

Issue 463

PS

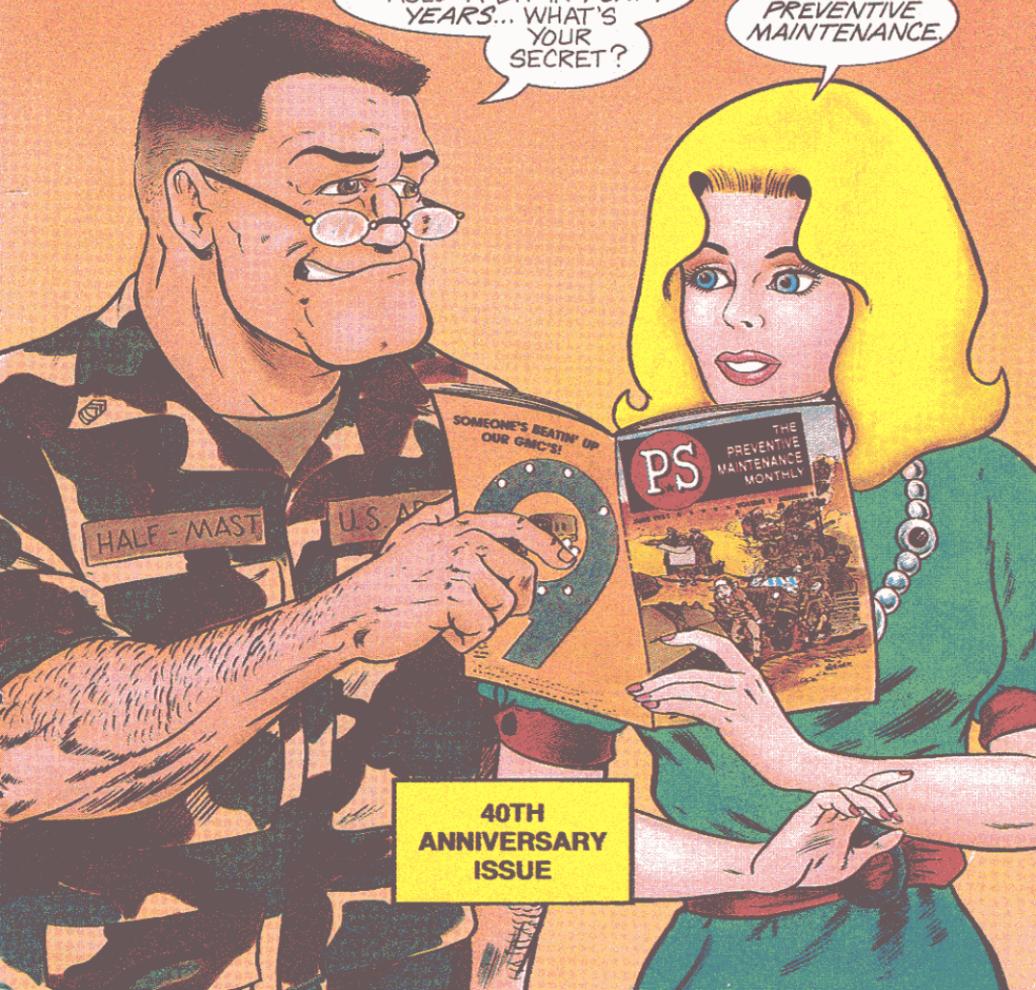
June
1991

THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-463

CONNIE, YOU HAVEN'T
AGED A BIT IN FORTY
YEARS... WHAT'S
YOUR
SECRET?

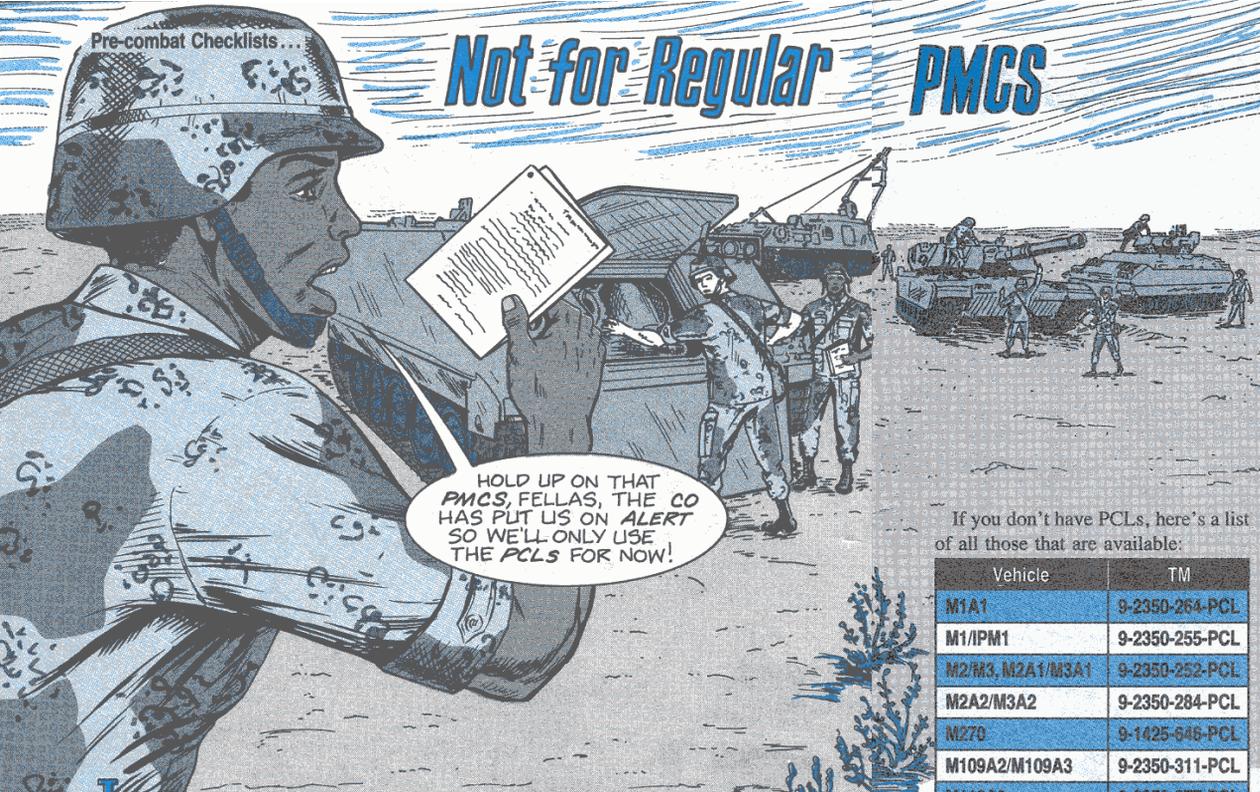
ERR-- AH...
LET'S JUST
SAY GOOD
PREVENTIVE
MAINTENANCE.



40TH
ANNIVERSARY
ISSUE

Pre-combat Checklists...

Not for Regular PMCS



HOLD UP ON THAT PMCS, FELLAS, THE CO HAS PUT US ON ALERT SO WE'LL ONLY USE THE PCLs FOR NOW!

Those pre-combat checklists for combat vehicles are good to use only when your commander says so—and even then, they don't replace the regular before-, during- and after-operation PMCS found in your vehicle's -10 TM.

The key to using the PCL right is in the title: A pre-combat checklist is for use when combat is expected soon or has already started and there is not enough time for a full-blown PMCS.

Many important checks and services are left out of the PCLs with the understanding that a complete -10 TM PMCS will be made as soon as possible. Ignoring the full PMCS can put you and your vehicle in serious danger.

Each PCL has a set of cards for the crew of one vehicle. If you already have PCLs for your vehicle, use them right, and only when told to do so by your commander.

If you don't have PCLs, here's a list of all those that are available:

Vehicle	TM
M1A1	9-2350-264-PCL
M1/IPM1	9-2350-255-PCL
M2/M3, M2A1/M3A1	9-2350-252-PCL
M2A2/M3A2	9-2350-284-PCL
M270	9-1425-646-PCL
M109A2/M109A3	9-2350-311-PCL
M113A3	9-2350-277-PCL
M113A2	9-2350-261-PCL
M88A1	9-2350-256-PCL
M728	9-2350-222-PCL
M163A1	9-2350-300-PCL
M548	9-2350-247-PCL
M60A3	9-2350-253-PCL
M110A2	9-2350-304-PCL
M578	9-2350-238-PCL

PS

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-463, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user.

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

MSG Hal Mast
The Preventive Maintenance Monthly
Lexington, KY 40511-5101

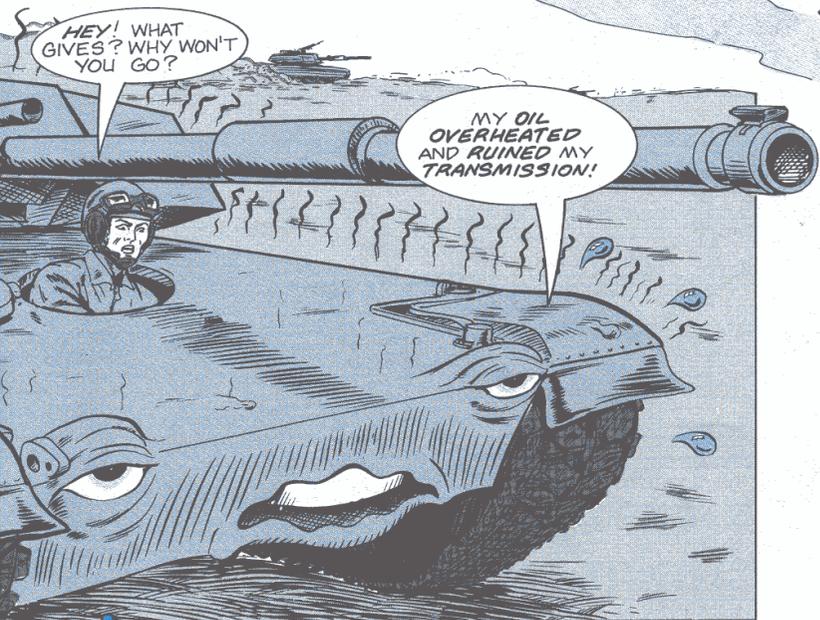
FAX: DSN 745-3855
or Comm 806-293-3855

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Mission Impossible



A debris- or sand-clogged oil cooler means an overheated oil cooler. That can mean damage for your M1 tank's transmission. You drivers can tell when things get too hot by the warning light on the control panel.



Without Transmission

Drivers, don't overlook the warning signal! Without the transmission, you don't have a mission anymore.

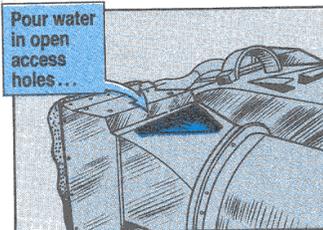
Pay special attention to cooling off the engine before shutdown. Idle for a couple of minutes. Otherwise, even more heat will be absorbed by internal components.

If the troubleshooting info in TM 9-2350-255-10-2 or TM 9-2350-264-10-2 doesn't turn up a solution, don't ignore the light and drive on. Call in your mechanics.

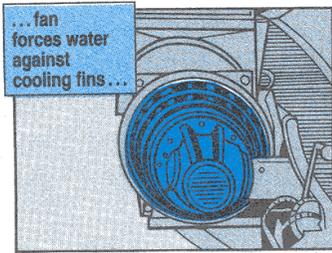
Mechanics, there are two ways to clean the transmission oil coolers.

The first way you can try right on the spot. Open the right- and left-hand top grille doors and both rear grille doors. Also open the access cover to the plenum. Clean out any debris or sand in the airway.

Then run the engine at tactical idle while pouring a couple of buckets of water into the access holes.



Pour water in open access holes...



... fan forces water against cooling fins...

The fans will propel the water against the cooler fins hard enough to wash away most of the gunk that's causing the overheating. If oil has turned the sand into a sticky mess you'll need a full-blown oil cooler washing, which may not be possible in the field. Tow the tank (don't drive it) like it says in your -10-2 TM.



... and cleans oil coolers of gunk



Keep Shelter Doors Unlocked in Use



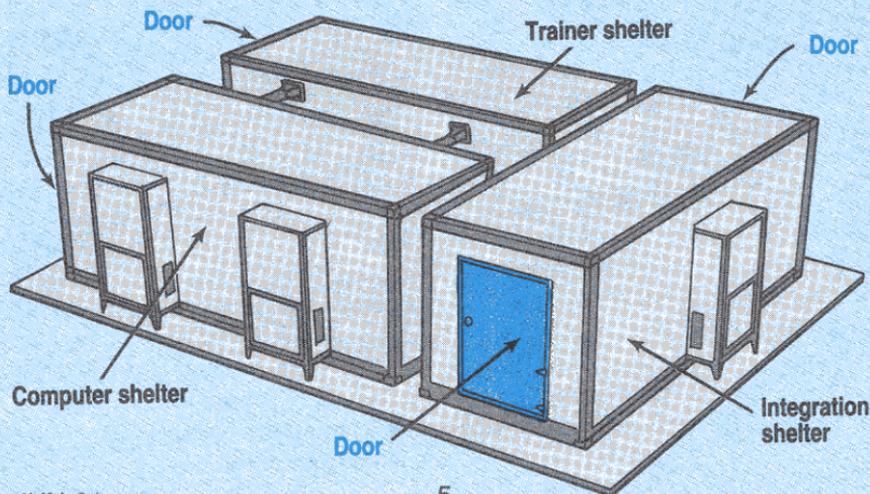
HERE ARE SOME WORDS OF CAUTION FOR OPERATORS OF CONDUCT OF FIRE TRAINERS:

The halon-based automatic fire protection system in the shelter allows just 20 seconds for soldiers to leave before halon is released. As long as all four doors are unlocked, occupants can get out before the halon wipes out the oxygen in the shelter.

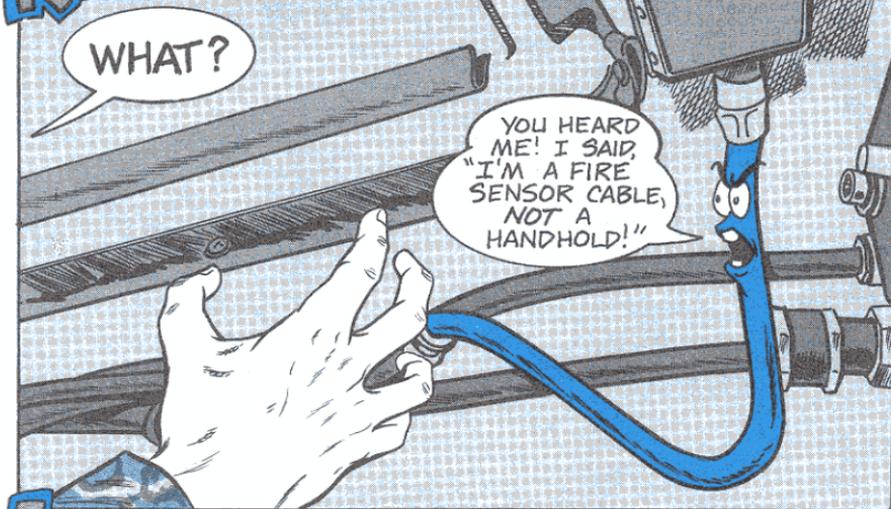
If any doors are locked, either from the inside or the outside, some soldiers may not get out in time. Halon could cause severe breathing problems and death at the same time it extinguishes fire.

COFT shelter operators must know all four doors are unlocked any time the shelter is in use.

LEAVE ALL DOORS UNLOCKED

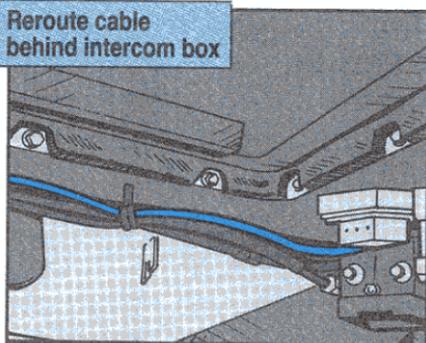
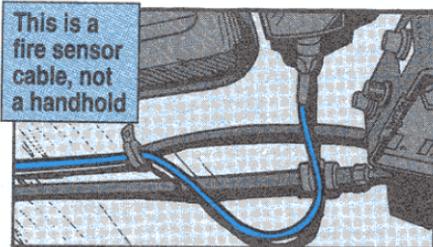


Reroute Fire Sensor Cable



Eyeball the 1W11P7 cable at the right rear corner fire sensor on the M2 IFV. If it's hanging down, someone might mistake it for a handhold, pull it loose and set off the extinguishers.

Route the cable behind the intercom box (between it and the ceiling), taking up the slack while leaving enough to re-attach the cable to the sensor.



Here's how to prevent the damage:

- 🔥 Shut off the fire suppression system.
- 🔥 Remove the connector from the sensor.
- 🔥 Remove the cable clamp nearest the sensor. This will let the cable hang free.

- 🔥 Reinstall the clamp. You may have to turn the clamp left or right to fit, but that's no problem.
- 🔥 Turn on the fire suppression system and you're set.

Trailer Power Hookup Not Needed

Next time the 1W24 trailer receptacle wiring harness or the connector jack gets banged up, don't bother fixing either of them. They're not needed.

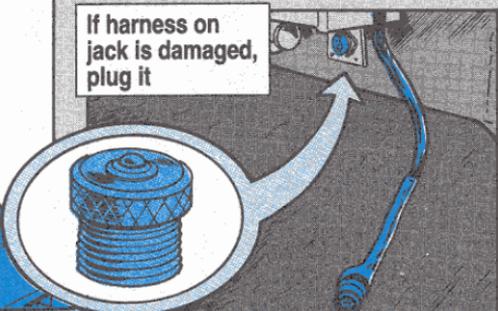


WHAT SHOULD WE DO ABOUT THAT BUM CONNECTOR JACK?

IT'S NOT NEEDED, JUST COVER IT!

Disconnect the wiring harness, keep any good parts and throw the rest away.

Plug the jack with an electrical cover, NSN 5935-01-184-7188. Take the chain off the cover first. Put a little adhesive primer, NSN 8040-01-148-1759, on the connector threads and then install the cover.



If harness on jack is damaged, plug it

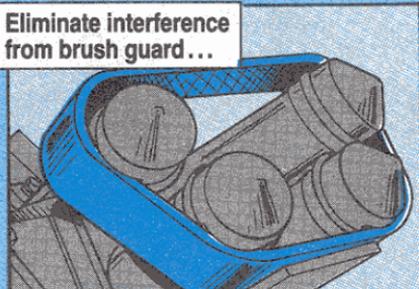
M113A3 Carriers...

Smoke Grenade Launcher Fix

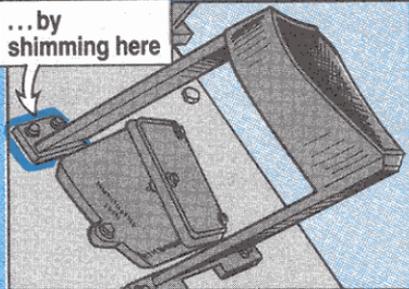
The brush guard bracket on most M113A3s rubs against the smoke grenade launcher discharge tubes. On some A3s you can't even get the protective caps off.

Solve this interference problem by shimming with flat washer, NSN 5310-00-167-0822.

Details on how to do the work are found in TB 43-0001-39-4 (Jan 91).



Eliminate interference from brush guard...



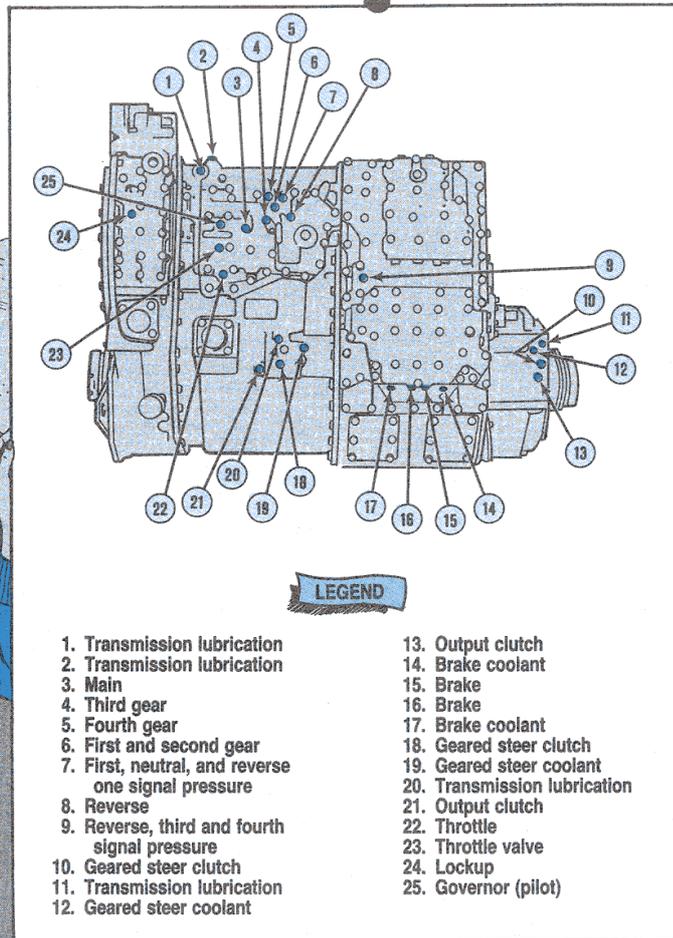
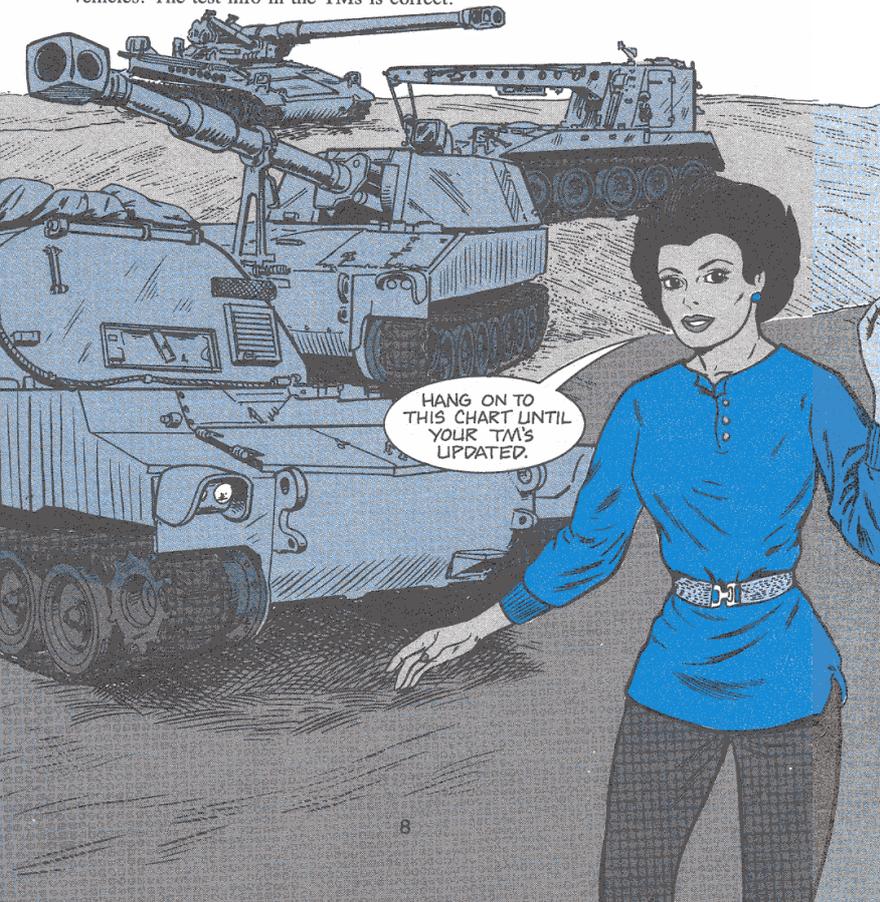
... by shimming here

TM Errors in

Pressure Testing Points

You can't test all the right pressure points on the transmission with the info in vehicle pubs TMs 9-2350-267-20, 9-2350-304-20, 9-2350-311-20-1 and 9-2350-238-20.

Use this diagram to identify the right transmission pressure points for M992 ammo carriers, M110A2 and M109-series SP howitzers and M578 recovery vehicles. The test info in the TMs is correct.



Warning Decal Changed



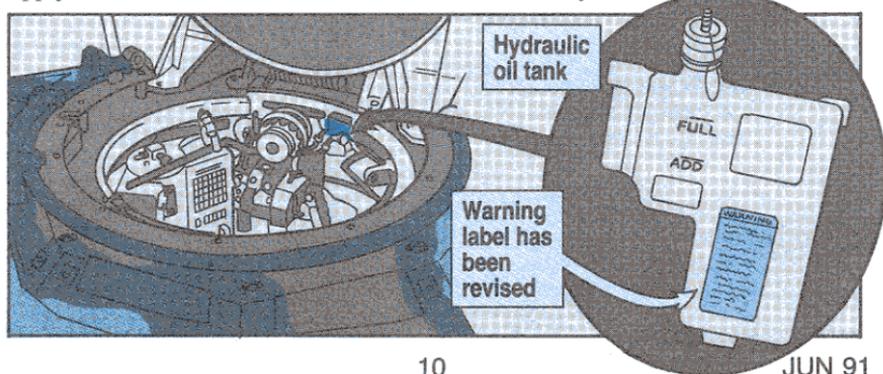
The warning decal that's mounted on the M981 Fire Support Team Vehicle's (FISTV) hydraulic oil tank has changed.

Additional information has been added to Notes 1 and 5, like so:

NOTE 1 –
DO NOT TURN OFF TSCD POWER UNLESS THE TARGETING HEAD IS IN THE STOW POSITION (EXCEPT WHEN PERFORMING MAINTENANCE, SEE NOTE 5).

NOTE 5 –
WHEN PERFORMING MAINTENANCE WITH THE TARGETING HEAD ERECT, BLEED DOWN THE HYDRAULIC SYSTEM AND SUPPORT THE TARGETING HEAD BEFORE TSCD POWER IS TURNED OFF.

Get the revised warning decal with NSN 9905-01-212-5489. Order it from GSA using 2A in card columns 65-66 of your supply request. That lets the supply folks know this decal cannot be ordered locally.



Rack Locks



THE M1920 RACK DOESN'T MEET SECURITY REQUIREMENTS FOR THE .38 CAL REVOLVERS SINCE YOU CAN'T LOCK THEM IN.

BUT YOUR SUPPORT CAN MAKE YOUR RACK SECURE WITH THIS FIX!

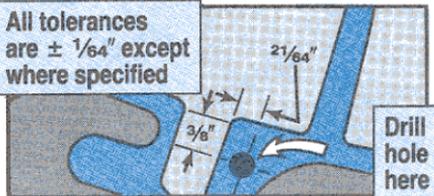
Remove the center post rivet that holds each circular rack you need for your .38's.

Turn the rack upside down and put it back on the center post.

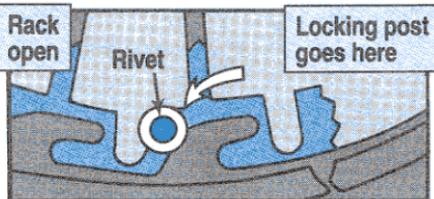
For each rack, you need 20 locally made locking posts and 20 rivets, NSN 5320-00-818-0942. Posts are made from 3/4-in stock by your support.

With a #12 drill, drill 20 holes in the inverted rack. Holes should be on the right-hand side of each pistol slot, 3/8 inch down and 2 1/64 inch from the slot edge.

All tolerances are $\pm 1/64$ " except where specified

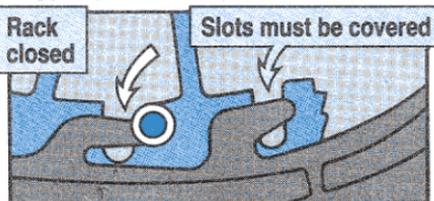


The locking post goes on the outside of the rack. Insert the rivet through the rack frame and into the post. Peen the rivets until each post is secured tightly to the rack frame.

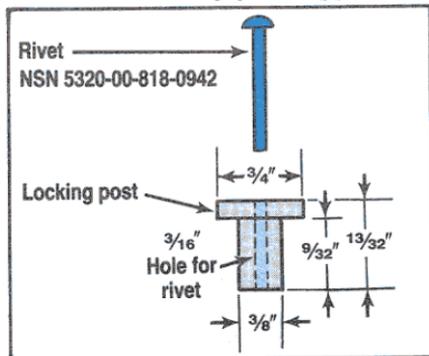


When all posts are installed, rivet the rack to the center post.

Slide the rack closed to be sure that each pistol slot is covered completely by the metal shafts that go through the trigger guards.



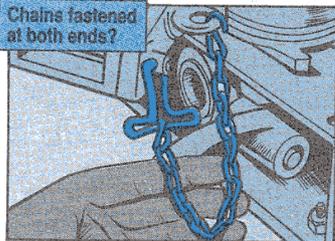
Reverse the revolver that's next to the lock so that the lock and locking mechanism can clear.



Step Up

No matter how well you've taken care of your machine gun, you're in big trouble if you ignore the mount.

✓ Make sure all locking pins have chains and the chains are securely fastened at both ends. If a chain's gone, the pin soon will be. The mount's useless without locking pins.



Your armorer can order new chains with NSN 4010-00-523-6999. If the M2 machine gun is to go on the mount, you must also order pins, NSN 5340-00-707-0291, and NSN 5340-00-707-0292. If no chains are available, find something—wire would work—to keep the pin with the mount until you get chains.

✓ Use a brush and dry cleaning solvent to clean off any grease from the mount. Rub off rust with crocus cloth, NSN 5350-00-221-0872. Dry the mount with a clean cloth.



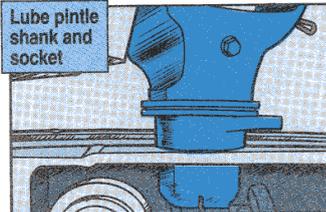
Mount PM

Lubing in the Desert

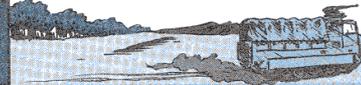
✓ Use CLP, LSA, or LAW—not grease—on bearing surfaces in the desert. Wipe off the rest of the mount as often as possible with a dry cloth. Cover the mount with a tarp when you're not firing.

✓ Feel the felt ring seals. If they're hard and brittle, rub some PL oil on the seals to soften them.

✓ Give the pintle shank and the inside of the pintle socket a light coat of CLP, LSA, or LAW.



Now your mount is ready for mounting.



M60 Machine Gun...

Match Spring with Rod

There are new guide rods and recoil springs for the M60 machine gun. If you mix old rods and springs with the new ones, you get problems.

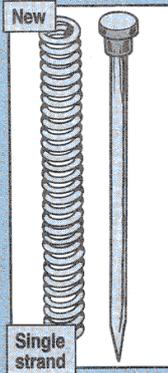
Since the old guide rod fits loosely in the new spring, the spring will get flat spots and cause the M60 to jam.

The new guide rod is too big for the old spring. If you force it in, the spring's damaged.

Match guide rods and springs. The guide rod should fit snugly—and easily in the spring. If it doesn't, order a new rod, NSN 1005-01-188-7877, or new spring, NSN 5360-01-203-2973.



Double strand



Single strand

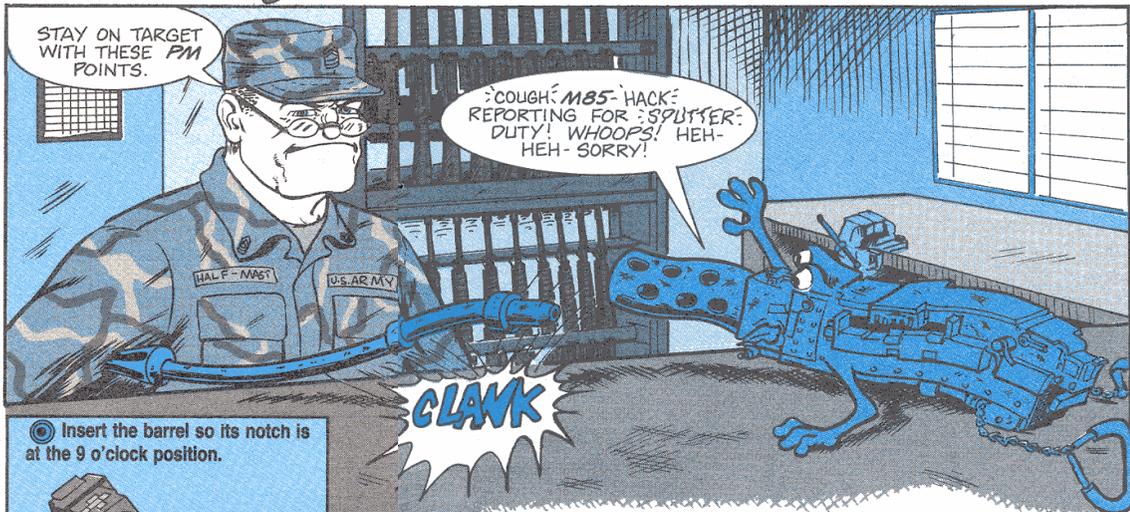
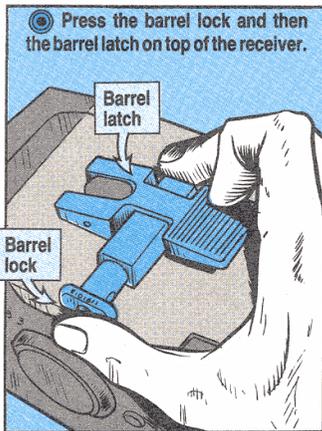
Shoot Straight with PM

PM makes the difference between an M85 that shoots fast and straight and one that sputters or doesn't spit fire at all.

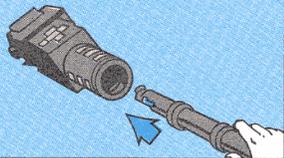
A Barrel of Advice

If the barrel locking lugs can't do their job, the barrel goes flying. Check the lugs during PMCS by locking the barrel in the receiver and trying to turn the barrel. If it moves, your armorer needs to eyeball the barrel latch assembly and accelerator housing assembly for broken or missing parts or improper assembly. Tell your armorer about any chipped lugs, too.

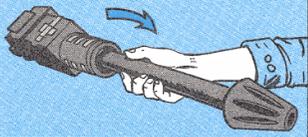
In the field, insure the barrel is locked in place like this:



● Insert the barrel so its notch is at the 9 o'clock position.



● Turn the barrel clockwise until it locks in place. The barrel latch will snap down.



● Twist the barrel back and forth to be sure.

Pin Points

Pins are the glue that holds your M85 together. Without them, it falls apart. Pen up pin problems with these tips:

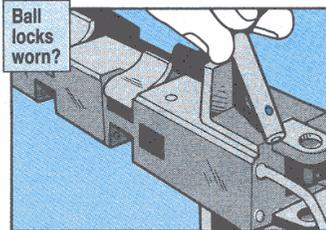
The best way to prevent missing pins when you clean your M85 is simply put them in your pocket as soon as you pull them out of the gun.

Keep pins clean and lightly lubed with CLP so they'll slide in and out of their holes without being forced.

On detent pins, work their ball locks as you lightly lube them to keep the snap in detents.

On feed and ejector quick release pins, eyeball the ball locks for wear.

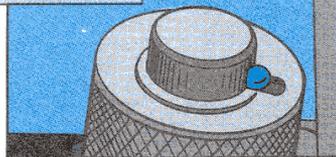
If the locks are worn, the pins work out and the feed and ejector assembly comes loose. Replace pins with worn ball locks.



Make sure the ball lock on the charger assembly detent pin is set in the notch of the detent knob. Other-

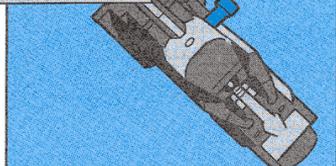
wise, the knob and pin fall off and you can't charge your M85.

Ball lock seated in notch?



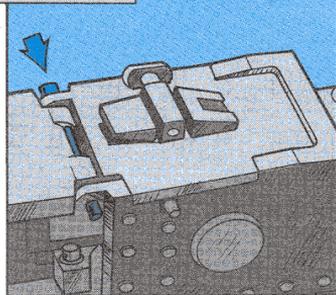
Look for the bolt retaining pin before you slide the bolt back in the receiver. It's often forgotten. Without the pin, the bolt blows apart.

Keep track of bolt retaining pin



Remember there's only one way to put in the quick release pin for the cover: left to right. If the pin's in backwards, you can't remove the pin and cover once the M85's mounted.

Insert pin from left to right



Ammunition Feeding

Not all .50-cal ammo is right for your M85. Both the M2 and M85 use the same ammo, but the links are different. The M85's are open loop, the M2's closed. Ask specifically for M85 ammo. Otherwise, you won't fire.

Open loop link



M85

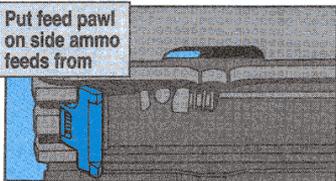
Closed loop link



M2

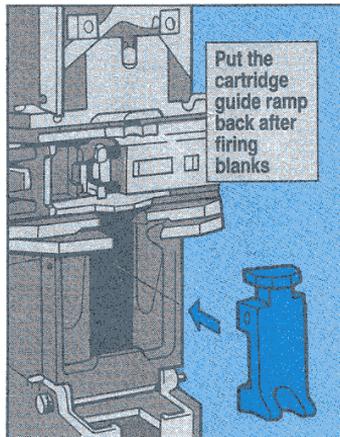
Put on the feed assembly carefully. A wrong-side feed pawl keeps your M85 from feeding and charging. The feed pawl should be on the same side you're feeding from.

Put feed pawl on side ammo feeds from

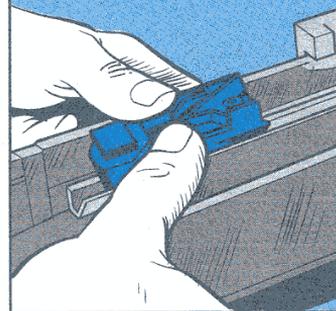


If you've been firing blanks with the M20 blank firing attachment, put the cartridge guide ramp back in the cover or you won't be doing any shooting next time out.

Put the cartridge guide ramp back after firing blanks



Feel for loose bolt locks



up or out, the cartridge retainer's broken or the locks are worn. Tell your armorer.

Eyeball the flash suppressor for bent prongs. Even one bent prong can deflect a round and send it off-course. Report bent prongs.

Make sure the interlock for the barrel is in place. Without it, your M85 can fire without the barrel.

PMCS Bits and Pieces

Feel for loose bolt locks when you have your M85 disassembled. The locks should be snug with only slight side movement. If you can pull them



Coolant Checkup

Used to be you drained the coolant in an engine yearly and replaced it. That way, you were sure the freeze protection and corrosion inhibitor were OK. But coolant is expensive, and money is tight.



For non-arctic military antifreeze, begin by checking the freeze protection. Use the battery/antifreeze tester, NSN 6630-00-105-1418, in the No. 1 Common shop set, or the antifreeze test kit, NSN 6630-01-011-5039.

Check for freeze protection



protection. If the strip is blue, corrosion protection is OK.



You can add corrosion inhibitor, NSN 6850-01-160-3868. This inhibitor is also listed in Para 2b of the TB.

You can boost the inhibitor only once, though. The next time the corrosion protection is down, you have to replace the coolant.

Here's how to use the corrosion inhibitor:

- ✓ Drain the cooling system and, if needed, filter the coolant through cheese cloth, NSN 8305-00-205-3496, to remove rust and solids.
- ✓ Add corrosion inhibitor to the coolant at the rate of one pint for each 17 quarts.
- ✓ Mix well and retest the reserve alkalinity level. If the coolant fails the test, replace the coolant.
- ✓ Flush the cooling system with water until the water comes out clear.
- ✓ Put the re-inhibited coolant back into the cooling system.

If you're in an area where the temperature falls below 32°F, you'll need freeze protection to below the lowest expected temperature.

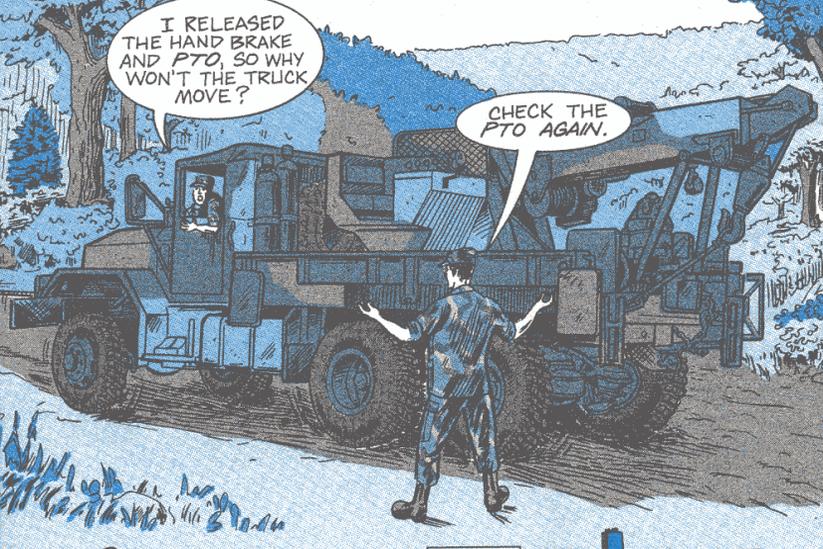
Check Para 4 in TB 750-651, Use of Antifreeze Solutions and Cleaning Compounds in Engine Cooling Systems, for the amount of antifreeze needed in a gallon of coolant for various expected low temperatures.

If the freeze point is OK, check the reserve alkalinity (corrosion protection) using antifreeze test kit, NSN 6630-01-011-5039. It is listed in Para 2b of the TB. This kit can only be used to test military antifreeze, Mil-A-46153. It can't be used to test arctic or commercial antifreeze mixes.

Dip a test strip in the coolant. A green or yellowish-green strip means the coolant needs a boost in corrosion

Make a note that you did this job by recording it in the REMARKS block of the DD Form 314 with the other antifreeze info.

PTO Brake Override Check



5 Release the hand brake and keep your foot off the brake pedal.

are crossed. They need to be switched —pronto!

6 Press spring brake release knob



Get your mechanic to switch the air lines from the release valve at the two elbows on the cab floor. Lines can be switched at the valve, but it's easier to get to the lines at the elbows.

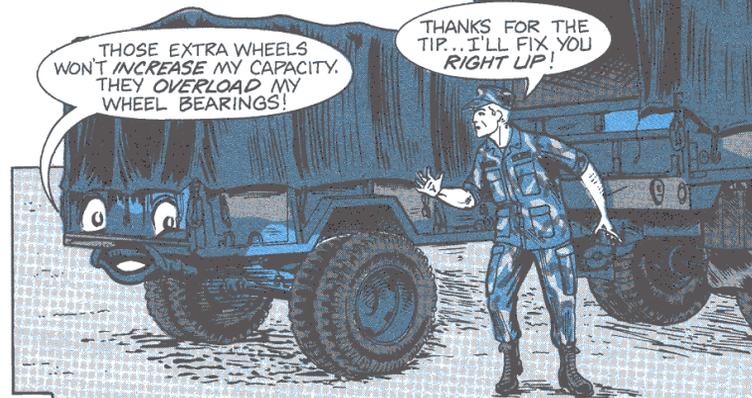
You mechanics need to double-check to make sure the PTO brake override is working like it's supposed to.

If the brakes release, your wrecker will move. Everything's OK. But if your wrecker does not roll, the lines

Hold the PTO spring brake release knob in to release the brakes and let the wrecker roll. Let go and the brakes should automatically lock again.

1½-Ton Trailers...

Dual Wheels a No-No



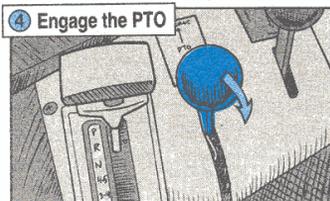
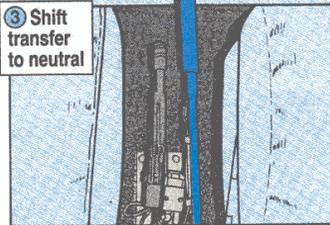
Never add an extra wheel to each side of your 1½-ton trailer to help carry the load. Those extra wheels do not increase the load carrying capacity of the trailer. Dual wheels just overload the wheel bearings.

The same goes for reversing the wheels on the trailer. Forget it—it won't help.

Operators, the PTO brake override operation on your M936A2 5-ton wrecker needs to be double-checked. Some wreckers left the factory with air lines crossed. If the PTO brake air lines are crossed, your wrecker's brakes will not release for self-recovery. This is because the PTO brake release valve mounted under the dash does not bypass the air. You're stuck, but good.

You operators need to check out that valve now. Here's how:

- 1 Shift the transmission to Drive (1-5).
- 2 Drive your wrecker on a slight incline, like a loading ramp and stop. Set the hand brake.



New Hub Free for Old

Axle hub covers are born leakers on these M870A1 semitrailers. When covers leak oil, axle bearings go dry and wear out. The trailer manufacturer knows about these bum covers. They'll give you new, better covers for free.

Put your unit's control number in Block 1. It's the same number that's assigned to Block 3 of the QDR.

MAKE UP A FORM
LIKE THIS, FILL IT
OUT AND SEND IT TO
THE MANUFACTURER.

M870A1 SEMITRAILER HUB CAP REPLACEMENT FORM

FROM: (Your Unit's Complete Address)

TO: Shoals American Industries
Attn: Mr. John Goode, QA Manager
338 Washington Street
Muscle Shoals, AL 35661

1. Replacement of _____ (No. Reported on QDR) each cover, access (hub caps) NSN 2530-01-317-3931 reported on QDR _____ (QDR No.) on the M870A1 Semitrailer, 40 Ton.

2. SHIP TO: (Your Unit's Complete Address)

at no cost to the government.

3. Defective parts shall be held for 25 days pending contractor's request for return to source for further investigation.

4. After 25 days, the parts shall be disposed of IAW local procedures, to prevent re-entry into the supply system.

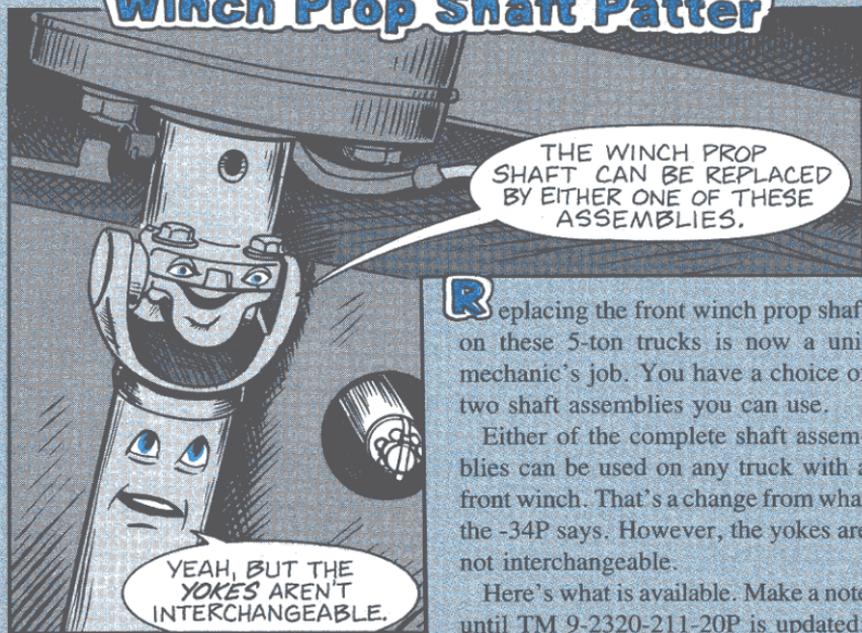
5. Point of contact is _____ (For Your Unit)

Commercial phone: _____ (For Your Unit's POC)

Then, at the same time,
fire off an SF 368, Quality
Deficiency Report, to:

US Tank-Automotive Command
ATTN: AMSTA-QWH
Warren, MI 48397-5000

Winch Prop Shaft Patter



Replacing the front winch prop shaft on these 5-ton trucks is now a unit mechanic's job. You have a choice of two shaft assemblies you can use.

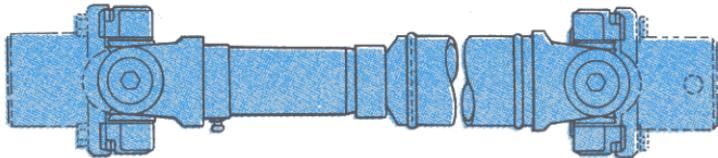
Either of the complete shaft assemblies can be used on any truck with a front winch. That's a change from what the -34P says. However, the yokes are not interchangeable.

Here's what is available. Make a note until TM 9-2320-211-20P is updated:

Propeller shaft with U-joints, NSN 2520-00-941-5434, uses:

If your shaft looks like this, it's a **MECHANIC**

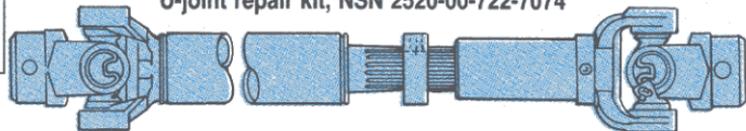
Yoke, U-joint, PTO to prop shaft, NSN 2520-00-740-9580
 Yoke, U-joint, prop shaft to winch, NSN 2520-00-740-9581
 U-joint repair kit, NSN 2520-00-999-7808



Propeller shaft with U-joints, NSN 2520-00-293-5127, uses:

If it looks like this, it's a **DANA**

U-joint repair kit, NSN 2520-00-722-7074



CUCVs...

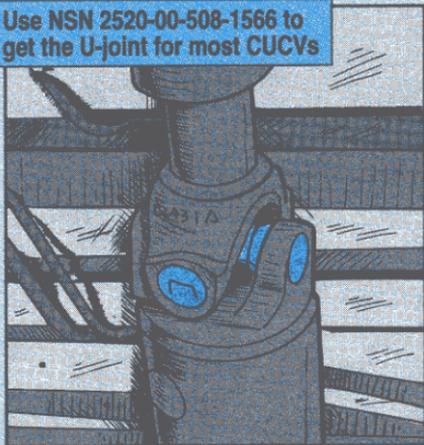
Correct U-Joint

The rear propeller shaft on M1009 CUCVs uses a different U-joint from the other models. But the same part number is listed for both types as Item 3 on Page 70-1 of TM 9-2320-289-20P.

The first listing for Item 3 should list CAGE 11682, PN 374246, which crosses to NSN 2520-00-508-1566. That U-joint is used on all models except the M1009.

The second listing—for the M1009—gives the correct CAGE and PN for NSN 2520-01-024-0279.

Use NSN 2520-00-508-1566 to get the U-joint for most CUCVs

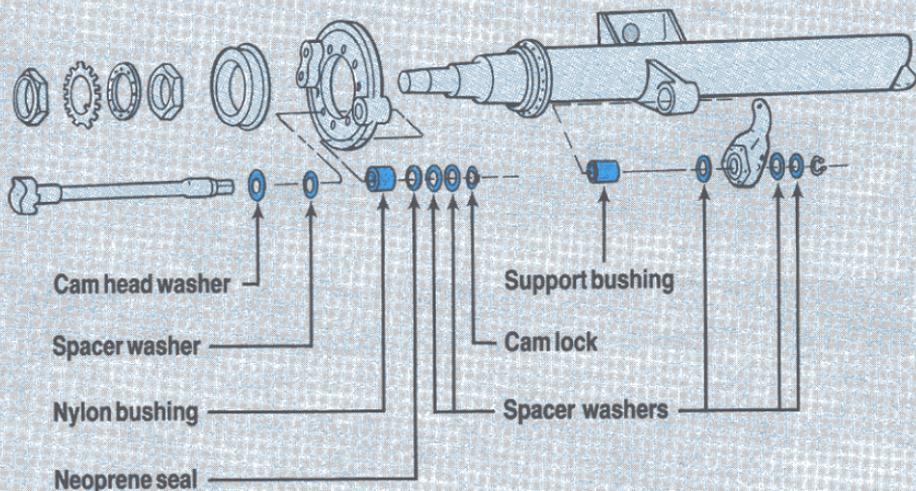


M172A1 Semitrailers...

Brake Camshaft Repair Kit

Now there's an easier way to get the parts you need to rebuild the brake camshafts on M172A1 low bed semitrailers.

Order camshaft repair kit, CAGE 6N100, PN 8-1341, on a DD Form 1348-6 from RIC S9C. The kit gets the following parts for one axle:



5-ton Wreckers ...

Throttle Cable NSNs

Wrecker	Cable NSN
M246	2590-00-405-9763*
M246A1	2990-00-411-9536
M246A2	2590-00-318-0485
M62	2590-00-159-8935*
M543	5995-00-546-4762
M543A1	2590-00-159-8935
M543A2	2590-00-912-3110
M816	2590-01-036-6735
M819	2590-00-405-9763

*Cable must be shortened. Use your old cable to figure the exact length.

THE REMOTE THROTTLE CABLE NSNs USED ON M39-SERIES AND M809-SERIES 5-TON WRECKERS ARE NOT LISTED IN THE TM-211 OR-260 SERIES MANUALS.

HERE'S WHAT YOU NEED:

M915 Tractor Truck...

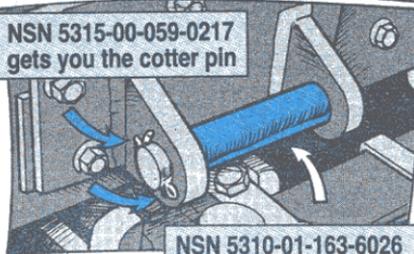
Air Shackle's Missing

Dear Half-Mast,

The M915 tractor truck in our motor pool is missing a sling lifting pin that's between the tandem axles. I looked in the -20P TM for a replacement pin, but came up empty-handed--the pin's not in the TM. How can I get a new sling lifting pin?

SFC LA.

NSN 5315-00-059-0217
gets you the cotter pin



NSN 5310-01-163-6026
gets you the shackle pin

Dear SFC L.A.,

Order the lifting shackle pin with NSN 5310-01-163-6026.

Use NSN 5315-00-059-0217 to get the cotter pins that hold the shackle pin in place. They come in a box of 100.

Half-Mast



This is a selected list of recent pubs of interest to organizational maintenance personnel. This list was made from a computer print-out provided by the Adjutant General.

TM 9-1025-211-10 Jan Howitzer, medium, towed: 15 MM, M198
TM 9-1090-203-20 Dec 90 M28 machine gun
TM 9-1095-205-20P Apr M128 ground vehicle mine dispenser
TM 9-1270-221-23 Apr M142 fire control subsystem
TM 9-1425-646-L Jan Multiple launch rocket system
TM 9-2350-200-BD-2 Feb M1-series tank turrets
TM 9-2350-261-24P Jan M113A2

series FOV
TM 9-2350-304-20-2 Jan M110A2 SP howitzer
TM 9-2350-304-24P-2 Jan M110A2 SP howitzer
TM 9-4120-389-24P Jan Air conditioner, 36,000 BTU/HR
TM 10-3930-632-24P Feb Truck, lift, fork, Army model MHE-229
TM 10-4130-240-13&P Oct 90 Eltek 30 GPH cooler
TM 10-4320-321-13&P Sep 90 Centrifugal pump model 2P373
TM 10-6630-230-13&P Sep 90 Gammon mini-monitor fuel sampling kit
TM 10-6630-233-13&P Sep 90 Koehler distillation apparatus
TM 10-6640-218-13&P Sep 90 Precision general purpose ovens model TS-31477
TM 11-5821-347-23&P Jun C-10999/A and C-10999/A CIS mode select panel
TM 11-5840-367-23P Aug 90 AN/PPN-19(V)1 and AN/PPN-19(V)2 transporter sets
TM 11-6625-3221-14&P Jun 90 TS-4245/G reference frequency oscillator (RFO) test set
TM 55-1520-228-BD Jan BDAR

OH-58A/C
TM 55-1520-244-BD Nov 90 BDAR maint for AH-1E, AH-1F and AH-1P
TM 55-2305-001-10 Oct 90 Lighter air cushion vehicle (LACV)
TB 1-1500-341-01 Nov 90 Aircraft components requiring maintenance management and historical data reports
TB 1-1520-238-20-15 Jan Quick reaction trimble trippack global positioning system (GPS) special mission installation, AH-64A
TB 1-1520-238-20-16 Jan Erosion inspection of main rotor blade tip caps on AH-64A for Operation Desert Shield
TB 1-1520-238-20-17 Tail rotor washplate deice brush block removal, AH-64A, desert operation
TB 1-1520-248-20-10 Jan Erosion inspection of OH-58D tail rotor blades in desert operation
TB 5-6665-202-20 Feb AN/PSS-11 mine detecting set
LO 5-6115-464-12 Nov 90 15KW, DED generators, MEP-004A, MEP-104A and MEP-113A
SB 700-20 Mar Army adopted/other items selected for authorization/list of reportable items

Maintenance & Safety-Of-Use Messages

AMCCOM SOU-Msg-05-91—Advisory, Proper repackaging of ammunition, AMSMC-DSM-11530Z Feb 91.

AMCCOM SOU-Msg-06-91—Advisory, Reinforces operating instructions for 84MM M136 launcher and cartridge, AMSMC-DSM-MA 041330Z Feb 91.

AMCCOM Maintenance Advisory Msg-91-07—Damage to rear threads of the barrel extension on M2 machine gun, AMSMC-MA 051600Z Feb 91.

AMCCOM Maintenance Advisory Msg-91-11—Info on installing a plastic housing in the M17A2 mask's nose cup, AMSMC-MAR-EP(A) 061330Z Mar 91.

AMCCOM Maintenance Advisory Msg-91-15—Use low pressure cleaning systems on vehicle's undercoating and CARC paint,

AMSMC-MA 141930Z Mar 91.

AMCCOM Maintenance Advisory Msg-91-18—Add a pipe-to-tube elbow to the fuel nozzle assembly on M157 smoke generator set, AMSMC-MAR-ED(A) 051630Z Apr 91.

TACOM SOU-Msg-91-04—Operational, M978 Heavy Expanded Mobility Tactical Truck (HEMTT) tanker, correct way to transfer fuel from one HEMTT to another, AMSTA-M 051600Z Apr 91.

TROSCOM SOU-Msg-01-91—One-time inspection, Emergency, reports failures of female hose coupling manufactured by Dayton Precision Mfg Co. under contract numbers DLA 700-86-C-1804, DLA 700-89-M-9797 and DLA 700-89-M-9901, AMSTR-MEPP 051500Z Feb 91.

TROSCOM SOU-Msg-10-91—

One-time inspection, Limited, check extraction bracket frame, that is a part of the extraction bracket assembly used on the type V aerial delivery platform, AMSTR-MEP 132030Z Mar 91.

TROSCOM SOU-Msg-12-91—Emergency, potential fire hazard with Temper tent flys manufactured by Camel Mfg Co. under contract number DLA-100-87-C-4233, AMSTR-M 051500Z Apr 91.

TROSCOM Maintenance Advisory Msg 91-07—Proper procedures for using M-21 and MLU-58/B reefing line cutter used on model G-11C cargo type parachutes, AMSTR-MEP 252130Z Feb 91.

TROSCOM Maintenance Advisory Msg 91-12—TM change for M85 laundry unit, AMSTR-MEP 141500Z Mar 91.

The NSNs for the retaining rings shown for Items 15 and 17 in Fig 23 of TM 9-2330-287-14&P are switched. Use NSN 5365-00-721-7680 for Item 15 and NSN 5365-00-442-5845 for Item 17.

Be Prepared Stay Prepared

THE BATTLE'S BEEN FOUGHT AND THE WAR'S BEEN WON! BUT NOW'S NOT THE TIME TO LET DOWN YOUR GUARD. KEEPING YOUR EQUIPMENT FIT FOR SERVICE IS A MAIN CONCERN

PAY
ATTENTION TO
WHAT OTHERS HAVE
FOUND OUT THE
HARD WAY...

BE PREPARED...
AND STAY PREPARED...
FOR ANYTHING.

WHAT'S
FIRST?

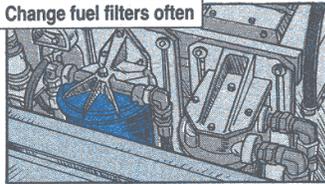
FUEL
IS A GOOD
PLACE TO
START.

Fuel

Microbial growth and crud in fuel tanks has made the switch from diesel fuel to Jet A-1/JP-8 a problem for many combat vehicle units. The crud breaks up in Jet A-1/JP-8, clogging filters and lines.

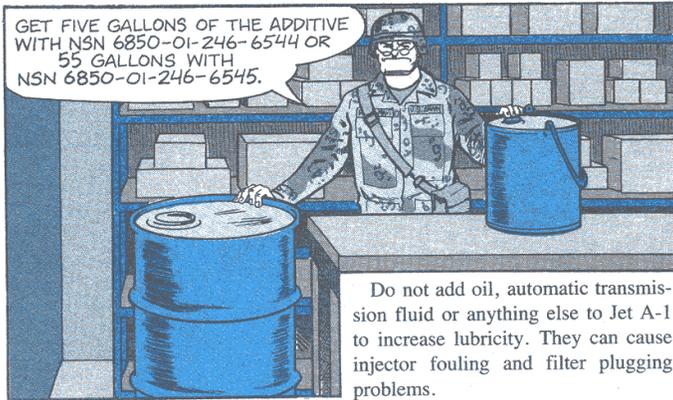
Frequent filter changes will help during the switchover from diesel to Jet A-1/JP-8.

Change fuel filters often



If you are stateside and want to eliminate the microbial growth problem in diesel fuel, use a diesel fuel stabilizer and corrosion inhibitor. It's used at the rate of one gallon per 3,500 gallons of fuel. That works out to about 3½ ounces per 100 gallons. A coffee cup half-full is about right. Add the additive to a half-full tank just before filling up.

GET FIVE GALLONS OF THE ADDITIVE WITH NSN 6850-01-246-6544 OR 55 GALLONS WITH NSN 6850-01-246-6545.



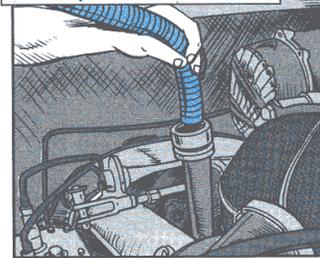
Do not add oil, automatic transmission fluid or anything else to Jet A-1 to increase lubricity. They can cause injector fouling and filter plugging problems.

Oil

Use 15W40 (OE/HDO-15W40) motor oil year-round in the desert. It's an all-season oil that works in all gasoline and diesel engines in land vehicles and generators. During the extreme heat season, June through September, grade 40 (OE/HDO-40) can be used. Other oils do not offer enough protection against desert heat.

REDUCE THE NORMAL CHANGE INTERVAL SO YOU REPLACE OIL AND FILTER AT LEAST TWICE AS OFTEN AS CALLED FOR IN YOUR VEHICLE'S LO!

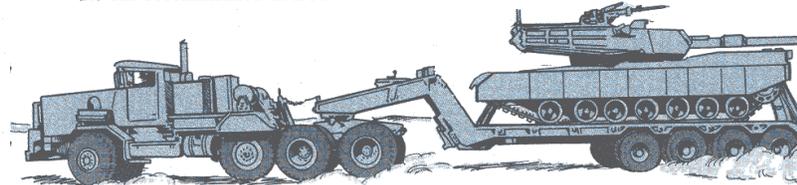
October–May: use 15W40
June–September: use OE/HDO-40



Remember that turbine engines used in land vehicles and generators require special jet engine oil covered by specification MIL-L-23699. Do not use OE/HDO oils in these engines.

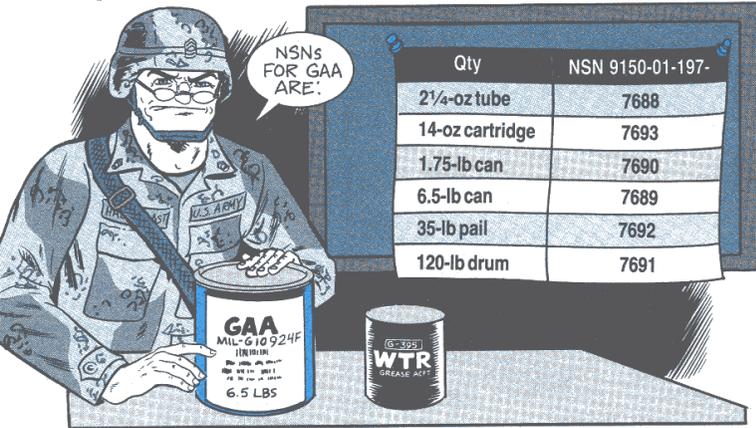
Marine equipment continues to use the oils recommended in LOs.

For example, if an oil change is required every 300 hours, change it in the desert every 150 hours or sooner if required. One exception is the M911 truck tractor. Never exceed 3,000 miles between oil changes on the M911.



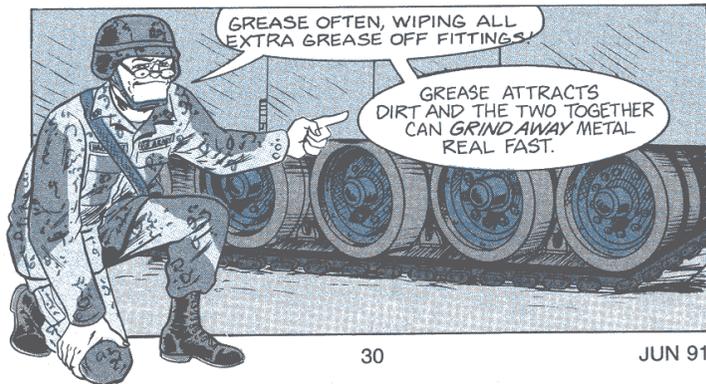
Grease

When your LO calls for GAA grease, make sure you use only MIL-G-0010924E (ME) or MIL-G-10924F. The "E" or "F" versions won't break down in desert temperatures. They also give better corrosion protection.



If you can't get the new GAA, use WTR, a wide-temperature-range general purpose grease. NSN 9150-00-944-8953 gets a 1-lb can; NSN 9150-00-145-0268 gets a 5-lb can; and NSN 9150-00-935-5851 gets a 35-lb can.

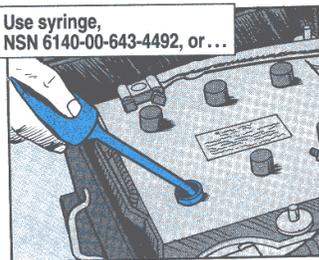
Use WTR specifically on M1-series tank suspension parts.



Batteries

Check battery electrolyte level two or even three times a day to prevent electrolyte boilout from overcharging. If the fluid level is low, add distilled water if it's available. Bottled water is OK if distilled water is not on-hand.

Use syringe, NSN 6140-00-643-4492, or...



... battery filler, NSN 6140-00-635-3824



On alternators and generators that can be adjusted, lower the charging rate to 26.5 volts or the lowest setting available. That'll help prevent overcharging, but it will give below-normal readings on some battery gauges. Don't worry as long as the readings are acceptable.

Air Filters

The powdery sand of the desert clogs air filters real fast, especially if you're traveling in convoy.

Clean filters 2 or 3 times a day



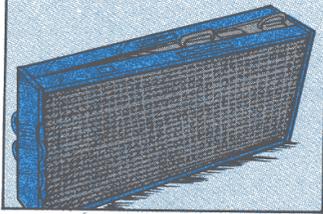
USE NO OIL ON A TRUCK'S DRY AIR FILTERS!

ALL THAT DOES IS ATTRACT SO MUCH SAND THAT YOUR ENGINE'S AIR SUPPLY IS CUT OFF.

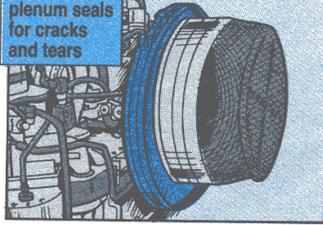


Combat vehicle filter V-packs and plenum seals must be checked for cracks, tears and dust trails as often as possible. Desert sand will KO an engine in a hurry if there are "holes" in the air induction system.

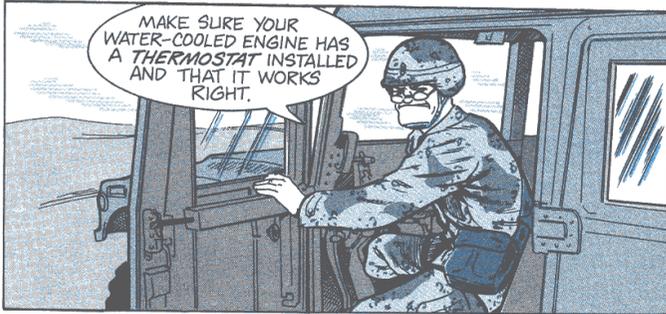
Check V-packs...



...and plenum seals for cracks and tears



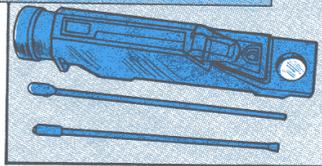
Cooling



If you add coolant to the radiator, you must maintain at least a 50-50 antifreeze-water solution in radiators to survive the heat. A 60-40 antifreeze-water solution is best.

Report any problems with your cooling system as soon as possible. You'll go nowhere in this desert without a good cooling system. Local water should not be used in cooling systems. It has a high mineral content, which will clog up the systems. Use distilled or potable water only.

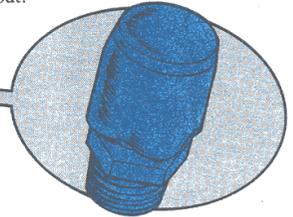
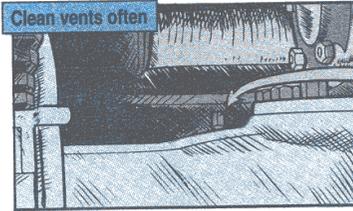
Check antifreeze protection with tester, NSN 6630-00-105-1418



Drive trains

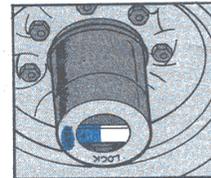
Clean all vents often on axle, transfer and transmission gear cases. If you don't, they clog up, causing seals to blow out.

Clean vents often

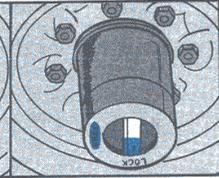


Do not wait until you are stuck in the sand to lock the front hubs on your vehicle. Also, make sure before you move out that your vehicle operates right in four-wheel drive. You'll go nowhere fast in the sand if you don't have all four wheels pulling.

FREE

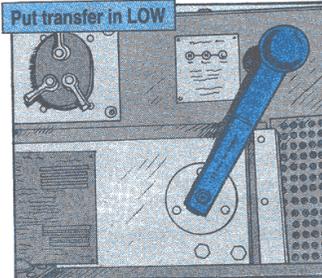


LOCK

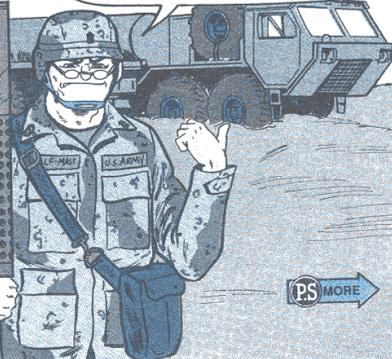


If your truck has a HI N LO transfer gear case, use only LO off-road. Front driveshafts can twist off.

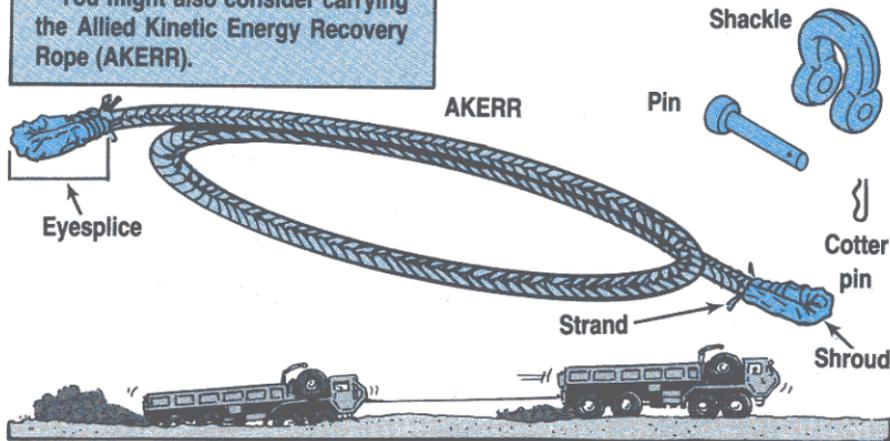
Put transfer in LOW



JUST TO MAKE SURE YOU CAN GET A TOW WHEN YOU NEED IT. CARRY A TOW ROPE IN YOUR ON BOARD EQUIPMENT.



You might also consider carrying the Allied Kinetic Energy Recovery Rope (AKERR).



The AKERR kit, NSN 4020-01-211-8382, contains the rope, specific shackles for AKERR use and a canvas bag for storage.

TM 9-4020-200-10 has the use and care information. You'll note the AKERR was designed for use on combat vehicles under 34 tons, but you might consider its use on heavy wheeled vehicles also.

PS END

Aviation Messages

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

AH-64-91-ASAM-05, ASM, Maint Mand, AH-64A with main rotor blades having inoperable de-ice systems, 251800Z Feb 91.

AH-1-91-ASAM-05, ASM, Oper, delete AH-1S/P from portions of previous USAVSCOM Message AH-1-91-ASAM-01, 271500Z Feb 91.

OH-58-91-ASAM-07, ASM, Info, OH-58A/C reduction of field inspect requirements, 272200Z Feb 91.

OH-58-91-ASAM-08, ASM, Info, OH-58D, Minimizing ground ops below 100 percent NP in sandy and dusty environments, 281800Z Feb 91.

OH-58-91-ASAM-09, ASM, Info, OH-58D/T703 eng improved compressor assy, 281900Z Feb 91.

OH-58-91-01, SOF, Oper,

OH-58D, Fuel boost pump procedure change, 121300Z Feb 91.

OH-58-91-02, SOF, Tech, OH-58D, Visual inspection of tailrotor gearbox support.

OH-58-91-03, SOF, Tech, OH-58, Rev to SOF Message OH-58-91-02, 162330Z Feb 91.

AH-1-91-01, SOF, Oper, AH-1, Removal of firing restrictions, 251600Z Feb 91.

AH-64-91-ASAM-04, Oper, AH-64 S/N 89-0192 and subsequent change of op procedures of power-up/power-down for the TADS/PNVs, 012100Z Feb 91.

GEN-91-ASAM-02, ASM, Info, All Army aircraft (except EH-60A, EH-1H and OH-58D), installation and use of cryptographic computer, KIT-1C, 012230Z Feb 91.

T-42-91-ASAM-01, ASM, Maint Mand, T-42A, Cabin door latching

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

mechanism, 041830Z Feb 91.

AH-1-91-ASAM-02, ASM, Maint Info, AH-1, TOW missile simulator functional check of all AH-1E/F that have had MWO 55-1520-236-50-18, 041900Z Feb 91.

AH-1-91-ASAM-03, ASM, Maint Mand, AH-1, Ferrograph inspect for contaminated grease in scissors and sleeve assembly, 111530Z Feb 91.

AH-1-91-ASAM-04, ASM, Info, AH-1, Degreasing of main rotor pitch horn bolts prior to installation, 111800Z Feb 91.

UH-60-91-ASAM-04, ASM, Info, H-60, Exceeding the retirement (finite) life of certain components, 121910Z Feb 91.

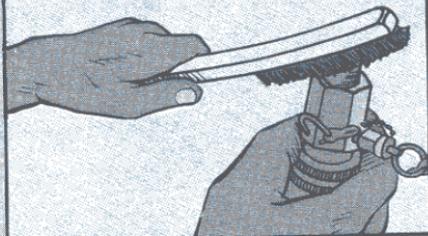
UH-60-91-ASAM-05, ASM, Maint Mand, H-60, Inspect for four unserviceable assemblies, 142130Z Feb 91.

Here's a Seal Deal!



Seepy, weepy, leaky pipe connections are the forerunners of big maintenance headaches. Luckily, you can stop them in their tracks by using antiseize tape on your hookups.

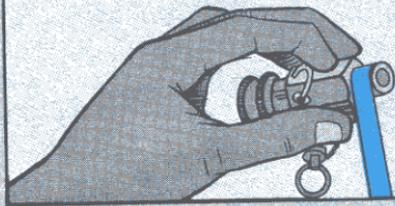
- 1.** First, clean the pipe threads with a stiff-bristled brush.



- 2.** Then, wrap the threads with the tape. Start two threads from the end of the fitting and move in the direction of the threads.



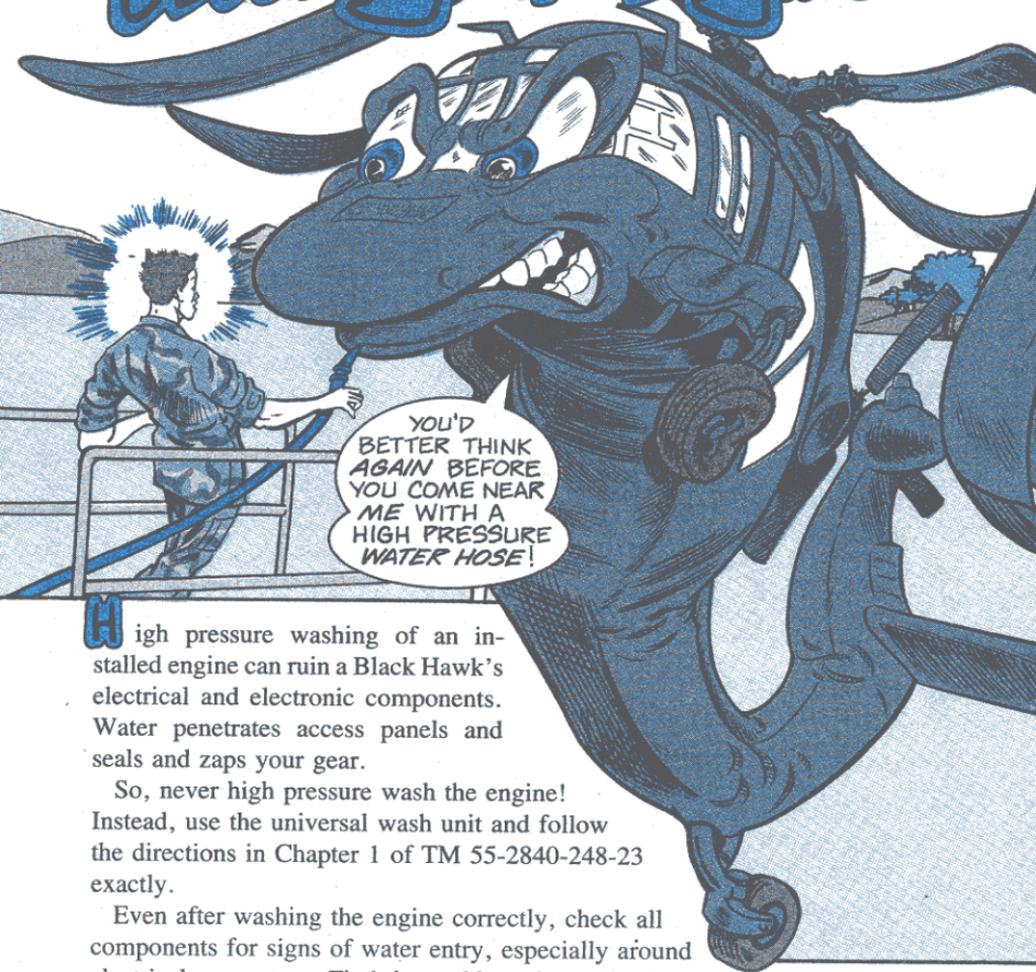
- 3.** Take no more than two turns of tape. Overlap the first turn about halfway with the second.



Use 1/4-in wide antiseize tape, NSN 8030-00-889-3534, for pipes from 1/8 to 3/8 inch. Use 1/2-in tape, NSN 8030-00-889-3535, for pipes 1/2 inch and up.

Keep the tape clean when you put it on and also in your tool box. Dirty or oily tape means a leaky connection.

Cleaning the Engine



High pressure washing of an installed engine can ruin a Black Hawk's electrical and electronic components. Water penetrates access panels and seals and zaps your gear.

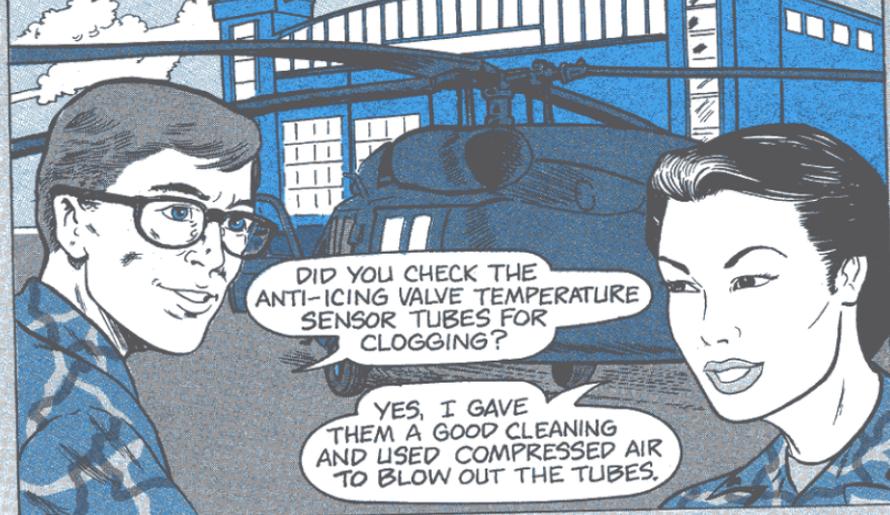
So, never high pressure wash the engine! Instead, use the universal wash unit and follow the directions in Chapter 1 of TM 55-2840-248-23 exactly.

Even after washing the engine correctly, check all components for signs of water entry, especially around electrical connectors. Find the problems immediately while on the ground so your pilot won't find them later in the air.

Remember, too, intervals for cleaning your Black Hawk engine are flexible. They depend on local operating conditions.

Certain conditions let you extend the time; others call for more frequent cleaning. Check out the word in Para 1-131.2 of your -23 TM for guidelines. TB 55-2840-248-20-17 tells when to clean in a desert environment.

NO Ice, Please



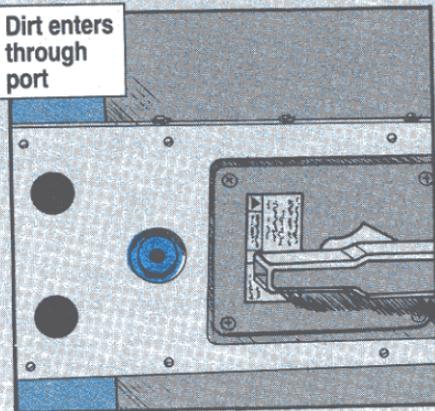
A clogged anti-icing valve temperature sensor tube means engine damage and maybe worse.

The tube lets hot air flow to the engine inlet. If it's clogged with sand fleas or other insects or gunk, ice forms and gets sucked into the engine!

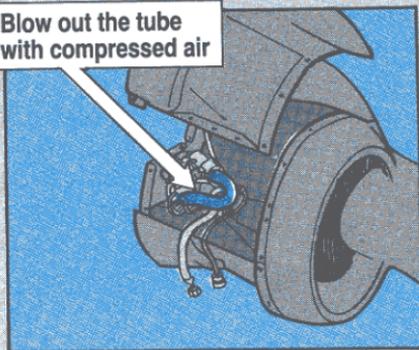
Keep the hot air flowing by cleaning the tube often.

To do a good cleaning, remove the ice detector cover and temperature sensor tube like it says in Task 9 of TM 55-1520-237-23-6. Blow out the tube

Dirt enters through port



Blow out the tube with compressed air



with compressed air. If the air won't clear it, replace the tube with tube assembly, NSN 4710-01-157-8026.

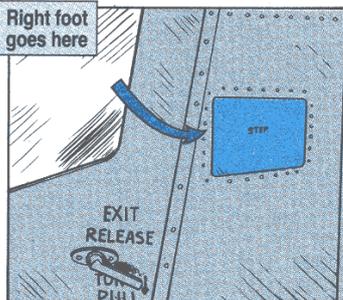
Neat Seats and Sturdy Steps

What do these things have in common?

Four-part directions with only three parts given. An 8-rung ladder with seven rungs. A Kiowa.

They're all missing a step!

You Kiowa mechs know that when you head for the top of your bird, you've got a handy-dandy spot to put your right foot. But what do you do with your left?

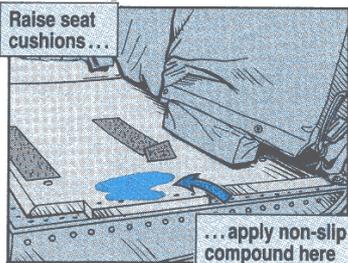


If you're like most, you plant that left foot, along with dirt and grease from the bottom of your boot, right smack dab in the middle of the seat.

It's not long until the seat cushion is worn out.

Save the cushions by making sure they're raised before you climb. Make it a part of your post-flight inspection to raise 'em.

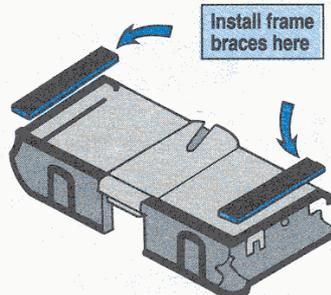
To give you a good toehold, coat the seat panel where you step with non-slip compound. NSN 5610-00-641-0428



brings a gallon. Cover the compound with CARC. NSN 8010-01-246-0717 brings a quart of aircraft green.

Of course, you'll want to use this step only when the seat panels are in place. When the panels are removed during maintenance, don't step on the frames. You'll bend them!

Make a brace to fit over the frames with two plies of 1/2-in thick phenolic sheet, NSN 9330-00-880-4870. Cut the sheets to the same length as the seat frame and 2 1/4 inches wide. Drill



holes in the sheets to match the holes in the frame and attach the phenolic with the hardware used to mount the seat panels.

Get Just the Knob

Dear Editor,

It costs \$13 to replace the hinge assembly (Item 13 of Figure 41 in TM 55-1520-228-23P) on the side plate of our seat armor.

Yet, that's what we have to do because vibration shakes the knob off the assembly and it gets lost.

We've found two knobs that work as replacements. NSN 5355-00-827-8682 brings a smaller knob that costs just 29 cents. NSN 5355-01-037-0835 brings a larger knob that costs \$1.14

Once we have the replacement knob, we lock it in place with sealant, NSN 8030-00-067-6744.

Use sealant, NSN 8030-00-067-6744, to secure replacement knob



CW2 John W. Pearce
Salina, KS

(Editor's note—Thanks. Saving \$12 may not seem like a lot, but multiplied by all the OH-58s it's quite a chunk of change.)

Replace Tool Kit Components

THERE'S NO PUBLICATION THAT GIVES THE COMPONENTS OF THE *MA-693/A* ELECTRONIC EQUIPMENT TOOL KIT. *NSN 5821-00-045-9695*. IF YOU NEED TO REPLACE SOME OF THE ITEMS IN YOUR TOOL KIT, USE THESE *NSN*'s:



Crimping tool, 26-10 AWG wire
NSN 5120-00-596-9313



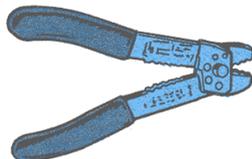
Wire Brush, Pilot
NSN 5130-00-540- dia, in.
6647 1/8
6646 5/32
6645 3/16



Adhesive, liquid, 2-oz bottle
NSN 8040-00-221-3811



Clip assembly, 3/8- to 5/8-in cap
NSN 5120-00-693-9532



Crimping tool w/cutting jaw, stripper,
22-1 AWG wire
NSN 5120-00-278-2423



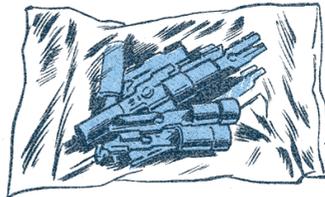
Cap, electrical, Class 1
NSN 5999-00- Wire Size Unit of Issue
280-3499 22-18 pkg (10 ea)
729-1628 16-14 pkg (25 ea)
807-3775 12-10 ea



Tool chest
NSN 5140-00-957-4203



Hand drill, w/o ratchet
NSN 5110-00-293-3411



Ferrule, electrical, wristlock type,
22-14 AWG wire size
NSN 5940-00-296-5326 pkg (10 ea)



Glove, wire mesh, rh, med size
NSN 8415-00-292-9236



Insulation tape, electrical, 2500-ft roll
NSN 5970-00-543-1005

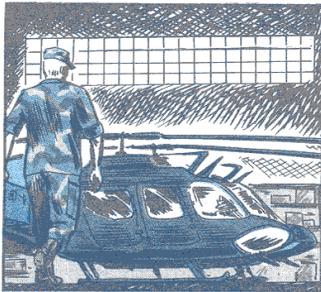


Insulation sleeving, electrical, flexible
extruded vinyl plastic
NSN 5970-00- Size AWG Unit of Issue
935-4999 18 FT
542-7120 14 FT
542-7121 12 FT
556-2717 7 FT
263-1325 5 FT
Size i.d., in
854-6713 7/16 FT
899-6664 1/2 FT
811-0640 5/8 FT
964-7121 3/4 FT
828-1090 7/8 FT



Key set, w/L-type handle, 9 keys w/case
NSN 5120-00-970-8947





Sealant & potting compound, kit
(This item has a shelf life of 6 months and is not issued with the tool set. Order when needed.)
NSN 8030-00-174-2597



Shears, straight trim
NSN 5110-00-293-9199



Nonmetallic channel, rubber
NSN 9390-00-290-8047 (Beech)
247-7282 (MIL-R-3065)

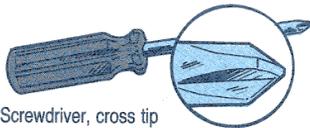
Unit of Issue
LG
FT

Mounting plate, nylon, 1/2-in x 3/4-in
NSN 5975-00-966-4323

Mounting plate, 1/2-in x 2-in
NSN 5975-00-966-6066



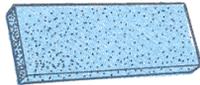
Retrieving tool, magnetic, telescopic
NSN 5120-00-545-4268



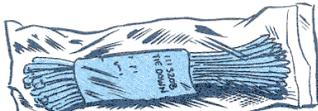
Screwdriver, cross tip
NSN 5120-00- blade dia. blade lg.
596-0866 3/16-in 3-in
237-8173 1/4-in 4-in

Splice, conductor, crimp style

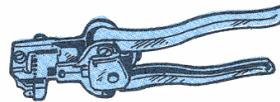
NSN 5940-01-	Wire Size	Unit of Issue
079-1647	18 AWG	HD
079-1375	14 AWG	HD
079-1936	10 AWG	HD



Sharpening stone, med grit
1/4-in x 1 1/2-in x 4-in lg oa
NSN 5345-00-190-5524



Tiedown strap NSN 5975-00-	Used With	Unit of Issue
111-3208	1 1/4-in dia.	HD
074-2072	1 3/4-in dia	HD
156-3253	4-in dia	HD



Wire stripper, hand, 22-8 AWG and AN wire range, size 3 blds
NSN 5110-00-268-4224

Lacing and tying tape, 250-yd spool
NSN 4020-00-656-1257



Terminal, lug, crimp style

NSN 5940-00-	Stud Size	Wire Size	Unit of Issue
113-9828	4	22-18	HD
813-0698	6	22-18	HD
557-1629	8	22-18	HD
143-4771	10	22-18	HD
615-6073	4	16-14	HD
283-5280	6	16-14	HD
143-4774	8	16-14	HD
143-4780	10	16-14	HD
204-8990	6	12-10	HD
143-4775	8	12-10	HD
143-4794	10	unspec	HD

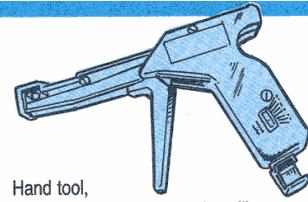


Terminal, quick disconnect, interlocking

NSN 5940-00-804-	Wire Size	Unit of Issue
9185	18 AWG	PR
9184	16-14 AWG	PR

Terminal, quick disconnect, female, 10 AWG wire size. Unit of issue is PR.
NSN 5940-00-877-9111

JUN 91

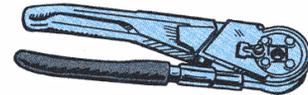


Hand tool, adjustable, tiedown strap installing
NSN 5120-00-781-7891



Crimping tool kit
NSN 5180-00-937-6846

consisting of:
NSN 5120-00-407-0730
Bit, insertion tool, elec contact, 22 ga (local purchase)
NSN 5120-00-407-0731
Bit, removal tool, elec socket, 22 ga (local purchase)
NSN 5120-00-407-0732
Bit, removal tool, elec pin contact, 22 ga (local purchase)
NSN 5140-00-437-1797
Tool case w/inserts (local purchase)



Crimping tool set, contact, hand
NSN 5180-00-921-5771

consisting of:
NSN 5120-00-165-3912
Crimping tool frame, hand
NSN 5120-00-016-6382
Turret head assembly, contact sizes, 12, 16 & 20.
NSN 5220-00-090-6722
Crimping tool gage, go/no-go

JUN 91



Crimping tool frame, CHS hex,
pop-out die type
NSN 5120-00-132-6913

Die crimping tool, CHS dbl hex,
0.160-in/0.309-in across flats
NSN 5120-00-116-3134

Die, crimping tool,
double closure,
0.213 and
0.255 in-hex
NSN 5120-00-116-3159

Handle, insertion/removal bit tool
(local purchase)
NSN 5120-00-407-0729



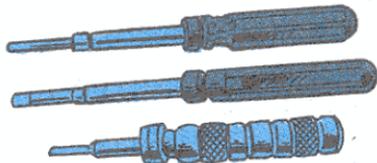
Insertion/extraction tool, elec cont
(local purchase)
NSN 5120-00-968-5880



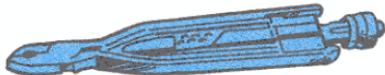
Installing tool, connector, elec cont
NSN 5120-00-
079-4600
079-4599
079-4598
859-9548

Gage
12
16
20
coaxial

Positioner, electrical contact	
NSN 5120-00-	Buchanan Cat No
017-3921	11697-1
937-6843	3538-1
937-6844	3538-2
809-7514	11764
179-3579	11470-2
179-3588	11467-1
	(local purchase)



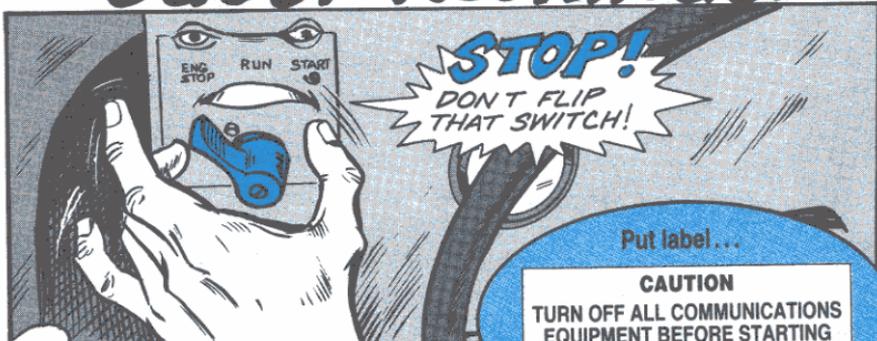
Removal tool, connector, elec cont	
NSN 5120-00-	Gage/identification
079-9461	12
079-4602	16
079-4601	20
928-4419	coaxial
931-2788	← for Cannon Royal-D connector pins



Wire twister, plier, w/wire cutter,
9-in nom size
NSN 5120-00-305-2306



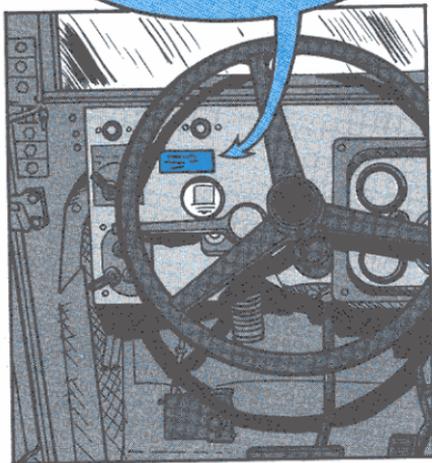
Label Reminder



Put label...

CAUTION
TURN OFF ALL COMMUNICATIONS
EQUIPMENT BEFORE STARTING
OR STOPPING ENGINE

...here



Forgetting to switch off your radio before starting the vehicle zaps your commo. That initial surge of power when you turn over the engine puts your radio down for sure. So, before you start the engine, make sure the radio's power knob is turned to OFF.

If you need help in remembering to turn off the radio, put a caution label, NSN 7690-00-942-7067, next to the vehicle's starting switch.

The label says: **CAUTION—TURN OFF ALL COMMUNICATIONS EQUIPMENT BEFORE STARTING OR STOPPING ENGINE.** SB 11-624 is the authority for ordering the label.

RC-292 Cable Connection

If you need to connect two CG-107A/U RF cables for the RC-292 antenna, get a PL-258 adapter. Order the adapter with NSN 5935-00-295-5449.

Cushion Items Carefully

Dear Editor,

Cushioning sensitive commo or electronic gear for transport to the maintenance shop is a must so that a minor repair job won't turn into a major repair job.

Most of the time it's hard to find old mattresses or blankets when it's time to make a run to the maintenance shop. We keep some 1-in foam rubber, NSN 9320-00-232-2474, on hand to cushion our commo equipment in back of the vehicle. That way the equipment is protected and we can use the foam rubber over again.

58th Light Equipment
Maintenance
Ft Bragg, NC

(Editor's note—Thanks for the tip on protecting equipment during transport. You can also cushion your equipment by wrapping it in bubble packing material, NSN 8135-00-926-8991, clothing or anything that'll pad the gear. Then, put the cushioned item in a box or container to help protect it during the ride.)



AN/TSC-85B Patch Panel Cable

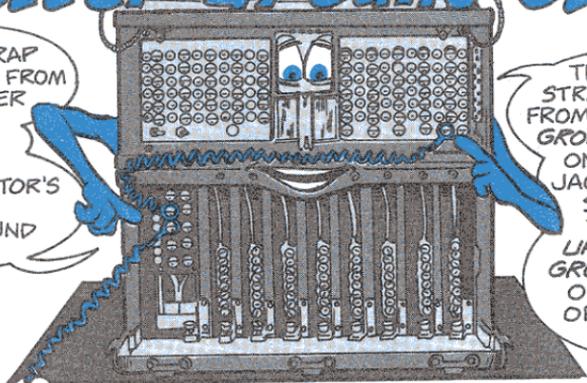
Here are the NSNs for the cables and looping plugs for the AN/TSC-85B Satellite Communications Terminal's baseband patch panel.

Order the looping plugs from S9E using CAGE 82389 and part number.

Item	P N or NSN
Cable, 12 inches long, single, 3-conductor	5995-00-717-9887
Cable, 12 inches long, dual, 3-conductor	5995-00-241-7489
Cable, 24 inches long, single, 3-conductor	5995-01-125-5158
Cable, 24 inches long, dual, 3-conductor	5995-00-113-0971
Looping plugs, 3-conductor	TT208

Better Ground Strap

ONE STRAP
CONNECTS FROM
THE LOWER
EARTH
GROUND
POST ON
THE OPERATOR'S
PACK TO THE
GROUND
ROD!



THE OTHER
STRAP
CONNECTS
FROM THE
EARTH
GROUND
POST
ON THE
JACK FIELD
SECTION
TO THE
UPPER EARTH
GROUND
POST
ON THE
OPERATOR'S
PACK.

You can now order a better ground strap for your SB-86/P switchboard thanks to an adopted SMART suggestion from James E. Uber of AMSA 5 of Niagara Falls, NY.

Ground strap, NSN 5805-01-163-8867, helps protect you and your equipment from electrical shocks.

You'll need to order two straps. One for the TA-207/P switchboard signal assembly and one for the SB-248/P manual telephone switchboard section.

RL-172/G...

Put Reeling Machine on HMMWV

Dear Half-Mast
I want to attach the RL-172/G
reeling machine to the bed of
my HMMWV. Is there a kit
that will do the job?
SGT J.P.F.

THANKS FOR
THE REEL DEAL
HALF-MAST!

Dear Sergeant J.P.F.,
No. There is no installation kit
for putting your RL-172/G in the
bed of your truck. However, the
reeling machine can be attached
to the tailgate of your truck with
an MK-2612/VRC installation kit,
NSN 5820-01-310-2549.

Half-Mast

U1R is the Splice of Life

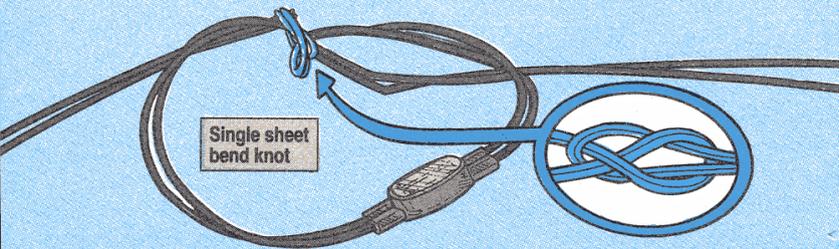


The U1R splice, NSN 5940-00-935-8262, is a quick, easy way to splice WF-16 field wire. But make sure you use the right crimper for the job.

The plain E9 crimper won't work with the U1R splice because its jaws won't open wide enough. You need the E9B crimper. Order it on a DD Form 1348-6, using CAGE 76381 and PN E9B from GSA. Put a 2B in card columns 65-66. That way the supply folks know not to substitute the plain model.

Now that you've got the right crimper, here's how to get a neat field splice:

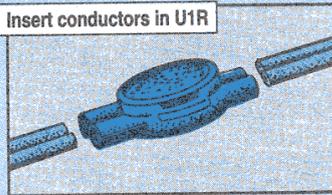
- Cut off the damaged wire and tie the two ends of the wire with a single sheet bend knot. This puts the strain on the line, not the splice. Leave 6 inches of insulated wire on each end to take the splice.



of Life

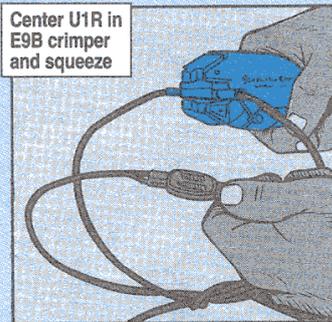
- Split each pair of conductors and insert them into the U1R. Make sure the conductors go through the metal prongs and all the way to the center of the U1R.

Insert conductors in U1R



- Center the U1R in the E9B crimper. Press the E9B firmly until the red top part of the U1R is even with the clear bottom part.

Center U1R in E9B crimper and squeeze



No tape is needed because the insulating grease in the splice protects against electrical leakage and corrosion. The insulating grease also makes the splice waterproof.

Check out Chapter 6 of TC 24-20 for more information on splicing field wire.

Order Part by Part

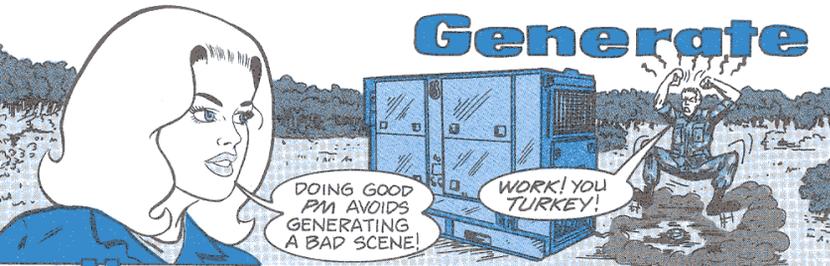
IF YOU NEED THE TE-33 LINEMAN'S TOOL KIT, YOU'LL HAVE TO ORDER IT PART BY PART. THE ITEMS ARE:



Item	NSN
TL-29 Knife	5110-00-240-5943
CS-34 Pouch	5140-00-498-8898
TL-13 Pliers without skinners	5120-00-239-8254
OR	
TL-13 Pliers with skinners	5120-00-247-2063

When you order the TL-13 pliers with skinners, put an advice code of 2B in card columns 65-66 of the supply request. That way the supply folks know not to substitute the pliers without skinners.

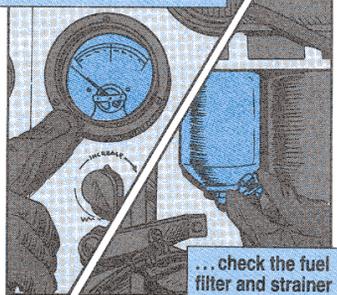
Generate Good PM



Here are a few ways to pull the plug on generator problems before they shut you down:

⚡ If the hertz meter fluctuates, bleed the fuel filter and strainer until clear fluid comes out. Never adjust the governor. That just throws off the injection pump. If bleeding doesn't do the trick, your repairman needs to adjust the valves, or replace the nozzle holder or the transducer or the frequency meter.

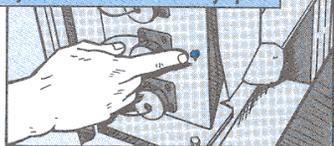
If hertz meter fluctuates...



⚡ **Eyeball ALL bolts...** especially those on the fan shroud and panels... for shiny spots before you operate. The 60 KW vibrates so much it shakes bolts loose. If the fan shroud bolts come out, the shroud is chewed up by the fan

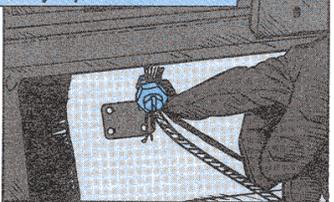
blades. If panel bolts work out, the panels fall off or can't be closed. Tighten loose bolts.

Eyeball ALL bolts for shiny spots



⚡ If you lose power to the load, eyeball the grounding stud for its safety clip and for corrosion. If the safety clip is missing, the generator has no ground. You can make a safety clip with wire, NSN 9505-00-596-1662. A paper clip is a good temporary fix. Corrosion on the stud also prevents a good ground. Remove corrosion with sandpaper.

Eyeball grounding stud for safety clip and for corrosion



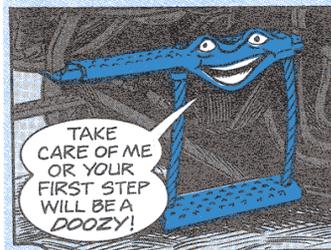
⚡ Look over cables and wires for bare spots and cracks... especially the wires across the top of the fuel tank. Bare spots and cracks cause everything from grounded-out starters to shorted-out batteries to electrocution. The 416 volts running across the wires over the tank can burn right through the tank. If you can't get wires or cables replaced immediately, wrap electrical tape around bare or cracked spots.

Check wires for bare spots and cracks



130G Graders...

Paint Step Saver



The cab steps on your 130G grader get hit by the blade when you cut a V-ditch or raise and turn the blade for travel. That's because the end of the blade is under the cab and you can't tell when it's about to hit the step. So-o-o-o, the blade snags the step and tears it off.

You mechanics can help operators by painting a "danger zone" on the circle reverse to remind operators to spare the steps. Here's how:

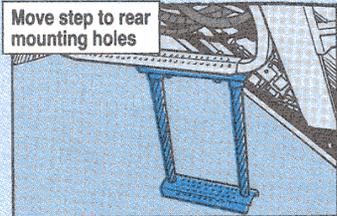
- Raise and rotate the blade so it's set for travel.
- As you turn the blade, get a buddy to tell you when the blade is a few inches from the step.

- Paint a black stripe on the circle reverse and another on the circle's frame, just above and back about 8 inches. Be sure you can see the stripes from the driver's seat.

Do the same thing on the other side.



You mechanics can move the lower wire rope steps to the rear holes. That way the lower step is further from the blade. Also, keep the blade close to the ground when rotating it.



Keys Are What You Need

Dear Half-Mast,
Some of our gear is
missing ignition keys. Could
you provide the key or key
blank NSNs for construction
equipment?
CPT P.E.V.

Dear CPT P.E.V.,
Yes, Sir. Here're the key NSNs
available from supply.

Half-Mast



Equipment	Number	Item
F5070 Dump Truck	NSN 2920-00-609-8296	Switch w/key
M4K Forklift	NSN 5930-01-145-0351 CAGE 77326 PN LS220*	Lever switch key Key for earlier models
MW24C Scoop Loader	NSN 5340-01-275-7751	Ignition key
M10A Forklift	CAGE 29510, PN 1124170C1* NSN 5930-01-039-2939	Ignition key Master disconnect switch key
M915-series trucks	NSN 2920-01-092-9134 NSN 2540-01-155-3601 NSN 5340-00-357-9269	Ignition switch Lock Cylinder with key Key blanks
MT-250 (25T) Crane	NSN 5930-00-307-8107	Ignition switch with key
K-300 Compactor	CAGE 09603, PN 851092601*	Ignition key
SP 848 Roller	NSN 5930-01-039-2939	Ignition key
C530A Roller	CAGE 30076, PN 0186304*	Ignition key
C350B-D Roller	CAGE 30076, PN 0186304*	Ignition key
CAT 621B Scraper 130G Grader D7/E/F/G/D8K Tractors	NSN 5930-00-715-1939 NSN 2920-00-775-7691	Key Battery disconnect switch

*Order on a DD Form 1348-6 using CAGE and PN from RIC S9C.

Windshield Washer

You can no longer get the MW24C's windshield washer or control valve listed in TM 5-3805-262-24P.

But that doesn't mean you have to leave your loader's windshield dirty.

There is a replacement windshield washer assembly or a new control valve available. However, if either the original washer or valve goes bad, you have to replace both.

NSN 2540-01-106-7121 gets you the control valve

NSN 2540-01-295-9773 gets you the windshield washer assembly

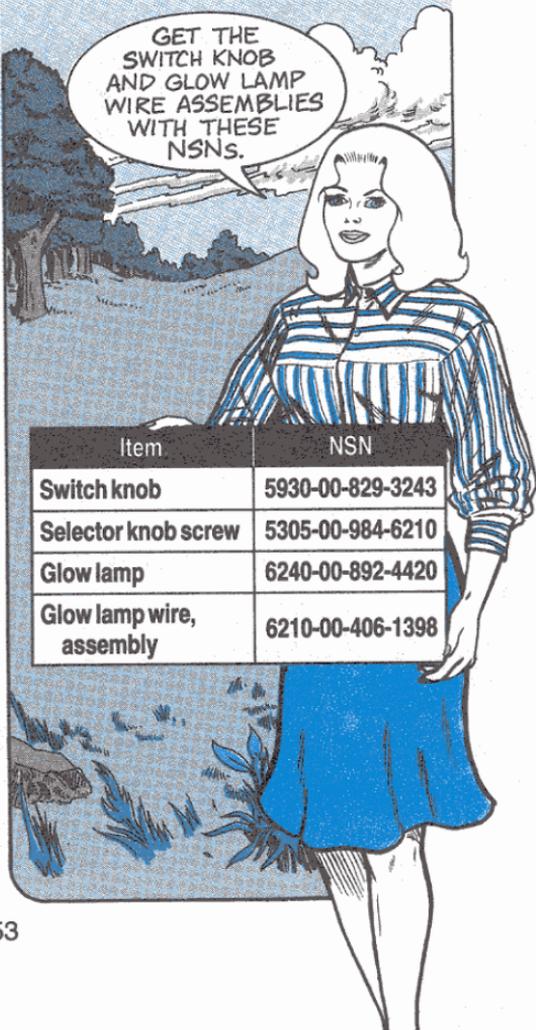


Distribution Box

TM 5-6115-365-15 is short on repair part NSNs for the distribution box on the PU-618/M, -619/M and -620/M power units.

GET THE SWITCH KNOB AND GLOW LAMP WIRE ASSEMBLIES WITH THESE NSNs.

Item	NSN
Switch knob	5930-00-829-3243
Selector knob screw	5305-00-984-6210
Glow lamp	6240-00-892-4420
Glow lamp wire, assembly	6210-00-406-1398



Tools...

Screwdriver & Nutdriver

MY, BUT YOU HAVE A MAGNETIC PERSONALITY!

Some tool sets include a screwdriver and nutdriver set called a general mechanics tool kit, NSN 5180-01-034-8231.

But you'll find only the basic kit's NSN in the SC or TM for the tool sets. Here's what makes up the tool kit:

Item	PN-	NSN 5120-	Size (inches millimeters)
Regular handle	99-1	00-056-3935	
Tee handle	99-4	00-241-5521	
Magnetic nutdriver	99-8M	CAGE 96508*	
Regular nutdrivers	99-6	00-152-2298	3/16
	99-7	00-056-3938	7/32
	99-8	00-159-8881	1/4
	99-9	00-056-3940	9/32
	99-10	00-159-8882	5/16
	99-11	00-056-3942	11/32
	99-12	00-056-3943	3/8
Hex screwdrivers	99-14	00-152-2299	7/16
	99-16	00-056-3945	1/2
	99-20	00-156-0969	.050
	99-21	00-162-2217	1/16
	99-22	00-156-0975	5/64
	99-23	00-190-5756	3/32
	99-24	00-156-0978	1/8
	99-25	00-406-3181	5/32
	99-26	00-112-9333	3/16

*No NSN. Order on a DD Form 1348-6 using the CAGE and PN from RIC GSA.

Set Components

DON'T ACT SCREWY...

Item	PN-	NSN 5120-	Size (inches millimeters)
Bristol multiple spline screwdrivers	99-612	00-112-9335	.048
	99-62	00-112-9345	.060
	99-63	00-112-9349	.069
	99-64	00-112-9355	.072
	99-65	00-112-9359	.076
	99-66	00-112-9371	.096
	99-67	00-112-9462*	.111
	99-68	00-112-9372*	.145
	99-69	00-112-9376*	.183
Slotted screwdrivers	99-125	01-020-7810	1/8
	99-811	00-056-3934	3/16
	99-250	00-152-2297	1/4
	99-312	00-132-0909	5/16
Phillips screwdrivers	99-820	01-021-7470	No. 0
	99-821	00-056-3933	No. 1
	99-822	00-132-0850	No. 2
Reamer	99-38	5110-00-440-7996	
Extension	99-X5	00-152-8991	

*Not on AMDF. Order on a DD Form 1348-6 using RIC GSA.

...OR GO NUTS...

...GET THE RIGHT TOOLS...

NO IF'S, AND'S, OR BUTS!

Component NSNs

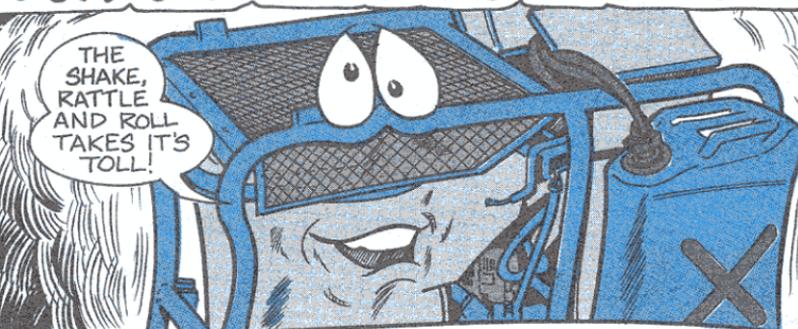
HERE'S WHAT MAKES UP THE
M1948 FLYPROOF KITCHEN TENT,
NSN 8340-00-470-2341.

≡ SNIFF ≡
≡ SNIFF ≡
CHOW!



Item	NSN 8340-00-	Qty
Tent, with cover and screen	257-2560	1
Screen, kitchen tent	254-8997	1
Cover, tent	262-2397	1
Pin, tent, wood, 16 inches	261-9750	32
Pin, tent, wood, 24 inches	261-9751	31
Pole, tent, ridge, jointed, 11 feet, 10 inches	188-8396	1
Pole, tent, ridge, solid, 5 feet, 11¼ inches	188-8392	1
Pole, tent, upright, jointed, 12 feet, 3 inches	188-8411	2
Pole, tent, upright, solid, 6 feet, 2 inches	188-8406	16
Pole, tent, upright, solid, 7 feet	188-8407	1
Pole, tent, upright, solid, 9 feet	082-2167	5

Lock Out Throttle Problems



THE
SHAKE,
RATTLE
AND ROLL
TAKES IT'S
TOLL!

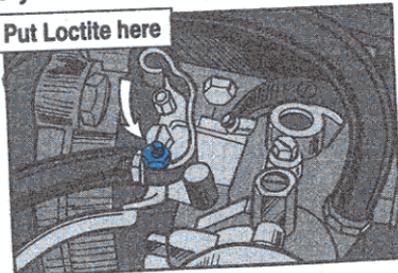
Dear Editor,

Vibration loosens screws, especially the idle adjusting screw for engine speed. The Sanator's RPMs can suddenly go up or down. You have to stop deconning and call your repairman to reset the idle speed, usually every few hours of operation.

We solved that problem by adding Loctite, NSN 8030-00-905-6818, to the adjusting screw's jam nut after we set the idle speed. A lock washer works, too.

SSG Michael Law
SGT Howard Widener
Ft McClellan, AL

Put Loctite here



(Editor's note: Your suggestion's giving me good vibrations. Thanks.

A loose adjusting screw's often caused by using the throttle lever to stop the engine. Stop the engine instead by lowering the engine speed to an idle by raising the throttle lever. Use the emergency stop switch to shut off the engine.)



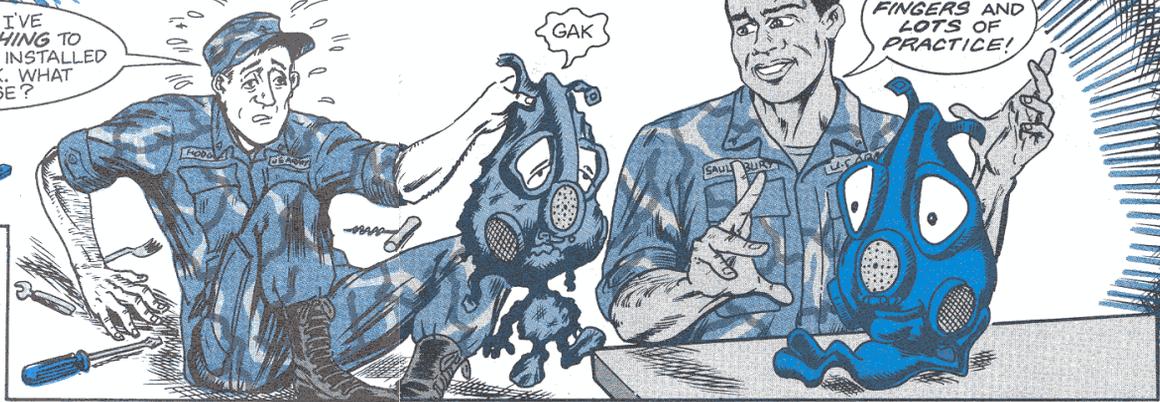
I USED LOCTITE.
I CAN SHAKE
ALL NIGHT.

Filter Facts

WHEW! I'VE TRIED EVERYTHING TO GET THE FILTERS INSTALLED IN THIS MASK. WHAT DID YOU USE?

GAK

JUST MY FINGERS AND LOTS OF PRACTICE!



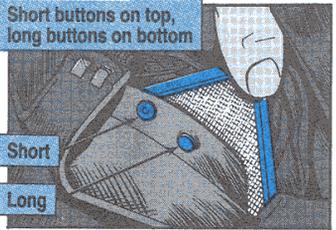
The only tools that will help you install M17 filters are the 10 on the ends of your hands. And the only way to make the job easy is to practice... practice... practice... and practice some more.

Ignore anybody who tells you that screwdrivers or homemade tools will make the job easier. All they do is tear the mask and cause your paycheck to be less for several months.

Remember these points as you practice:

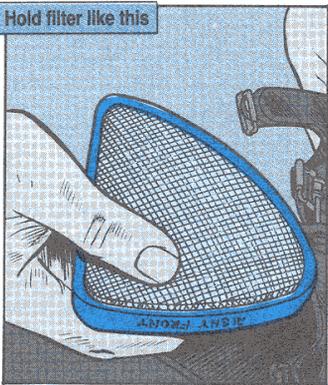
Before you do anything, lay the head harness over the eyelenses. That gets the harness out of the way.

Eyeball all four flap buttons. The short ones should be on top, the long



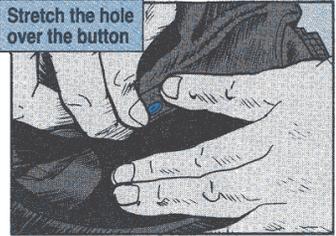
ones on the bottom. The smaller parts of all four buttons should be facing up.

Hold the filter at its top towards the inside corner. Move the nosecup to the side. Push the filter's bottom pointed



end into the flap pocket corner as far as possible.

Slide the filter in until it seats. If it won't go, something's wrong. Get help.



the button. If the hole won't slip over the button, dab water over the button and hole and try again.

Once you get the two top buttons buttoned, button the bottom ones the same way.

Everything go OK? Good. Do it again. Practice makes it perfectly easy.

When you remove the filters, grip them at the top. If you grip them lower, you can tear the mask.

Pack Up Your NBC Bag and Smile

WE'LL BOTH
BE HAPPIER...



...IF YOU PACK
YOUR NBC BAG
CORRECTLY!

The best place to pack your chemical protective overgarment (CPO) or battle dress overgarment (BDO) is in the NBC bag. But you can't just stuff the suit in the NBC bag. That could damage the suit. Do it like this:

1. Make a small cut (about 1 inch) in one corner of the vapor barrier bag. Be careful not to cut the suit.



2. Fold the bag lengthwise so it forms a V. This will push out trapped air in the bag.



3. Place a strip of duct tape, NSN 7510-00-266-5016, over the cut and any other cuts or punctures in the bag.

4. Slide the V-shaped bag into the NBC bag point first.



5. Slide the chemical protective footwear covers into the opening of the V.



6. Fold a pair of chemical protective gloves and place them in the bag.



7. Seal the hook and pile at the top of the bag. Fasten the side quick-release fasteners.

You're ready to move out.

If you don't have an NBC bag, order one with NSN 8465-01-216-6259.

Remember you can continue to use CPOs that have been stored for 6 years, even if their bags have been punctured... but only if they haven't been exposed to moisture, smoke, or fuel fumes.

TIPS Has New Address

The Tool Improvement Program Suggestions (TIPS) has moved to the Force Integration Support Agency (FISA) at Ft Belvoir. Send your tool suggestions to:

US Army Force Integration Support Agency

ATTN: MOFI-TED-E, Bldg 2588
Ft Belvoir, VA 22060-5587

Or call DSN 345-2512 or Commercial (703) 355-2512. The datafax number is DSN 345-3252 or Commercial (703) 355-3252.

PM--
THE BEST
DEFENSE AGAINST
THE SANDS OF
TIME!



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

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

Rifle Sling Adapter

If you need a longer sling for your M16 rifle, order a top sling adapter kit, NSN 1005-00-406-1570. The adapter provides an extra 12 inches that makes it easier to get into firing position and lets you shoot without taking the rifle off your shoulder.

M916, M920 PMCS Change

The M916 and M920 tractor truck's -10 TM is unclear on inspecting the winch cable. The latest word from the headshed is that the vehicle is NMC when the winch cable is frayed, has one or more kinks, or is broken or missing. Make a note until the PMCS is updated.

HMMWV DCA Cover NSN

You can use NSN 5340-01-158-0098 to get the diagnostic connector dust cover. This saves buying a new connector assembly.

M105 1 1/2-Ton Trailer

Use NSN 2530-00-741-2065 to get the wheel cylinder for all the TM 9-2330-213-14&P trailers. The NSN is missing from Item 6, Fig 12. The PN should be F56114.

M2385 Crane Muffler NSN

NSN 2990-00-498-3775 gets the muffler for the 20-ton crane. Make a note until your TM's updated.

**The Desert May Forgive You for a
Lot of Things. But Forgetting to Clean
Air Filters is NOT One of Them.**



**CLEAN
AIR FILTERS
AT LEAST
TWICE DAILY!**

PIN: 064836-000