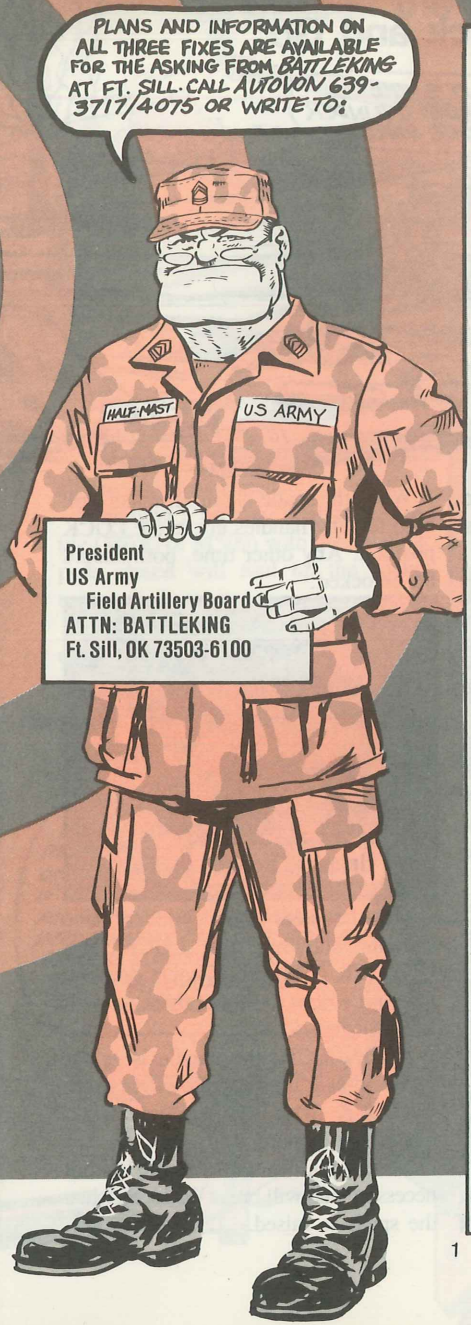

Issue 399
PS
February
1986
THE PREVENTIVE MAINTENANCE MONTHLY
OH, I JUST GOT BACK FROM THE FIELD, MOM, THOUGHT I'D GIVE YOU A CALL.
TELEPHONE
See Mother Knows Best
Page 29-36

Field Artillery... The Fix is In!



PS THE **PREVENTIVE MAINTENANCE** MONTHLY

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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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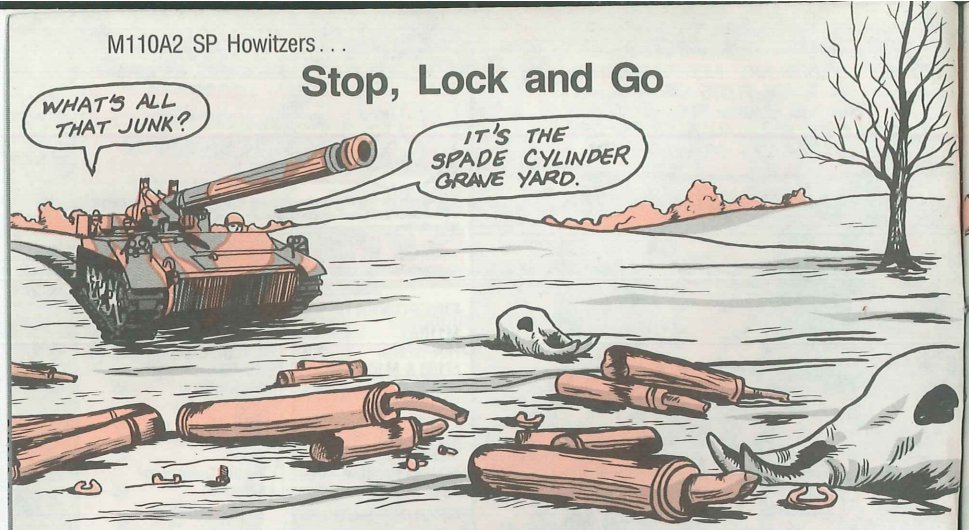
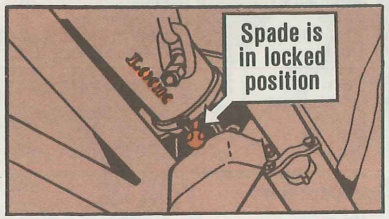
Stop, Lock and Go

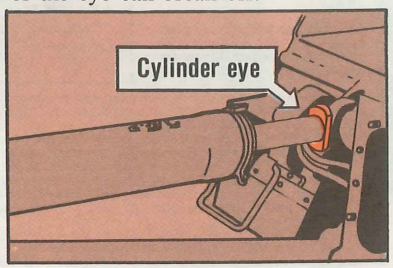


Before you move your howitzer anywhere, make sure both spade locks are locked.

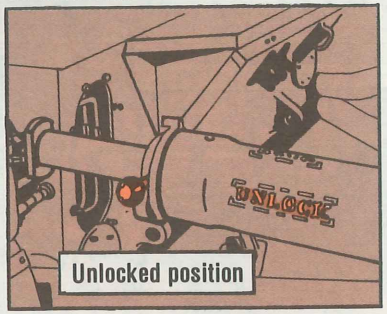


There's a bunch of busted spade cylinders out there, crewmen, because someone locked only one of the cylinders before moving out.

If only one cylinder is locked, it does all the work. The cylinder can rupture or the eye can break off.



When the spade is raised, make sure both locking handles are in the LOCK position. Any other time, both should be unlocked.



Most howitzer spade cylinders have stencils showing the LOCK and UNLOCK positions. If yours doesn't, get your mechs to stencil them on with 1/2-in letters.

At UNLOCK, the handle is as far outboard as it'll go. LOCK is 90° from UNLOCK with the handle upright against its inboard stop.

Never lock the spade down. It's not necessary and will break the locks when the spade is raised.

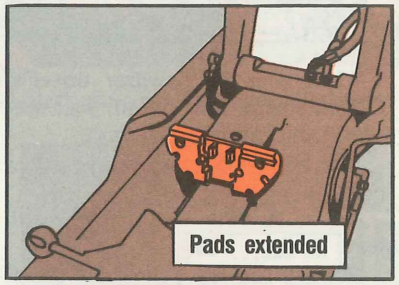
Eyeball the Headlink!

If your howitzer's loader-rammer headlink doesn't look like this, tell your mechanic pronto!

The only right pad position for firing all ammo, is extended.

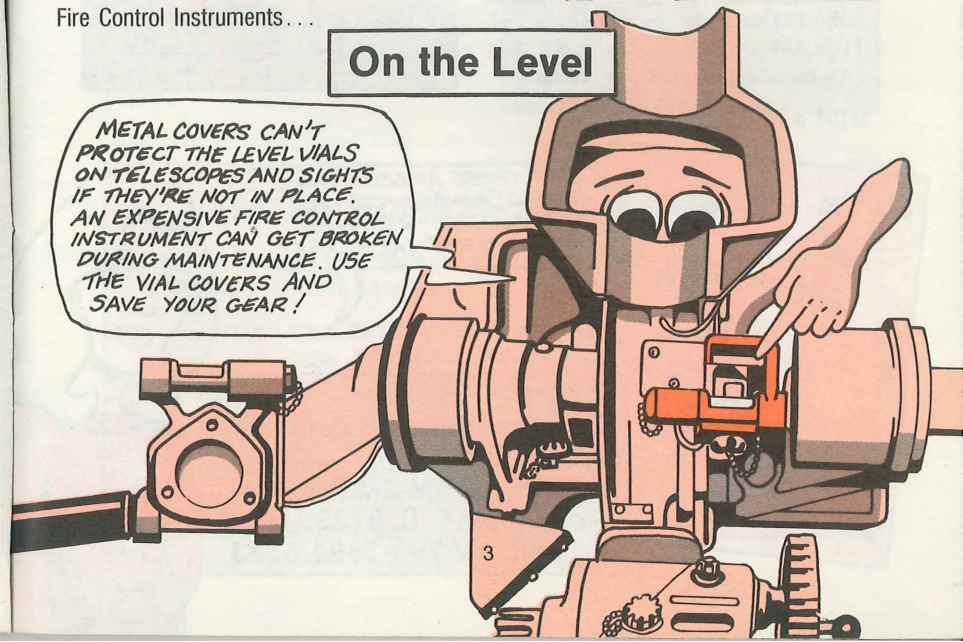
Ramming a hollow, boattail projectile (M650 or M509) with the headlink pads closed will foul up the rocket motor.

That can mean a short round and endanger troops nearby.

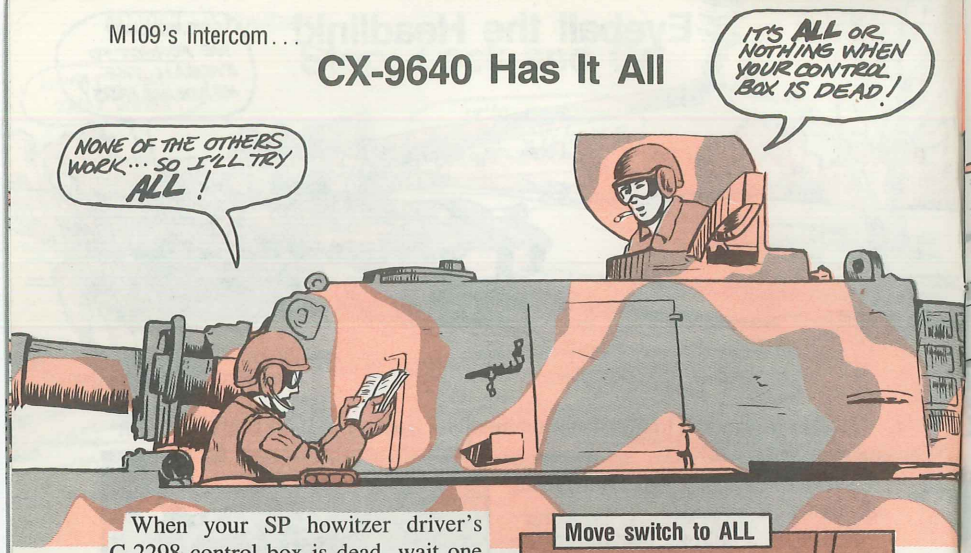


Fire Control Instruments . . .

On the Level



CX-9640 Has It All

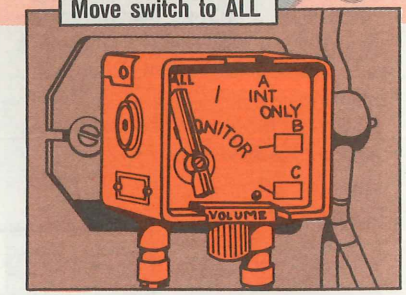


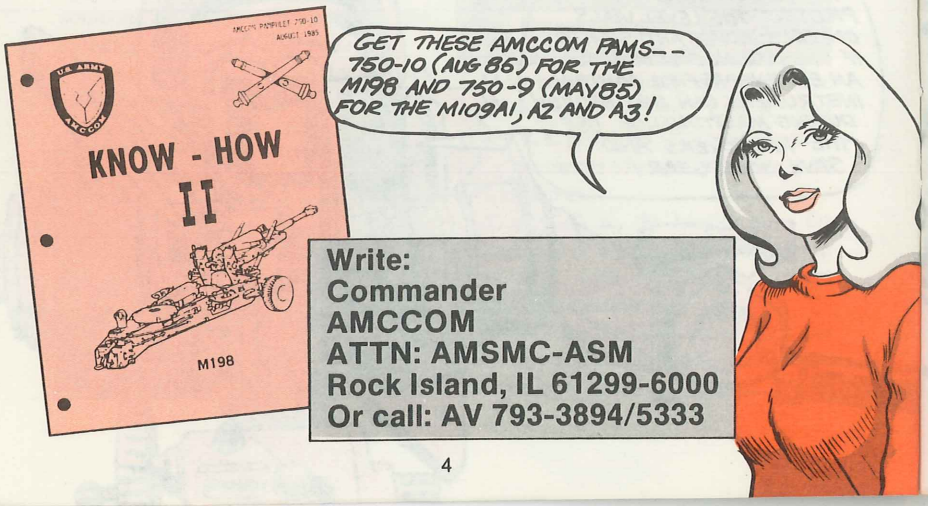
When your SP howitzer driver's C-2298 control box is dead, wait one before you call in maintenance.

The box works only in the ALL position.

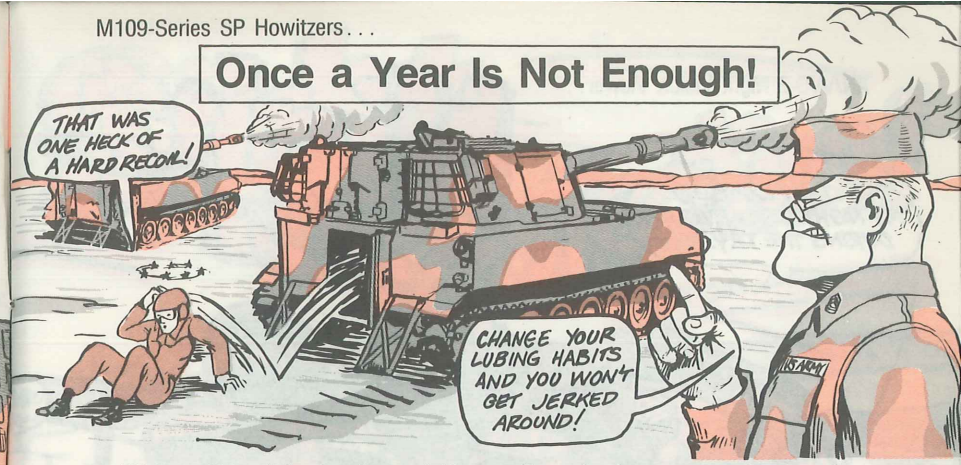
Any of the other four positions will leave it silent.

Many drivers don't know this. Their radio TM's and the intercom pub, TM 11-5830-340-12, don't mention it. Other crewmembers can use any setting.





Once a Year Is Not Enough!

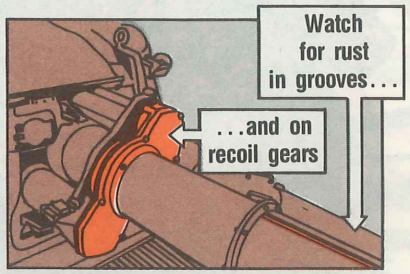


We're talking lube for the variable recoil mechanism gears and torque key groove. Once-a-year lubing by the LO won't get it. Dirt, water and rust can cause recoil problems with your howitzer.

If you're getting hard or jerky recoil, check the gears and groove under the gun mount dust cover and recoil housing.

Rusty gears don't turn easily, and the tube won't slide easily in a rusty groove either.

You've got a choice of lubes to use, according to the weather. Use GMD or GGP except in extremely cold weather. Use GAA if temperature is 0°F or below.



M198 Howitzer Wheel Parts

Look no further for repair parts for the narrow wheels used on the M 198 towed howitzer:

Tire—NSN 2610-00-060-9960 (highway tread)
NSN 2610-00-204-4029 (mud/snow tread)

Tire tube—NSN 2610-00-260-7345

Wheel rim—NSN 2530-01-163-3732

Wheel side ring—NSN 2530-01-177-2777

Wheel lock ring—NSN 2530-01-177-2776

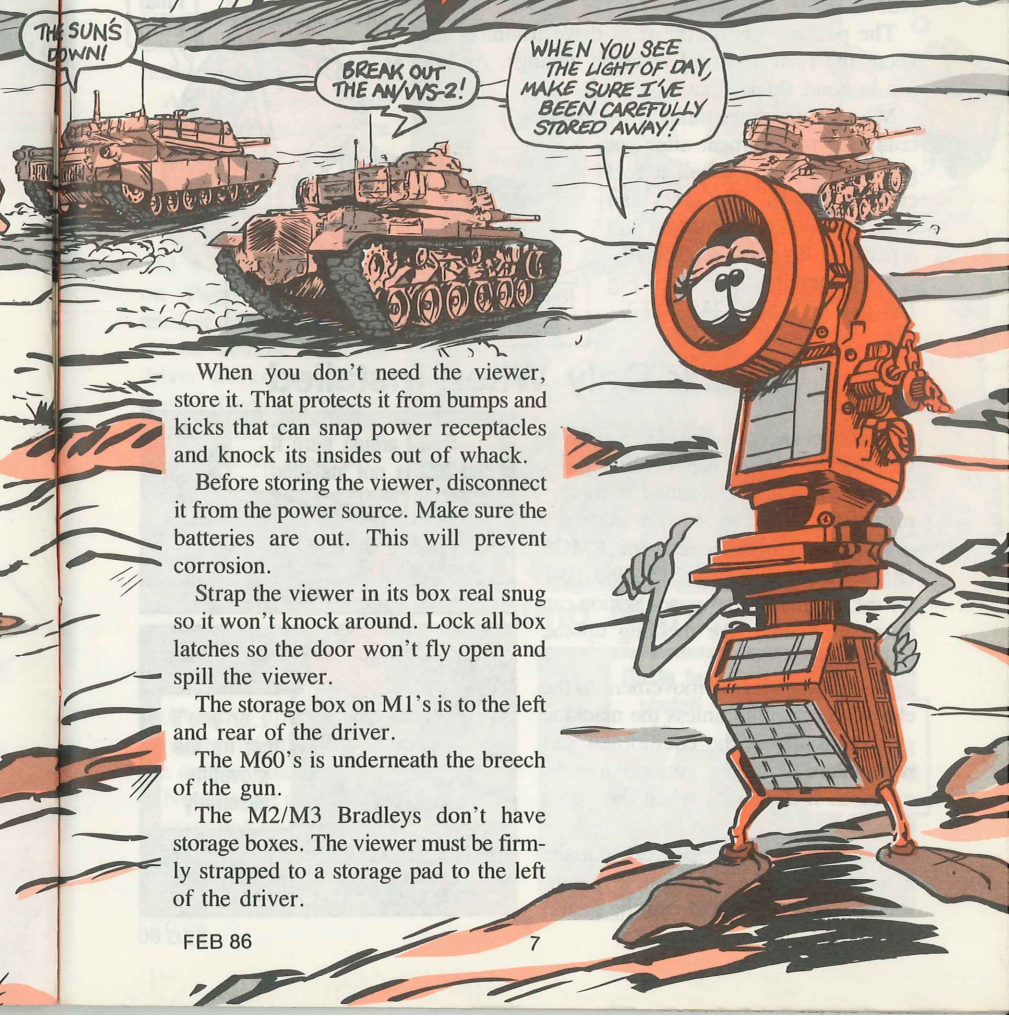
Night Sight Protection!

Tankers, your AN/VVS-2 night vision viewer is a delicate instrument that requires lots of tender, loving care. If you treat it rough, you can be in for some rough nighttime treatment on the battlefield without your "eyes."

Never expose the viewer to direct sunlight and never use the viewer when lightning is splitting the sky—powerful light will blind your viewer.

Never plug the viewer in when the batteries are in—the batteries will burst.

Any time you're not using the viewer, keep the head assembly covered, whether it's stored or mounted. The cover protects the viewer from sunlight. NSN 5855-01-066-4398 or 5855-01-027-1553 will get you the cover.



When you don't need the viewer, store it. That protects it from bumps and kicks that can snap power receptacles and knock its insides out of whack.

Before storing the viewer, disconnect it from the power source. Make sure the batteries are out. This will prevent corrosion.

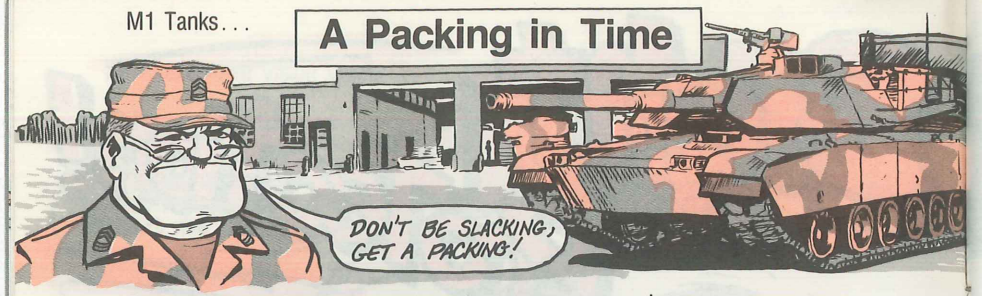
Strap the viewer in its box real snug so it won't knock around. Lock all box latches so the door won't fly open and spill the viewer.

The storage box on M1's is to the left and rear of the driver.

The M60's is underneath the breech of the gun.

The M2/M3 Bradleys don't have storage boxes. The viewer must be firmly strapped to a storage pad to the left of the driver.

A Packing in Time

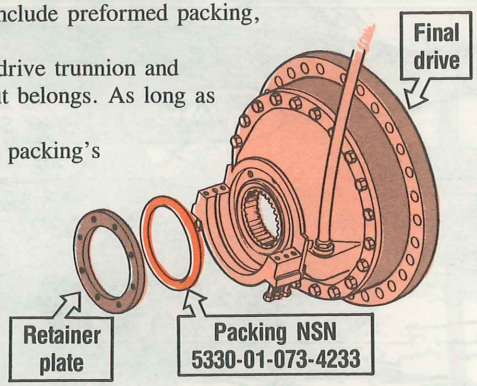


Installing a power pack requires that you use a service repair kit. But that kit doesn't include preformed packing, NSN 5330-01-073-4233.

The packing fits on the final drive trunnion and keeps the final drive oil where it belongs. As long as it's in good shape, that is.

Most of the time, though, the packing's ready for replacement after you pull a pack. So, eyeball it real close for nicks, flat spots and other damage every time you pull a pack. If it's bad, replace it.

The packing is Item 60 of Fig 165 in TM 9-2350-255-20P-1.



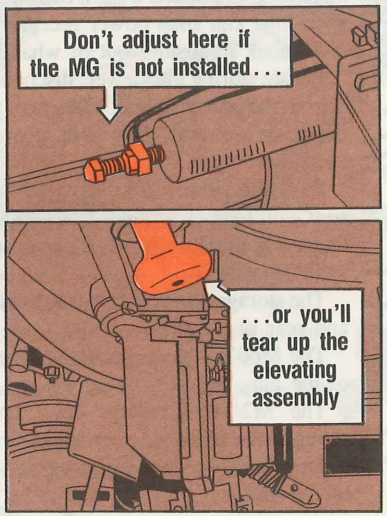
Check Only When Installed

Don't get check-happy, TC's and turret mechs, when the commander's machine gun is not installed in its turret mount.

With the gun removed, the PMCS check shown in TM 9-2350-255-10-1 for the commander's weapon station can cause problems, like messing up the brass gears.

You won't get free movement in the elevation assembly unless the machine gun is installed. The equilibrator has been adjusted so the gun elevates as easily as it depresses when the gun's mounted.

So never force the assembly to make it work right when the gun's not installed. You'll only tear up the gears.



Taking It on the Chin

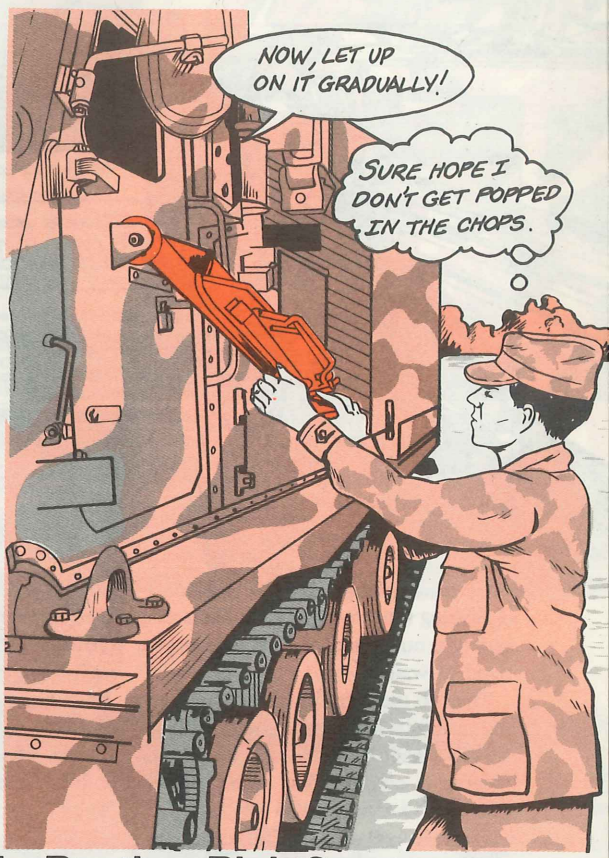
A locked-open ballistic window packs a wallop as powerful as a right uppercut.

That's why the closing procedure is a two-man job.

When the window is unlocked for closing, a torsion bar unwinds with enough force to lift the heavy assembly.

Any unlucky soul standing near or passing by the door when the window is released runs the risk of catching a shot to the chin.

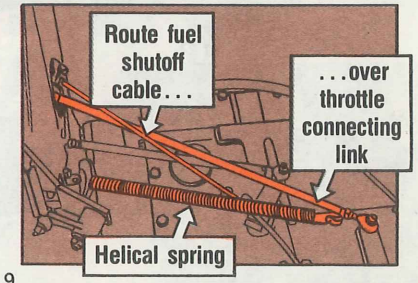
So do the job the way TM 9-1450-646-10 says on Page 2-97. Have another crewman press in on the window while the driver works the release handle. Once that's done, the crewman lets the window come up gradually.



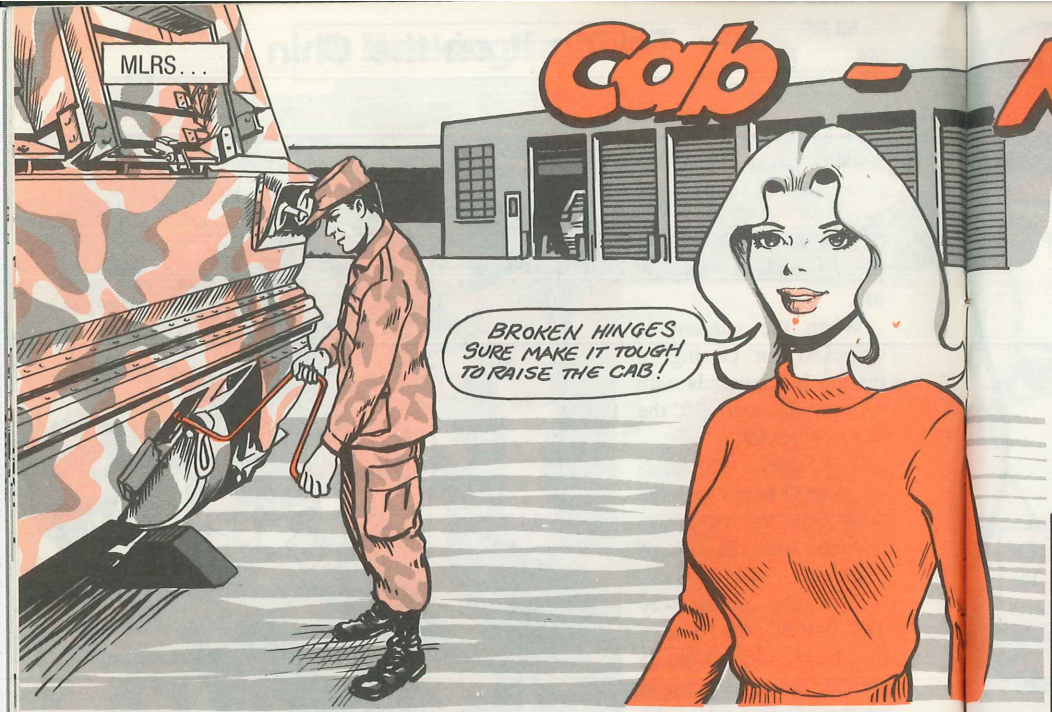
Cable Routing Right?

Remember, mechs, the fuel shutoff cable runs from the driver's gearbox/control tower, **between** the throttle connecting link and helical spring to the engine shutoff.

Never route the cable under the connecting link or you could be laying the ground work for jammed throttle controls.



Cab - Raising Tips

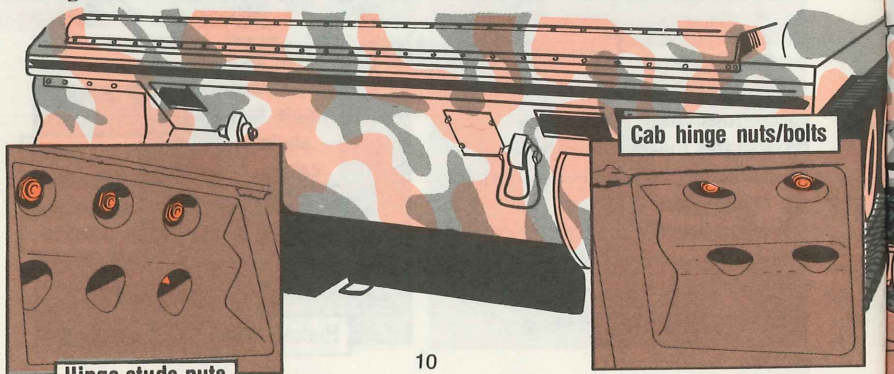


Raising the cab on your MLRS is easy enough, but there are some things you need to watch.

Eyeball the cab hinge studs and nuts for cracks or looseness. The torsion bar makes raising and lowering easier, but it puts a considerable strain on the hinges.

Cracked studs or loose nuts? Let your mech know. Don't raise or lower the cab until the nuts or studs have been replaced.

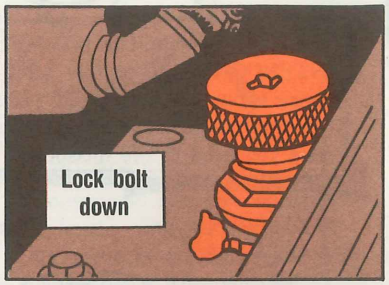
If the nuts just need retorquing, you mechs need to tighten them when the cab is raised. That way you'll be putting the torque on the nuts when the torsion bar is under the least strain.

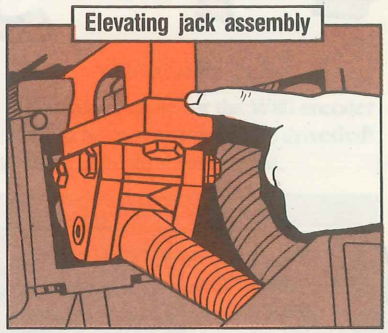


The elevating jack assembly can't take extra strain, so make sure any equipment stowed on top of the cab is removed before raising or lowering.

You've also got to keep the cab locked down right or you'll mess up the lock-down bolt threads or crack the frame.

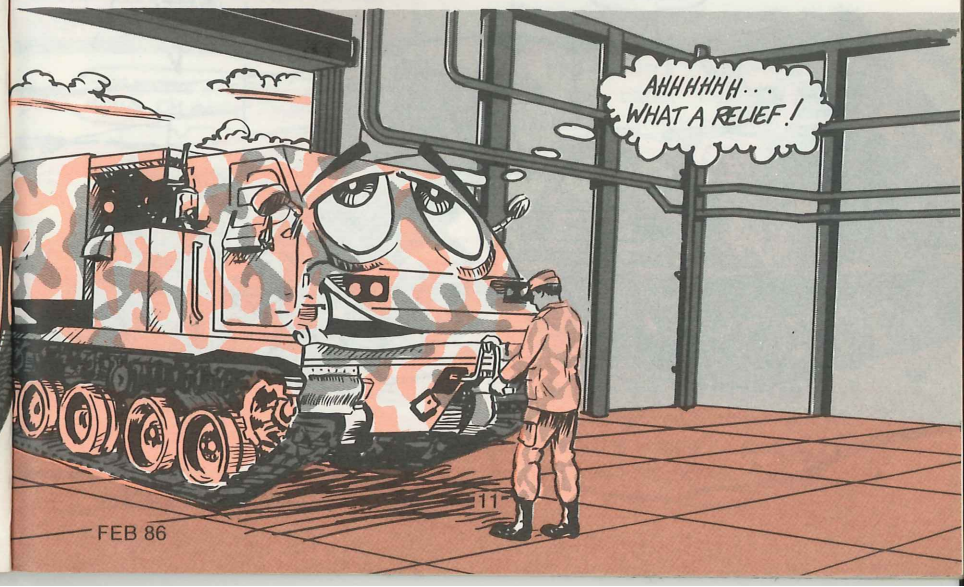
When the bolt's not seated or tightened right, the cab can sit cockeyed. The frame can crack as the cab flexes.





Cab lock-down bolts can bind. If they do, clean the threads and make sure the bolts are seated right. Cross-threading means replacing the entire lock-down assembly. To make the job easier, put a little oil on the bolts from time to time.

Remember—release the tension on the elevation mechanism after the lock-down bolts are tightened. It'll save busted parts.

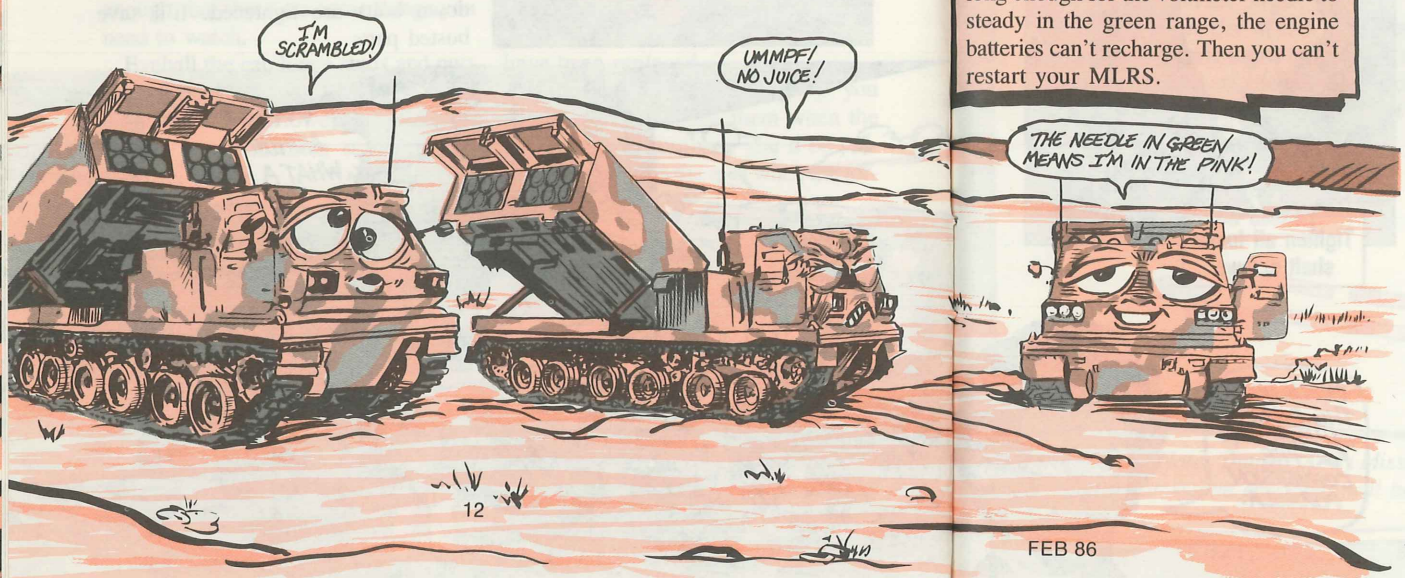


Keeping The Right Connections

1 If you leave the LAUNCHER INTERCONNECT switch ON when you start the engine, voltage surges scramble the computer's memory. That means you can't fire missiles.

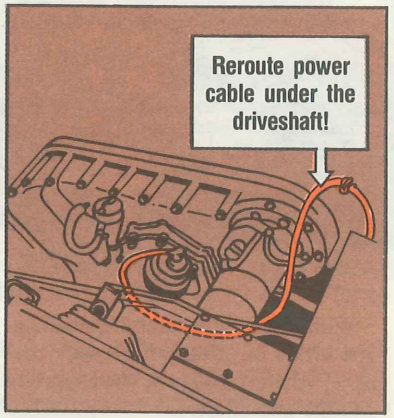
2 If you don't turn the LAUNCHER INTERCONNECT to ON **after** the engine is running, the launcher batteries won't get charged. They won't have the juice you need to fire missiles.

3 If you don't switch the LAUNCHER INTERCONNECT to OFF before shutdown and run the engine long enough for the voltmeter needle to steady in the green range, the engine batteries can't recharge. Then you can't restart your MLRS.



W80 Cable Tips

The power cable for the W80 encoder needs to be rerouted under the driveshaft to keep it from wearing out.



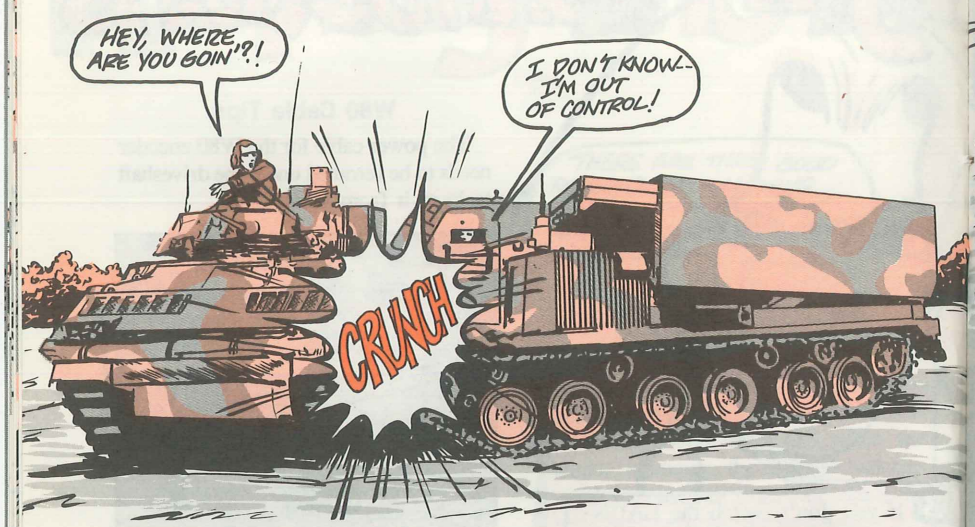
Here's an easy way: Loosen all the cable clamps from the J1 jack to the P2 plug. Pull the slack toward the P2 and down and under the driveshaft. Retighten the clamps and you're back in business.

Metric Only

See your parts manual for the right metric tools.

Section chiefs can speed things up by keeping 10-MM, NSN-5120-01-045-4904, and 17-MM, NSN 5120-01-045-4909, box/open-end wrenches on hand. The wrenches will handle just about all MLRS hardware you're responsible for. The wrenches should be part of your organizational MLRS tool kit.

Nip It in the Bud



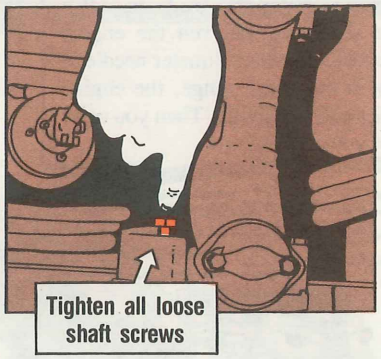
With just a little careful eyeballing, you crews can head off a costly propeller shaft breakaway and prevent damage and injuries.

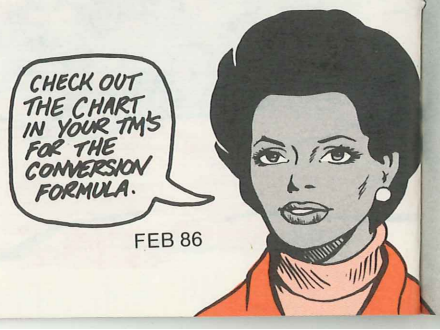
Sooner or later, the eight screws holding each prop shaft are going to vibrate loose. The prop shafts can then break loose, leaving you drivers with little control over the vehicle and you mechs with lots of busted parts to replace.

Crews, you've got to keep an eye on the shaft screws. If they're loose, report 'em so they can be retorqued.

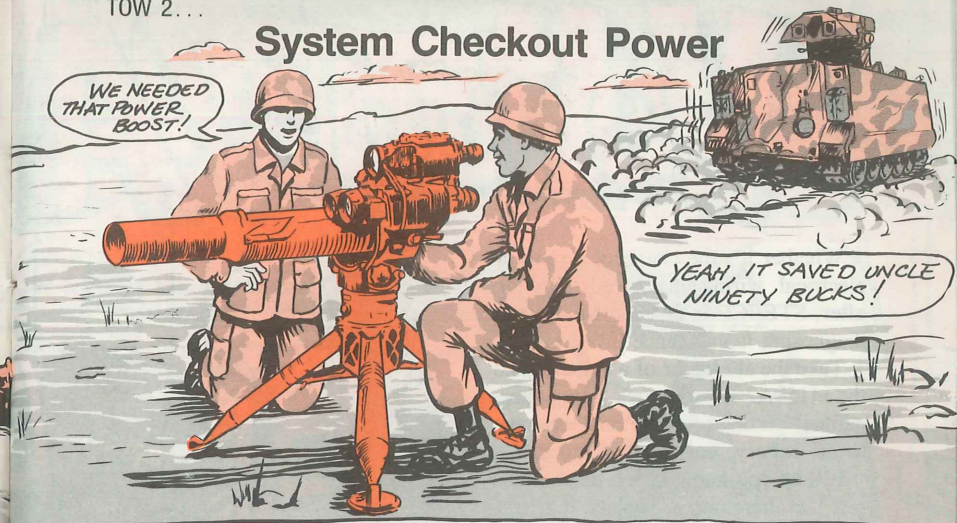
Mechs, torque the screws to 86-94 lb-ft. You tighten once, loosen them up and then torque them again.

Remember, too, that if you use an adapter to get at the screws, you'll need to convert the torque value. Check out the chart in your TM's for the conversion formula.





System Checkout Power



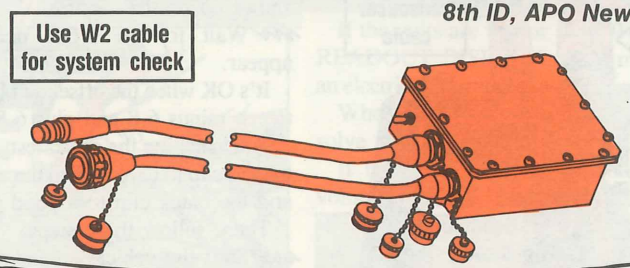
Dear Editor,

TOW 2 weapon system checkout procedures can save a lot of lithium batteries if they're done with vehicle power as opposed to batteries.

The checkout in Table 2-1 of TM 9-1425-450-12 can be done with the AN/UAS-12A night sight's 15-ft W2 cable, NSN 5855-01-144-2920. Used in the M901 ITV mode, it supplies ITV vehicle power to the TOW 2 night sight in ground mode—where TOW 2 is checked out. Use it instead of the battery power conditioner.

Vehicle power can save a lot of $90 lithium batteries.

Jack Childs
8th ID, APO New York



(Editor's Note: Thanks! Army Missile Command tells us that use of vehicle power for system checkouts will be included in a TM update.)

Voltage/Amperage Tests

Whether it's the charging system or electrical wiring that needs looking after, STE/ICE is fast and first-rate at diagnosing maintenance problems.

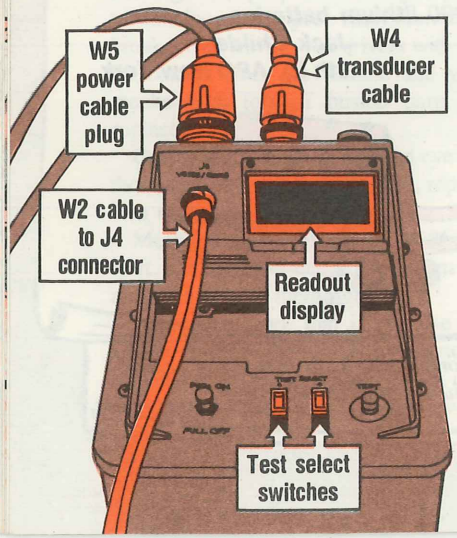
Take the alternator of a vehicle, like the M151A2 1/4-ton truck. If the alternator is putting too little or no voltage to the battery, put the tester to it.

It'll let you know if you need to adjust the alternator or replace it.

Voltage Test

To make sure the alternator is pumping amps to the battery to keep the volts up to par, do this:

- With the engine off, hook P1 plug of the W2 test probe cable to J4 VOLTS/OHMS connector.
- Put the black and red clips together.
- Dial Test 89 on the TEST SELECT switches.



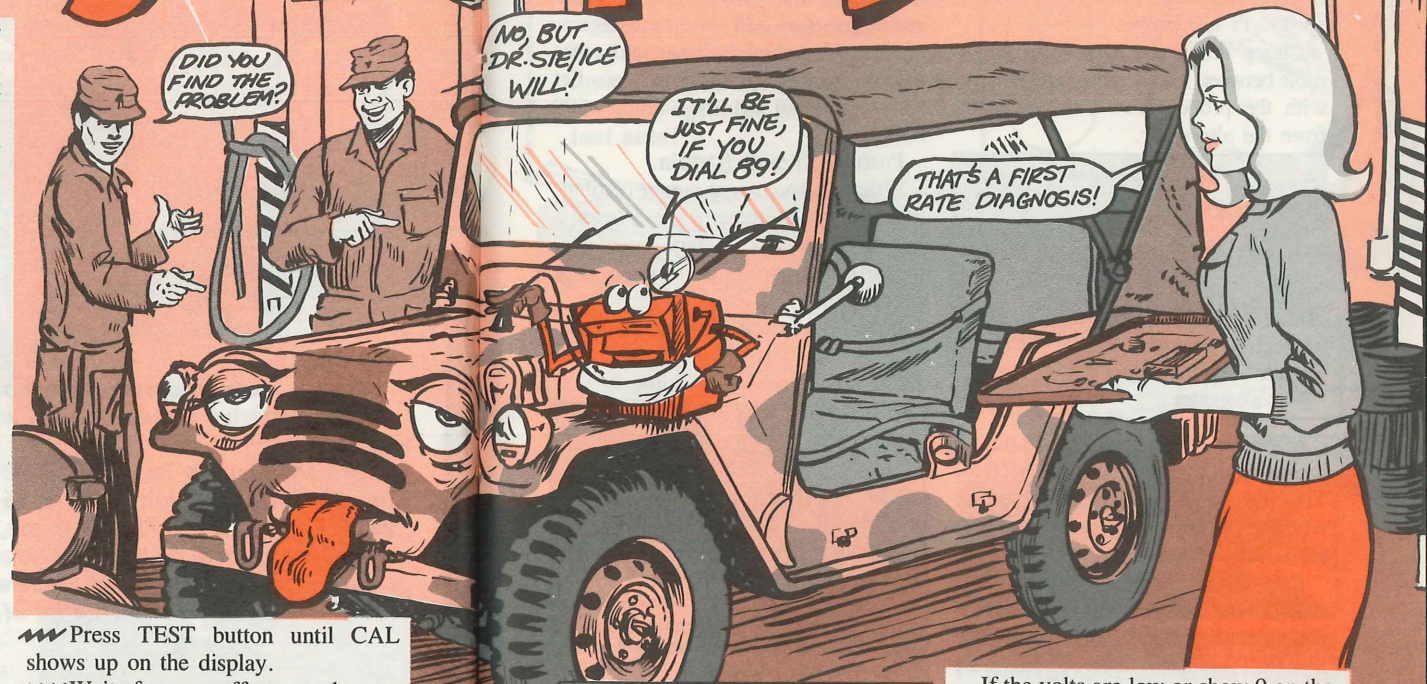
- Press TEST button until CAL shows up on the display.
- Wait for an offset number to appear.

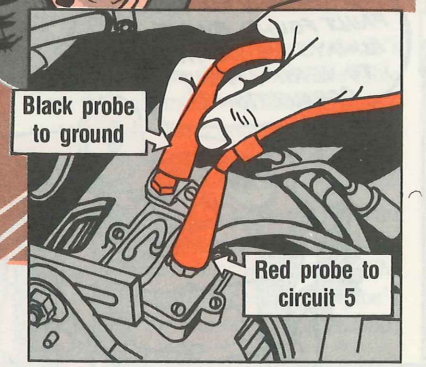
It's OK when the offset number is between minus 6.8 and plus 6.8.

After making the offset test, hook up the red clip to Circuit 5 on the alternator and the black clip to a good ground.

Then, follow these steps:

- Start the vehicle engine.
- Turn on lights and other vehicle-related electric power.
- Set engine speed to fast idle.
- Push TEST button.

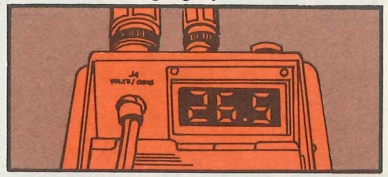




If the volts are low or show 0 on the READOUT DISPLAY, there may be an electrical short, wire broken or loose.

When you replace a bad cable or solve the problem, repeat the test.

If the display reading is 26.5-29.5 volts, the charging system is OK.



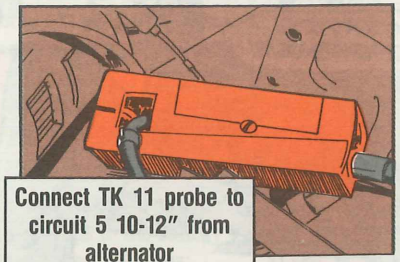
P.S MORE

Amperage Test

Hook up to the alternator and cable.

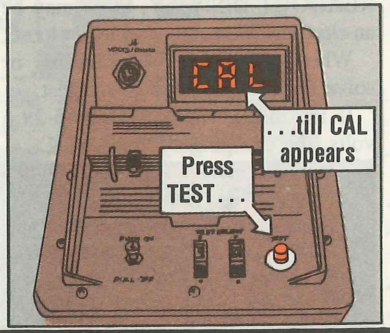
With the W5 power cable connected between a battery and the VTM (Vehicle Test Meter) and a W4 transducer cable connected to J2 or J3 plug, hook up TK 11 test probe.

Clamp the probe around Circuit 5 cable between the alternator and battery, with the probe arrow pointing away from the alternator.



Make sure the probe is 10 to 12 inches from the alternator connection. This'll keep from getting messed up with a secondary magnetic field or other electrical interference.

After doing confidence tests, you're ready to test the charging system's output current by dialing Test 90 into TEST SELECT switches and cranking the engine for just a moment.

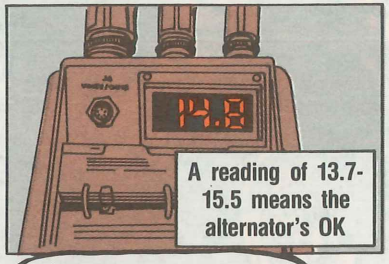


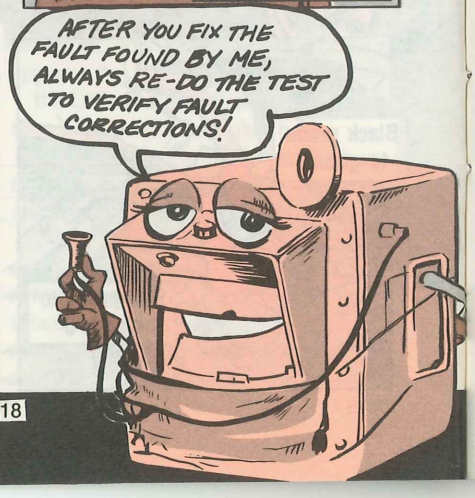
With the vehicle engine off, press TEST switch until CAL appears on the READOUT DISPLAY. Then wait for the offset value to light up on the display. If it's between plus (+) 225 and minus (−) 225, start the engine, turn on the vehicle's lights and other vehicle-related electrical power. Set engine speed to fast idle—about 1,500 RPM.

Push TEST switch again.

If there's no current output reading, look for loose alternator drive belts, a bad alternator or voltage regulator, broken or loose cable, corrosion or poor connections.

If the VTM readings slowly decrease, like "15.5, 15, 14.8, 14.5, 14.2, 14, 13.7," the alternator is doing its job.



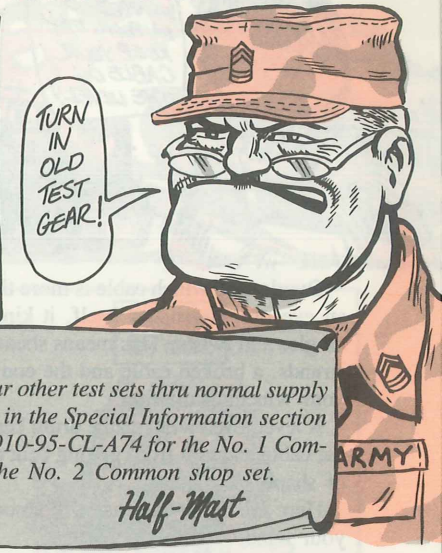


STE/ICE In—Testers Out

Dear Half-Mast,

I'm using STE/ICE (Simplified Test Equipment for Internal Combustion Engines) for testing the vehicles in our maintenance shop. Do I still need my other test equipment such as the generator and voltage regulator and tach-dwell test sets?

SFC D.C.C.



Dear Sergeant D.C.C.,

No! When you have STE/ICE you turn in your other test sets thru normal supply channels. Instructions for test set turn-ins are in the Special Information section of your tool set supply catalogs, such as SC 4910-95-CL-A74 for the No. 1 Common shop set and SC 4910-95-CL-A72 for the No. 2 Common shop set.

Half-Mast

STE/ICE...

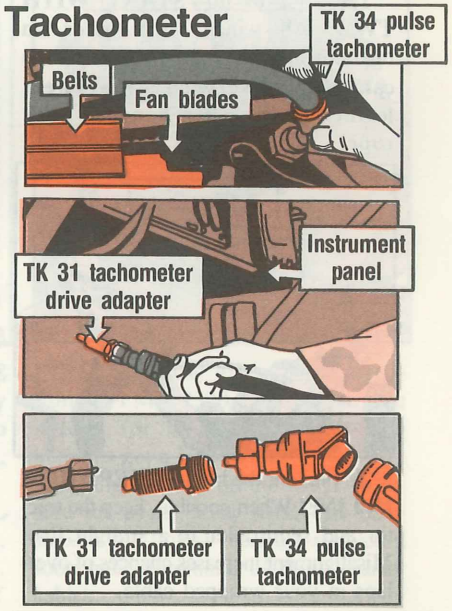
Skinning a Tachometer

There's more than one way to hook up the TK 34 pulse tachometer for testing diesel engine RPM.

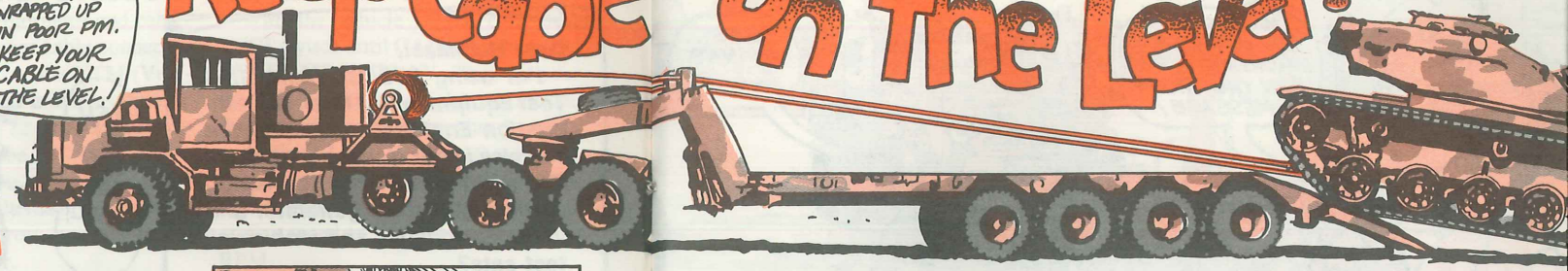
Connecting directly to the engine tachometer output can be risky—as on the M44A2-series 2 1/2-ton truck where the hookup is close to fan blades and drive belts.

Instead, connect to the vehicle's tachometer cable. Just unhook the cable from the tachometer—behind the instrument panel—and connect the TK 31 tachometer drive adapter to the pulse tachometer.

Make sure, tho, that the tachometer cable's in good shape. If there's a delay in numbers showing up on your VTM (vehicle test meter) when the engine's running, or the numbers jump around, replace the cable.



Keep Cable on the Level!

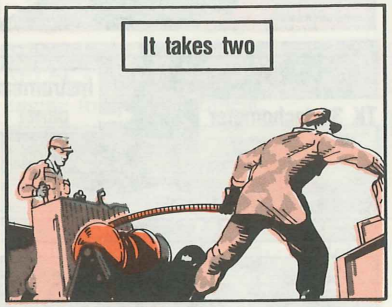


Overlapped winch cable is more than an eyesore. It crushes itself, it kinks, tangles and twists. This means sheared strands, a broken cable and the end of your winching mission.

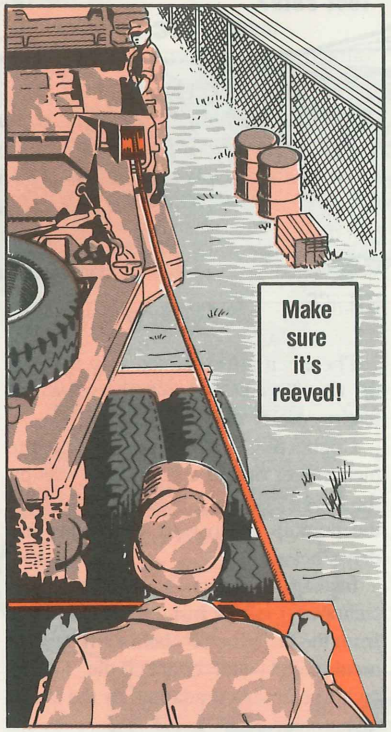
A level, even wrap on the drum keeps the cable and you from getting bent out of shape.

Here are some tips that will smooth your wind:

The first to do—**START WITH TWO!** All winch work needs an operator and a crewman. One person cannot get a level wind. **Always wear leather gloves when handling wire rope!**

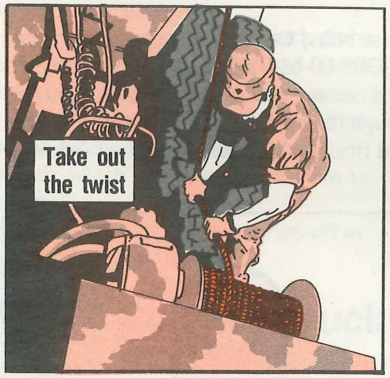


To prevent the bind—**KEEP THEM IN LINE!** When possible, keep the tractor and semitrailer in a straight line. Misalignment increases chances of overlaps in your wrapped cable.



Next you need—**TO MAKE SURE IT'S REEVED!** Thread the cable through the rollers on your M747 semitrailer. They'll act like an extra pair of hands to keep out overlaps and tangles.

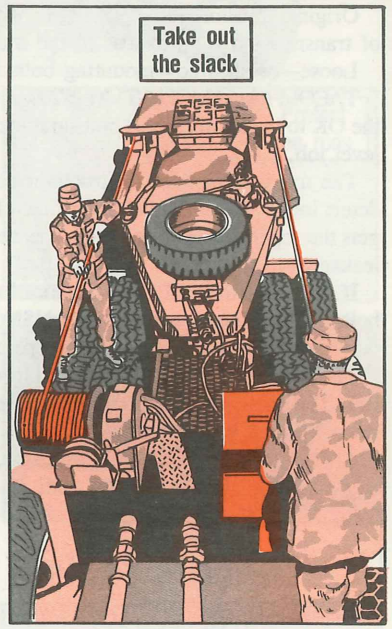
Now don't miss—**TAKE OUT THE TWIST!** A level wind starts without a load on the cable. Pay out the cable until the cable that's left on the drum is in smooth, level rows. Untwist the paid out cable and pull it as tight as possible. Keeping as much tension as you can on the cable, rewind the cable on the drum a couple of turns.



The next act—**TAKE OUT THE SLACK!** Connect to a load heavy enough to keep tension on the cable to take out slack. When the cable is taut, make sure it is straight.

The way to go—**REEL IN REAL SLOW!** Take up at a slow, steady pace. Never reel in the cable at a high speed.

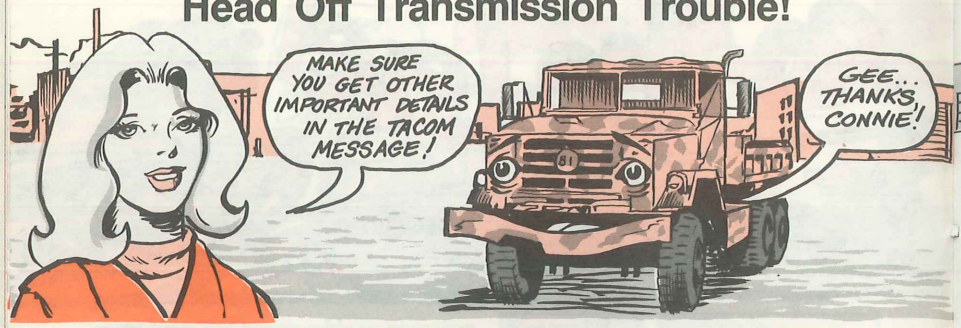
Prevent the worst—**KEEP SAFETY FIRST!** Follow all safety instructions in TM 9-2320-270-10. The care needed for a safe operation also helps to get a level wind.



Taking in cable on the M911 to insure an even, level wind can be a smooth job. Follow these tips and you'll soon have command of those cranky cables.

M939-Series 5-ton Trucks...

Head Off Transmission Trouble!



Original transmission mounting hardware is giving trouble—ranging from loss of transmission fluid to loss of the transmission itself.

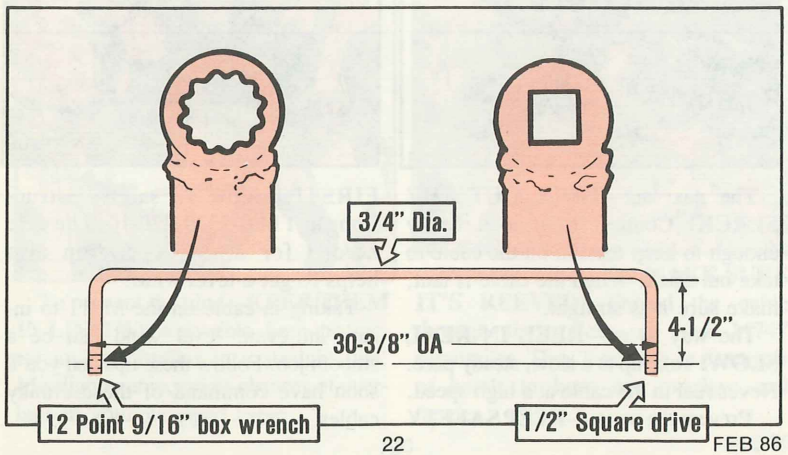
Loose—or sheared—mounting bolts are to blame.

TACOM Msg AMCPM-TVM 072020Z Oct 85 gives Organizational Maintenance the OK to install improved bolts and lock washers and head off a major support-level job.

The message includes instructions for immediate and periodic inspection to detect loose or sheared bolts, leakage of oil and evidence of gasket damage. DS gets the repair job if there're any sheared bolts or there's gasket damage or fluid leakage.

If the problem's only one or more loose bolts, Org Maint replaces all of the bolts and washers, using bolts, NSN 5305-00-638-8920, and lock washers, NSN 5310-00-004-5033. Bolts are replaced one at a time, using 41-49 lb-ft torque.

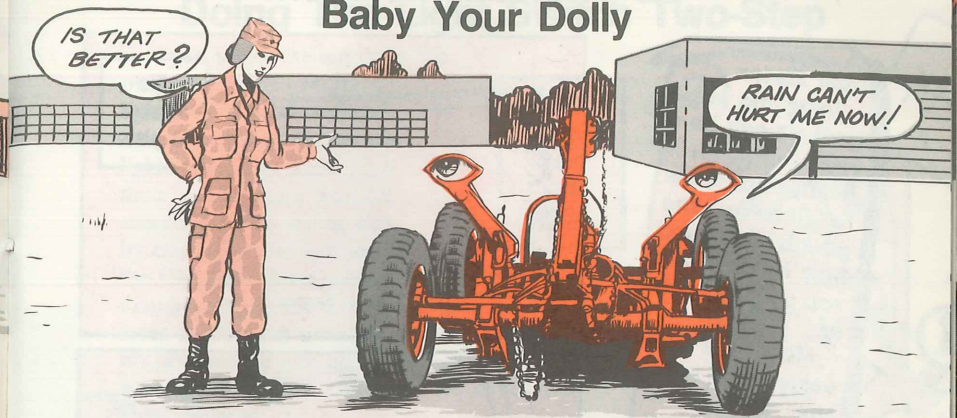
The four top bolts can be reached through the transmission access door in the cab. The eight other bolts can be reached from underneath using this fabricated wrench along with a torque wrench:



FEB 86

M840/M832 Dolly sets...

Baby Your Dolly



Protect your transportable shelter's dolly sets when you're not using them. Lower them to the ground.

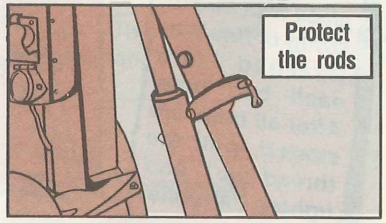
This retracts the lift jack cylinder rods and—

—Protects the rods from the elements to prevent corrosion.

—Solves the frozen lifting jack problem. You just pump 'em up and let the hydraulic pressure break 'em loose.

—Pushes the hydraulic fluid back into the reservoir. This leaves less room for air which reduces condensation in the tank.

—Tilts the pump so water runs off instead of seeping inside.



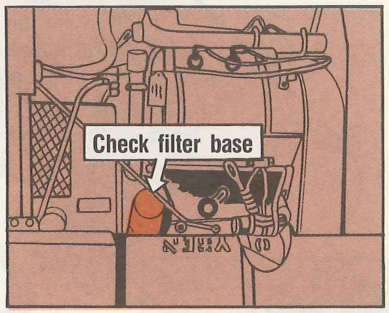
M887...

Contact Truck Welder Filter

There's a new oil filter base that's used on the welder engine on some M887 contact maintenance trucks.

Look at the filter base on the Wisconsin VG4D engine. If it's PN RV52A1, you need an automotive-type spin-on filter, PN RV52S4. Get a package of four with NSN 2940-01-186-0415.

If the base PN is other than RV52A1, use filter NSN 2940-00-891-9342 listed in TM 9-4940-421-24P.



FEB 86

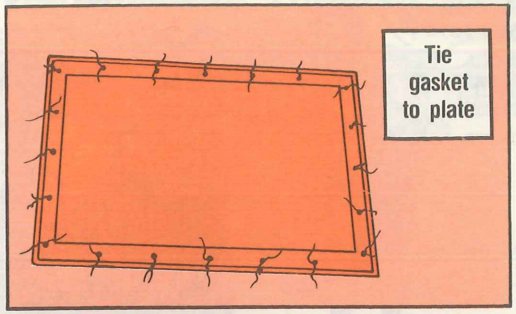
Tie That Gasket Down

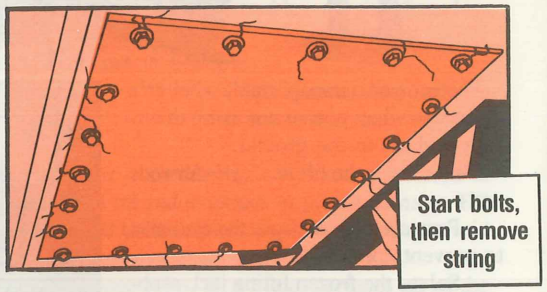
Dear Editor,

Installing large gaskets can be a real pain. It's nearly impossible to line up the gasket, cover and bolt holes while you get the bolts in.

Make the job easier by tying the gasket in place with thread, string or fine wire threaded thru each bolt hole. After all bolts are started, pull the thread out and tighten the bolts.

CM3 Vincente V. Fuentebella
FPO San Francisco





(Editor's Note: SMART idea, mate! If fine thread is used, some folks don't bother removing it.)

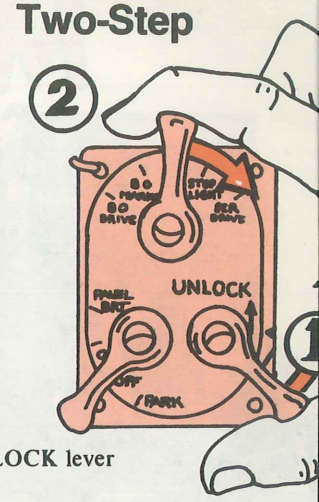
Elbow NSN Error

Use NSN 4730-01-155-5449 to get the elbow that connects the oil sampling valve, oil supply hose and oil outlet port of the transmission oil cooler on M939-series trucks. The NSN listed on Page B-36 of TM 9-2300-422-23&P is wrong.

Doing The Light Switch Two-Step

If you break the interlock pin on your vehicle's military light switch, you can accidentally turn on the service lights when you don't want them...like under blackout conditions! Pins are broken by operators who pull up on the UNLOCK lever with their thumb and pull down on the LIGHT lever at the same time. That puts pressure on the pin, and sooner or later it breaks. A broken pin means the switch has to be replaced.

Unlock—then move light switch

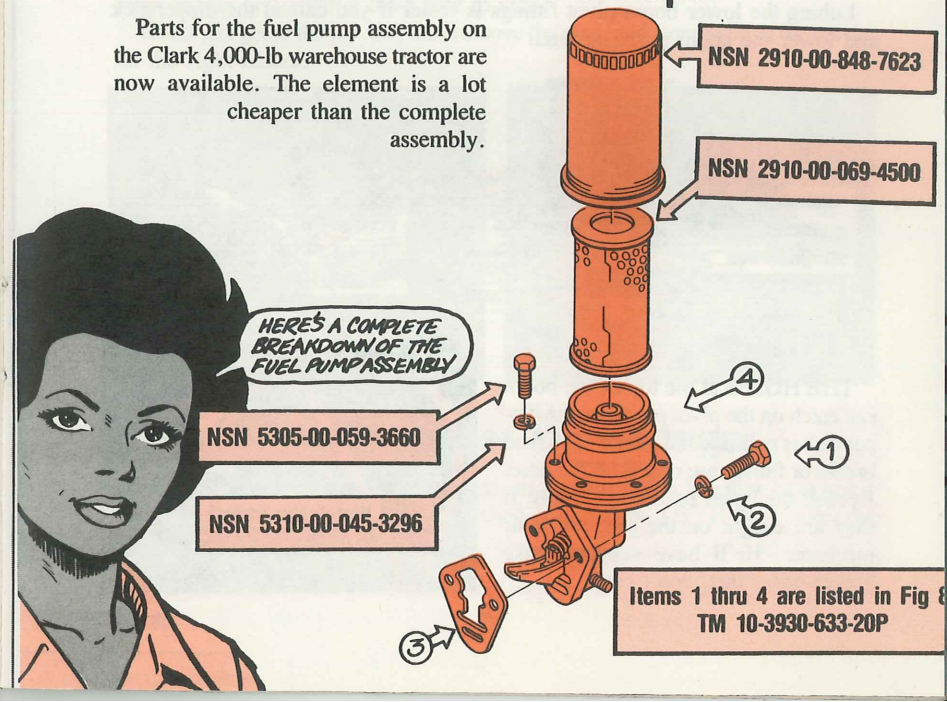


When you work the switch, pull up on the UNLOCK lever first, then move the LIGHT lever to the position you want.

MHE-228 Tractors...

Filter Parts Are Cheaper

Parts for the fuel pump assembly on the Clark 4,000-lb warehouse tractor are now available. The element is a lot cheaper than the complete assembly.

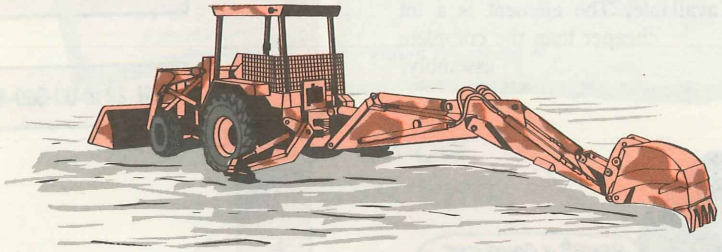


Dig That Backhoe PM

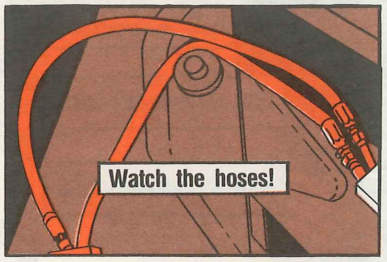
The backhoe on your JD-410 makes digging a snap—beats using a shovel.

To keep the backhoe on the go, tho, there are some things you have to do.

Lubing the lower boom pivot fittings is easier if you extend the dipperstick and lower the boom to the ground.

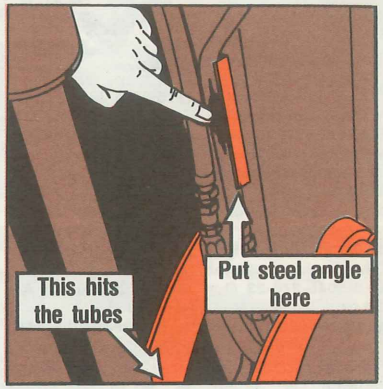


THE HOSES at the top of the boom can catch on the pivot pin when the dipperstick is pulled to the tractor. The hose breaks or fittings are ripped off the hose. Eyeball the hoses before operation. If they are caught on the pin, tell your mechanic. He'll have support make longer hoses that won't catch.



THE BUCKET LINKAGE can hit the hydraulic tubes on the back of the dipperstick if the bucket is extended too far when you dump the bucket. The tubes get bent, cutting off hydraulic fluid to the bucket clam cylinder.

Protect the tubes by having your mechanic weld on a piece of 1-in steel angle about 4 inches long on both sides of the tubes. NSN 9520-00-277-5986 will get you 1-in steel angle.

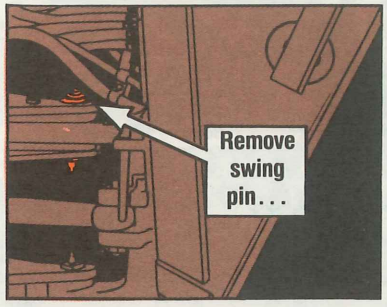


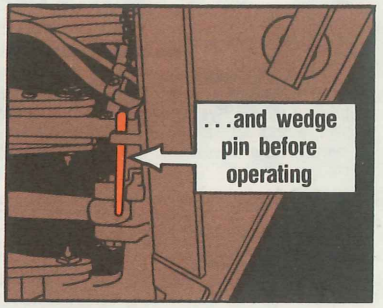
Pin IN—Pin OUT!

If you try to use the backhoe on your JD-410 before you remove the boom wedge pin or the swing lock pin, you'll tear up the boom or the bracket.

You need the pins when you transport the backhoe. The pins keep the boom from falling or swinging from side to side.

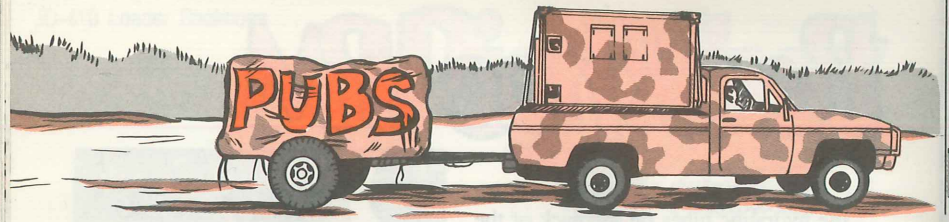
When you get to the job site, tho, remove the pins, and store them in the bracket on the right fender.





JD410 Loader Oil Change

No need to use that special 10-weight oil in your JD410 loader backhoe's transmission anymore. The headshed now says OE/HDO 10W oil (MIL-L-2104) works just fine.



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.

TM 3-1040-276-10 Sep M3A4 smoke generator
TM 3-1040-276-23 Oct M3A4 smoke generator
TM 3-1040-276-23P Oct M3A4 smoke generator
TM 5-2090-202-12&P Sep Cradle for twin jet bridge boat
TM 5-4930-230-23P Dec Mil design tank and pump unit
TM 5-6115-606-14 Sep 100-KW DED generator set
TM 5-6675-324-14-1 Sep Topographic support system, Model ADC-TSS-13
TM 5-6675-324-14-2 Sep Topographic support system, Model ADC-TSS-13
TM 9-1015-223-23P Jul M67 90-MM recoilless rifle
TM 9-1430-489-24P Dec Azimuth laying set, LANCE
TM 9-2320-280-20 Apr HMMWV
TM 9-2320-280-20P Apr HMMWV
TM 9-2320-285-24-1 Oct M878A1 yard tractor
TM 9-2320-285-24-2 Oct M878A1 yard tractor
TM 9-2320-285-24P Oct M878A1 yard tractor
TM 9-2350-261-20-1 Jul M113A2-series FOV
TM 9-2320-285-24-1 Oct M878A1 truck, tractor
TM 9-4935-486-24P Oct LANCE
TM 9-4935-547-24P Sep HAWK
TM 9-6920-470-24P Nov M70A1 and M70 TOW training set
TM 11-5855-214-10 Sep AN/TVS-5 night vision sight
TM 11-5965-279-13&P Sep MK-896A headset-microphone kit
TM 11-7440-283-12-1-1 Jan 86 Cannon battery system computer group
TM 11-7440-283-12-1-2 Jan 86 AN/GYK-29(V) LANCE fire direction system
TB 9-2300-378-14 Sep M48A5/M60-series tank air induction system
TB 55-1520-214-20-44 Sep H-6 series helicopter tail rotor blade tip caps
TM 55-1520-238-23P-1 Oct AH-64A
TM 55-1520-238-23P-2 Oct AH-64A
TB 55-1680-328-20-3 Oct High performance rescue hoist assembly
TM 55-1520-241-MTF Jul 84 CH-47A/B/C
TB 43-0121 Dec IM-9, IM-93, IM-147 radiacmeters
TB 55-1500-200-20-24 Oct MS25224 switch guards and two-position switches on all aircraft and supporting equipment
TB 55-1520-214-20-44 Sep H-6 series
TB 55-1520-214-20-47 Oct H-6 series
TB 55-1520-227-20-27 Oct CH-47B
TB 55-1520-227-20-28 Oct CH-47C
TB 55-1520-228-20-36 Oct OH-58A and C model
TB 55-1520-237-20-73 Nov UH-60A
TB 55-1520-240-20-5 Oct ALQ-156/XM-130

AUDIO VISUAL STUFF

Available at battalion or post Learning Center

Films, TV Tapes

TVT 6-145 Intro to LANCE Missile System
TVT 6-150 MLRS Fire Control and Version 4 Update
TVT 9-70 Flux Cored and MIG Welding
TVT 9-85 Welding Shop, Trailer Mounted
TVT 9-86 Carbon Air Arc Cutting and Gouging
TVT 46-3 The Black Hawk Ice Protection System
TVT 22-14 Leadership: a Soldiers' Forum
SF 20-730 Make Winter Driving Safer

Maintenance & Safety-of-Use Messages

TACOM SOU—Fuel dispensing hoses, M969A1 5,000-gal fuel tanker, NSN 2330-01-155-0048, AMSTA-MVA 311600Z Oct 85.

TACOM SOU—Transmission assembly, NSN 2520-00-8844833, 2½ton truck, AMSTA-FTM 131420Z Nov 85.

TACOM SOU—M48A5 AVLB launcher, NSN 5420-01-076-6096, and M60A1 AVLB launcher, NSN 5420-00-889-2020, AMCPM-M60 221845Z Nov 85.

TACOM-SOU—M813A1 or M939-series 5-ton truck as prime mover for XM1048 flatbed trailer, AMSTA-MVA 191100Z Nov 85.

TACOM SOU—M113 APC family vehicles, AMSTA-MCB 131400Z Nov 85.

AMCCOM SOU—Gage, headspace, reject, NSN 4933-01-043-8212 for M240/M240C machine gun, AMSMC-MA 082110Z Nov 85.

AMCCOM MA 85-40—M113A1/2 APC ambulance with M14 GPFU, AMSMC-MAR-C 011920Z Nov 85

Your direct Support or Logistic Assistance Office (LAO) can provide you with more information.

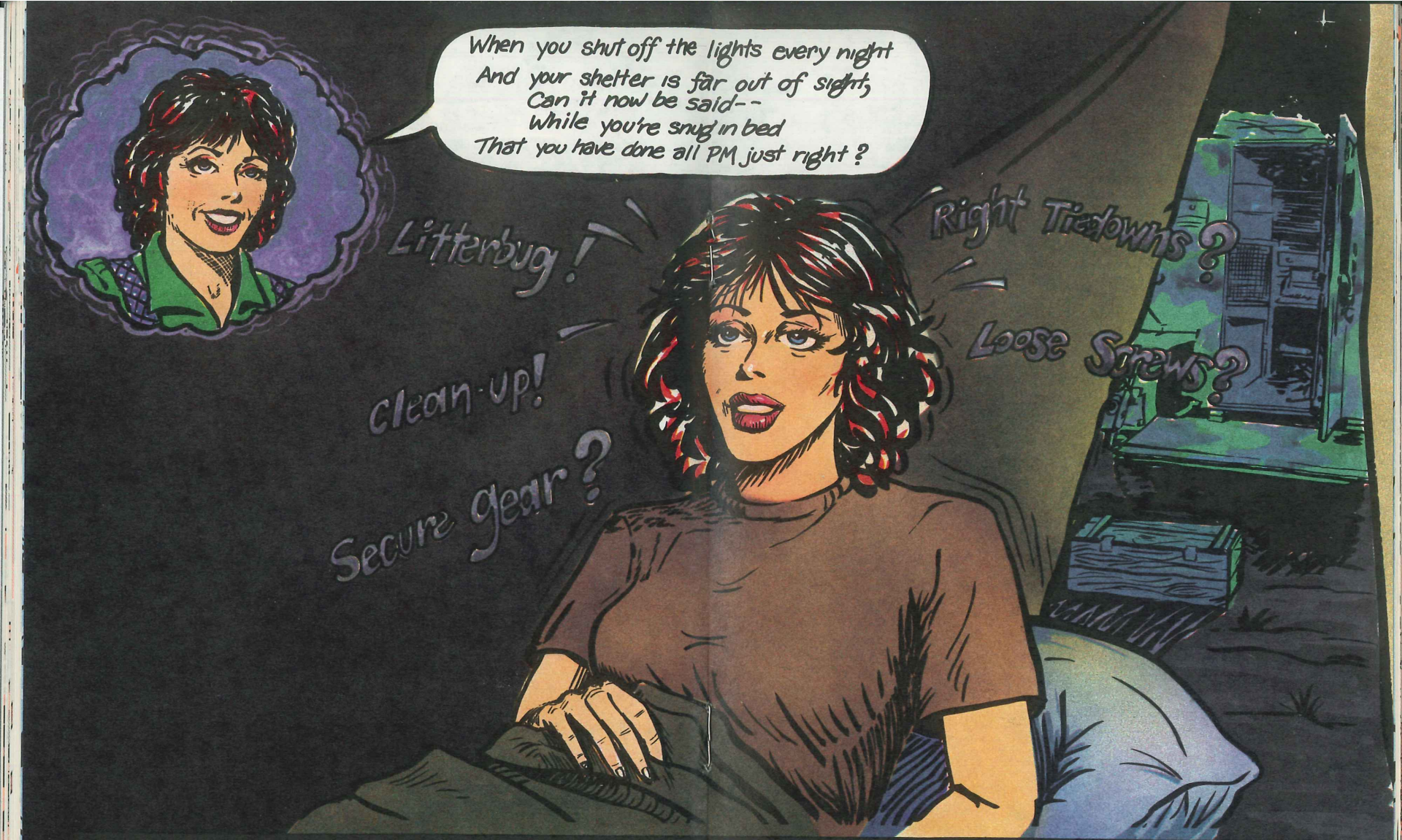
SMART Messages

SMART Msg #65—15W40 oil in internal combustion engines at 5° F and above, DALO—PLR 251852Z Nov 85.

SMART Msg #66—Improved tire inflation gage in No. 1 and No. 2 Common Shop Sets, DALO-PLR 251853Z Nov 85.


WHAT HAVE WE HERE? IS THIS GROUNDING EQUIPMENT SCATTERED ALL OVER THE FLOOR? NO EXCUSES, NOW! I KNOW YOU WERE IN A HURRY, BUT HASTE MAKES WASTE. LOOK AT THE DAMAGE THE ROD HAS ALREADY DONE. YOU'VE POKED A HOLE IN THE SHELTER'S SKIN! I'M ASHAMED OF YOU, SWEETHEART. I TAUGHT YOU BETTER.
AND LOOK-- TSK, TSK, YOU'VE LEFT SPARE COMPONENTS ALL OVER THE FLOOR. HERE ARE REELS NOT SECURED AND LOOSE ROLLS OF TELETYPE PAPER. HON, YOU KNOW YOU'VE ALWAYS BEEN A BIT CLUMSY AND YOUR FEET HAVE NEVER BEEN DAINTY. NOW WITH THOSE BIG BOOTS, WELL, YOU'LL STEP ON THOSE CABLE CONNECTORS AND KICK THE KNOBS OFF THAT EQUIPMENT!


WHAT'S THIS? JUST LIKE YOUR DRAWERS AT HOME-- A JUMBLED MESS...
...BUT THESE AREN'T SOCKS, THEY'RE CIRCUIT CARDS. YOU'LL BREAK THEIR CAPACITORS AND DIODES FOR SURE!
YOU'RE GETTING MORE LIKE YOUR FATHER EVERY DAY. AFTER ALL I'VE TAUGHT YOU ABOUT BEING TIDY!



WE HAVE THE WORLD'S BEST EQUIPMENT ...*Take care of it*


AND LOOK AT THIS— LOOSE RETAINING SCREWS! THAT'S AN ACCIDENT JUST WAITING TO HAPPEN. IF YOU DON'T RACK THIS GEAR TIGHT, OUT IT WILL SLIDE!
IS THIS YOUR COAT? THROWN RIGHT ON TOP OF YOUR EQUIPMENT?
AND YOU'VE LEFT PUBS SCATTERED ABOUT, TOO. WHAT HAS HAPPENED TO YOU, HON? THIS EQUIPMENT AND THIS SHELTER ARE YOUR RESPONSIBILITY. YOU'LL LOSE MORE THAN YOUR ALLOWANCE IF YOU DON'T KEEP IT CLEAN AND STRAIGHTENED!
OH NO! YOU'VE BECOME A LITTERBUG, TOO...
... SODA CANS -- FOOD WRAPPERS— WHEN PAPER AND SODA GET INSIDE YOUR TT'S OR VGC-74 YOU'LL WISH YOU'D LISTENED TO YOUR MOTHER!
IS THE OUTSIDE ANY BETTER? NO! IS THIS THE RIGHT WAY TO TIE IT DOWN? YOUR SHELTER HAS GOT TO BE SECURE ON ITS TRUCK!!

OH-58A&C..

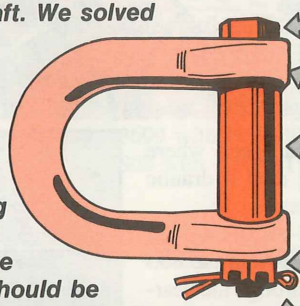
Blowing in the Wind?

Dear Editor,

High winds used to give us fits with our OH-58's, which aren't equipped with tiedown points like most of our other aircraft. We solved the problems by using tiedown shackles that attach to the fore and aft jacking points.

Get your AVIM shop to make a steel bushing to fit around the bolt between the ends of the shackle. The bushing should be 1/4-in ID, 1/2-in OD and 1-in long. It keeps the shackle from rattling during flight.

CW3 Michael L. Millam
Fort Rucker, AL



(Editor's Note: Sounds like you've tied down some loose ends!)

AVIATION MESSAGES

CAT 1 EIR Phone
AUTOVON 63-2066
(24 hours)

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

CH-47A-85-12, SOF. Comprehensive safety inspection, 082300Z Oct 85.

CH-47B-85-13, SOF. Comprehensive safety inspection, 082310Z Oct 85.

CH-47C-85-14, SOF. Comprehensive safety inspection, 082320Z Oct 85.

CH-47D-85-15, SOF. Comprehensive safety inspection, 082330Z Oct 85.

CH-47A/B/C-85-16, SOF. One-time inspection of spiral bevel gear forward and aft transmission 110300Z Oct 85.

CH-47-85-17, SOF. Technical. Depot team inspection of suspect spiral bevel gear in forward and aft transmissions, 152330Z Oct 85.

OH-6-85-02, SOF. #2 FM antenna impedance, 031900Z Oct 85.

UH-60A-85-25, SOF. Main rotor pitch horn bolts, 301700Z Oct 85.

UH-1-85-08, SOF. One-time inspection of all **UH-1C/M/H/V, EH-1** and **TH-1/TAH-1/AH-1** for defective tension torsion straps, 022045Z Oct 85.

AH-1-85-06, SOF. Technical. One-time inspection of all **UH-1C/M/H/V, EH-1** and **TH-1/TAH-1/AH-1 for defective tension torsion straps, 022045Z Oct 85.**

GEN-85-01. SOF. Maint Mandatory. interference between MS25224 switch guards and two-position switches on all aircraft and their supporting equipment, 031930Z Oct 85.

SOU-UH-60A-85-01 and **SOU-UH-1-85-01,** High performance hoist, NSN 1680-01-058-3671, 021650Z Oct 85.

MIM-UH-60A-MEM-85-06, Critical parts program, 152230Z Oct 85.

MIM-UH-60A-MEM-85-07, Inspection/repair of tail rotor blade assembly, 302100Z Oct 85.

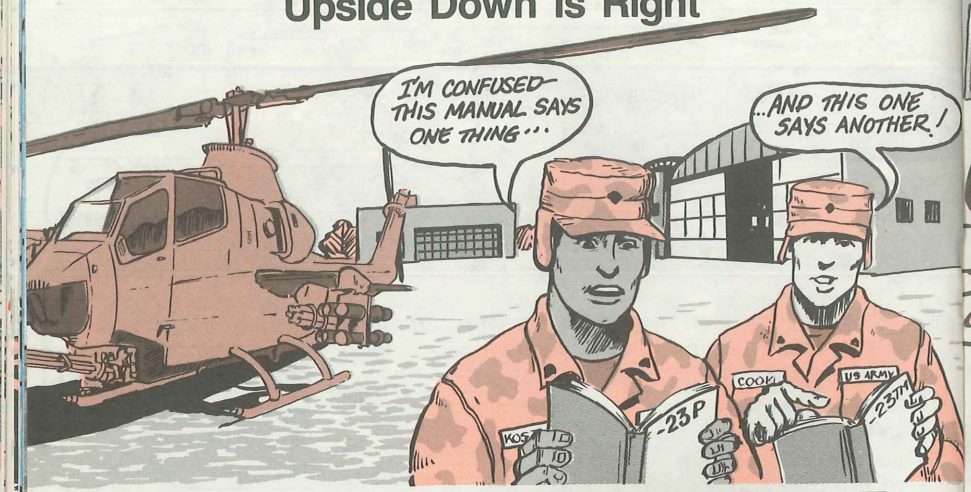
MIM-UH-60A-MEM-85-08, Main transmission module, 251600Z Oct 85.

MIM-UH-60A-MEM-85-09, Tail rotor driveshaft spherical washer, 301730Z Oct 85.

MIM-CH-47-MEM-85-07. Identification of forward and aft pitch change links, 211630Z Oct 85.

AH-1S Series...

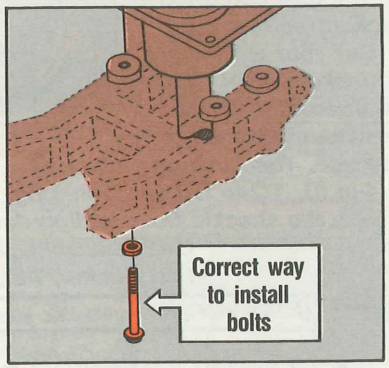
Upside Down Is Right



Confused about what goes where when you're installing dual hydraulic cylinders on your Cobra?

Fig 7-3 of TM 55-1520-236-23-2 shows the bolts installed from the bottom of the support up through the bearing housing. Fig 137 of the -23P shows the bolts installed from the top of the housing down through the support.

It's easier to install 'em like shown in the -23-2 TM—from below the support up through the bearing housing.



UH-1...

Inspection Correction

The special inspection following a sudden stoppage—main rotor blade strike—is not complete until you inspect the SKCP-series driveshaft.

The inspection procedures listed in Para A on Page 1-68 of TM 55-1520-210-23-1 are out of sequence. Steps (3) and (4) are reversed.

Aircraft...

Time for an Oil Change?

Never use oil from previously opened cans, bird mechs. You never know what kind of junk may have gotten into a can that's been opened and put on the shelf.

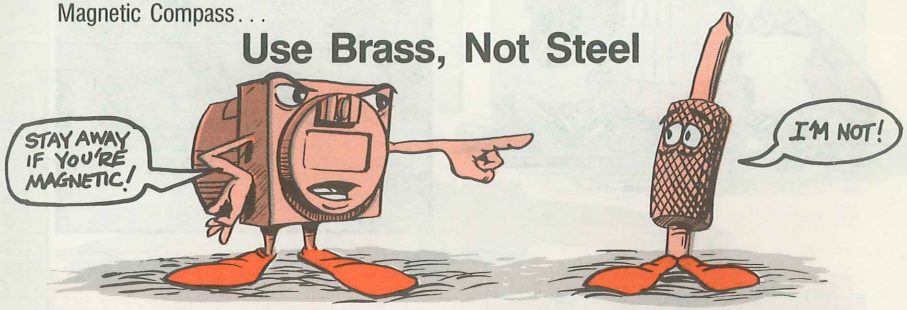
Always open a new can, use what you need and get rid of what's left.

If you've been throwing out oil left in quart cans, maybe you need smaller ones. Get an 8-oz can of:

- MIL-L-23699 with NSN 9150-00-180-6266
- MIL-L-7808 with NSN 9150-00-108-5359.

Magnetic Compass...

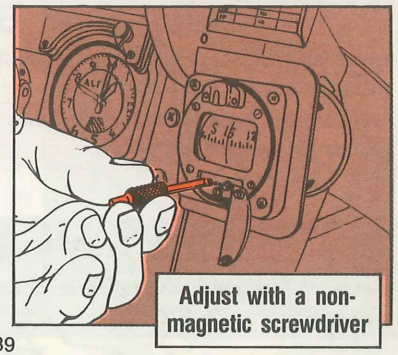
Use Brass, Not Steel



Never use a steel screwdriver to adjust the magnetic compass, bird mechs. If you do, pilots may not get a true reading and next time the bird flies there's no telling where it will land.

That's because steel has some magnetism in it. Magnetism will distort the compass reading.

Use only a non-magnetic screwdriver, NSN 5120-00-473-6450, to adjust the compass. It's part of the AVUM No. 1 and No. 2 shop sets.

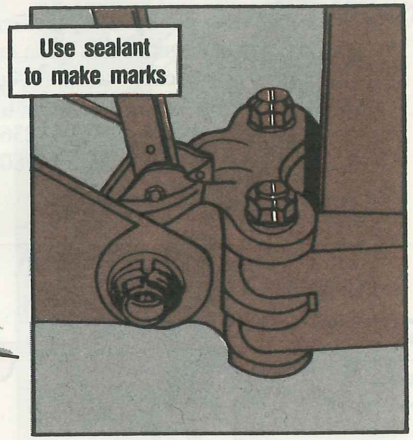


Army Aircraft . . .

No Runs, No Hits, No Errors

Applying slippage index marks to nuts, bolts and adjoining surfaces can be messy and ineffective, especially if you don't have a very small brush and a steady hand. The lacquer called for in Para 7-66 of TM 55-1520-236-23-2 is too thin and runs everywhere.

One way to solve these problems is to use sealant, NSN 8030-01-077-7674. It comes in a small squeeze tube, is white and won't run or drip.



OH-58A & C . . .

Keep Seat Belts Secure

When you're a passenger in an OH-58A & C, be sure to refasten the seat belt before you leave the aircraft.

Unfastened belts sometimes find their way outside the bird's doors and bang against the honeycomb panels.

Pitot Static Line Tubing

Get the plastic tubing to fabricate pitot static lines for OH-58A & C aircraft with NSN 4720-00-916-7092.

UH-1 Gearbox . . .

No Pain to Drain

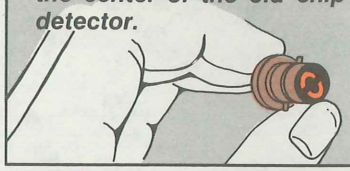
Dear Windy,

There's no gearbox drain tube in the supply system for the Huey, but you can make one real easy.

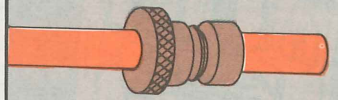
All you need is an unserviceable chip detector, a 15-in long piece of 1/4-in plastic tubing, NSN 4720-00-964-1433, and a cotter pin, NSN 5315-00-828-8190.

Here's how you make it:

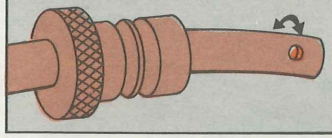
Knock out or drill out the center of the old chip detector.



Insert the tubing through the detector.

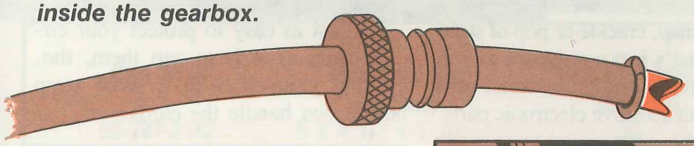


Make a small hole on each side of the tubing about 3/8 inch from the end.



Insert the cotter pin through the holes and bend it around the tubing to keep it from slipping out.

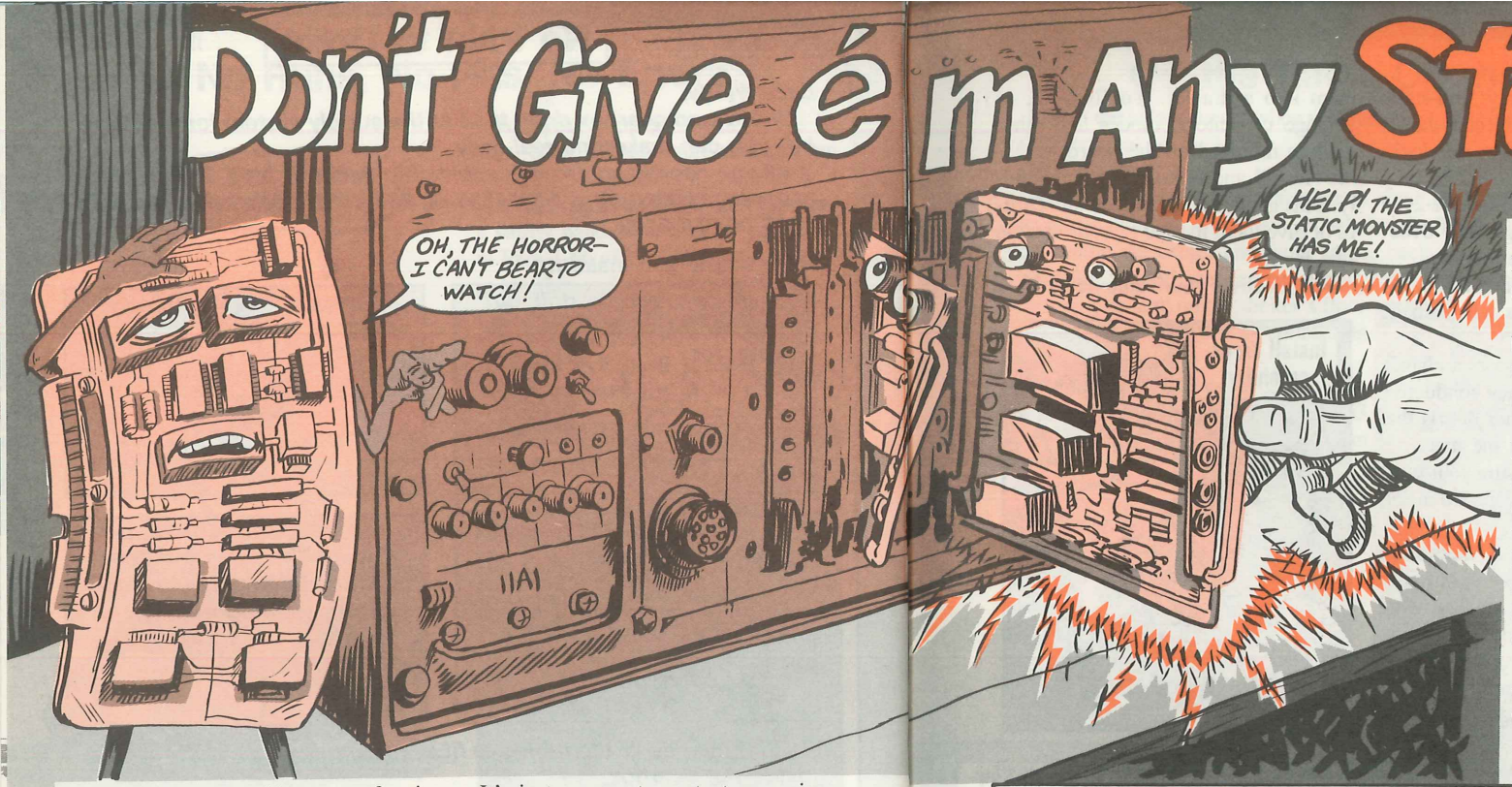
Slot the end of the tubing to fit over the poppet shutoff valve inside the gearbox.



To use this drain tube, take the chip detector out of the bird's gearbox and insert the homemade drain. 'Course, be sure you have something handy to catch the oil when it drains.

Vernon Cantrell
Frankfort, KY

Don't Give 'em Any Static!



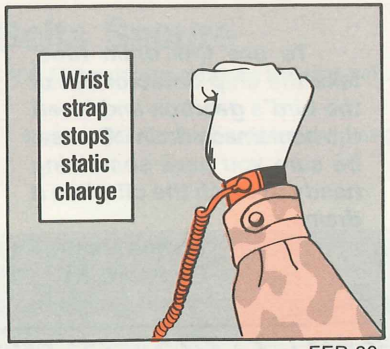
The little snap, crackle or pop of static electricity that's just a nuisance to you can be the kiss of death to a circuit card assembly with sensitive electronic parts.

Many of the cards you change every day in your commo shelter and other gear are super-sensitive to static electricity. The discharge of this static electricity is called Electrostatic Discharge (ESD). ESD can zap sensitive gear.

You—the operator—are a prime ESD carrier. Just by walking across the floor, sliding around in your chair or combing your hair, you build up thousands of volts of static electricity.

Some circuit card components can be ruined by ESD doses as low as 20 volts.

It's just as easy to protect your circuit cards as it is to zap them, tho. Ground yourself with a wrist strap before you handle the cards.



You can get a wrist strap with NSN 4240-01-063-4880. The strap costs approximately $9.

Additional protection is offered by special conductive mats. Use them on work surfaces and floors.

Once you've removed and handled a circuit card properly, repackage it in its original anti-static container. This applies to field returns, too. If you don't have the original pack, here's an assortment of reusable, anti-static and cushioned fast pack containers.

These NSN's can also bring the old untreated fast packs. Specify "anti-static" on your request.

NSN 8115-	Max Card Size (inches)	Max Card Weight (pounds)
00-787-2142	5 x 4 1/2 x 1 1/4	.50
00-787-2147	5 x 4 1/2 x 2 1/4	1
00-101-7647	8 x 5 1/2 x 1 1/4	.90
00-101-7638	8 x 5 1/2 x 2 1/4	1.80
00-787-2146	11 x 7 1/2 x 1 1/4	1.80
00-787-2148	11 x 7 1/2 x 2 1/4	3.60
01-019-4085	17 x 11 1/2 x 1 1/4	4.30
01-019-4084	17 x 11 1/2 x 2 1/4	7.75
01-057-1244	9 x 9 x 2 1/4	2.65
01-057-1243	12 x 12 x 2 1/4	4
01-057-1245	15 x 15 x 2 1/4	5.30
01-093-3730	23 x 15 x 2 1/4	10

PS MORE

Remember to use only anti-static material to pack your circuit cards. Using the plain recloseable, interlocking fastener bags is a no-no. Use only anti-static bags. NSN 8105-01-197-2965 brings a 12-in square bag. NSN 8105-01-197-2966 is 10 inches square.

Put only one card in each fast pack. Double up and the cards will damage each other.

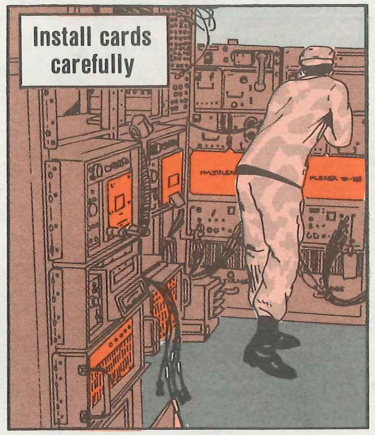
Give your static protectors a chance to do their job. Keep your conductive mat clean of dirt and other debris that might insulate you from the mat.

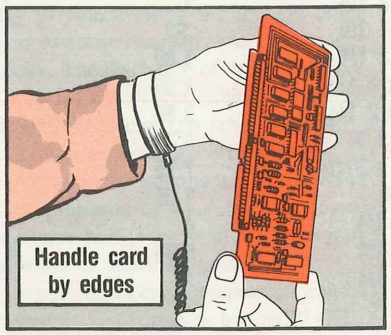
You should also make sure your wrist strap is attached to bare grounded metal, not paint.

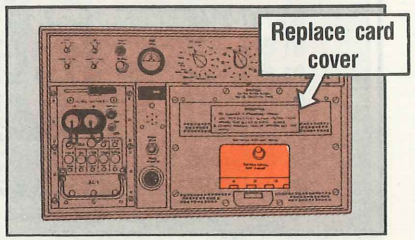
You might want to suggest these same ESD protection measures to your support shop (if they aren't already using them). A circuit card that's zapped in the shop won't work in the field.

Deal all cards a PM hand. Here are some rules to keep in mind any time you handle one:

- Use your wrist strap.
- Handle circuit cards only on the edges. Dirt, grit and natural skin oil can louse up printed circuits, too.
- Never stack cards or just throw them into a drawer. You'll break or damage capacitors, diodes and other devices mounted on the board.
- Install and remove cards carefully. Pins get busted when you jam cards in or give them the flat of your hand to seat them.
- Shut down your equipment before installing a card. Likewise, bring your shelter's power source up to speed before turning the commo gear on again.
- Use card cell covers. Once you've installed your cards, replace the gear's cover. Without it, cards can jiggle loose, giving you a poor connection.







Off the Rack, On the Shelf

Forget the balancing act when you slide the multiplexer out of its AN/TRC-145 radio terminal set rack.

Use the shelf.

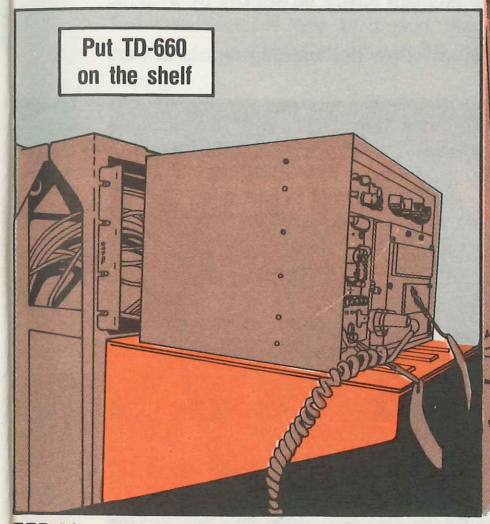
Newer Track-145's (serial number 47 and higher) have the shelf. You operators and unit repairmen don't have to balance the TD-660 on the rack's edge while you handle the cables and work in the back.

A 50-lb multiplexer can be quite a load. If you lose control of it, the -660 can take a beating on the shelter's floor after it tears loose from its connecting cables.

Use the shelf. If yours is damaged or missing, replace it with FSCM 80063 PN SCD681135. Order on a DD Form 1348-6 with RIC of B16.

If you're working on the TD-660's plug-in panels, use a light touch. Before you push them in, be sure the guide pin mates with the case receptacle.

When you've got all the panels seated, replace the card cell cover. It keeps the panels seated. It also holds dirt and moisture out of the case.



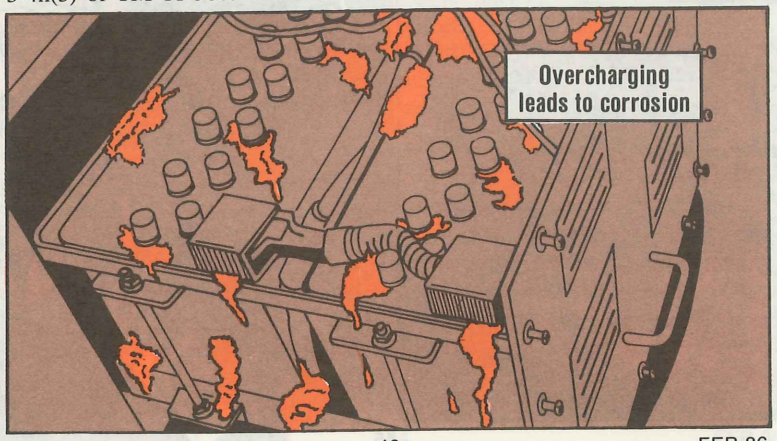
Nobody wins when you overcharge your telephone central's storage battery.

The **battery** loses because that extra charging voltage will shorten—or end—its life.

You lose because the overcharged battery boils over, coating your battery box slides, battery cables and the battery box itself with corrosion. That leaves you with a messy cleanup or support maintenance with a repair job.

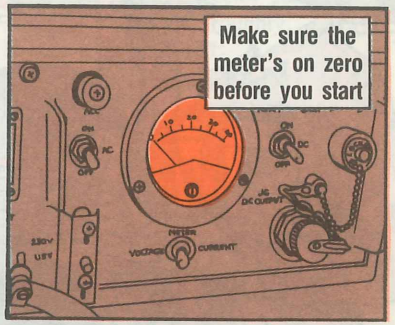
Overcharging is dangerous. The hard charge will release extra hydrogen from the battery's electrolyte. That flammable gas can easily be set off by a flame or spark.

Your best defense against all of these is to follow the winning words in Para 3-4h(3) of TM 11-5805-693-12.



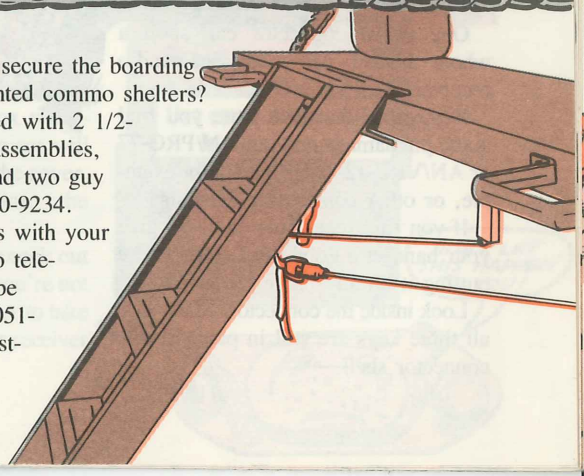
Remember never to crank the voltage past the TM limits in the hopes of getting a faster charge. Likewise, don't set your PP-6224 power supply for constant voltage and forget it. You have to keep an eye on the operation when you're charging at this rate. See the TM.

Make sure you're getting only the volts the power supply's output meter says you are. Make sure it's on zero volts before you set the charging voltage. Turn the meter to zero if it's not already there.



While you're adjusting the power supply's output, stop turning the DC OUTPUT ADJUST knob when you feel resistance. If you turn past that point, you can twist and break inside wiring.

Boarding Ladder Ropes



Need rope assemblies to secure the boarding ladders on your truck-mounted commo shelters?

The MX-3391 ladder used with 2 1/2-ton trucks takes two rope assemblies, NSN 4020-01-043-4214, and two guy fasteners, NSN 4030-01-040-9234.

The MX-3543 that comes with your AN/GRC-142 or -122 radio teletypewriter set takes two rope assemblies, NSN 4020-01-051-7025. Use the same guy fasteners as above.

Watch for BAD Apples

One rotten connector can spoil a whole bushel of good FM audio receptacles.

Remember that next time you find audio pin damage on your AN/PRC-77 or AN/VRC-12-series radios, for example, or other commo components.

If you find receptacle damage, give your handset a good once-over before putting it on any other receptacle.

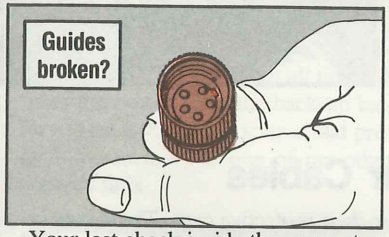
Look inside the connector. Make sure all three keys are still in place on the connector shell.

These small studs match the keyways on the receptacle. Together they let the connector pins mesh with, not mash on, audio pins.

Without keys, the connector can slide on too far, ruining receptacle pins.

Also make sure that the plastic guides on the connector insert are held by the grooves in the connector shell.

If the guides break off, connector pins shift around and grind on receptacle pins.



Your last check inside the connector is for an O-ring. It gives you smooth and watertight connections.

The O-ring does both jobs best when lightly lubed with silicone, NSN 6850-00-880-7616.

Even a good connector can do big damage if handled roughly. Always handle it by the shell.

When connecting, pull back on the shell to seat the connector, not on the cable.

When disconnecting, slide the connector off by handling the shell. Never just yank on the cable.

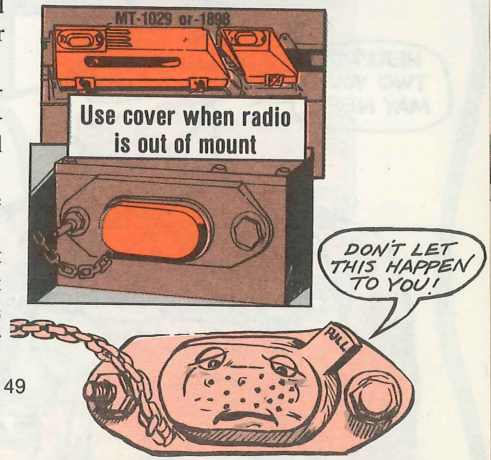
Yanking on the cable can damage wiring, break the audio receptacle or both.

Punched Holes Poke at PM

An electrical connector cover poked full of holes will leak like a sieve in your MT-1029 or MT-1898 radio mount.

Leaving the cover, NSN 5935-00-911-2323, on the junction box receptacle when you're installing a set will let contact pins poke holes in the cover. Then moisture will get into the receptacle.

Keep the cover in place to knock out moisture, dirt and dust when you're not using the mount. Just remember to take it off before you push an RT or receiver in the mount.



Power Shifting's a No-No

Leave the speed shifting to Big Daddy, RATT operators, and shut your commo gear down before changing power sources.

Sure, your radio teletypewriter set goes both ways—AC and DC—but it needs a rest in between.

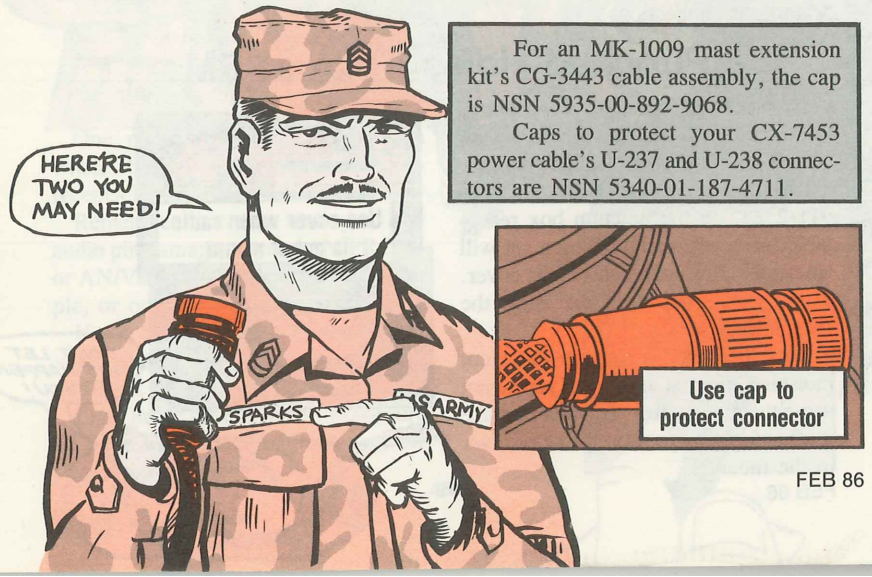
Some quick-like-a-fox operators think they can "fool" their gear. They try to move the power panel switch between power sources so fast the gear won't know the difference.

But it does. The surge from the new power source will cause arcing or spikes, which will damage the commo gear being powered.

So, always shut down before changing power sources. Power up again per Para 2-10 of TM 11-5815-334-10.

Cap Your Cables

When you're not using your cables, use their protective caps. These caps keep dirt and moisture out and prevent bangs and knocks from KO'ing your commo.



For an MK-1009 mast extension kit's CG-3443 cable assembly, the cap is NSN 5935-00-892-9068.

Caps to protect your CX-7453 power cable's U-237 and U-238 connectors are NSN 5340-01-187-4711.

FEB 86

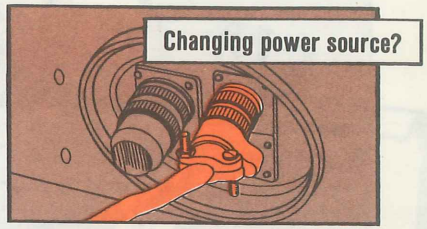
Use the Right Fuse

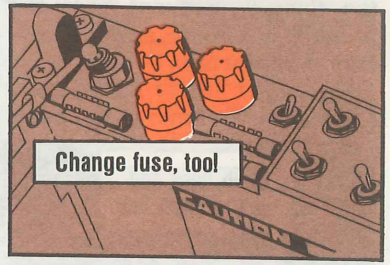
Before you change the power source to your AN/UGC-74 communications terminal, make sure you change the fuses. This is especially important when the terminal is installed in the AN/GRC-142, -122 Radio Teletypewriter Set.

Using a fuse with too high a rating in your gear leaves it open to damage from power surges. Using a fuse with too low a rating could shut you down when you need to be operating.

When you're using generator power, fuseholders F1 and F2 should have 1 1/2-amp fuses, NSN 5920-01-023-4822. When you're powering the terminal from the vehicle, use 6 1/4-amp fuses, NSN 5920-00-529-0618.

Fuseholder F3 takes a 2-amp fuse, NSN 5920-01-023-5878, at all times. It fuses the power from the back-up battery. That's the power source that protects the memory if one of the other sources fails.



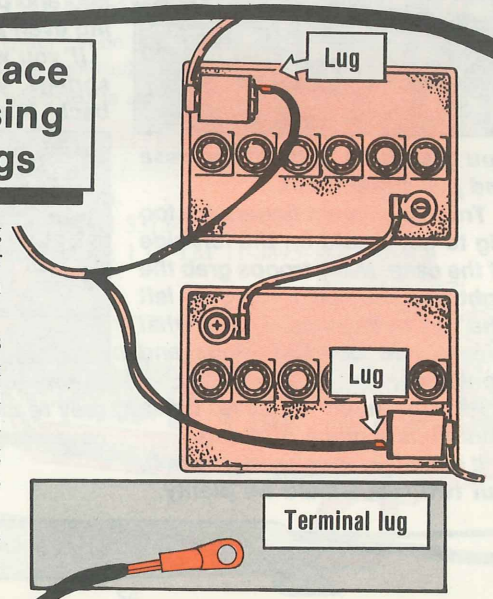


Replace Missing Lugs

Terminal lugs missing from your CX-4720 power cables? Replace them ASAP.

Wrapping bare wires around a battery post means you don't get good contact. Wires loosen and could short out, leaving your AN/VRC-12-series radio powerless.

Get replacement lugs with NSN 5940-00-838-2984.

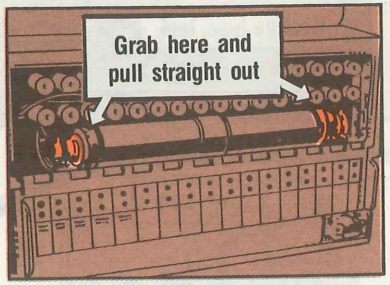


String Along Your SB-22

Dear Editor,

Adding a piece of string to your switchboard's battery case is just the thing to prevent bent and broken retaining springs and spring contacts.

Fig 2-5 of TM 11-5805-262-12 shows how to remove the case.



You grab both ends of the case and pull straight out.

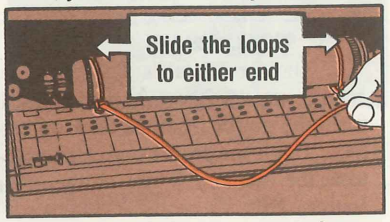
Trouble is, most fingers are too big to get a hold on the left side of the case. Many troops grab the right side and pull, forcing the left end out of its clips. That's what breaks and bends springs and contacts.

All you need to save those springs is a piece of string.

It can be as long as you want it, but two feet should be plenty.

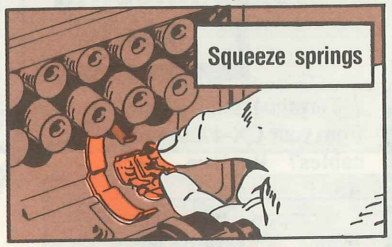
Tie a loop in both ends. Slip the loops over the case before you install it.

When it's time to remove the case, just slide the loops to either



end and pull the case out, keeping even pressure on both ends.

If you've already sprung your springs, you can put some hold back into them by squeezing



them together gently. Once they're close enough to hold the case snugly, stop squeezing.

The DS Crew
Ft Dix, NJ

Editor's Note: Thanks for the tip.

Ground Strap Trick

It takes a magician to get a small eyelet on a big thumb bolt when you're connecting your SB-22 switchboard to an MX-148/G ground rod.

Before calling in Houdini, do your own sleight of hand by changing the ground strap, NSN 5805-01-163-8867, eyelet from an "O" to a "C" with a cutting tool like a hacksaw. This will let the strap snug up to the rod when you tighten the bolt.

Or, you may want to cut off the eyelet and bolt the strap to the rod.

Make a loop to run the ground strap thru the end of your SB-22. This saves the rubber gasket from gouges and cuts.

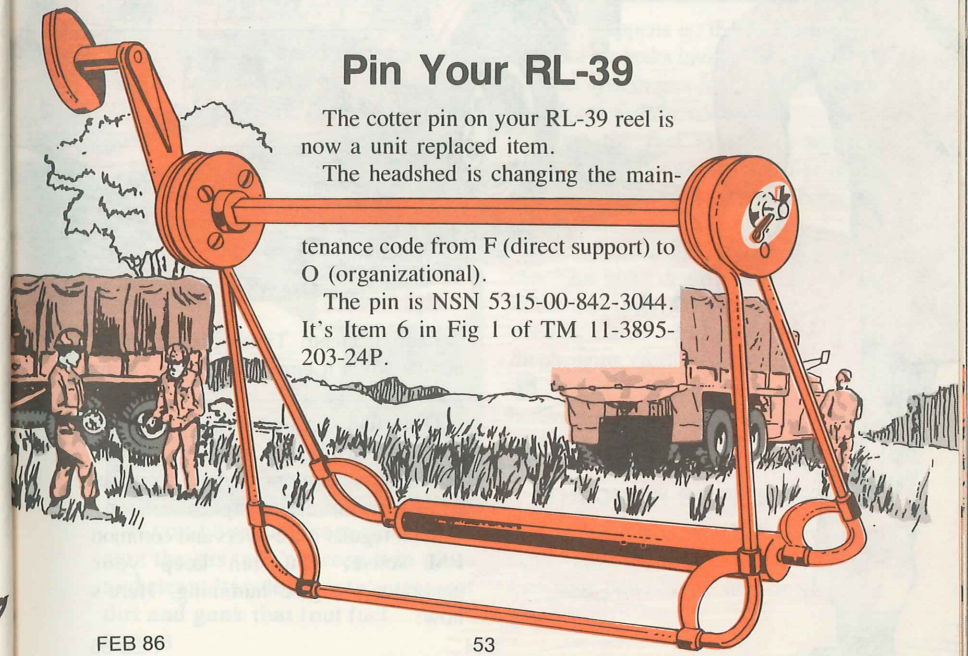
Eyeball the switchboard's ground contacts. Clean 'em if they are corroded or dirty.

Pin Your RL-39

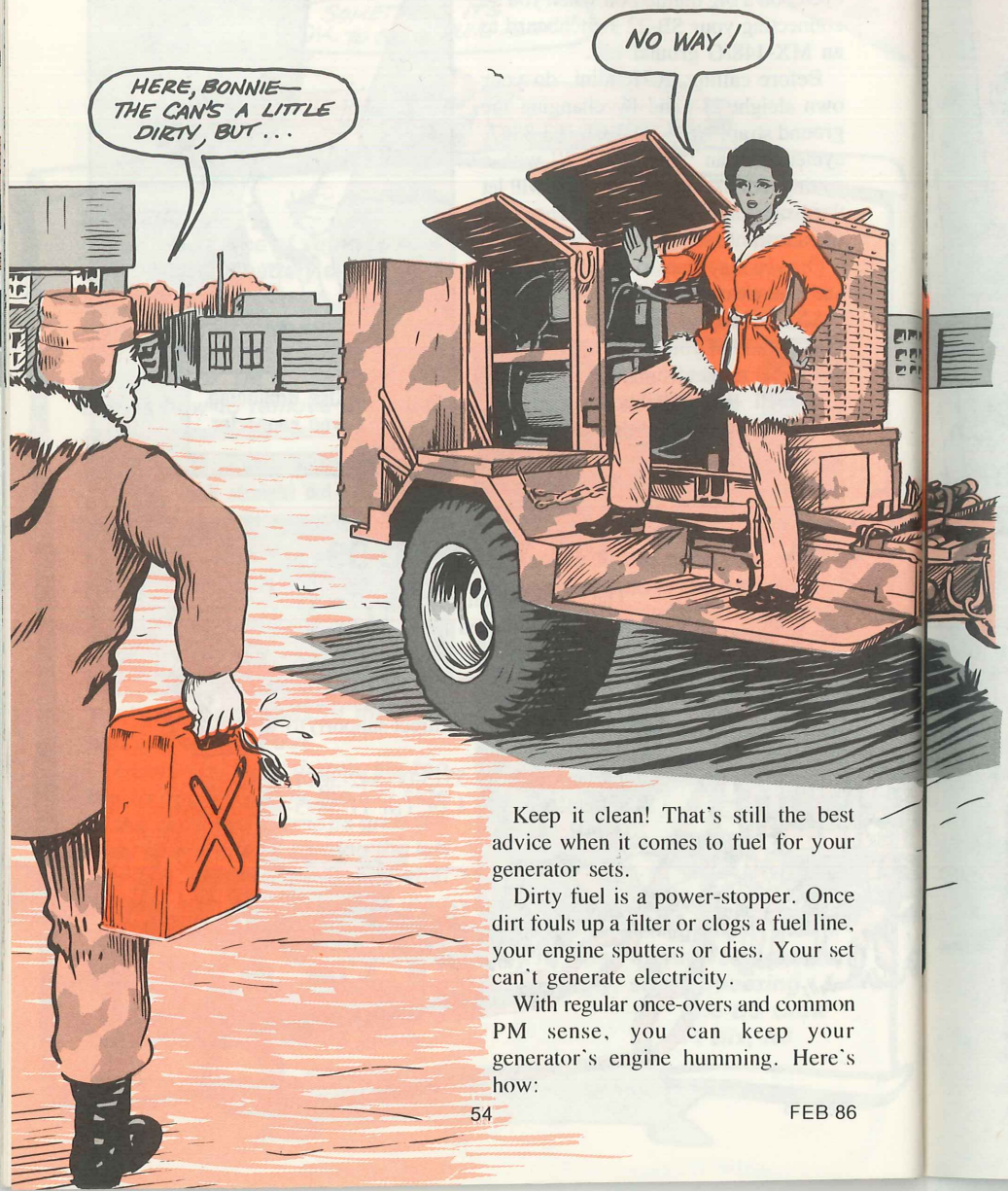
The cotter pin on your RL-39 reel is now a unit replaced item.

The headshed is changing the maintenance code from F (direct support) to O (organizational).

The pin is NSN 5315-00-842-3044. It's Item 6 in Fig 1 of TM 11-3895-203-24P.



Come Clean With Fuel

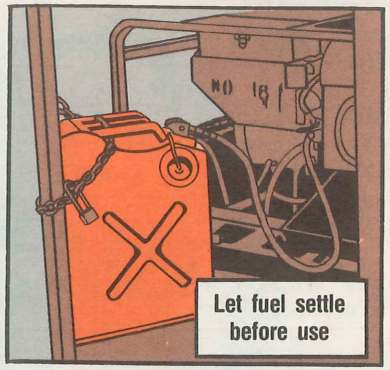


Keep it clean! That's still the best advice when it comes to fuel for your generator sets.

Dirty fuel is a power-stopper. Once dirt fouls up a filter or clogs a fuel line, your engine sputters or dies. Your set can't generate electricity.

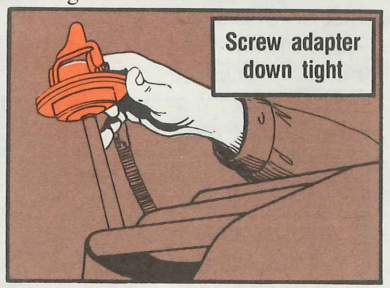
With regular once-overs and common PM sense, you can keep your generator's engine humming. Here's how:

Keep fuel clean. Rust and dirt will settle to the bottom of a 5-gallon can. Dump out the last few ounces of fuel in each can instead of using it. Dump it into an approved container, of course, not onto the ground. Check your chain of command for proper fuel disposal.

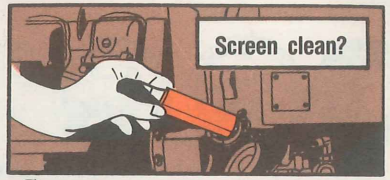


If the can **is** your fuel tank, don't shake it so the dirt gets into the fuel tank adapter.

Be sure you snug the adapter when you install it. That keeps the pipe from sucking air into the fuel lines.

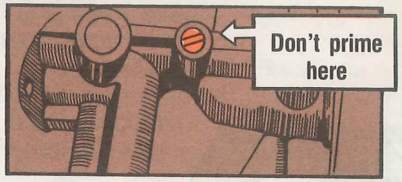


If you pour fuel from cans, make sure the gas tank's screen is in place and clean. Its sole job is to screen out dirt and gunk that foul fuel.



Check fuel filters often. Don't hesitate to replace a dirty one.

Never try to prime your engine by pouring gas into the carburetor—or into the metering jet.



What happens is, the jet O-ring gets lost and air leaks invade the system. Or the fuel system gets fouled up from dirty fuel from a dirty container.

When the fuel system is working properly, the carburetor is self-priming. Use the fuel pump to prime a bone-dry engine.

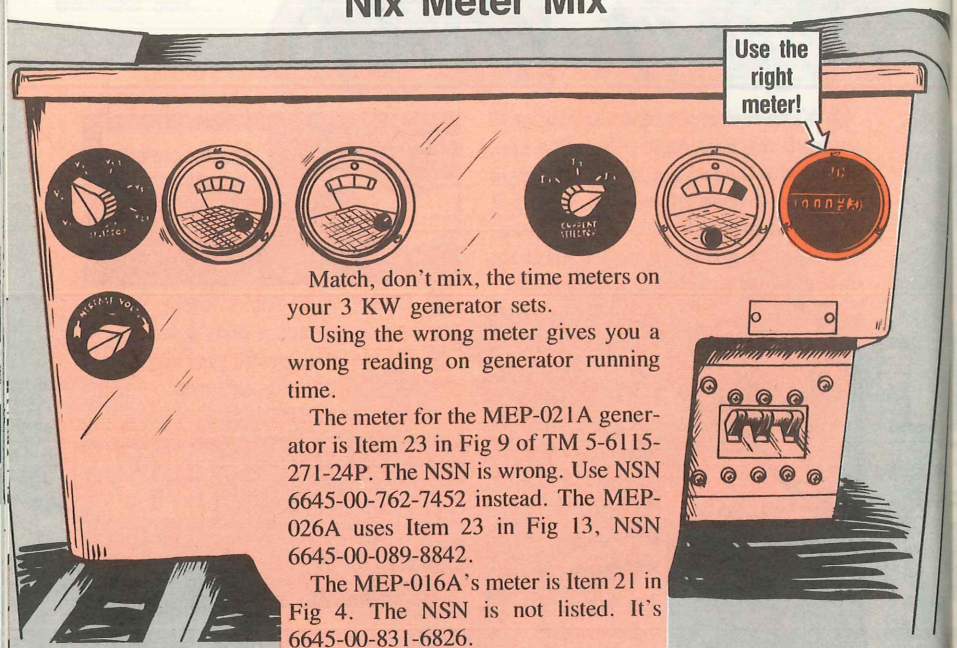
Keep fuel tanks full whenever you can. That holds down corrosion and rust in the fuel lines, keeps carburetor float needles clean and keeps fuel pump diaphragms from drying out.

Squirt a little oil into the fuel line before you hook it up. That keeps down rust and corrosion, too.

THROW IN SOME SAFETY

The final word in fuel safety is to never add fuel to a hot engine. A fire can shut down your set—or you—for good.

Nix Meter Mix



Match, don't mix, the time meters on your 3 KW generator sets.

Using the wrong meter gives you a wrong reading on generator running time.

The meter for the MEP-021A generator is Item 23 in Fig 9 of TM 5-6115-271-24P. The NSN is wrong. Use NSN 6645-00-762-7452 instead. The MEP-026A uses Item 23 in Fig 13, NSN 6645-00-089-8842.

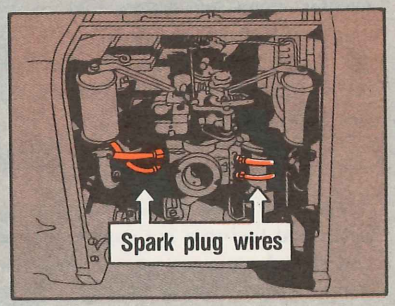
The MEP-016A's meter is Item 21 in Fig 4. The NSN is not listed. It's 6645-00-831-6826.

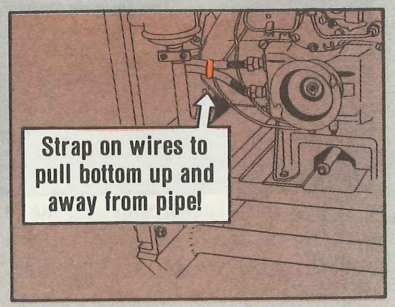
3-KW Wires Wired?

The spark plug wires on your generator set are in the danger zone when they pass between the engine and the muffler pipe.

That muffler gets red hot after your set has been running at a high load. If the wire hits the muffler—or gets too close—the insulation can burn off. That leaves bare wires to short out on the muffler or another piece of metal.

You can forget that worry by tying the wires together with a plastic tiedown strap. NSN 5975-00-074-2072 brings 100 6 1/2-in straps.





Welding Equipment Pubs & Parts

You can't get publications or repair parts through regular channels for commercial welding equipment. If that's got you coming apart at the gussets, here's how to get help:

Publications

Manuals for many welding machines and torches are available from the Defense General Supply Center. You'll find a list in DGSCM 4140.1, Index of Technical Manuals.

Commander
Defense General Suppy Center
ATTN: DGSC-SMA
Richmond, VA 23297-5000

Or call AUTOVON 695-3980, Commercial (804) 275-3980.

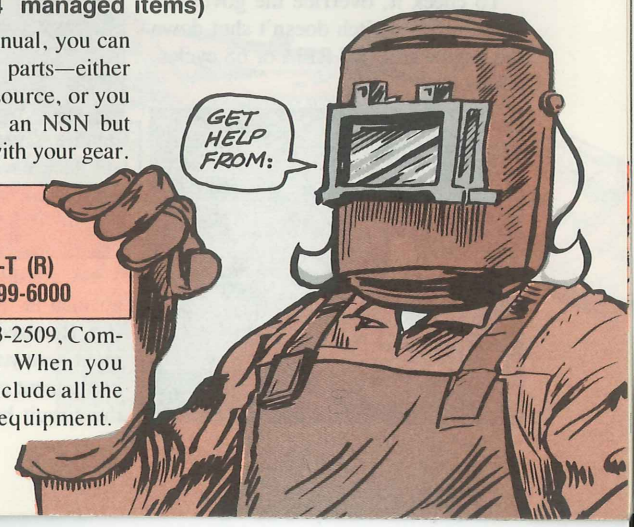
If you don't find your welder listed, order a manual on a DD Form 1348-6. Use RIC S9T. In the REMARKS block, tell your supply support that you're looking for an operator's or parts manual for your equipment. Give the manufacturer, model and serial number—and the contract number, if you know it.

Repair Parts (for B14 managed items)

Even with the right manual, you can have trouble ordering parts—either supply can't find a local source, or you find a similar item with an NSN but don't know if it'll work with your gear.

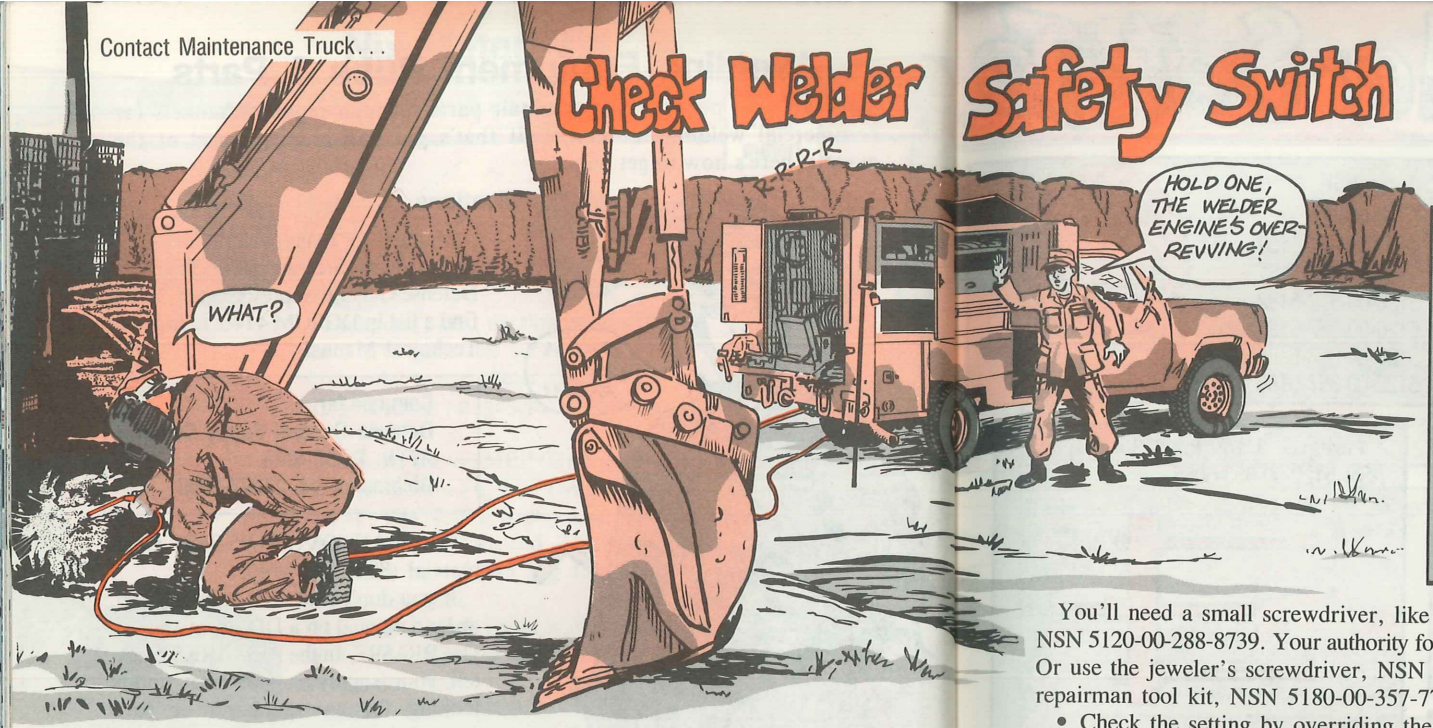
Commander
USA AMCCOM
ATTN: AMSMC-MAT-T (R)
Rock Island, IL 61299-6000

Or call AUTOVON 793-2509, Commercial (309) 782-2509. When you tell them the problem, include all the details you have on the equipment.



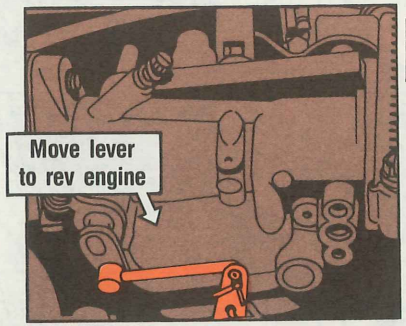
Contact Maintenance Truck. . .

Check Welder Safety Switch



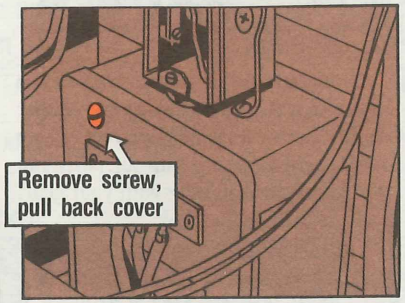
If the overspeed safety switch is adjusted wrong, the voltage regulator on the Hobart welder/generator can be damaged by an over-revving engine.

To check it, override the governor. If the safety switch doesn't shut down the engine at 2,040 RPM or 68 cycles, adjust it.

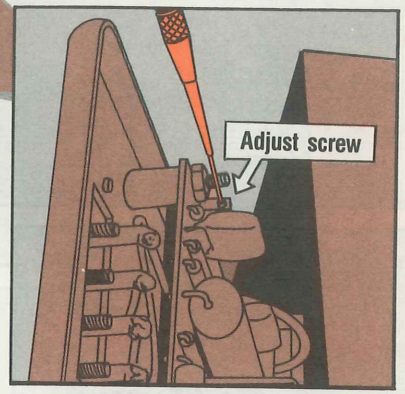


Here's how:

- Remove the screw from the top left corner of the overspeed safety switch.

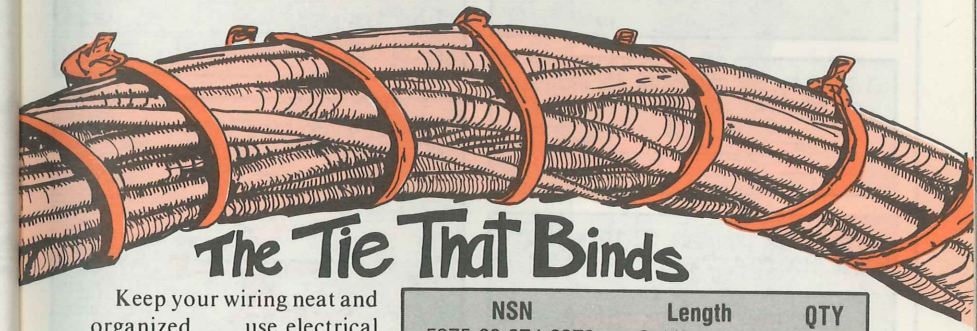


- Carefully pull back the cover about an inch at the top.
- Remove the paint from the adjustment screw. It's on top of the square component at the bottom left corner of the circuit board.
- Adjust the screw so the switch shuts the engine down at 2,040 RPM or 68 cycles. Turn the screw clockwise to increase the RPM or frequency.



You'll need a small screwdriver, like one in the jeweler's screwdriver set, NSN 5120-00-288-8739. Your authority for the set is Appendix A of CTA 50-970. Or use the jeweler's screwdriver, NSN 5120-00-180-0728, in the small arms repairman tool kit, NSN 5180-00-357-7770.

- Check the setting by overriding the governor at least three times.
- When the screw is properly adjusted, lock it in place with a drop of paint or varnish, NSN 5970-00-583-0401.
- Reinstall the cover and screw.



The Tie That Binds

Keep your wiring neat and organized . . . use electrical tiedown straps to keep everything in place.

Here are three lengths:

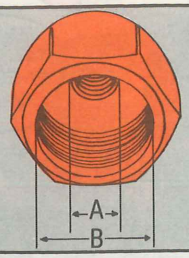
NSN	Length	QTY
5975-00-074-2072	6 1/2 inches	100
5975-00-570-9598	10 1/4 inches	100
5975-00-156-3253	13 1/4 inches	100

Pull Your Puller Set To gether

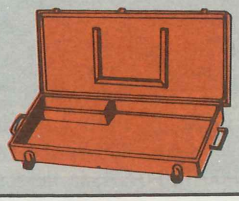
HERE'S A RUNDOWN OF WHAT MAKES UP THE UNIVERSAL TOOL KIT, NSN 5180-00-423-1596, USED TO PULL BEARINGS AND GEARS...

...THE PULLER IS IN SEVERAL AUTOMOTIVE AND AIRCRAFT SHOP SETS!

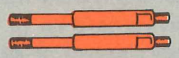
Qty	Item A	Item B	NSN
1	Adapter, 5/8-18	to 5/8-18	5120-00-357-5180
2	Adapter, 5/8-18	to 3/4-16	5120-00-357-5181
1	Adapter, 5/8-18	to 7/8-14	5120-00-357-5182
1	Adapter, 5/8-14	to 1-14	5120-00-357-5183
1	Adapter, 5/8-14	to 1 1/8-12	5120-00-357-5184
1	Adapter, 5/8-14	to 1 1/2-12	5120-00-357-5186



1 Box, puller set
NSN 5140-00-357-5463



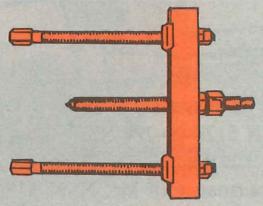
1 pair Legs, push/pull, 4 1/2 inches
NSN 5120-00-227-0633



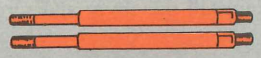
1 pair Legs, push/pull, 16 1/2 inches
NSN 5120-00-227-0635

1 pair Legs, push/pull, 22 1/2 inches
NSN 5120-00-227-0636

1 Push/pull, 3 1/2- to 12 3/4-in spread
NSN 5120-00-633-5085

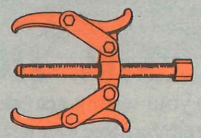


Includes:
1 pair Legs, push/pull 9 1/2 inches
NSN 5120-00-227-0635

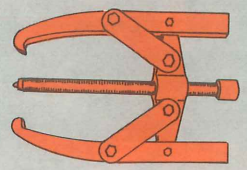


1 pair Leg ends
FSCM 45225, PN 24827

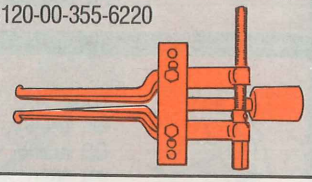
1 Puller, 3 1/4-in reach
NSN 5120-00-595-9304



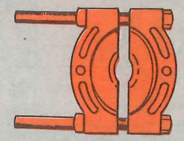
1 Puller, 11-in reach, 12 1/2-in spread
NSN 5120-00-288-7711



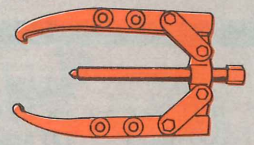
1 Puller, 5 1/4-in reach, 1 1/2- to 7-in spread
NSN 5120-00-355-6220



1 Puller, 1- to 9-in spread
NSN 5120-00-711-6753

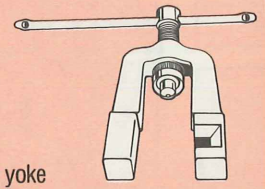


1 Puller, 8 3/4-in reach 0- to 10-in spread
NSN 5120-00-030-7942

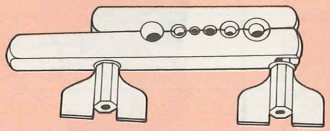


Flaring Tool Parts

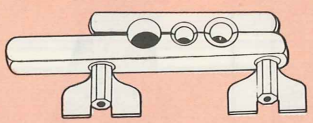
Dear Half-Mast,
We have a flaring and swaging tool, NSN 5120-00-251-2267, part of the No. 1 Common shop set. There's no listing of the components. We need to replace a few missing parts. Can you help?
SFC P.J.B.



Die block yoke
PN 07885801

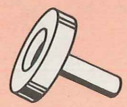


Die block, 1/8- to 7/16-in.
PN 08476901



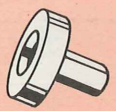
Die block, 1/2- to 3/4-in.
PN 08477001

Adapter,
for 3/16-in.
OD tubing
PN 05838800



Adapter,
for 1/4-in.
OD tubing
PN 06801200

Adapter,
for 5/16-in.
OD tubing
PN 06801300



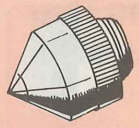
Adapter,
for 3/8-in.
OD tubing
PN 06801400

Adapter,
for 1/2-in.
OD tubing
PN 06801500

Swaging cone,
for 3/16-, 1/4-,
and 3/8-in.
OD tubing
PN 03859600

Swaging cone,
for 3/4-in.
OD tubing
PN 03859900

Swaging cone,
for 1/2-in.
OD tubing
PN 03859700

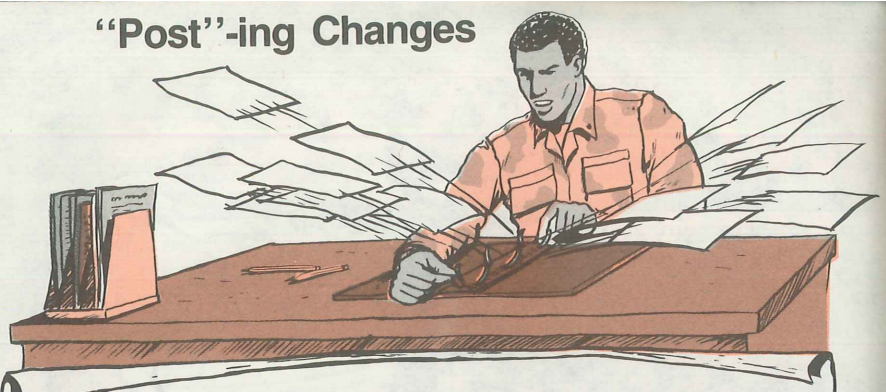


Flaring cone,
PN 03860000

Swaging cone,
for 5/8-in.
OD tubing
PN 03859800

Swaging Cone,
for 7/16-in.
OD tubing
PN 08176301

"Post"-ing Changes

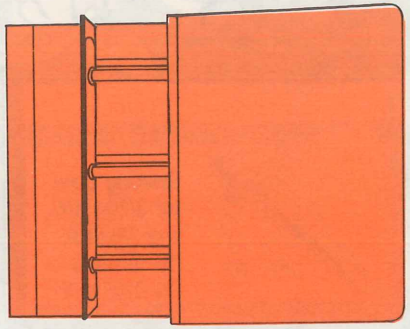


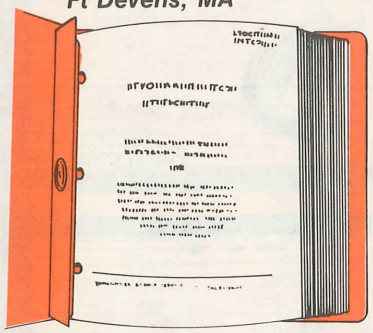
Dear Editor,

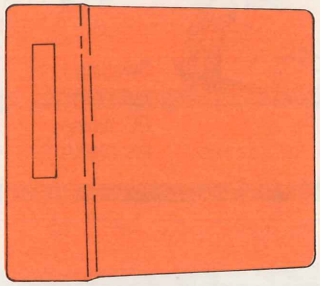
Posting changes to technical manuals is a lot easier when you use a binder that has posts instead of rings. You can order two sizes from the GSA—NSN 7510-00-889-3519 for pubs 2- to 3 1/2- inches thick, or NSN 7510-00-889-3520 for pubs 3- to 5 1/2- inches thick.

The binders are spaced to hold TM's that have five holes punched along the left side.

MAJ Mike Steve
Ft Devens, MA







(Editor's note—Thanks for keeping us posted, Sir.)

Ether's Out

Cold engines can be a pain to start. But **never** use spray cans of ether to help start a vehicle. You could damage the engine. Or worse, you could cause an explosion—and get hurt! Go by your TM for cold-weather starting instructions.

CUCV Power Steering Fluid

GM uses hydraulic fluid in the power steering on the CUCV. But you use Dexron II when you add or change the fluid. The two oils mix with no problems. NSN 9150-00-698-2382 gets a quart of Dexron II.

CUCV Window Channel Filler

You can get 25 feet of rubber filler for the channel on the CUCV's side door windows with NSN 5330-00-753-8036. The NSN is not listed for Item I in Fig 121 of TM 9-2320-289-20P, but it's the same filler used for the M1009's tailgate window shown as Item 4 in Fig 125.

HEMTT Brake Shoe NSN

Get a rear brake shoe asembly for your HEMTT with NSN 2530-01-192-4462. The NSN listed in TM 9-2320-279-20P has been dropped from the system.

M60A3 NSN Change

When ordering a socket head cap screw for your M60A3's cupola cradle access doors, use NSN 5305-00-983-7459. The NSN listed as Item 19 in Fig 102 of TM 9-2350-253-20P-2 is wrong.

Tach Shaft Replacement

Rear tachometer shafts for M48A5/M60-series tanks and bridge launchers and M728 CEV come in two lengths. For vehicles using the AVDS-1790-2C or -2D engines, use the 95-in shaft, NSN 6680-01-142-6221. For those using AVDS-1790-2A engines, use the 100-in shaft, NSN 6680-01-151-3477. For info on installation, scope out Pages 2-56 through 2-61 of TB 43-0001-39-5 (Apr 85).

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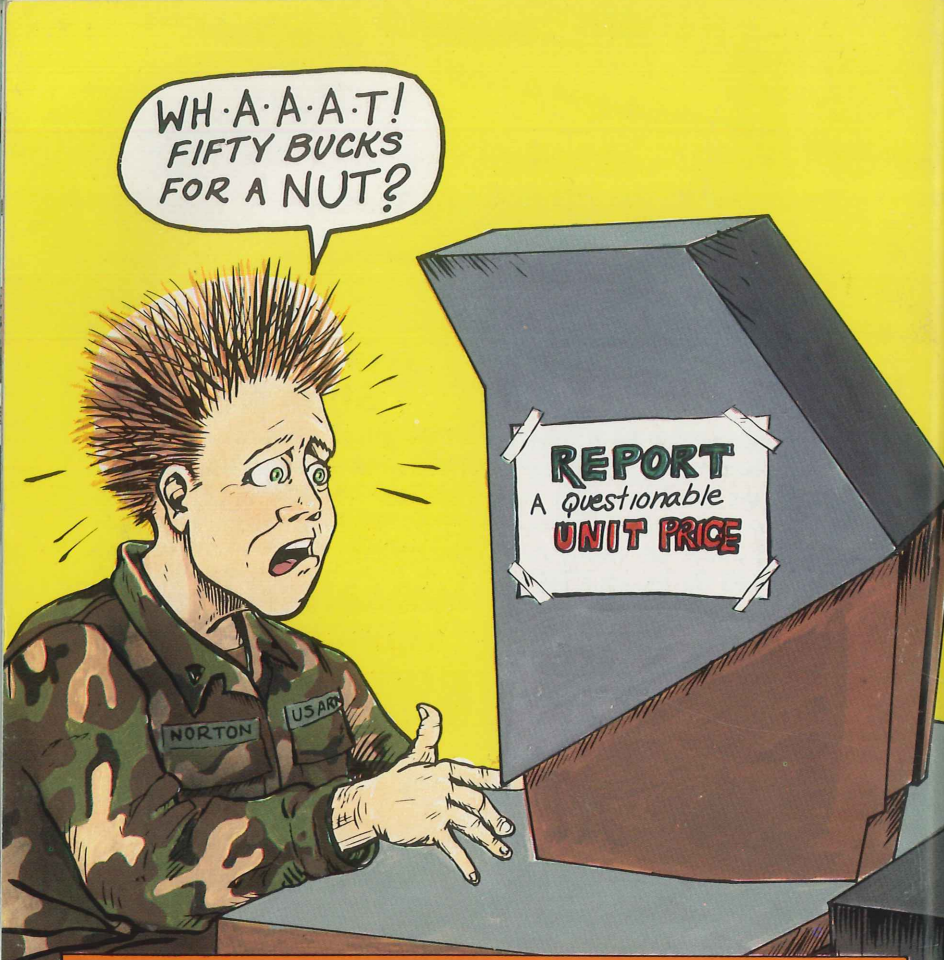
Would You Stake Your Life right now on the Condition of Your Equipment?



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