your Victor torch has built-in check valves, remove the hoses. The valves are just inside the fittings on the torch.

Texoma
Earth
Auger...

Drilling for Auger Parts



ITEM	NSN
Auger, 9-in dia	3820-00-294-2095
12-in dia	3820-00-294-2097
16-in dia	3820-00-295-9974
24-in dia	3820-00-294-2104
Pilot point	3820-00-146-6154
Rock bit	3820-00-294-2107
Dirt bit	3830-00-295-9979
Auger pin	5315-00-768-0230
Cotter pins for auger pin and bits	5315-00-209-7273

Those Exposed Parts...

Cap, Plug or Bag Them!

A real pro never leaves the rear and flanks unprotected—or any delicate parts exposed to danger or damage.



Remember this any time you take equipment apart for service or repair. Be sure you protect those parts from dirt, moisture and damage—or all your hard work is wasted and you could be hurtin' for certain!

Rough handling breaks delicate connector pins and mashes threads. Dirt gets into holes and open lines where you've disconnected something.

Use plastic caps and plugs to cover openings and protect threads until you put everything back together again.



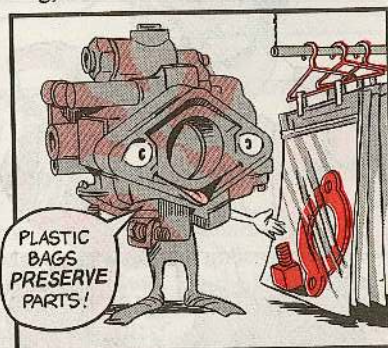
NSN 5340-00-450-5718 gets you 156 caps and plugs in different sizes.

Need only certain sizes? Check the microfiche of Catalog FSC-5335/40-IL. Look under Cap, Protective, Dust and Moisture Seal, or Cap, Plug, Protective, Dust and Moisture Seal.



Use plastic bags to hold bearings and small parts, like nuts and bolts, that might get dirty or lost. Larger bags will hold things like disconnected cables. You can tag the bags to make sure everything goes back in the same place you took it from.

Bags in different sizes and styles are on the FSG-8100-IL microfiche, under Bag, Plastic.



***You** Can Help Design... The Optimum Instruments*

PROBLEM: Too many different types of measuring equipment—like **multimeters**—with too limited a measurement range. The Army buys a lot of specialized testers, when what is needed is a wide-range, multiple-use tester.

SOLUTION: Specify and procure measurement equipment that'll perform the most jobs for the most equipment.

AH, ANOTHER PROBLEM: Nobody except the user knows just what the actual needs of the user are. To gain that knowledge, somebody would have to run every specified measurement test of every item in the Army. No way!

AHA, THE SOLUTION: Get feedback from the users as to just what ranges are actually used in performing maintenance on their assigned equipment. The headshed can then come up with specifications for new test equipment that'll meet the Army's needs. That'll save procuring the wide mix of off-the-shelf devices that are now fielded.



YOUR HELP
IS NEEDED!

You, the measurers, are in the best position to tell what measurement range is needed on your equipment. Here's your chance to give the headshed a steer on what the measurement capability of new multimeters should be.

1 Identify the item you maintain that requires the highest AC voltage measurement:

AC Voltage	Frequency(Hz)	Nomenclature	TM

2 Identify the item with the highest Frequency(Hz):

Hz	AC Voltage	Nomenclature	TM

3 List all the items with an AC voltage x Hz factor exceeding 1,000,000. (For example, a required measurement of 200 VAC at 10KHz would be $200 \times 10,000 = 2,000,000$, which is greater than 1,000,000.)

AC Voltage	Frequency(Hz)	Volts x Hz	Nomenclature	TM

PLEASE FILL IN
THE FORM AND
SEND IT TO ...

Commander
US Army Materiel Command
ATTN: AMCTM-E
5001 Eisenhower Avenue
Alexandria, VA 22333-0001

Connie's
POST
SCRIPTS

BY PLUTO'S
BONES, CONNIE!
I HAVE A
PROBLEM!

Tools and Small Items...

Your Ideas are Needed!

You need top quality tools to do a first class maintenance job—and the Army wants to make sure you have them! Which is where you, the tool user, comes in. Only the user can tell whether the tool performs the way it should, or how it can be improved. Your ideas about tools or minor items of equipment are needed. Send in a suggestion on any new tool ideas you might have, or to recommend new commercial tools or equipment you have run across that would help you do your job better.

You will be communicating directly with the Army's tool honchos, so take this opportunity to lay it on them. They

will get back to you with their findings. The Army now has just one receiving point for new tool ideas or minor items of equipment. Send your suggestion directly to:

Commander
USAMC Materiel Readiness
Support Activity (MRSA)
ATTN: AMXMD-M
Lexington, KY 40511-5101

Or, if you desire, you can send your ideas through the SMART channels:

SMART!
US Army Logistics Center
ATTN: ATCL-CST
Ft Lee, VA 23801-6000

Your idea will then be sent to MRSA for evaluation.

Don't Swim the Bradley!

Do not swim your M2 or M3 Bradley Fighting Vehicle if the water barrier has been modified with kit number 12316900, or if your vehicle's serial number is higher than 2AA00752 (for M2's) or 3AA00490 (for M3's). These vehicles have 14 inch long compression springs inside the water barrier slide brackets on the hull instead of safety strut blocks. Bradley's using the strut block are safe for swim operations if the strut blocks

are installed according to TM 9-2350-252-10-1. This word is found in AMC Safety-Of-Use Msg AMCSF-E 231730Z Oct 84.

Ground-Handling Wheels

The tire pressure for ground-handling wheels on Page 39 of PS 384 is only half right. The correct tire pressure for the UH-1 and AH-1G wheels, NSN 1730-00-980-9552, is 50 PSI. The correct tire pressure for the AH-1S (MOD, PROD, ECAS and MC) wheels, NSN 1730-01-133-9204, is 75 PSI.

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

Split Lock Rings

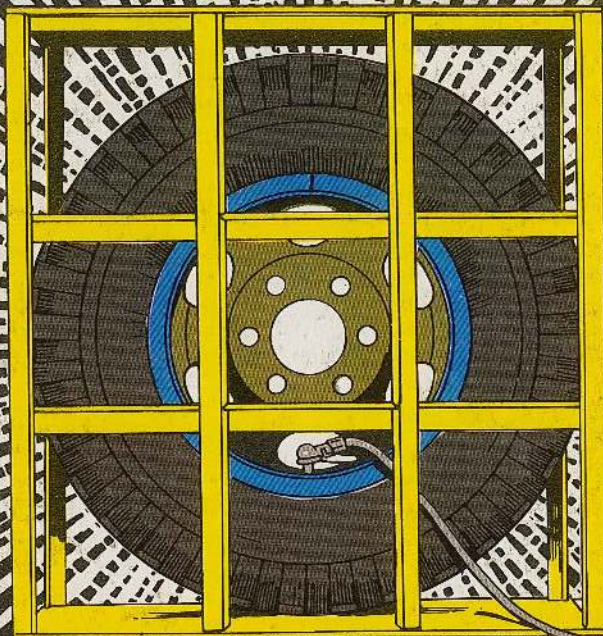
KILL!

TM 9-2610-200-20

WARNING PREVENT PERSONAL INJURY

Place tire and wheel in safety cage before inflating. The operator should be at least 10 feet from the safety cage. Minimum hose length used is 10 feet.

C
A
G
E



T
H
E

KILLER!

See Pages 20-21 of this Issue