

Issue 362

# PS

January  
1983

## THE PREVENTIVE MAINTENANCE MONTHLY

Resolve  
To Pass  
This Copy  
Along!





Operator/Crew PMCS...

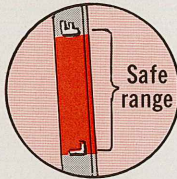
# Is Engine Oil Level

IT'S BELOW THE FULL MARK BUT IT'S OVER ADD--SO IS IT OK TO START THE ENGINE?

Dear Half-Mast,  
This is about trucks, combat vehicles, construction equipment, generators and other ground equipment with a dipstick for checking the engine oil level.

The big question is: Must the cold engine oil level be at the FULL mark on the dipstick to start the engine? Or is any level between FULL and ADD safe for engine starting? SFC K. L. B.

If your TM or LO does not say otherwise, it's OK to start your engine with the oil level in the safe range.



## Multifuel Update

TM's and LO's for multifuel engine trucks will be changed, where needed, to specify the cold oil check level at 1 to 1½ inches over the FULL mark.

## Goer Different, Too

"Above the FULL mark" is required before starting the Goer engine. This is explained in PS 360, Page 22, "FULL Is Not Enough".

Dear Sergeant K. L. B.,

It depends on what's specified in your operator's TM or in the LO.

But, in most cases, your question is answered by the dipstick itself. In these cases, "ADD" or "L" or whatever symbol is used on the dipstick means exactly what it says. It is not necessary to add oil until the oil level drops to ADD.

If a higher level is required for safe engine operation, that's where the ADD mark would be.

Engines are designed with oil capacities that provide a safe range for oil loss. That safe range is between ADD and FULL (or between "L" and "F", etc). An oil level between those points is safe for engine operation!

There's no excuse for letting the oil level drop below ADD. The safe range allows plenty of opportunity to keep the oil level above ADD.

# SAFE?

NO--THAT'S A MULTIFUEL ENGINE! THE PMCS IN YOUR -10 TM CALLS FOR AN INCH TO 1½ INCHES OVER FULL ON A COLD CHECK!

I'VE GOT A TOUGH DAY AHEAD, SO I'M STARTIN' OUT WITH THE OIL UP TO FULL... AND I'M TAKIN' A FEW EXTRA QUARTS--CUZ THIS BABY USES SOME!

RIGHT ON! Y'GOTTA USE COMMON SENSE! AFTER ALL, THE WHOLE IDEA IS TO MAKE SURE YOUR ENGINE HAS ENOUGH LUBE!

HOT CHECKS FOR YOUR EQUIPMENT MAY BE A SPECIAL STORY!

BE SURE TO GO BY THE INSTRUCTIONS IN YOUR EQUIPMENT'S LO OR TM!



THE  
**PREVENTIVE  
MAINTENANCE**  
MONTHLY

Published by the Department of the Army for the information of all soldiers assigned to combat and combat support units, and all soldiers with organizational maintenance and supply duties.

Within limits of availability, older issues may be obtained direct from Editor, PS Magazine, c/o US Army Materiel Readiness Support Activity, Lexington, KY 40511.

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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  
PS Magazine  
Lexington, KY  
40511

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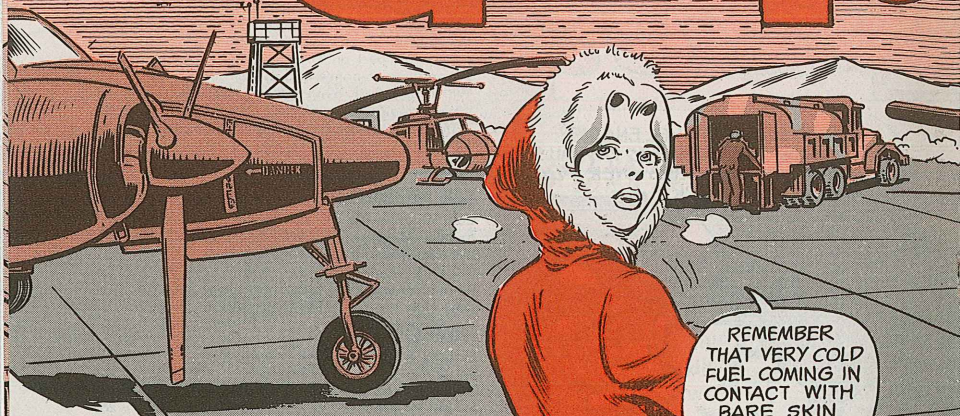
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# Give It Your Best!



REMEMBER  
THAT VERY COLD  
FUEL COMING IN  
CONTACT WITH  
BARE SKIN  
CAN CAUSE  
FROSTBITE!

BE SAFE!!  
GROUND FUEL  
TRUCK AND BIRD  
LIKE THIS...

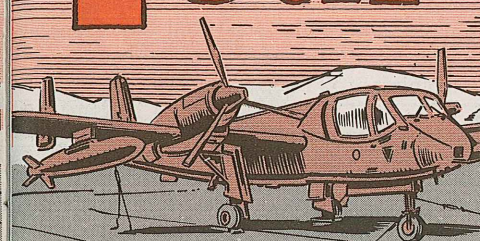
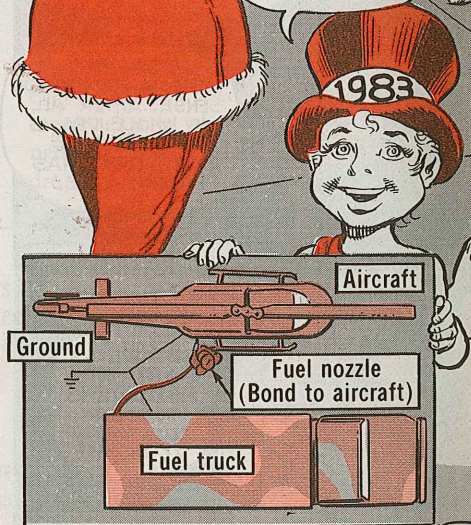
The urge to hurry thru preventive maintenance inspections on your aircraft in freezing temperatures is a natural one, bird mechs. Fight it! A thorough check is important.

For example, fuel contamination is always a possibility in cold weather. Sure, the truck delivers filtered fuel to your bird. But if the aircraft is warm when parked, with partially empty tanks, cold overnight temperatures will condense moisture in the tanks.

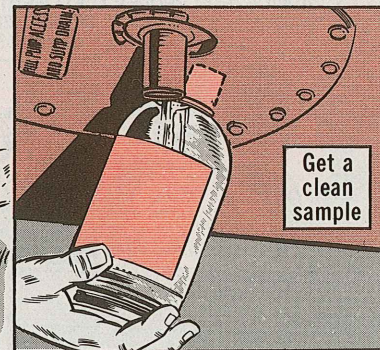
So, always keep the fuel tanks topped off.

Refueling in the cold can be a real danger because you're more likely to get leaks in the seals of the refueling truck. That means more danger of fire.

The colder the weather, the dryer it gets. The dryer it gets, the more static electricity is generated. Make sure the truck and aircraft are grounded, and the fuel nozzle is bonded to the bird.



When sampling the fuel in your bird, drain off enough fuel so that it's clean and free of water. Remember



that the fuel control is capable of pumping water, as well as fuel, into the engine.

The rate of flow for fuel, oil, and hydraulic fluid is changed during cold weather. If you're using fire-resistant hydraulic fluid, MIL-H-83282, Para 4-2 in TB 55-1500-334-25 gives you the word on changing to MIL-H-5606. That is, if the chart in Para 4-1 shows your operating temperatures are low enough.

## Focus on the Engine

In the cold, fuel is harder to ignite and harder to keep going when the engine is cranked up. Oil flows slower, resisting rotation of the compressor. So, it's mighty important that you use the right fuel and oil for the temperature. The servicing and lube charts in each aircraft maintenance manual list the fuel and oil you should use.

It's a tough job to start a cold-soaked engine. Use engine inlet and exhaust covers, plus any other protection you can find, to keep ice and snow from the engine.

When an engine is shut down in cold weather, the heat from the engine will melt snow or ice particles that get in the engine inlet.

After the engine cools, the water will condense and freeze in the compressor section. When the next start is attempted, the tips of compressor blades will be frozen to the compressor case.

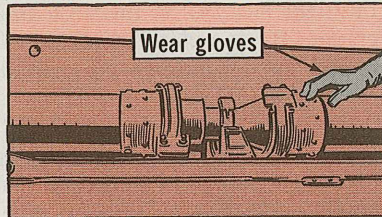
Remember that ice can build up on the engine inlet screens and block the flow of air. Eyeball your aircraft maintenance manual to determine if screen removal is necessary.

Starting an engine with frozen compressor will damage the compressor and starter drive train. So, whenever possible, rotate the compressor by hand during a PM Daily to make sure it's free. If it's not, roll up a Herman-Nelson heater and thaw out that baby.



## Dress Warm

Making an inspection during freezing temperatures takes longer, so wear the right duds. Wear gloves. Never expose bare hands to the cold for any length of time. Never touch metal with bare hands because your skin can freeze to it. Removal smarts something awful!



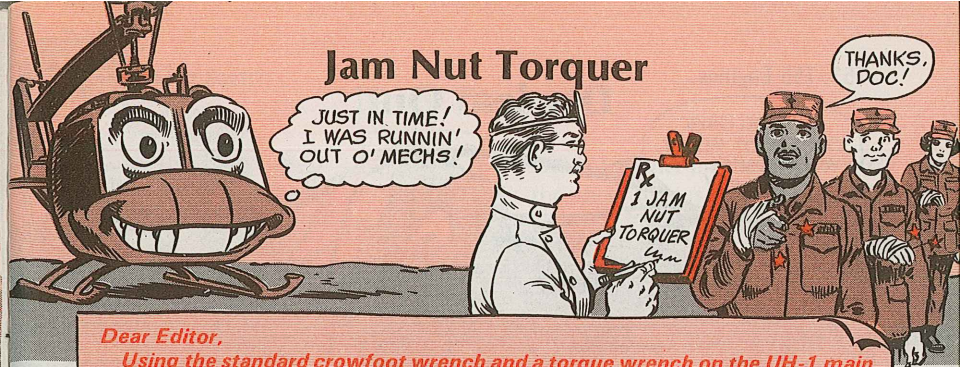
Limit the time you spend making checks and adjustments as a chopper is being run up on the ground. The rotor wash from UH-1 rotor blades, for example, has a direct effect on the wind-chill factor. At 25 MPH, with an air temperature of 10 degrees F,

PLAY SAFE! DRESS FOR THE WIND-CHILL FACTOR!



COOLING POWER OF WIND EXPRESSED AS "EQUIVALENT CHILL TEMPERATURE"																								
WIND SPEED		TEMPERATURE (°F)																						
		40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60		
CALM		CALM																						
KNOTS		AMPH	EQUIVALENT CHILL TEMPERATURE																					
3-6	5	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-65		
7-10	10	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-65	-70		
11-15	15	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-65	-70	-75		
16-19	20	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-65	-70	-75	-80		
20-23	25	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-65	-70	-75	-80	-85		
24-28	30	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-65	-70	-75	-80	-85	-90		
29-32	35	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-65	-70	-75	-80	-85	-90	-95		
33-36	40	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-65	-70	-75	-80	-85	-90	-95	-100		
WINDS ABOVE 40 HAVE LITTLE ADDITIONAL EFFECT.		LITTLE DANGER					INCREASING DANGER (Flesh may freeze within 1 minute)					GREAT DANGER (Flesh may freeze within 30 seconds)												
		DANGER OF FREEZING EXPOSED FLESH FOR PROPERLY CLOTHED PERSONS																						

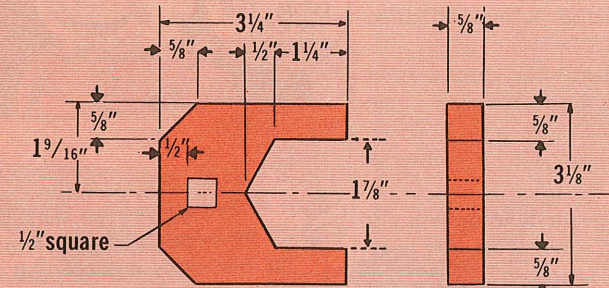
## Jam Nut Torquer



Dear Editor,

Using the standard crowfoot wrench and a torque wrench on the UH-1 main rotor-hub drag brace jam nuts can be a bit of a problem. The crowfoot spreads, the wrench slips, and you wind up with some bruised knuckles.

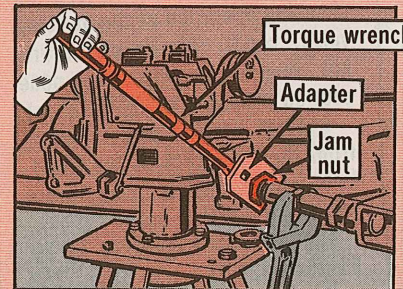
We solved the problem, tho, by making up this steel adapter.



Tolerance  $\pm .010$  inches

Break all sharp edges

Just insert the torque wrench into the adapter...no more slips!



David Ahlman  
Ft. Devens, MA

(Ed Note—  
Remember that you're adding 2 inches to the length of the torque wrench. So use the formula in Fig 6-61, TM 55-1500-204-25/1, to figure the torque value needed on the jam nuts.



## Dry 'em Out!

NO! YOU GUYS  
CAN'T PILOT ME 'TIL  
YOU PROMISE TO  
DE-ICE ME!

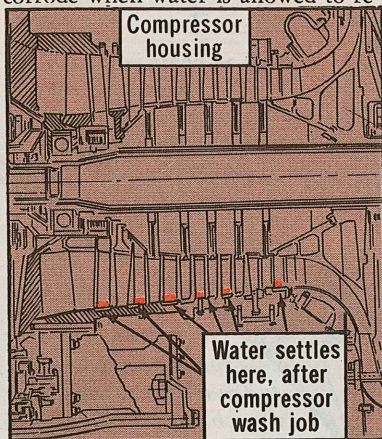
?

...IN  
100°  
WEATHER?

Chances are you airplane drivers won't get temporary duty to Corpus Christi Army Depot. If you did, you'd notice that a lot of engine housings are scrapped because of internal corrosion.

The inlet housing is vented to ambient air, so moisture routinely enters the internal passages in the nose section, eating away at the unprotected magnesium.

The compressor housing will also corrode when water is allowed to re-



main under the lower stator assemblies, following a compressor wash job.

YOU CAN  
SAVE A LOT  
OF PARTS  
FROM THE  
SCRAP  
HEAP!

## Use De-Ice Switch

- On every engine start, move the de-ice switch from OFF to ON. The operator's manuals call this out as part of your engine runup. Leave the switch ON until you get a rise in turbine gas temperature. Not only will you be checking operation of the de-icing valve, you'll also be circulating hot engine air into the nose section passages to dry them out.
- Right after a bird is towed from the wash rack to the flightline, following a compressor wash, dry out that baby.

The info on Page 2-11 in TM 55-2840-229-23, on the T53 engine, says to run it at flight-idle a minimum of 2 minutes, with the de-icing switch ON.

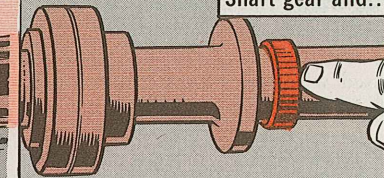
## Easy Does It!



I GOT JUST  
TH' GUY T' HELP  
US, GEORGE!

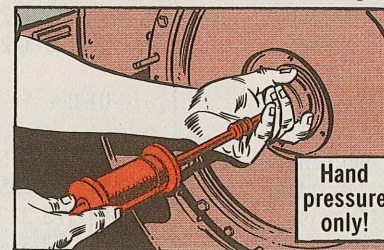
Never hammer on the output shaft if the shaft splines don't mesh with

Shaft gear and...



When you T55 engine mechs pull the hot-end inspection, use only hand pressure when you install the power output shaft. A lot of damaged

the overspeed drive gear teeth, tho. Just rotate the shaft for an easy engagement.



governor overspeed drive gears are being replaced during engine overhaul.

Sure, it's OK to use an impact puller to remove the shaft. You also use the puller to aline and install the shaft.



Make sure the torquemeter sleeve and shoulder do not contact and damage the overspeed drive gear. See the CAUTION, Para 9-29 of TM 55-2840-234-24/2. This will help cut down on expensive gear replacement.

## Keep 'em Flowing

T55-L-11 engine fuel controls are in short supply, bird types. Check tech supply and send any of these fuel controls that may need repair to your support!

YOUR  
CONTROL  
ON THIS  
LIST?

THEN  
SEND IT  
TO DS!

NSN

2915-00-076-1362	2915-00-111-0188
2915-00-431-3648	2915-00-176-3288
2915-00-178-1039	2915-00-178-1037
2915-01-028-8286	2915-00-025-1770



LOOK! HE'S  
GOT TH' LIST  
AND TH' KIT!

TERRIF!

## Balance Chart NSN's

Most of the charts and check lists used with the Vibrex Balancing Kit have now been assigned NSN's.

UNTIL TM  
55-4920-  
402-13&P  
IS UPDATED,  
HERE'S A  
HANDY  
LIST...

Item	Used On	NSN
Balance chart	OH-58, main rotor	7610-01-123-3224
Balance chart	OH-58, tail rotor	7610-01-123-3225
In-flight chart	OH-58, main rotor	7610-01-123-3226
Check list	OH-58, main and tail rotor	7610-01-131-9691
Balance chart	UH-1, tail rotor	7610-01-123-3222
Balance chart	UH-1, tail rotor (old series)	7610-01-123-3223
Track and balance chart	UH-1, main rotor	7610-01-006-4428
Check list	UH-1, main and tail rotor	7610-01-132-0157
Balance chart	CH-54, tail rotor	4920-01-046-7359
Balance chart	AH-1, tail rotor	7610-01-123-3227
Track and balance chart	AH-1, main rotor	7610-01-123-3221
Check list	AH-1, main and tail rotor	7610-01-136-9822
Chart corrector	Used on all balance charts	1615-01-089-8578

## Call for Help!

Not all repairs for your aircraft Vibrex tracking and balancing kit can be made in the field.

NO USE!  
GOTTA  
SEND IT  
TO DEPOT!

OK, BUT CALL  
TH' HEADSHED  
FOR SHIPPING  
INFO.

So when the maintenance allocation chart in TM 55-4920-402-13&P calls for depot repair, the complete kit has to go back to the manufacturer.

You need shipping details from the head hangar, tho. Just call TSARCOM at AUTOVON 693-3312, giving the serial numbers of the following:

Balancer/Phazor, NSN 4920-01-042-8519  
Calibrator, Vibrex, NSN 6625-01-077-8349  
Tracker, Blade, NSN 4920-01-037-4089

## No Shortcut Here!

NO TIME... GOTTA  
CUT SOME CORNERS,  
OL' BUDDY!

OH, NO!  
HALP!!

Dear Windy,

The scissors and sleeve lower hub nut on our UH-1 sometimes becomes loose during operations. Is it OK to retorquer the nut without removing the sleeve for disassembly and inspection?

SSG. J. P. M.

Loose nut?  
Remove the  
assembly

Dear Sergeant, J. P. M.,

Negative! TM 55-1520-210-23 requires removal of the assembly for an inspection by AVIM.

With a loose nut, it's possible that you have more than a loss of torque. You may have a bearing, spacer or seal failure. So stick with the tech manual.

Windy

## No Load Test Needed

HEY--GREAT!

GOOD  
NEWS!

Dear Windy,

Para 4 in TB 43-0142, on lifting devices, calls for stenciling the load rating and date of the next test on A frames, shop floor cranes, hoist beams, jacks and safety stands.

My buddy says we have to load-test our B-4A maintenance platform because it is raised hydraulically. I don't agree.

How do you see it, Windy?

CW3 J. L. M.

Dear CW3 J. L. M.,

You're right! The B-4A has a maximum capacity of 500 pounds so it's not used to hoist a load. Para 3-10 of TM 55-1730-215-13&P on the platform says only a daily inspection is required.

There are a number of platforms or stands that are hydraulically or mechanically raised. They are never used as lifting devices.

Windy



## Equal, at First

HEY...

NO SWEAT!

THE THREADS EXPOSED AREN'T EQUAL LIKE TH' BOOK SAYS!

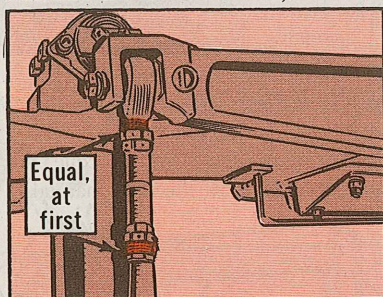
When you Cobra mechs adjust the pitch change links during a main rotor hub and blade installation, turn the

barrel on the rod end so the exposed threads at each end are equal within  $\frac{1}{16}$  inch.

The word's in the maintenance manuals.

But you don't have to maintain that measurement if the test flight following your maintenance shows the auto-rotational RPM is not within limits.

In that case, adjust the links as necessary. The exposed threads may not be equal at each end of the barrel...no sweat!



MY TM SAYS EVERY 300 HOURS!

## Standard Check

MINE SEZ 100 HOURS!

AN' I SAY ASK WINDY!

Dear Windy,

There are a lot of figures thrown around about when to test the aircraft outside air temperature (OAT) gage.

For example, the 24-month check on the U-21A gage, that used to be on Page 1-59 in TM 55-1510-209-23, was removed by C9. TM 55-1510-200-PM calls for a 300-hr inspection.

On the other hand, Page 3-138B in TM 55-1500-204-25/1, on general maintenance practices, still calls for the test every 100 hours.

What do you recommend, Windy?

SGT B.M.

Dear Sergeant B. M.,

Follow the Phase Maintenance pub for your aircraft, Sarge. The 100-hour figure in TM 55-1500-204-25/1 is being removed.

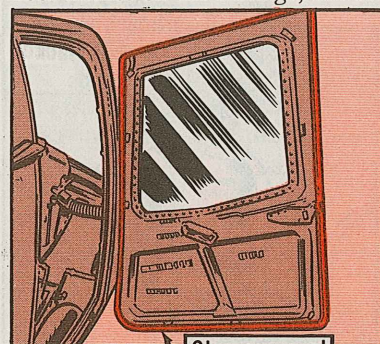
## Hot Fix

GLUE THAT NEW RUBBER SEAL THIS WAY!

If you're flying your OH-58 with its doors off, chances are the seals around the door frames are taking a beating and need to be replaced.

Seals take a beating

The usual solution is to remove the damaged seals and install new ones. This time, tho, glue the seals to the cargo and crew doors and not to the door frames on the fuselage, like so:



Glue new seal to the door

- Remove the damaged seal from the fuselage with toluene, NSN 6810-00-281-2002. Use plastic gloves when handling toluene.

- Use a clean rag and methyl-ethyl-ketone (MEK), NSN 6810-00-281-2785, to clean the edge of the door.

- Sand the edge of the door with 180 grit sandpaper, NSN 5350-00-721-8117.

- Wipe the sanded area clean with a rag and MEK.

- Glue the rubber seal, NSN 9390-00-133-6472, to the door with adhesive.



# Purging

WHAT DO YOU MECHANICS KNOW ABOUT PURGING AND CHARGING FIRE CONTROL INSTRUMENTS?

A LITTLE?

A LOT?

NOT ENOUGH?

WELL, READ AND HEED THIS...

... AND YOU'LL BE ABLE TO PURGE AND CHARGE WITH THE BEST OF THEM!

Purging every 90 days, or more often if needed, helps get the moist air out of your fire control instrument and prevents fungus from growing inside it. Charging helps keep the moist air out.

Purging won't push out drops of water, tho. If your fire control instrument is water-logged, send it to support for repair.

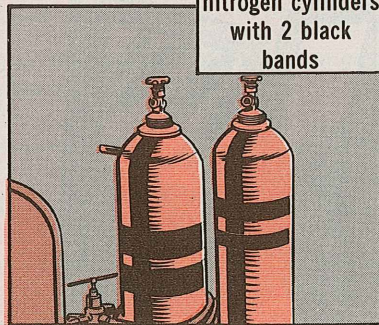
## Here's What You Need

- SC 4931-95-CL-J54 (Jul 75) lists equipment needed to purge and charge.
- TM 750-116 (Oct 71) and your instrument's TM's tell you how to purge and charge most fire control instruments.
- Purging kit, NSN 4931-00-065-1110.
- Check out your -10, -20 and -20P TM's. Some TM's have info on purging and charging equipment and how to use it.

The cylinder body should be painted gray with 2 black bands. Before you accept a cylinder for purging, see if the valve is a CGA 580-series and has right-hand internal threads.

**Warning: Never drop the cylinder. It could explode. In confined areas, get ventilation because too much nitrogen gas can kill you.**

Accept only nitrogen cylinders with 2 black bands

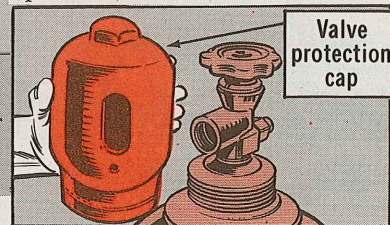


# and Charging

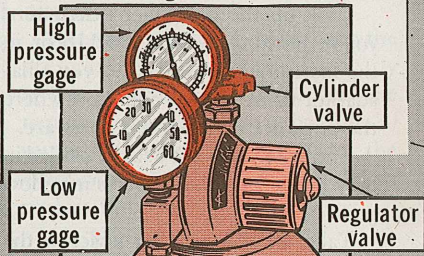
Before you purge, line up your materials and check 'em for good working order.

Take the valve protection cap off your nitrogen cylinder and quickly open and shut the valve. This'll blow

moving. The valve must be completely open. Where the needle stops tells you the PSI of the gas inside the cylinder.



Valve protection cap



any dust or water out of the valve seat.

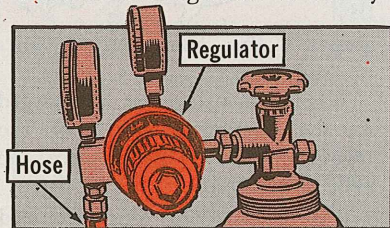
If nothing happens, the cylinder is empty or the valve stem is stuck in the closed position. If you smell something, you've got the wrong cylinder 'cause nitrogen has no smell.

Mount the regulator on the cy-

This number should be equal to or near the service pressure stamped on the cylinder (1800-2015 or 2265). It has to be more than 100 PSI or you can't do a good purging job.

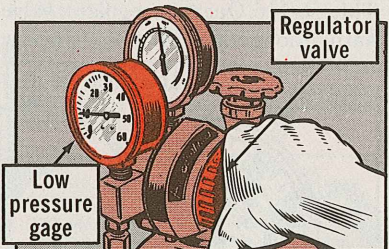
If the pressure's too low, get another cylinder from supply. Never drain the nitrogen cylinder below 100 PSI. The pressure helps keep dirt and water out of your cylinder.

If everything is OK, slowly open the regulator valve until the low-pressure



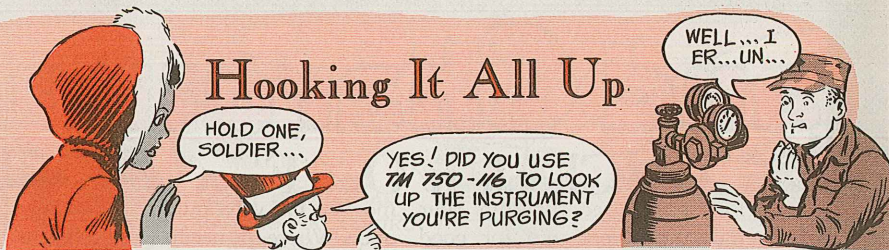
linder and the hose on the regulator. You'll need  $\frac{9}{16}$  and  $1\frac{1}{8}$ -in wrenches. Take care not to over-tighten. The brass threads damage easily. Both regulator gages should be registering zero.

Slowly open the cylinder valve until the high-pressure gage needle stops



gage registers 10 PSI. Then close the valve quickly. This clears water, dust, spiders, etc., out of the hose so they don't get blown into your instrument.





## Hooking It All Up

Think things out before you purge. Look up the particular instrument you're purging in TM 750-116 or in the instrument TM. It'll tell you what adapter to use (if any) and show where the entrance and exhaust ports are.

Entrance ports are usually circled in gray paint and exhaust ports in yellow paint.

Take off the caps (or unscrew the screws) of both ports before you start. If you don't open the exhaust port you could build up pressure and blow things apart inside the instrument.

Be careful not to lose the port caps

or screws. You'll need to replace them after charging.

If the entrance valve has a screw instead of a cap, you'll need one of the



Adapters

adapters in the purging kit. You'll need either 8-32UNC-2A, 10-24UNC-2A or 10-32UNC-2A.

IF YOU SMELL SOMETHING... YOU GOT TROUBLE!



## Purging

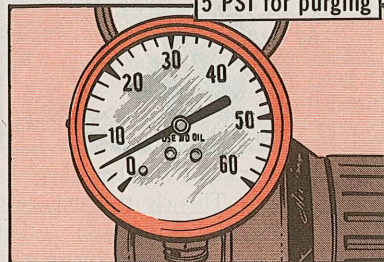


YES-- NITROGEN HAS NO ODOR!



Get the purging formula (pressure and time) for your instrument from TM 750-116. Open the regulator valve until the proper pressure—nearly

Low pressure at 5 PSI for purging

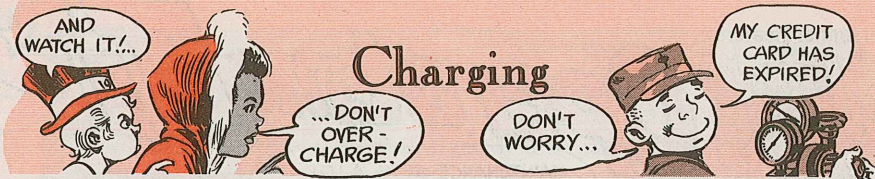


always 5 PSI—shows on the low-pressure gage.

When the instrument has purged for the required time, shut off the regulator valve. Then replace the exhaust port cap or screw.

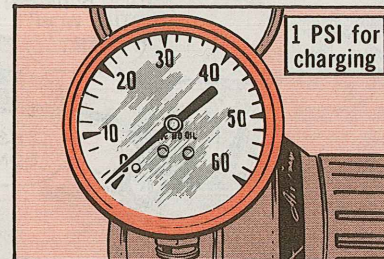
If the exhaust port is not equipped with gaskets or seals, lightly coat the port screw with sealing compound, NSN 8030-00-275-8110, and reinstall the screw.

Replace any missing gaskets to prevent nitrogen leakage. Order new screw and gasket sets from Table 2-3 on Pages 21-22 of TM 750-116.



## Charging

After purging, you need to build up the pressure inside your instrument so it will resist the invasion of dust, mist, water, etc., from the outside.



You do this by charging it with nitrogen.

Set the regulator valve to the prescribed charging pressure—nearly always 1 PSI—and charge for the required time, which may be only 20 seconds. (Check TM 750-116 for the exact time.) Don't overcharge. Then replace the port cap or screw.

## Finishing Up

- Shut off the nitrogen. Completely close the valve on the cylinder. Open the valve on the low-pressure side of the regulator just a little to bleed off the pressure.

If you don't bleed off the pressure, the rubber diaphragm in the regulator will be under constant strain. This could cause a permanent leak and you'll need a new regulator.

- Read up on compressed gases in AR 700-68, Storage and Handling of Compressed Gases and Gas Cylinders. Working with a high-pressure nitrogen cylinder and its accessories can be dangerous unless you know what you're doing.

Make sure the cylinder is correctly marked and has the proper safety devices—dust plug and/or valve protection cap.

- Radioactive fire control instruments are purged the same way as others. Just don't purge them if the radioactive vials are broken. In that case, turn 'em in the way it tells you in the weapon -12 TM.

Fire control instruments not listed in TM 750-116 that need purging are collimator M1A1 (radioactive); M137 pantel and M138 elbow telescope (M198 howitzer); AN-VVG-2 laser rangefinder; M61 (Vulcan) sight; M55 laser gunnery trainer and second generation passive periscopes M35E1 and M36E1.

THOSE OF YOU WORKING ON M60A3 OR M1 TANKS NEED TO CHECK YOUR TM'S FOR INSTRUMENTS THAT NEED PURGING AND CHARGING!





# Hot Operating Tips

MAINTENANCE GETS A LOT OF HEATERS THESE DAYS THAT ARE FILLED WITH FUEL!

YUP! 3 TIMES!! STILL WON'T START!

LET'S ASK BONNIE!

DIDJA TRY WAITIN' BETWEEN TRIES?

YOU OPERATORS HAVE TO KNOW WHEN TO QUIT TRYING TO START YOUR HEATERS!

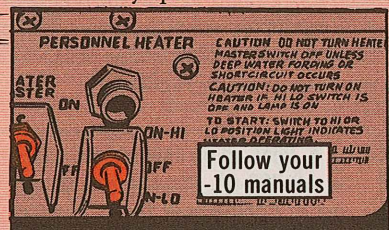
WHENEVER POSSIBLE, LEAVE A HATCH OPEN WHEN USING YOUR HEATER! GOOD VENTILATION PREVENTS CARBON MONOXIDE POISONING!

1983

1983

## Never Flood That Heater

Follow the instructions in your -10 manuals. Pay special attention to the



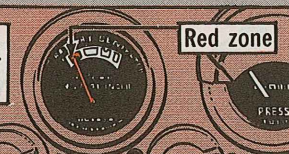
amount of time you give to each starting try and the intervals in between.

If the heater won't start after the third try, troubleshoot it like your -10 TM says. If troubleshooting doesn't work, let organizational maintenance know. Do not try to start the heater again.

## Save Those Batteries!

Never run your heater when the battery-generator indicator is in the red range. If you have to run the heater when the engine's off, do it only for a few minutes. You'll drain the battery fast, if you don't run the engine.

Battery Generator Gage



Red zone

A weak battery lets carbon build up in the heater because the blower won't run fast enough to maintain the right air/fuel mix. Carbon build-up will also make heater start up harder next time.

## Let the Heater Run!

The heater must run for at least 5 minutes with the indicator lamp on. If you shut the heater down before 5 minutes, the heater will flood and you won't be able to restart it.

## Let the Heater Purge!

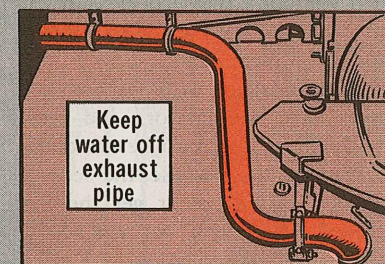
Heaters must keep running after you've turned them off to burn all the fuel and vent all the exhaust gases.

Some new vehicles, like the M1 tank and M113A2 carrier, purge themselves even with the master switch off. If you have an older vehicle, remember to leave the master switch on until the heater purges itself.

A heater that's not purged builds up lots of carbon and is ruined. Remember—heater switch off first, let the heater purge, then master switch off.

## Watch the Water!

A lot of heaters show up at maintenance full of water. When you wash your vehicles, never spray water at the heater exhaust pipes.



## Maintenance Reminders

Some vehicle heaters are not covered in the TM's yet. You can get the right scoop on repair parts and procedures in EIR Digests.

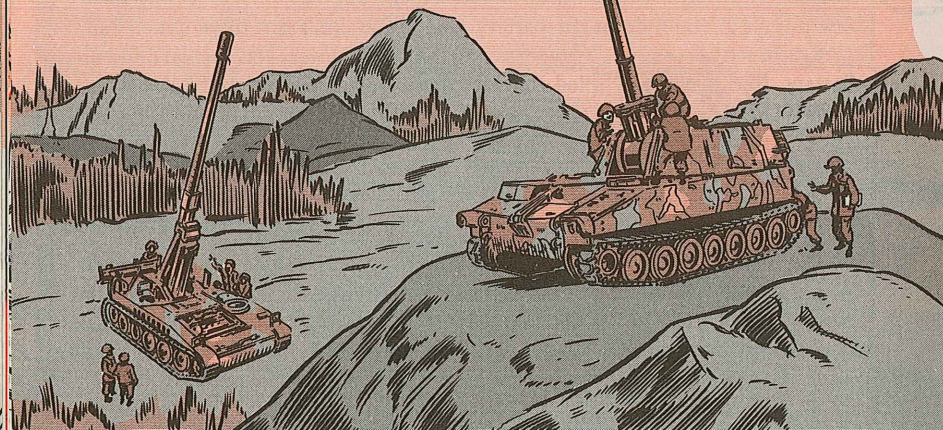
For the Stewart-Warner 10560C—used on all combat vehicles except the M113A2—check out TB 43-0001-39-5 (1 Apr 81) and TB 43-0001-39-1 (1 Apr 82).

For the Hupp 510B (dual air) and Stewart-Warner 10560M (dual air)—used on the M113A2—check out TB 43-0001-39-7 (1 Oct 81).

If you need help with heaters, call the Tank-Automotive Command heater hotline, AUTOVON 786-7417 or -7378.



# Recoil and Equilibrator Exercising



Do you make sure your artillery leak and the weapon won't recoil the weapon or tank gun gets regular way it should. exercise?

If you don't, that may explain why you have seal leaks on the equilibrator and recoil mechanism.

Some artillery weapons and tank guns have equilibrators and recoil mechanisms that must be exercised.

Without the exercise, the seals on floating pistons don't get the lube needed. They take a "set" and start to

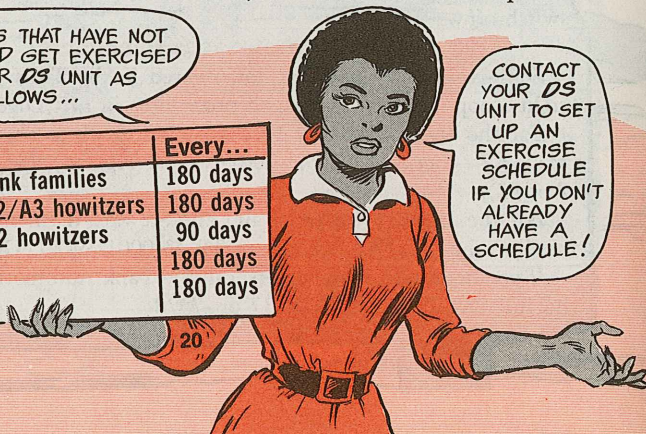
Not all weapons need exercising. Only those with non-Teflon seals do. The M101/M101A1, M102, M114A1 and M198 towed howitzers have Teflon seals and do not need exercising.

So when are the weapons that need it exercised? Whenever they haven't been fired. Firing gives the recoil mechanism a workout and lubes the seals, so it counts as an exercise period.

WEAPONS THAT HAVE NOT BEEN FIRED GET EXERCISED BY YOUR DS UNIT AS FOLLOWS...

Weapon	Every...
M48/M60 tank families	180 days
M109/A1/A2/A3 howitzers	180 days
M110/A1/A2 howitzers	90 days
M728 CEV's	180 days
M1 tanks	180 days

CONTACT YOUR DS UNIT TO SET UP AN EXERCISE SCHEDULE IF YOU DON'T ALREADY HAVE A SCHEDULE!



## Removing Handguards



GATHER 'ROUND, TROOPS...

LET'S TALK ABOUT GOOD HANDGUARD PRACTICE!

Dear Half-Mast,  
I know you've had articles on the easy way to remove M16A1 rifle and M203 grenade launcher handguards, but could you print it again? Troops still pry off handguards with anything handy, and the guards crack.

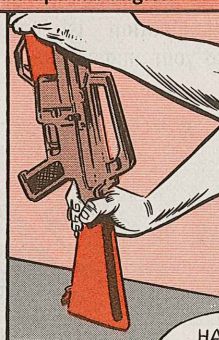
SGT J. L.

Dear Sergeant J. L.,

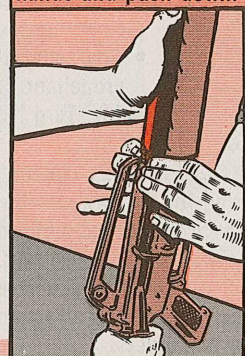
Sure thing. Maybe the word'll get around better if you armorers push it along. Sure would help.

The buddy system handguard removal goes like this:

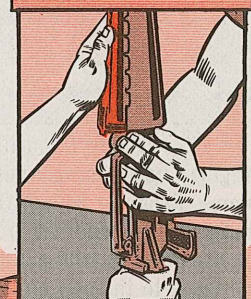
Rest the weapon on the buttstock. Put a hand on one handguard down low, and grip the stock with your other hand. Keep the barrel at an upward angle.



Have your buddy circle the handguard slipping with the thumbs and forefingers of his hands and push down.



Lift up and out on one section of the handguard and repeat the lift on the other section. With the M203, the whole handguard can be freed in one lift.



HANDGUARDS CAN BE INSTALLED MORE EASILY WITH THE SAME BUDDY SYSTEM!



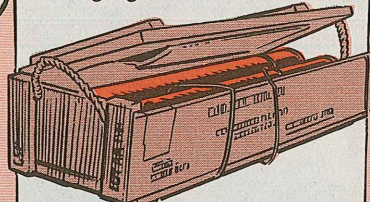
# Ammo Needs

If your  
ammo's not  
ready, you  
can't shoot.

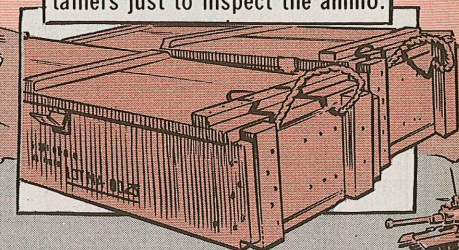
Organizational-  
level ammo-main-  
tenance is vital,  
and it's easy  
to do.

Here's  
the  
general  
routine:

- Inspect ammo packaging daily. Open boxes or containers showing signs of contamination or

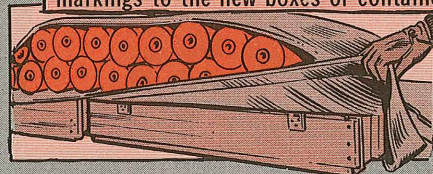


deterioration, and inspect. Never open good sealed boxes or containers just to inspect the ammo.



- Any ammo that shows severe corrosion or propellant contamination is unserviceable. Turn it in to your ammo supply.

• When you're through firing for the day, use the original boxes or containers to repackage unfired ammo. Repair or replace the containers as necessary. Make sure all materials are dry and sound. If you have to, use other suitable containers and transfer all ammo markings to the new boxes or containers.



- Wipe off dirty or wet ammo.

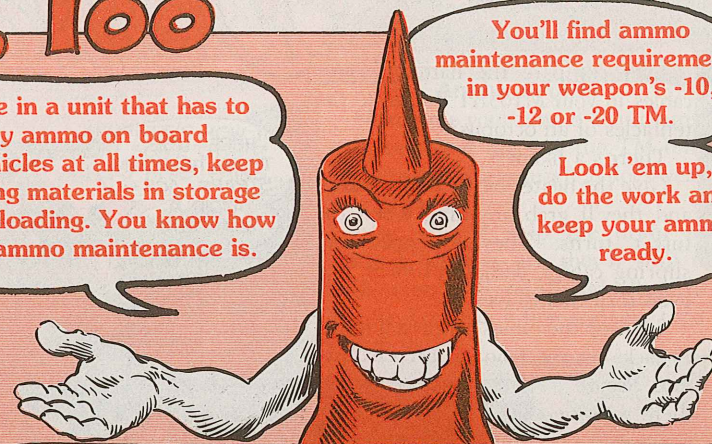


# It, Too

If you're in a unit that has to carry ammo on board your vehicles at all times, keep packaging materials in storage for down-loading. You know how critical ammo maintenance is.

You'll find ammo maintenance requirements in your weapon's -10, -12 or -20 TM.

Look 'em up,  
do the work and  
keep your ammo  
ready.

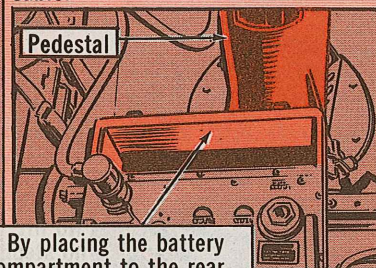


## TOW MGS Turn-Around

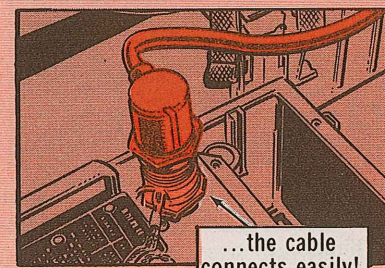
Dear Editor,

The required position of the missile guidance set (MGS) in the TOW M151-series carrier damages the cable from the MGS to the traversing unit.

TC 23-23 (Fig 4-15) and TM 9-1425-472-12 show the MGS with the battery assembly toward the front of the vehicle. This means the cable must bend at a sharp angle in order to be connected, which causes a high failure rate for the cable.



By placing the battery compartment to the rear...



...the cable connects easily!

This damage can be headed off by installing the MGS with the battery assembly facing the vehicle rear, where the cable can be connected easily and without strain.

(Ed Note—Good thinking...and the headshed OK's the switch.)

Jack Childs  
Missile Maintenance Technician  
Fort Lewis, WA



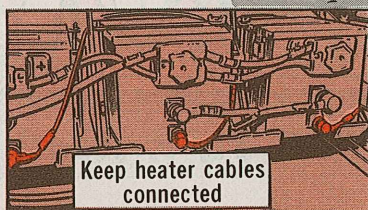
# Demon

Ever compare the battery heater cables in your M163A1 Vulcan to the tentacles of an octopus?

There's a likeness.

Give the heater cables half a chance and they'll grab anything when the turret turns. They've ripped out slipping cables, damaged others, and even torn themselves up.

So, keep the cables connected to the J3 jacks on the front of each battery case. Secure them with tie-down straps. NSN 5975-00-074-2072 gets you a pack of 100.



Keep heater cables connected

HERE--USE THESE TIE-DOWN STRAPS, ACE-- AVOID A HEADACHE!

## Unit 5 Filter

A clean filter in the Unit 5 power supply of your M163A1 and M167A1 keeps your radar system operating smoothly.



Clean filters weekly

It also saves damage to radar system components. Dirty filters cause damage.

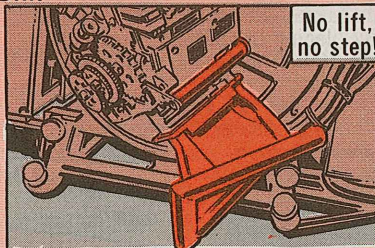
Clean the filters weekly, as the PMCS tables in your TM's tell you. In dusty areas, clean them as often as is necessary.

## Exit Unit

No part of the exit unit is a step. Think on that.

Parts of the unit may look like a handy boost into or out of the commander's hatch for crewmen or repairmen, but forget it!

Feet break or strip the housing or other parts and set up expensive repairs.



No lift, no step!

# Cables

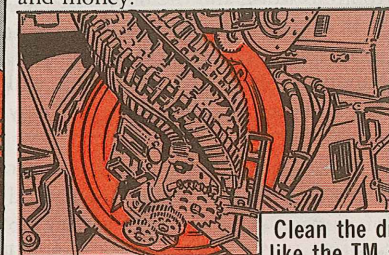


...AND HERE'S HOW TO AVOID SOME OTHER M163A1 HEAD PAINS...

## Ammo Drums

Next time your ammo drum jams, try cleaning it the way the TM tells you. Crud jams it as surely as does wear or a bad part.

Also, if you ship the drum to support, chances are they'll ship it back to you, crud and all, and tell you to clean it. So, clean it first and save time and money.

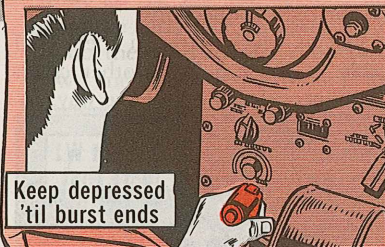


Clean the drum like the TM says

## Action Switches

Ammo bursts on your Vulcans are pre-set...but not quite automatic. Whether firing preset bursts of 10...or more...you must keep the action switches (gunner's control) depressed until the bursts are completed.

If you release the switches before the bursts end, you can damage the feeders and other parts.



Keep depressed 'til burst ends

## Fording

Hot shots have hit the water as fast as 30 MPH...and have gone down, down.

At the least, entering the water at higher speeds can rip off the flotation pods.

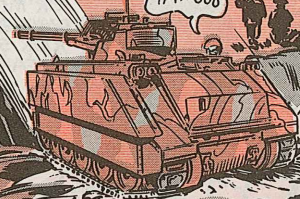
When you take your M163A1 for a swim, go slow as you enter the water.

Keep the vehicle in Gear Range!

IT'S PETTY SHOWIN' HIS STUFF, BONNIE!

YAHOOOO

?! SEND FOR A SCUBA TEAM!





# Rotary Coupler

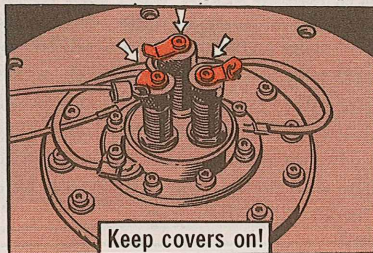
Face it! If the mast rotary coupler connections of your Forward Area Alerting Radar (FAAR) system are not tight, you may not have a system.

The key is to connect the E1W1 cable to the J1 jack first. Get that one on and tight while you've got a little room to work, and the big job is over.

If connections are less than tight, jacks and connectors will be damaged, bandpass filters and circulators will fail, and your traveling wave tube may go.

Loose connections also let water and moisture in with their own brand of damage. That includes setting up the rotary coupler itself for removal and expensive repair.

Moisture is the big reason that pro-



ective covers have to be on the J1, J2 and J3 when cables are not connected to the jacks. The stuff can ruin them.

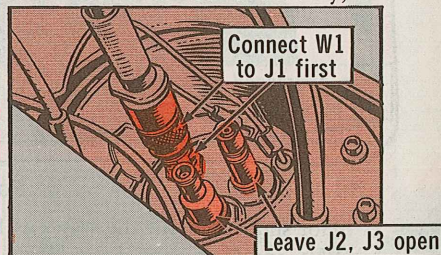
LIKE ANYTHING ELSE IN LIFE, SOLDIER... IT HELPS WHEN YOU HAVE GOOD CONNECTIONS!



## What

Keeping the covers on unused jacks protects them. Here's more on what to do for tight connections:

Get as much slack on the E1W1 cable as you can. With other cables disconnected and out of the way, an-



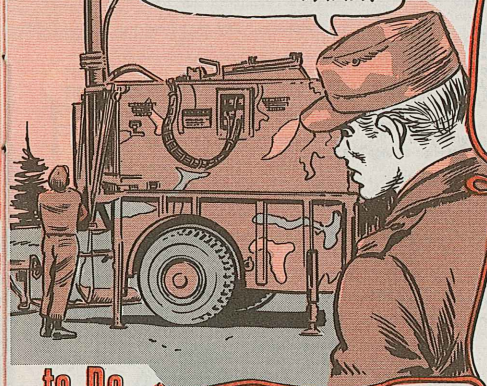
gle the W1 onto the J1 jack. You have the working room you need for the heavier W1 cable with the others disconnected. That's even more important in cold weather when the cable's

IF ALL THAT SOUNDS AWE-SOME, IT IS!

LOOSE CONNECTIONS OR MOISTURE DAMAGE MEANS YOUR SYSTEM FAILS!

# Countdown

I GOTCHA, BONNIE! GOOD CONNECTIONS ENABLE US TO GO FAAR!



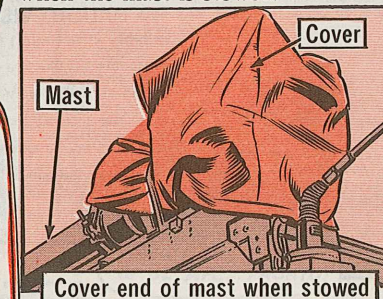
## MDS Re-Hook

Just as important as the connections is remembering to re-connect the E1W1 after minimum detectable signal (MDS) calibration.

If you forget to re-connect, you set up the same damage potential.

## Canvas Cover

You can further protect the rotary coupler by putting a cover over it when the mast is stowed.

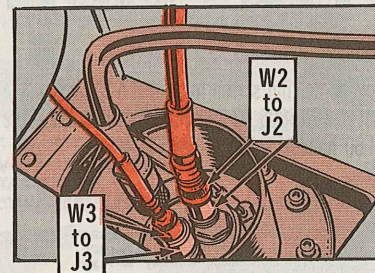


## to Do

stiffer and harder to bend.

Line up the key and keyways and thread the connector on tight.

Once the W1 is on tight, connect the E1W2 and E1W3 cables to the J2 and



J3 jacks. Again, get them on tight.

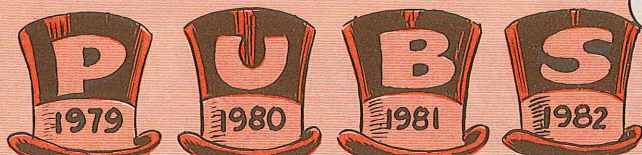
You may not have a lot of working room, but that system will let you tighten the connections with less strain on you and the cables.

The cover keeps out dirt, dust, rain and moisture...and resultant damage.

Scrap canvas or an old poncho will do. Discarded radome covers from the Vulcan's AN/VPS-2 radar work fine. Units that use the covers say they have fewer problems than when the rotary coupler end of the pedestal is left uncovered.

You can get a cover for the pedestal with PN 10687397, FSCM 18876. It's used to cover the pedestal and A-I assembly in the trailer.





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

#### Miscellaneous

DA Form 12-51A-1 Sep Requirements for commo electronics pubs  
LO-5-4610-215-12 Aug Water purif unit, reverse osmosis 600-GPH  
LO 9-2320-272-12 Sep Truck, 5-ton M939-series (diesel)  
SC 5180-95-CL-A13-HR Jun Tool kit, field artillery mechanics: 155-MM gun

#### Technical Manuals

TM 3-4240-285-20P Nov Collective protect eqpt, Patriot missile  
TM 5-4120-341-23P Oct Air conditioner, floor mtd 3/4-HP, 60-cy, 9,000-BTU  
TM 5-4120-344-14 May Air conditioner,

vertical compact; 18,000-BTU cool, 12,000-BTU heat, Harvey W. Hotel Mod CV-18-4-08  
TM 5-4120-344-24P Jun Air conditioner, vertical compact; 18,000-BTU cool, 12,000-BTU heat, Harvey W. Hotel Mod CV-18-4-08

TM 5-4120-359-24P May Air conditioner, split package; 18,000-BTU cool, 30,000-BTU heat Keco Mod F18H4-2  
TM 5-4120-371-14 Jun Air conditioner, vertical, compact; 18,000-BTU Keco Mod F18T-25

TM 9-2590-209-14P Jan Bulldozer earth moving; 1800 mounting M9  
TM 10-1670-255-12P Oct High-altitude airdrop resupply sys  
TM 11-5820-520-10 Nov Radios AN/GRC-106, AN/GRC-106A  
TM 11-5820-520-20 Nov Radios AN/GRC-106, AN/GRC-106A  
TM 11-5820-769-24P Oct Radio repeater AN/TRC-152 (V)

TM 11-5820-894-10-HR Aug Radio terminal AN/TRC-151 (V)  
TM 11-5820-894-24P Oct Radio terminal AN/TRC-151 (V)  
TM 11-5841-287-10-HR Nov Transmitting set, radar data AN/AKT-18B  
TM 11-5895-824-10-HR Aug Interrogator set AN/TPX-46 (V) 7  
TM 11-5895-1050-12 Jul Satellite commo terminal AN/GSC-39 (V) 1  
TM 11-5895-1137-23 May Radio commo sys AN/FRC-176 (V)  
TM 11-5895-1141-12 Jul Control radio channel C-10931(P)/FRC  
TM 11-5895-361-10 Oct Antenna gp OE-316/TSC-99  
TM 11-7440-283-12-1-1 Sep Computer gp gun direction OL-200/GYK-29(V)  
TM 11-7440-283-12-2 Sep Data display group gun direction OD-144 (V)/GYK-29 (V)  
TM 55-1730-224-13AP Sep Trailer aircraft maint airmobile Part No. 23142

#### AUDIO-VISUAL STUFF

Available at battalion or post Learning Center

Films, TV Tapes  
TVT 21-53 MILES on APC/TOW  
TF 46-6273 2.75-in rocket system on Cobra

#### TEC LESSONS

030-051-6458-F Medium girder bridge Part II

101-113-7214-A Checking RT-524, RT-246  
102-113-5512-A Radio AN/ARC-115  
412-061-7205-J Checks and services on BC scope  
412-061-9012-A Install PADS in M151  
412-061-9013-A Install PADS batteries

412-061-9015-A PM on PADS  
610-091-6035-A Starting, charging system maint  
610-091-6160-F PMCS on M816 truck/wrecker  
610-091-6161-F PMCS on M816 truck/wrecker  
621-113-6431-A Splice field wire WD-1/TT Part 2  
644-093-7083-A AN/PDR-54

radiac  
644-093-7108-A Inspect Pershing warhead  
644-093-7175-A Replacing damaged Heli-coil and Kelox inserts  
936-071-1230-A Switchboard 629-939/OT  
945-171-0063-F M113A1, M577A1 Part II in the cold

## New Pubs Guide!

Wondering how to get on distribution for pubs using a DA 12-series form? Or order pubs on a DA Form 4569? The new DA Pamphlet 310-10, The Standard Army Publications System (STARPUBS): Users Guide (Oct 82), puts it all together. It supersedes the old DA Pam 310-10, DA Pam 310-10-2, and DA Pam 310-30.

## M113 FOV Breather NSN

The NSN given for the hydraulic reservoir breather in TM 9-2300-257-20P is wrong. Use NSN 2520-00-839-1055 for Item 3, Fig 229.

## TA-312 Screen

The deicing screen for your TA-312 telephone set is NSN 5805-00-392-7628. You'll find it in the H-60 handset's TM 11-5965-224-14P.

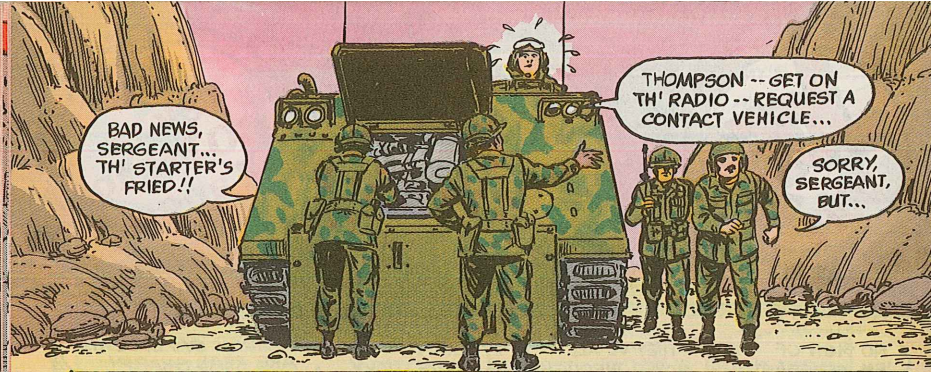
## Maintenance Advisories

CECOM MA-1—Lessons Learned, VRC-12 FM Radio (letter issued 27 Aug 82).  
ARRCOM Maint Advisory 82-1 was cancelled.  
ARRCOM Maint Advisory 82-2, M4A1 Outlet Valve Leakage Indicators, NSN 6665-00-738-2128, DRSAR-MAO-NC 181910Z Oct 82.

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







BAD NEWS,  
SERGEANT...  
TH' STARTER'S  
FRIED!!

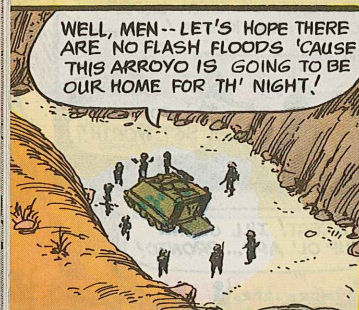
THOMPSON -- GET ON  
TH' RADIO -- REQUEST A  
CONTACT VEHICLE...

SORRY,  
SERGEANT,  
BUT...

I WAS JUST  
COMING TO TELL  
YOU... WHEN DENSON  
TRIED TO FIRE UP TH'  
ENGINE, THE  
RADIOS GOT  
ZONKED!!

OH,  
NO...

⚡ GULP ⚡



WELL, MEN -- LET'S HOPE THERE  
ARE NO FLASH FLOODS 'CAUSE  
THIS ARROYO IS GOING TO BE  
OUR HOME FOR TH' NIGHT!

BREAK OUT YOUR  
SHELTERS AND RATIONS  
... BUT NO FIRES!! TH'  
OPFOR IS ALL AROUND  
US!

BRADDOCK, YOU'RE  
ON GUARD FOR 2  
HOURS! DENSON, THEN  
YOU TAKE OVER 'TIL  
DAWN!



LATER...

QUIET AN'  
PEACEFUL OUT  
THERE, DENSEY...  
JUST AN OCCASIONAL  
COYOTE SERENADE!

OH, YEAH... WATCH  
OUT FOR TH' HOLES  
AND BOULDERS WHEN  
YOU CHECK THE NORTH  
PERIMETER...  
G'NITE!



BRRR! WHO'D  
B' LIEVE TH' DESERT  
COULD BE SO  
COLD?

GLAD ORDERS ARE T'  
CHECK OUR SITE PER-  
IMETER EV'RY HOUR...

KEEPS ⚡ BRRR ⚡ TH'  
BLOOD CIRCULATING...  
HUH? WHAT'S  
THAT?

W-WHO  
GOES  
THERE  
⚡ HALT!!



KRAK



HALTED I AM,  
YOUNG FELLA!

ADVANCE AND  
BE RECOGNIZED!

?  
WHAT A  
STRANGE  
LOOKIN'  
DUDE!

YOU MUST BE ONE OF  
THOSE OPFOR GUYS!!

NO...

I'M TAKING  
YOU TO SGT.  
WORTH!!  
STEP  
LIVELY...



I'M SURE YOU WON'T  
RECOGNIZE ME,  
SOLDIER, BUT...

Name:  
C.V. Trakman  
Rank: Sergeant,  
U.S. Army  
Serial No.:  
9.7.111

... BUT I'VE BEEN  
OBSERVING YOU...

NAH! THEN YER  
A SPY!

TURN  
AROUND  
AND MARCH,  
MISTER...

HEY!  
WHAT  
TH...



TRIPPED!!  
I...

BONK

... UNGHH!



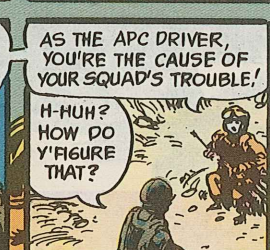
A SHORT TIME LATER...  
WH-WHERE  
AM I?

RIGHT WHERE YOU  
FELL, SPECIALIST!  
REST THERE  
FOR A FEW  
MINUTES...



WHILE YOU  
RECOVER FROM  
THAT BUMP ON  
THE HEAD...

I'M GOING TO  
DISCUSS A FEW  
THINGS WITH  
YOU...



AS THE APC DRIVER,  
YOU'RE THE CAUSE OF  
YOUR SQUAD'S TROUBLE!

H-HUH?  
HOW DO  
Y'FIGURE  
THAT?



WE'VE GOT TH' BEST  
MAINTAINED CARRIER  
IN OUR BATTALION!

TRUE!



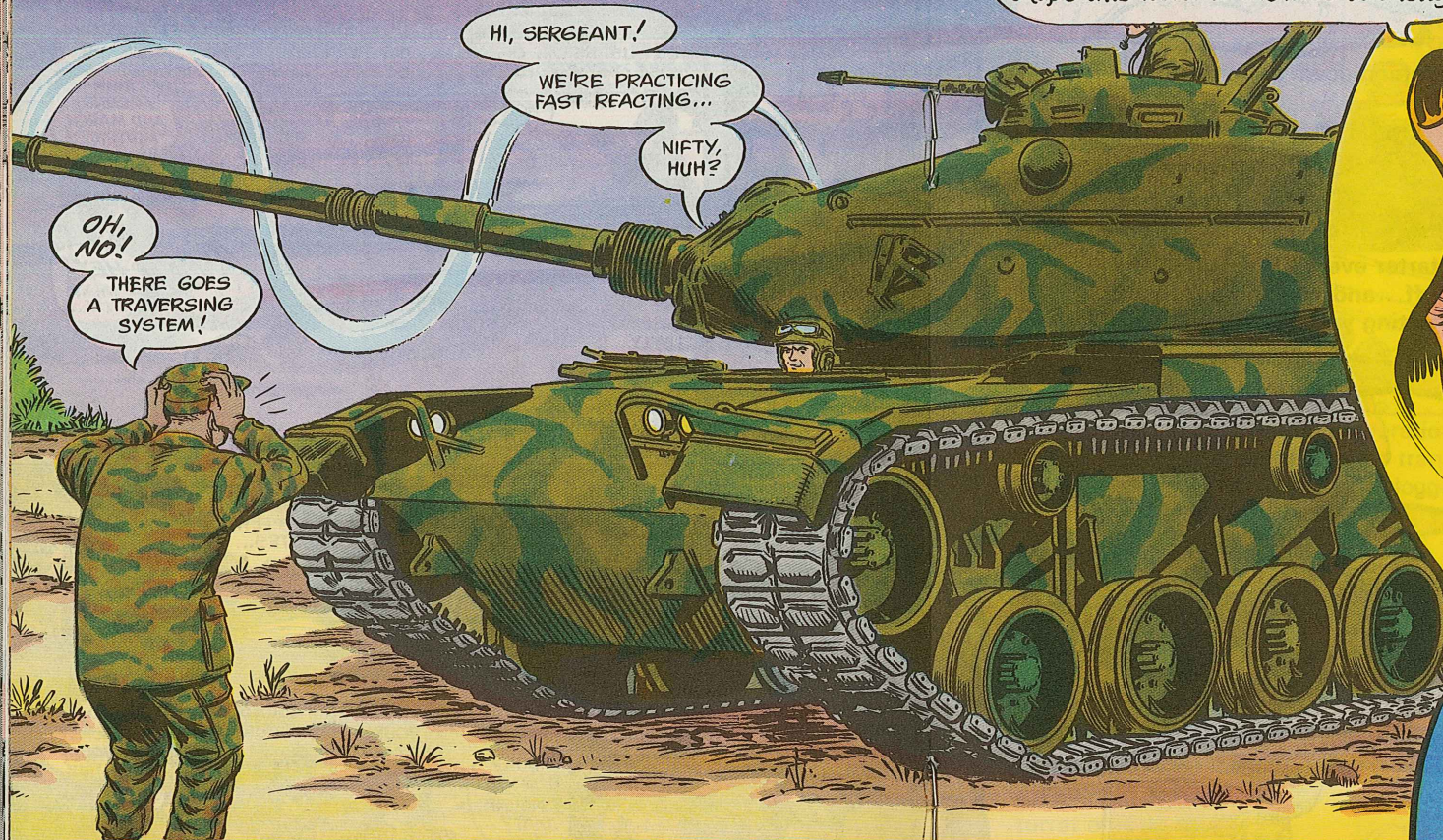
... AND IT'D BE GREAT IF PM  
GUARANTEED THE USEFUL  
LIFE OF COMBAT EQUIPMENT!

SAD TO SAY,  
IT DOESN'T!!

EVEN THE BEST MAINTAINED  
EQUIPMENT CAN BE PUT OUT  
OF OPERATION BY OPERATOR  
ABUSE!



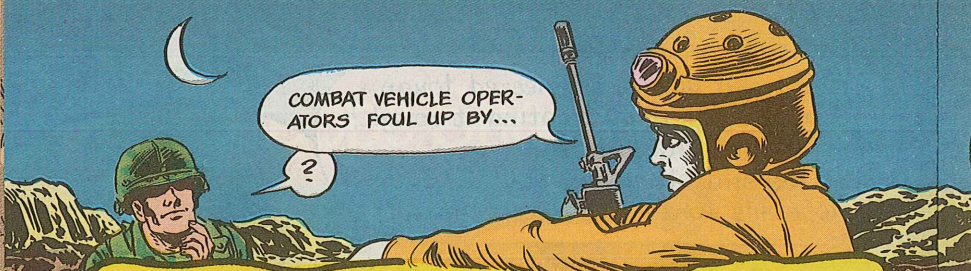
# JOE'S Dope Sheet



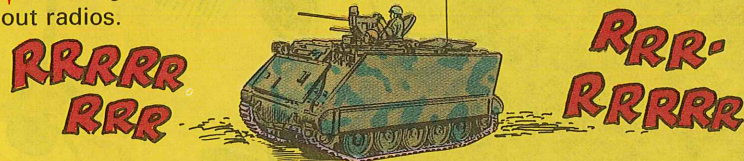
WE HAVE THE WORLD'S BEST EQUIPMENT ... *Take care of it*

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.



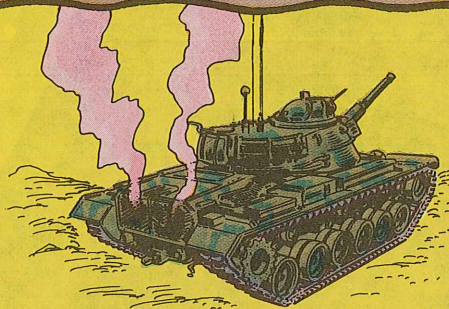


★ Wearing out starters, running down batteries and burning out radios.

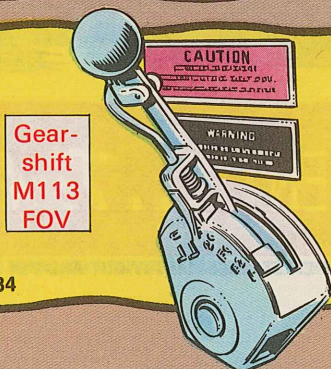


You should cycle your starter every 15 seconds and give it a chance to cool off...and you should turn off your radio gear before starting your engine.

★ Failing to idle turbo-charged engines after start-up and before shutdown. Lack of lubrication to turbo-chargers causes them to burn up. Idle 2 minutes after starting and 5 minutes before shutdown.



★ Failing to select the proper gear range for the terrain. This tears up transmissions, differentials, drive shafts, U-joints and engines.

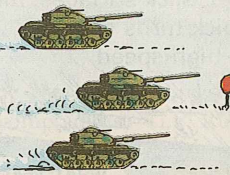


★ Making jackrabbit starts and stops. This tears up track, transmissions, differentials, driveshafts, U-joints and engines.



Accelerate smoothly and stop gradually, when possible. Learn your S's!!

**S**MOOTH  
STARTS  
**S**MOOTH  
TOPS  
**S**TEADY  
PEED



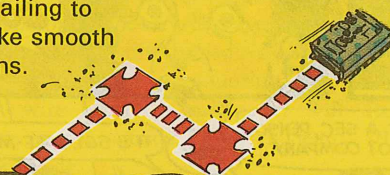
★ Failing to pay attention to pressure and temperature gages, warning lights, odd noises and changes in performance.



Driver's  
control  
panel  
M60A3

This can lead to overheating, operation without enough lubrication, blown engines, failed transmissions and differentials. Also, thrown tracks and clogged air filters.

★ Failing to make smooth turns.



This chunks roadwheels, throws track, tears up track pads, breaks end connectors and puts a big strain on the drivetrain.

★ Failing to traverse the turret only as fast as necessary; changing direction before the turret has stopped. This wears out the traversing gears and motor, and breaks no-baks on tanks.





★ Failing to operate the vehicle safely by not using ground guides where needed, speeding on wet, slick surfaces, making quick turns or pivots at high speed...

... THESE CAN DAMAGE VEHICLES AND INJURE OR KILL PEOPLE...

AND I OUGHTA KNOW!

WHAT YOU SAY SURE MAKES SENSE, MISTER... AN' I ~~IS~~ REALIZE THAT I'VE BEEN ABUSING MY TRACK...

GOOD!...

... NOW THAT YOU UNDERSTAND, I'M SURE THERE'LL BE NO MORE SUCH FOUL-UPS!

SO...

... I'LL BE LEAVING NOW!

HEY-- WAIT!! YOU'RE MY PRISONER-- AN' I'M TAKIN' YOU IN-- YOU OPFOR SPY!

OH... YES...

... BUT YOU'LL NEED THIS!

WHA--? MY M16!!

~~WHEW~~ CAUGHT IT!! NOW, WISE GUY, LET'S GO... WHAT TH'... HE...

IT-- IT CAN'T BE... HE'S **GONE!**

DAYBREAK...

SGT. WORTH, YOU'LL NEVER B' LIEVE...

JUST A SEC, DENSON, WE GOT COMPANY...

YAY!

IT'S SGT. HALF-MAST!

H'LO, TROOPS-- CAN I HELP?

A QUICK RADIO REQUEST FOR A CONTACT VEHICLE IS MADE AND THEN...

... AN' THAT OPFOR GUY COMPLETELY VANISHED!! WHAT D'YA THINK O' THAT, SGT.?

I THINK YA BETTER SEE ABOUT THAT BUMP ON YER HEAD, DENSON!

HOLD ONE, GENTS... DIDN'T YOU KNOW...

... SGT. C.V. TRAKMAN TRAINED ON THIS POST IN 1942... AND ABOUT ONCE A YEAR, SOMEONE CLAIMS T' SEE HIM OUT HERE IN TH' DESERT!

SO WHAT?

WELL, Y' SEE, HE DIED IN HIS TANK IN TH' NORTH AFRICA CAMPAIGN!

COMO

THE RADIO IS DOWN AGAIN! WHAT NOW!?

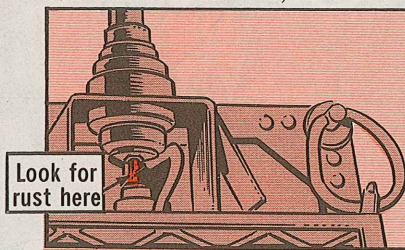
AN/GRC-106 Radio Set...

## Whipping Corrosion

I THINK THEIR PM IS RUSTY!

A little "brushing up" on PM can save your Angry-106 radio a lot of downtime.

Like brushing away the rust and corrosion that build up on your AB-652 mast base contacts, for instance.



Rust on the contact can keep the RF output of your AM-3349 amplifier from reaching the whip antenna. The RF will back up and can KO your amp.

Grab your brushes and clean up the crud before it does any damage. Before you do, tho, be sure the radio's off and the base is out of its mounting.

A wire brush or sandpaper will shine up the outside. Once it's clean, look inside.

If it's rusty, too, grab a smaller brush. The one from your weapon cleaning kit will do.

Coat the brush with bore cleaner, cleaning compound or CLP. Run the brush over the contact until it's clean.



To keep it that way, coat the contact (and anything else that can corrode) lightly with non-conductive silicone compound. An 8-oz tube comes with NSN 6850-00-880-7616.

Other contacts need cleaning, too. Like the whip antenna's mating ends. Rub them with a polishing cloth, NSN 7920-00-985-6849.

As a final bit of protection, cover the mast base with a protective cap. Get the one you need with NSN 5999-00-264-9213.

## If PS Doesn't Arrive...

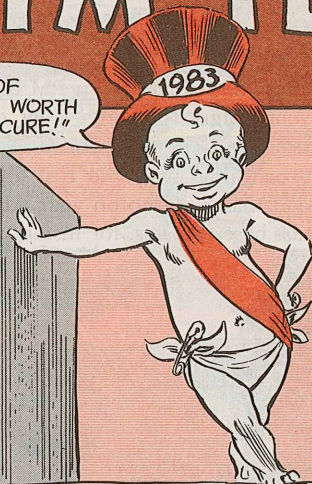
Each issue of PS Magazine is mailed from the printer's plant around the 10th of the month before the issue's date. For example, the December issue is mailed around 10 November. If copies don't reach your unit in a reasonable time, let PS Magazine know. AUTOVON 745-3478, or jot a note to PS Magazine, Lexington, KY 40511.



Just What the Doctor Ordered...

# FM Rx = PM + TLC

"AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE!"



For you, for sure. For your AN/VRC-12 series radio sets, too.

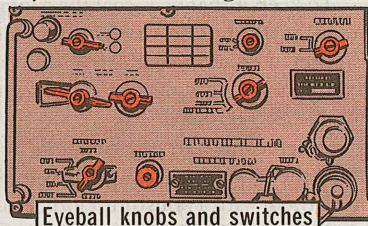
That prescription will keep your FM radios healthy and your unit happy through any field operation.

OK, Doc, you say your FM's could use a checkup right now?

Well, put on your best bedside manner and let's roll in the patient.

## Everything There?

First, take a gander at all the knobs and switches, screws and connectors. They should all be snug.



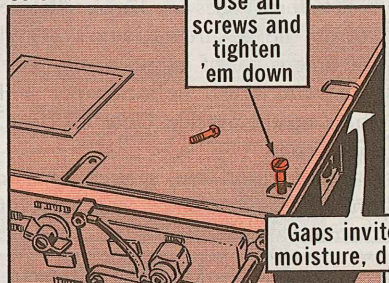
**Eyeball knobs and switches**

A loose receptacle can lead to trouble inside. When you try to hook a connector, you'll turn the receptacle, twisting the wires behind it.

**SCREWS MISSING? REPLACE 'EM WITH THESE...**

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

Watch out for that MWO screw. It's threaded all the way to the top. If you want to get a tight fit, file off about 1/4-in worth of threads from the top of the screw.

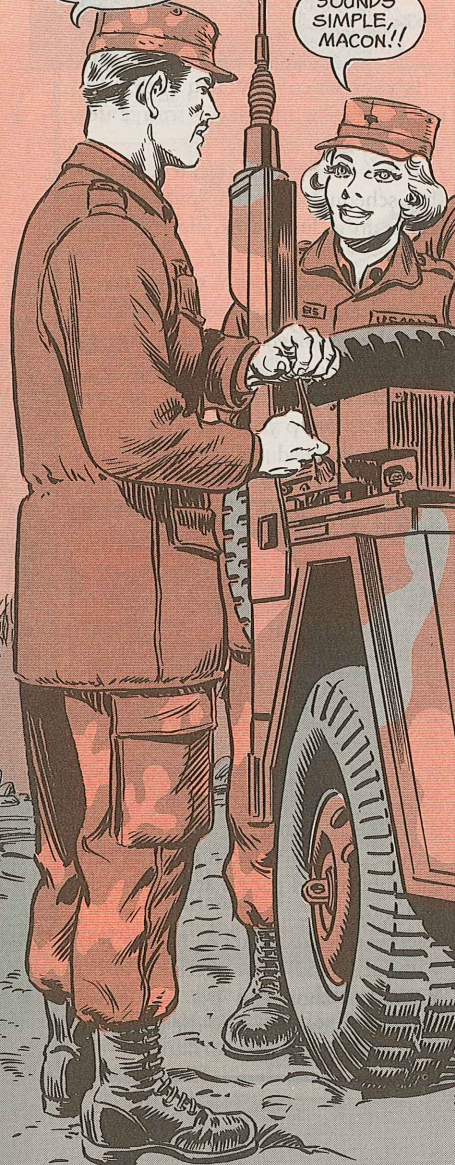


It's important to snug up all screws, tho. A loose or missing screw leaves gaps in the case and will let in dirt or moisture. That can sure foul up your commo.

...SO THAT'S THE PRESCRIPTION... GOOD FM AND LOADS OF TENDER, LOVING CARE!

SOUNDS SIMPLE, MACON!!

YEAH-- BUT WE GOTTA USE TH' RIGHT AMOUNTS...OR OUR GEAR BECOMES A VICTIM!! RIGHT, SERGEANT?



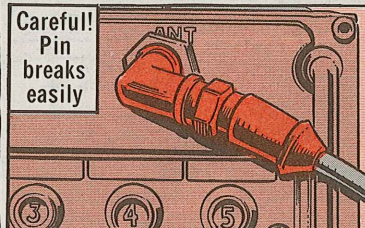
## Wired Right?

How's your set wired? Connections right and tight?

Eyeball the CX-4720 power cable assembly from the mount to the vehicle battery. Black and green wires go to the negative (-) terminal. Red and white hook to the positive (+).

Simple enough, you say. Do it wrong, tho, and the mount or radio is the victim.

Go easy when mating the L-shaped end of your CG-1773 radio frequency cable to the RT. The connector pin breaks easily. If it breaks off inside the



receptacle, support gets the repair job.

Hooking the other end of the CG-1773 and the CX-4722 cable to your MX-6707 matching unit takes a soft touch. Since you can't see the receptacles easily, mangled pins follow any rough stuff.



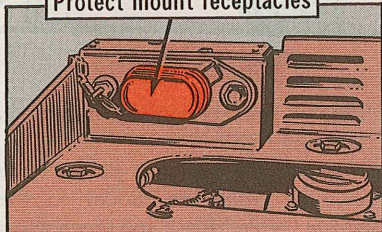
## Keep It Clean

Tight connections are wasted if they're dirty.

Clean audio connectors with a plain ol' rubber eraser. Keep 'em clean with covers when they're available.

F'rinstance, protect your MT-1029 and -1898 mount receptacles with a

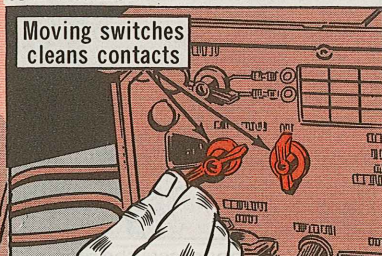
### Protect mount receptacles



cover, NSN 5935-00-911-2323. The receptacle covers on the mount's bottom are NSN 5935-00-933-3752.

O-rings are needed for tightest connections. For easy mating, grease rings with silicone lube, NSN 6850-00-880-7616. Don't use spit. It can corrode or short you out. It freezes in cold weather.

### Moving switches cleans contacts



Clean inside contacts by moving the MC-TUNE-KC switches back and forth a few times. On your RT-246, move the band switch from AUTO to A or B band. That insures proper channel changing.

## Check Temperature



Is your set cold? Warm it up. If it's been off a while, let it run a few minutes before keying.

If it's overheating, clean it. Follow the schedule in your pubs. When you're in a dusty area, clean it more often.

The heat exchanger vanes, blower motor fan and power transistor assembly all need to be dust-free for cool operation.

Replace any panels you remove. They help keep your set cool.

You can head off dust buildup by leaving the MWO handles on.

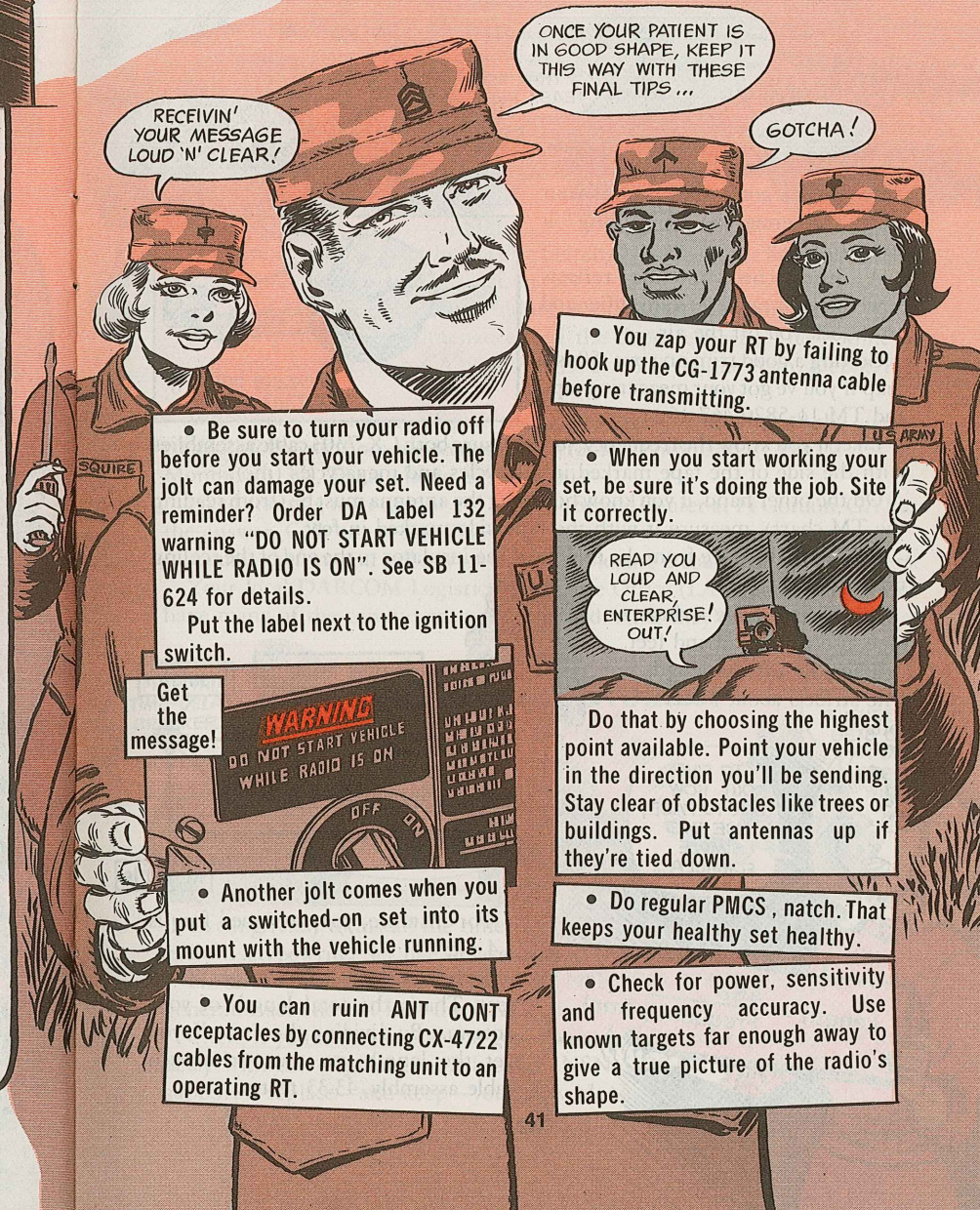
### Leave MWO handles ON



Some troops are told to take 'em off before sending an RT in for repair. That leaves your front panel defenseless. And, if you forget to replace 'em when the RT comes back, the unbuttoned panels are open to dirt and moisture.

Never leave your A model RT's without handle protection, either. Your DS shop can put the MWO handles on the A type if the guards are broken or damaged.

## Staying Healthy



RECEIVIN'  
YOUR MESSAGE  
LOUD 'N' CLEAR!

ONCE YOUR PATIENT IS  
IN GOOD SHAPE, KEEP IT  
THIS WAY WITH THESE  
FINAL TIPS ...

GOTCHA!

• You zap your RT by failing to hook up the CG-1773 antenna cable before transmitting.

• When you start working your set, be sure it's doing the job. Site it correctly.

READ YOU  
LOUD AND  
CLEAR,  
ENTERPRISE!  
OUT!

Do that by choosing the highest point available. Point your vehicle in the direction you'll be sending. Stay clear of obstacles like trees or buildings. Put antennas up if they're tied down.

• Do regular PMCS, natch. That keeps your healthy set healthy.

• Check for power, sensitivity and frequency accuracy. Use known targets far enough away to give a true picture of the radio's shape.

• Be sure to turn your radio off before you start your vehicle. The jolt can damage your set. Need a reminder? Order DA Label 132 warning "DO NOT START VEHICLE WHILE RADIO IS ON". See SB 11-624 for details.

Put the label next to the ignition switch.

Get  
the  
message!

• Another jolt comes when you put a switched-on set into its mount with the vehicle running.

• You can ruin ANT CONT receptacles by connecting CX-4722 cables from the matching unit to an operating RT.

**WARNING**  
DO NOT START VEHICLE  
WHILE RADIO IS ON



AN/GRA-50  
Antenna Group...

## Give It a Good Trim

THAT WAS  
EASY, HUH?

Sending a good signal from your doublet antenna means "cutting" it down to size.

A mismatched antenna reflects power to your radio set's amplifier and can knock you off the air.

Getting a good trim on your -50 is a snap if you've got your measuring tape and TM 11-5820-467-15.

Like, if you know the frequency, just measure both CX-7303 cable assemblies with the side of the tape marked in kilocycles and megacycles (mc).

On the other hand, if you know how long the antenna must be (from reading the TM chart), measure it with the tape side marked in feet.

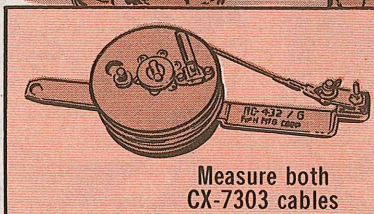
Be sure to measure from the middle of the insulator to the end of the reeling machine.

If you don't have a chart or tape, use your head and feet.

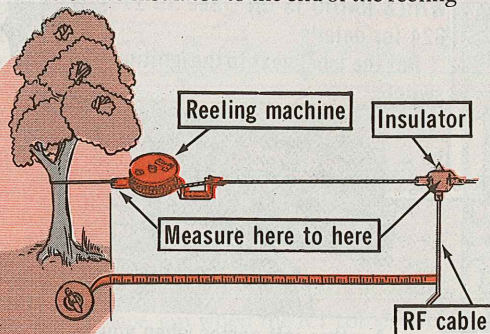
Like pace off the length.  
One stride's about 3 feet long.

TO FIND  
OUT HOW  
FAR TO PACE,  
USE THIS  
SIMPLE  
FORMULA...

$$\text{Length} = \frac{468}{\text{Frequency (mc)}}$$



Measure both  
CX-7303 cables



For instance, your assigned freq is 5.4 mc.

Divide 468 by 5.4. You get 86.67 feet. That's the total length of your antenna. By dividing that in half, you get the length you must trim each cable assembly, 43.33 feet.

HEY, GREAT!!  
YOU'VE SOLVED  
MY PROBLEM!

Commo  
Hotlines

SCHOOL

DEPOT

MAIT,  
LAO

CECOM

If you're a commo-type who needs a helping hand from the headshed, we've got a hot number for you. Several, in fact.

All are AUTOVON numbers and all are answered 24 hours a day.

If your problem is maintenance, call the depot experts. The hotline at Sacramento Army Depot, CA, is 839-2839. For Tobyhanna Army Depot, PA, dial 795-7900.

When you find a piece of gear that seems faulty or unsafe, call the quality control folks at Communications-Electronics Command (CECOM) at Ft Monmouth, NJ. Their phone is 992-5200.

Need training materials or advice? The Signal Center at Ft Gordon, GA has the answer. Call 'em at 780-7777.

'Course, before you call any of these people, use a couple of local numbers.

Your local DARCOM Logistics Assistance Office (LAO) and MAIT teams have many of the commo answers you need. And, they're right next door.

IT'S THE  
TIME-DELAY  
BREAKER...  
FROM  
SUPPORT!

## RATT Rig Breaker

THEY  
SAID YOU  
SENT IT TO  
THEM STILL  
ATTACHED TO  
YOUR GENERATOR.

THANK  
GOODNESS!!  
IT SURE  
GETS COLD  
IN OUR  
SHELTER  
WITHOUT  
IT!

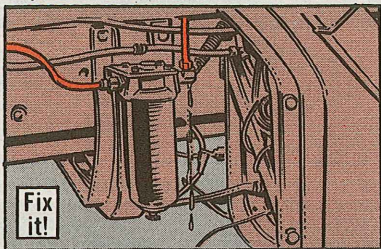
Getting ready to install the time-delay circuit breaker to your AN/GRC-46 radio teletypewriter set like it says on Pages 50-51 of PS 351?

No sweat. Just remember, the breaker, NSN 5925-00-898-4180, goes on the generator set and not into the RATT rig.

Then, if you have to send the generator to maintenance, replace the time delay with the original circuit breaker, NSN 5925-00-961-1202. Otherwise, support'll replace—and keep—your slow blow.



It's easy to spot a leaking fuel line in a system with the in-tank fuel pump.

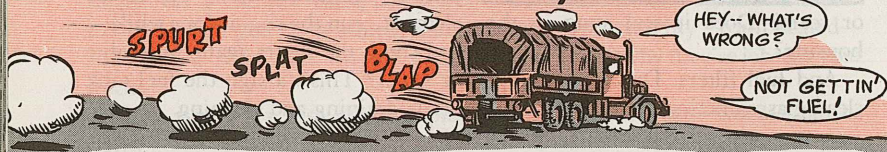


There's pressure on the fuel when the pump's running, so you'll see fuel dripping from a break or loose connection in the fuel line. Fix it.

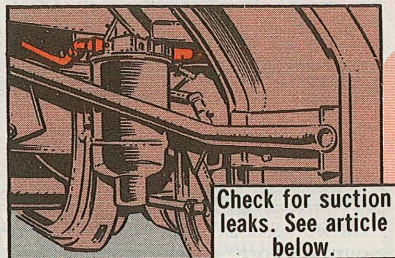
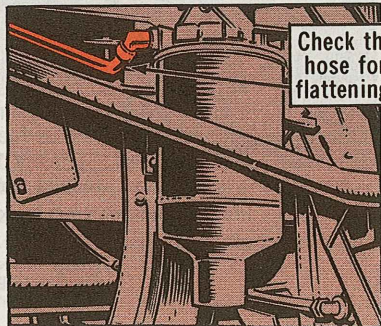
It's a little harder, tho, when fuel's being pulled from the fuel tank. Air is pulled in thru the break or loose hookup. You can't see the air, natch—but it sure gives your engine fits!

M809-Series 5-Ton Truck...

## Look for Mushy Hose



Engine fuel trouble in your M809-series 5-ton truck may be caused by an old, mushy hose between the fuel filter and the engine fuel pump.



To check for a suction leak in the fuel line, squirt a little oil on the connections—checking one at a time. Do the same on a suspected crack or other damage point. With the engine running, look real close. If oil is sucked in, air is being sucked in.

Try to tighten a leaking connection. If it still leaks, repair it. Replace the line if it's pinched or if some damage is causing a leak.

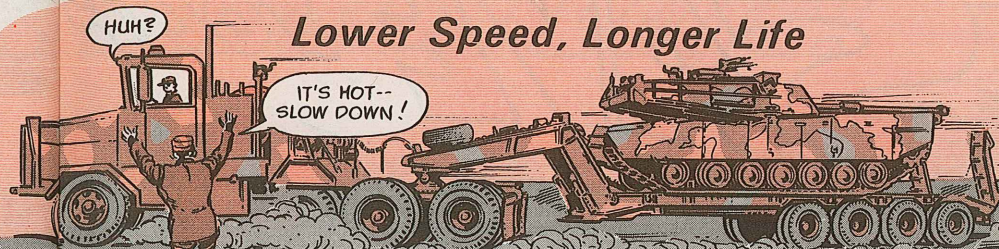
Fuel pump suction can collapse the hose, squeezing off the fuel supply—just enough to make your engine run bad.

Check the hose while your engine's running. Look for flattening anywhere along the full length of the hose. See the Fuel System Support Diagrams in your TM 9-2320-260-20-2-1, Pages 15-2 thru 15-4.

If you've got a bum hose, put on a new one—NSN 2910-00-134-4649 in your TM 9-2320-260-20P.

M747 Semitrailer...

## Lower Speed, Longer Life



If you're hauling an M1 tank with your M747 semitrailer, slow down as the outside temperature goes up.

The wrong combination of speed, temperature and payload of more than 60 tons can cause your trailer a heap of trouble. Tire tread may separate, and brakes and wheel bearings will wear out too soon.

TO CUT THE CHANCES OF THIS HAPPENING, GO BY THESE SPEED/WEATHER COMBINATIONS WHEN HAULING AN M1 OVER THE ROAD!

Weather	Maximum Speed Limit (miles per hour)
Hot—80°F and up	15
Warm—50° to 80°F	25
Cold—Under 50°	35

If you're not sure of the temperature, as a general rule, stay under 27 MPH on paved roads and 10-15 MPH off the road.

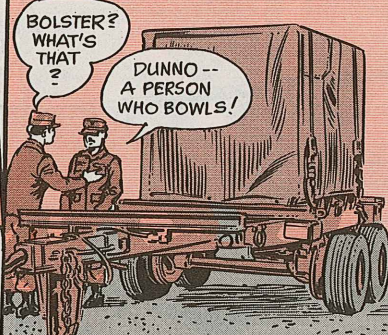
You can lighten your M747's load when hauling an M1 tank by removing such things as extra fuel and ammo from the M1.

## Commercial Electrical Kit



Electrical terminal kits for commercial-design vehicles are not in the common tool sets. You can get a kit, tho, with NSN 5940-00-525-0907. This brings 500 terminals in 20 different types and sizes, a crimping tool, and a storage box.

## 4-Ton Bolster



NSN 4720-00-069-9338 gets a 98-in intervehicular hydraulic hose assembly—Item 2, Fig 36, TM 9-2330-287-14—for your M796 4-wheel trailer.

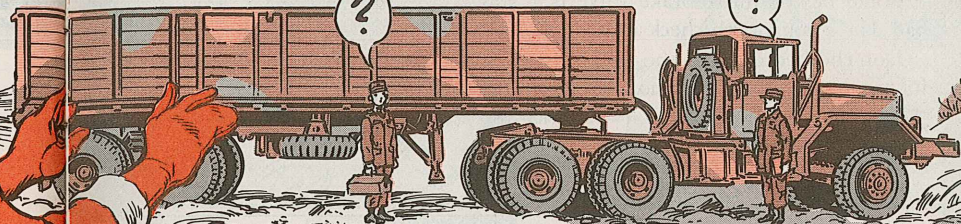
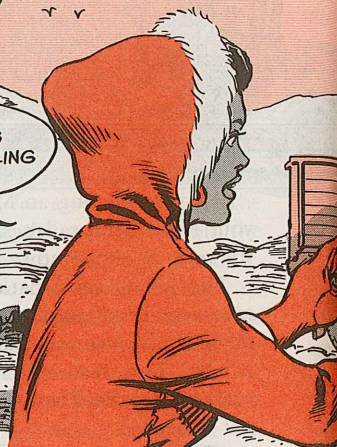


Tractor/Trailer Rigs...

# SAVE Your Landing Legs!

HOLD ONE, YOU GUYS!!

YES! THERE'S NO GOOD REASON FOR BUSTING UP YOUR SEMITRAILER'S LANDING LEGS WHEN YOU'RE UNCOUPLING ON SOFT OR UNEVEN GROUND!



But it's happening. When the legs are cranked down and the shoes don't make solid contact with the ground, some operators just pull out from under the trailer anyway—and the trailer comes crashing down on the legs.

A drop of several inches can be a killer! The legs can't take it! And it's dangerous if you drop a 5,000-gal tanker loaded with fuel—and the shock ruptures the tank!

OH, OH! I REALLY DID IT THAT TIME!

WONDER IF ANYBODY'LL NOTICE?



Parking your trailer on soft ground invites big trouble, too—when the landing leg shoes sink and trailer weight is thrown forward. Bad for the landing legs—especially with a fully-loaded trailer! And you may have to round up a wrecker to lift the trailer so your tractor-truck can get under it for coupling.

How do you beat these problems?  
Simple:

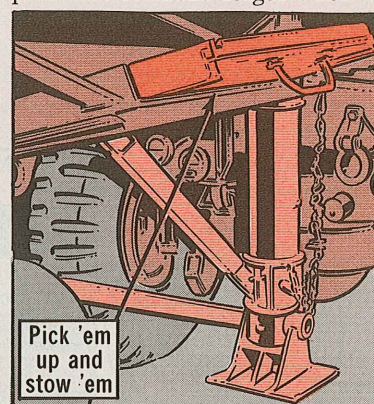
Use the landing pads.



If they're lost or torn up, get new pads, NSN 2510-00-741-7585.



Look around. You may find landing pads that someone forgot when he



coupled up and moved out. Somewhere that "someone" may be about to tear up his trailer's landing legs—

-- WHEN HE'S READY TO UNCOUPLE AND HAS NO PADS!





# 5-Ton Wrecker... Micro-Brake Valve Check

You have a recovery job for your 5-ton wrecker. You set the micro-brake lock. The wrecker moves! The brakes won't hold!

Could be the micro-brake valve is bad. Have your mech check it out.

Don't bother to look in the -20 TM's for troubleshooting help, tho.

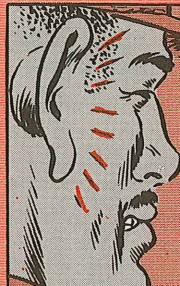


THERE'S NOTHING THERE!

HERE'S HOW TO CHECK IT!

## LISTEN

Turn the battery switch ON. Press the brake lock switch button. Listen for a click at the micro-brake valve. The valve is near the master cylinder on the M62, M246, -A1, -A2, M543, -A1, -A2, and on the left frame member near the transfer on the M816 and M819. A click means the valve is working. If you hear no click, you have to make a continuity check.

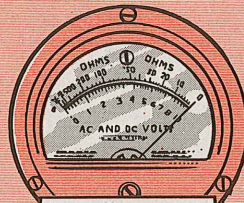


Listen for click

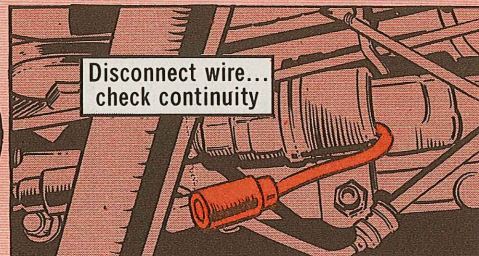


## CONTINUITY CHECK

Disconnect the wire at the micro-brake lock valve.



0 reading means valve's OK!



Disconnect wire... check continuity

Set up your multimeter as in TM 9-2320-260-20-2-2, continuity test, Pages 27-20 thru 27-22.

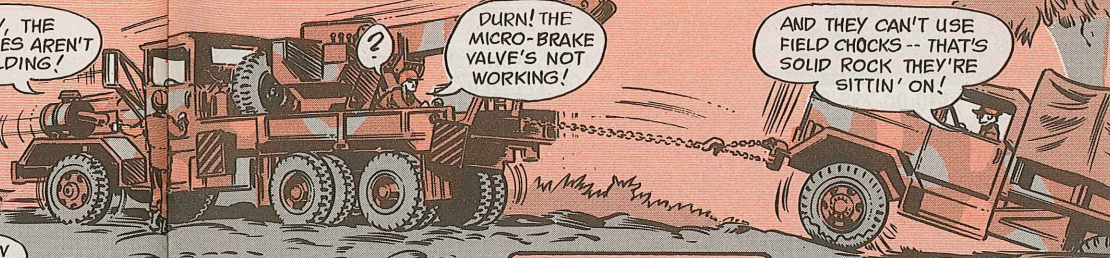
Check continuity from the brake valve wire to ground. If you get anything but a zero reading, the valve is bad. NSN 2530-00-886-5872 gets a new one.

A good check means you have to make some voltage checks.

HEY, THE BRAKES AREN'T HOLDING!

DURN! THE MICRO-BRAKE VALVE'S NOT WORKING!

AND THEY CAN'T USE FIELD CHOCKS -- THAT'S SOLID ROCK THEY'RE SITTING ON!



## VOLTAGE CHECKS

Disconnect the No. 10 wire at the rear of the push-button switch.

Set your multimeter on the 100-VDC scale (or 50-VDC scale if the multimeter has one). See DC voltage test, Pages 27-3 thru 27-7, in your -20-2-2 TM.

Turn the battery switch ON.

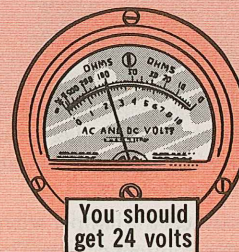
Touch the red probe to the No. 10 wire and the black probe to ground. You should get battery voltage. If not, the No. 10 wire needs to be repaired or replaced.

If you get battery voltage, turn the battery switch OFF and reconnect the No. 10 wire. Pull the No. 480 wire from the push-button switch.

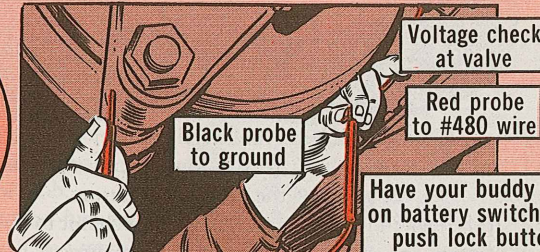
Turn the battery switch ON. Touch the red probe to the push-button switch terminal and the black probe to ground. Have your buddy push the button. You should get battery voltage. If not, replace the push-button switch, NSN 5930-00-433-2239.

If you get battery voltage, turn the battery switch OFF and hook up the No. 480 wire.

Pull the wire at the micro-brake valve.



You should get 24 volts



Voltage check at valve

Black probe to ground

Red probe to #480 wire

Have your buddy turn on battery switch and push lock button

Touch the red probe to the harness wire—No. 480—and the black probe to ground. Have your buddy turn the battery switch ON and push the lock button. You should get battery voltage here, too. If not, repair wire No. 480.



## M172A1 Wheel- Mounting Hardware

Grab a pencil and update your TM 9-2330-211-14 on wheel-mounting hardware for that M172A1 25-ton semitrailer.

HERE'S TH' RUNDOWN THAT GOES WITH FIGURES B-26 AND B-27!

Nut, NSN 5130-00-732-0560.

Spacer, NSN 5365-00-177-9262.

Stud, right-hand thread, NSN 5307-00-075-7185; left-hand thread, NSN 5307-00-075-7186.

Nut, right-hand thread, NSN 5310-00-078-7025; left-hand thread, NSN 5310-00-078-7026.

Nut, right-hand thread, NSN 5310-00-847-2733; left-hand thread, NSN 5310-00-861-9125.

## M911 Tractor Truck...

### Plug Your Air Loss

Is your M911 truck losing air pressure and you don't know why? You'd better find out. You need full air pressure for your brakes!

If you've got an early model M911, maybe the low-air-pressure-indicator



switch is leaking. Check the serial number of your truck. If it's earlier than FS0 740-C, it was built with a low-air-pressure switch mounted on the cab firewall to the right of the steering column.

If the switch is leaking air, get your mechanic to disconnect the jumper wires leading to the switch and reconnect them directly to the stoplight switch. The switch is then replaced with a 1/4-in pipe plug, NSN 4730-00-187-4207.

Low-air-pressure switches are not on M911's with serial number FS0 740-C and after.

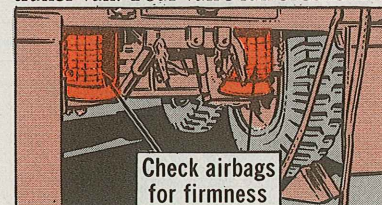
## XM971 Semitrailer...

### Keep Level and Closed

HEY! FEELS LIKE SOMETHIN'S DRAGGIN'!

DID YA STOW TH' LEVELLING JACKS?

Make sure you check those airbags before moving your XM971 semitrailer van. Your van's full of sensitive

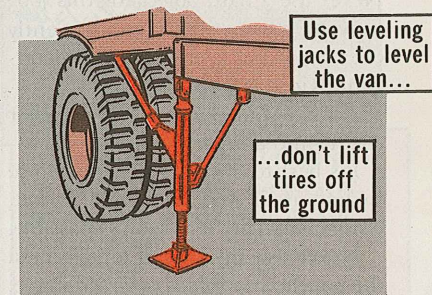


electronic equipment, so a firm, level ride is important.

If you move with bag problems, you'll know it right away. The van body will look like it's ready to tip over. TM 9-2330-362-14&P, Page 2-6, Item 7, tells you what problems to look for and what to do about them.

Also, keep those van doors closed tight. They keep outside radio waves

from interfering with the equipment inside. And, when running commo wire in and out of the van, never drill holes before checking with your supervisor.



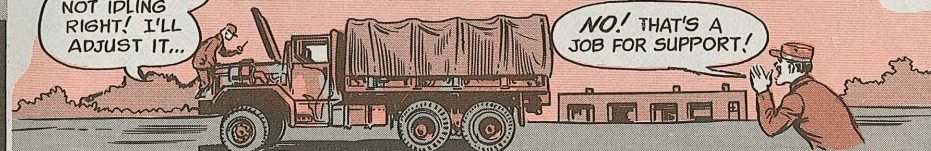
Finally, the 2 leveling jacks in the rear of the van are only for leveling the van. Never raise them so high that the wheels are lifted off the ground.

## M809-Series 5-Ton Truck...

### Support Adjusts Engine Idle

THIS HEAP'S NOT IDLING RIGHT! I'LL ADJUST IT...

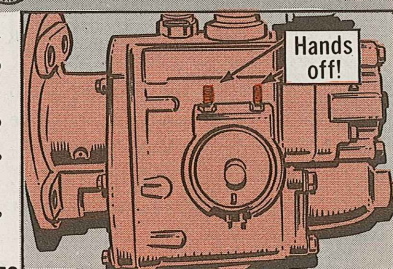
NO! THAT'S A JOB FOR SUPPORT!



Is the idle speed off on your M809-series 5-ton truck? Well, don't try to fix it! That's a support job.

Those 2 screws on the fuel pump don't control the idle. If you turn 'em, you'll screw up the pump.

If your truck's idle needs adjusting, let support do it.





# Poncho

Your lightweight poncho is made of nylon with a special waterproof coating. It needs special PM care.

Never wash it in a machine! The spin cycle will force water thru the weave and tear the waterproof coating from the fabric.

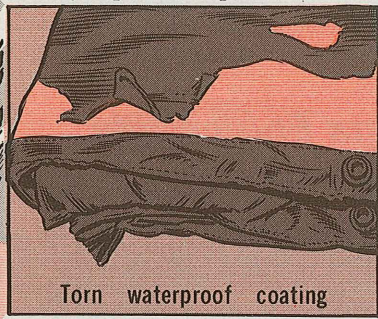
Wipe off dirt with a clean cloth. Never use a hard object for this job.

Wash your poncho by hand—gently does it—using a mild soap or detergent. Rinse it well.

Air-dry your poncho. Never, never toss it into a dryer!

It's best to dry your poncho before folding it. If you must fold it wet, unfold it and dry it as soon as possible.

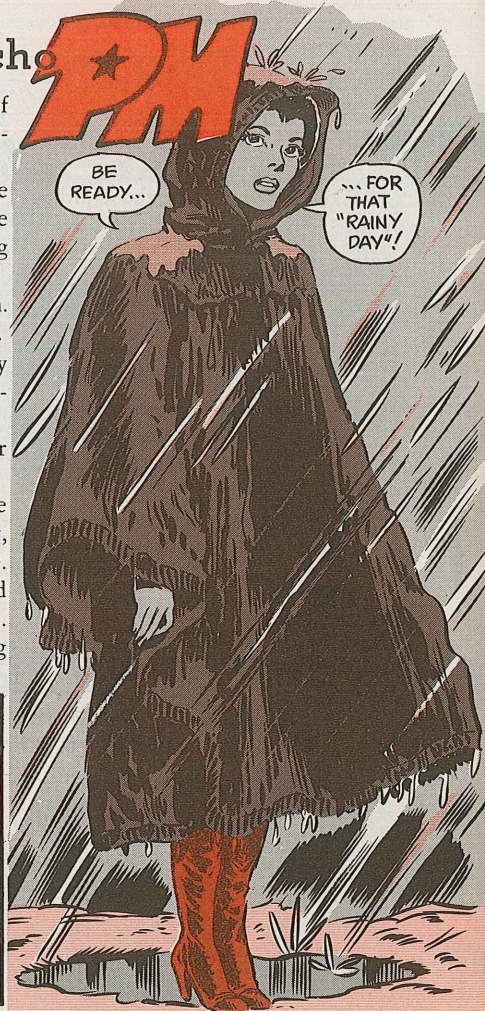
Never use any kind of tape to hold the poncho in a folded or rolled shape. You'll tear up the waterproof coating when you pull the tape off.



Torn waterproof coating

FM 21-15 has the folding/storing information for ponchos.

As a temporary fix, you can patch small holes with pressure-sensitive parachute mending cloth. NSN 1670-00-176-1802 gets a square yard ... enough to patch every poncho in your company.



Check your QSS, SSSC or clothing repair shop to see if they can get you the mending cloth.

TM 10-1670-264-13&P on parachutes lists the cloth in the bulk materials section.

TM 10-8400-201-23 has the word on a permanent repair for small holes.

? DIDN'T EXPECT YOU UP HERE FOR YEARS, SOLDIER!... WHAT HAPPENED?

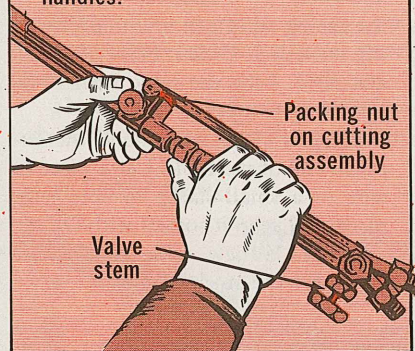
## Welding PM Tips

WELL, I... ER... CHECKED WITH A FLAME AND...

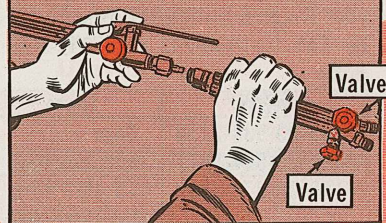


These PM tips will save you some aches—mental and physical—when you're using a welding or cutting torch.

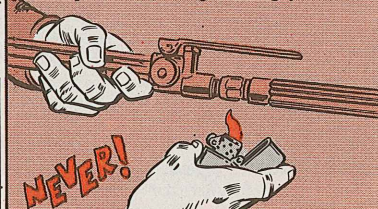
Check for leaking valves, bent valve stems, damaged seats and loose packing around the valve handles.



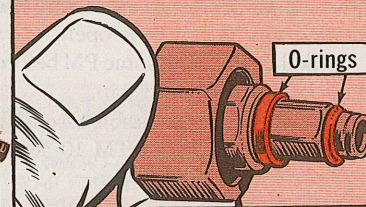
Hand-tighten the packing nut on the cutting assembly and the 2 packing nuts on the torch valve. Use soap and water to test for leaks at the valves.



Never use any kind of flame to test your valve-tightening job.



Always be sure the O-rings on the cutting assembly are present and in good shape...not nicked, torn or rotten.



Be sure the tip of the torch is not distorted or dirty.

Never bang the nozzle against a hard object to dislodge slag.

Never let the nozzle touch the material you're cutting.

CHAPTER 5, TM 9-237 HAS THE WORD ON THE CARE AND CLEANING OF TORCHES!





4,000-LB RTFL...

WOW! CAN'T STOP!  
ACCELERATOR  
IS STUCK!

## Accelerator Cable PM

LUCKY YOU  
DON'T HAVE A  
PALLET OF  
AMMO!

A sticky accelerator cable on your 4,000-lb rough terrain forklift means trouble...especially if you're handling hazardous cargo like fuel or ammo.

Dirt, sand or rust can get inside the cable's outer casing and cause the cable to stick with the throttle open.

Stick the cable with some PM before it sticks you with a mishap.

Take the accelerator cable assembly off—like Para 2-15i of TM 10-3030-

638-24&P, says. Slide the cable out of the casing and clean it with drycleaning solvent P-D-680, NSN 6850-00-264-9038. Lube the cable with 10-W oil before you put it back in.

Wrap a clean rag around the exposed end of the cable. Use a piece of wire or a small clamp to hold it in place, and keep it soaked with OE oil.

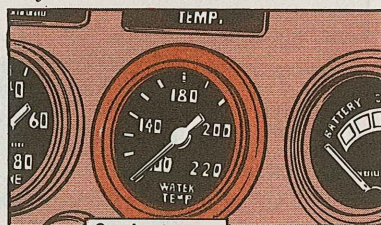
There's a new cable coming, so watch for the stock number.

## RTFL Temp Gage

NUMBERS?  
I DIDN'T KNOW  
YOU WERE IN THAT  
RACKET, BILL!

SURE AM... AND  
THESE ARE ALL  
WINNERS!

Jot down these numbers for the



Coolant gage

water temperature (coolant) gage for your rough terrain forklifts supported by TM 10-3930-242 and -243-series pubs:

NSN	Item
6685-00-936-2139	Gage
6685-00-814-5271	Sending unit
6145-00-578-6602	18 AWG wire (as required)

25-Ton CCE Crane...

## Collector Swivel PM Tip

OK,  
SERGEANT!  
DON'T WORRY--  
I'LL GREASE  
IT LATER...  
I... ULP!

UH-OH!

SNAP!  
PSS-SSST!  
SSS-SS!  
PINE

Rust buildup put the big maintenance bite on an M250 crane recently.

It happened to the wiring in the collector ring and swivel assembly. Condensation caused a rust buildup on the swivel pipe (Item 7, Gr 2, Page 14.1, TM 5-3810-293-14&P-2). The pipe "froze" in the hydraulic swivel (Item 16).

When the operator swung the boom, umpteen electrical wires were broken!

Head off this problem by greasing the collector ring base like it says in

the upper lube chart, Fig 3-1 of the -14&P-2 TM.



5- to 25-Ton Cranes...

## Wire Rope NSN

≥ WHEW!  
GLAD YOU'RE  
HERE!

CAN'T FIGURE WHY  
THAT FRAYED WIRE  
ROPE HASN'T SNAPPED  
ALREADY!

H-HUH?

Need some ½-in diameter wire rope for the boom hoist or pile driver on your cranes?

**Use NSN 4010-00-269-9308 to get a 600-ft reel of wire with a 22,400-lb breaking strength.**

Use App A, CTA 50-970 as your authority if the number's not in your equipment parts manual.

Use the wire rope on this equipment:

Crane Model	Crane size, tons
M320, M320T2	20
M2380, M2385	20
H-446, H-446A	5
Grove 300-5	25
Bucyrus Erie 22BM	12½
Thew-Lorain L-36M	12½



DA Form 2404...

# Initial

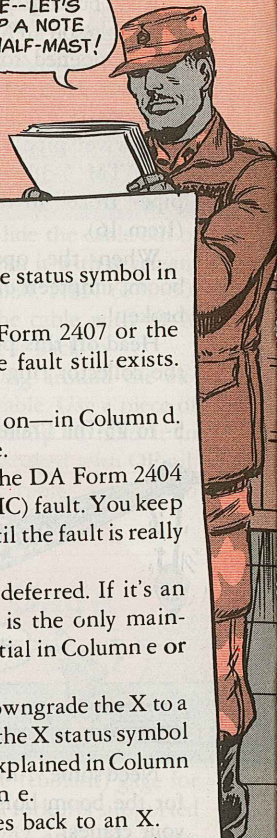
Dear MSG Half-Mast,

When we send a piece of equipment to support on a DA Form 2407, or defer maintenance, do we initial Column e and the status symbol in Column b of the operational (PMCS) DA Form 2404?

SSG J. W. D.



I'M NOT SURE--LET'S DROP A NOTE TO HALF-MAST!



Dear SSG J. W. D.,

Yes and no. You initial Column e, but you do not initial the status symbol in Column b.

Transcribing a fault from the DA Form 2404 to a DA Form 2407 or the deferred maintenance 2404 is not a corrective action. The fault still exists. You're just moving it from 1 form to another.

Explain what you're doing—which form you're putting it on—in Column d. Sign or initial in Column e. Leave the status symbol alone.

Once you put the entry on another form, you can trash the DA Form 2404 with the open fault—unless it is a Not Mission Capable (NMC) fault. You keep the operational DA Form 2404 with an NMC fault on it until the fault is really fixed.

Course, a fault carrying an X status symbol cannot be deferred. If it's an organizational-level job, the operational DA Form 2404 is the only maintenance form that shows it. So the fault stays open—no initial in Column e or on the status symbol—until it's fixed.

Course, your CO or the designated representative may downgrade the X to a circled X status for limited operations. A circle goes around the X status symbol in Column b for that situation. The limited operations are explained in Column d. The person authorizing the limited ops initials Column e.

But at the end of the limited operations, the status goes back to an X.

The status symbol in Column b of the DA Form 2404 is initialed only when the problem has been fixed by the operator—replacing a part—or organizational mechanics.

*Half-Mast*

# Impression

Able Z Operator Sp4

TM ITEM NO. a	STATUS b	DEFICIENCIES AND SHORTCOMINGS c	CORRECTIVE ACTION d	INITIAL WHEN CORRECTED e
7	A	Transmission	Reconnect with	ERA
15	X	Motor	Check motor	ERA
39	/	Lock	Make sure	DA Form 2407(Spt) ERA

INITIAL THE STATUS SYMBOL ONLY WHEN THE FORM ACTUALLY REPORTS MAINTENANCE WORK! TRANSCRIBING THE ENTRY TO DA 2407 OR DEF MAINT DA 2404? INITIAL ONLY IN COLUMN e!

DA FORM 2404

Replaces



## Homemade Cards

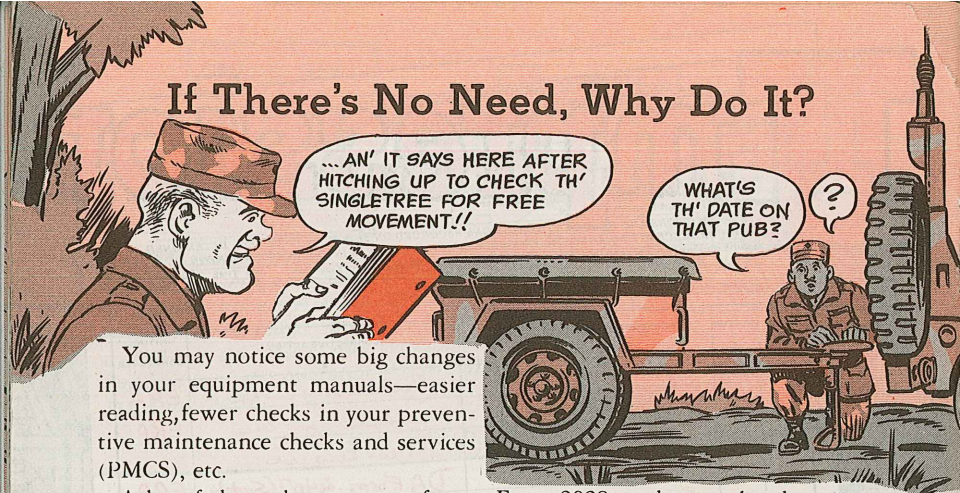
Wondering where to get the cards that go in the outside pocket of your Equipment Records Folders? Make your own for now! You can make those cards by cutting down heavy paper, cardboard or index cards.

## Your Pubs Current?

You won't get the latest info from the tech manuals on your equipment if the changes are gathering dust on a shelf. Put 'em in the manual—now!



## If There's No Need, Why Do It?



You may notice some big changes in your equipment manuals—easier reading, fewer checks in your preventive maintenance checks and services (PMCS), etc.

A lot of those changes come from Reliability Centered Maintenance (RCM).

RCM people review new pubs and changes for unneeded work. They look at what the PMCS asks you to do and why. Some items you just may not need to check. Other services may be more trouble than they're worth.

It may change how often you pull a PMCS or do a check in the PMCS. Some checks are dropped altogether. For example, C7 to TM 55-1520-210-PM deleted the 200-HR bench check for the Huey inverters. Experience showed it wasn't needed.

Maybe you have some ideas along those lines? Pass 'em on! Send in a DA

Form 2028 to the people who wrote the pub you're interested in.

The RCM people are concentrating now on equipment reported on the DA Form 2406.

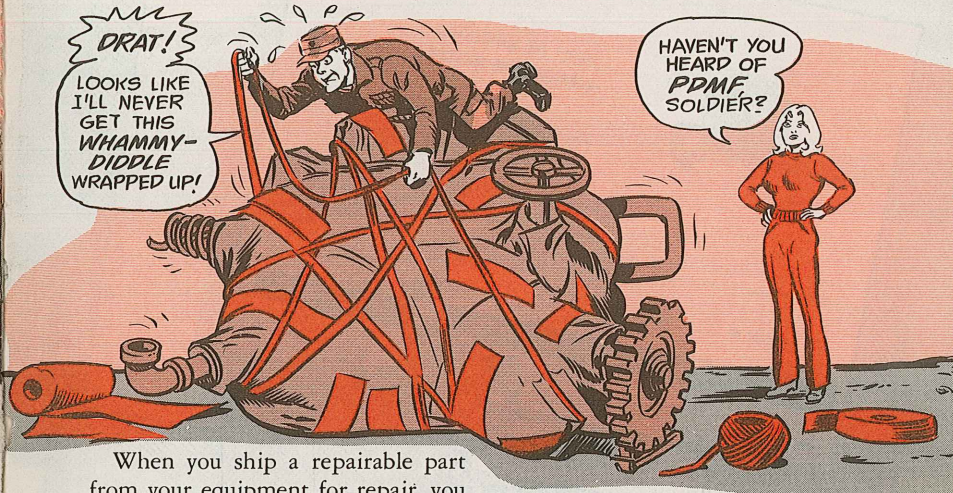


## Oil Toil

So what do you do with an old DD Form 2026, Oil Analysis Request? Keep only the latest one. When a new form comes back from the lab, trashcan the older form. File the DD Form 2026 with—or clip it to—the component's DA Form 2408-20. That info will be added to the AOAP pubs.

Shipping a Part to Support?

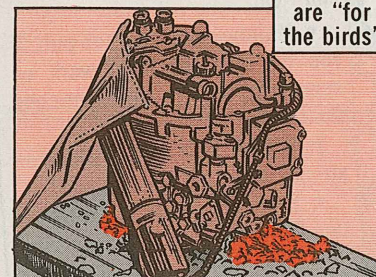
## Get the Latest Word!



When you ship a repairable part from your equipment for repair, you don't want it to arrive damaged. It happens.

For example, an aircraft T53 engine fuel control arrived at overhaul in a suitable shipping container. Unfortunately, plastic "peanuts" were used as cushioning.

The trapped remaining fuel melted the plastic, which then hardened around the control.



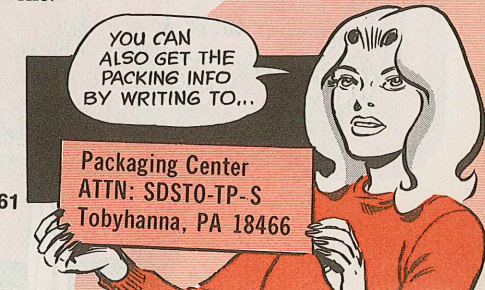
The plastic had to be peeled from the control, increasing the part turna-

round time. Cellulose, Spec PPP-C-843, NSN 8135-00-183-8823, should have been used for cushioning.

### Call for Help

How can you get the right info for packing a part of your aircraft, truck, tank—you name it?

Contact the packaging experts who put out the Packaging Data Microform File (PDMF). The file is on microfiche at major installations. Call the Army's Packaging, Storage and Containerization Center at AUTOVON 795-7145, -7681, or -7683 for the location of the nearest file.





## Starting Off Right

SUPPLY AND MAINTENANCE  
MANAGEMENT INFORMATION

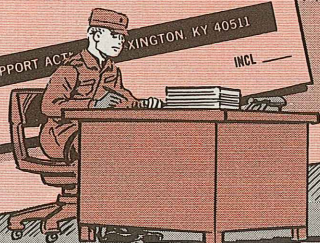
PRESCRIBED LOAD LIST  
CONSOLIDATED SEQUENCE

PROJECT NO. \_\_\_\_\_

US ARMY DARCOM MATERIEL READINESS SUPPORT ACTIVITY, LEXINGTON, KY 40511

INCL \_\_\_\_\_

MBRA FORM 45, 1 JUL 78



Need some help figuring what to stock on a first-time prescribed load list (PLL) or for future needs?

Para 2-11i (5) of AR 710-2 and Para 8-5a of DA Pam 710-2-1, Using Unit Supply System Manual Procedures, tell you about some folks who can give you a recommended PLL for 1 item or hundreds.

DROP  
A LETTER  
ASKING FOR  
A PLL  
TO...

Commander  
USAMRSA  
ATTN: DRXMD-S  
Lexington, KY 40511

PUT THIS  
INFO IN THE  
LETTER...

- NSN, model and quantity, authorized and on hand, of each end item.
- Maintenance level you pull. If you do different level work on some gear, tell 'em which ones and the levels.
- Engine NSN and quantity—aircraft only!
- Your outfit's Unit Identification Code (UIC).
- Your name and telephone number in case they need to talk to you.

## Continued on Next Page...

Dear MSG Half-Mast,  
TM 38-750 says the DA Form 2404 and the Phased Maintenance Checklist are continuation sheets for DA Form 2408-13. Are any other forms treated as part of DA Form 2408-13?

SSG M. E. S.

DA FORM  
2404

Dear SSG M. E. S.,

Any forms or checklists that apply to or go with DA Form 2408-13 are considered continuation sheets.

Para 10-30c of TM 38-750 gives some examples—Rotor Smoothing Record and maintenance test flight sheets—but there are others, like serial number checksheets and optional checklists.

When a form or checklist is attached to DA Form 2408-13 as a continuation sheet, go by Para 10-30c (13) of TM 38-750 for disposition.

Keep the continuation sheets with DA Form 2408-13 until it is pulled from the 6-month file. Then stash those forms or lists in the aircraft historical records file until the phase inspection is due again.

Half-Mast

## Use the Same Form

Para 10-44b.(1) in TM 38-750 calls for recording aircraft oil samples on the DA Form 2408-20. Although the tech manual lists components (not systems) for sampling, list your hydraulic system samples on the same form. Appendix A of TB 43-0106 lists the systems to be sampled for each aircraft.

## Put File on Ice

Your aircraft grounded for lengthy maintenance, parts wait, storage or a long stretch of bad weather? Put your DA Form 2408-13 6-month file on hold until the bird flies again. Para 10-37d (4) on Page 10-70 of TM 38-750 will be changed to say: If the aircraft does not fly in a given month, the file will be retained intact until the aircraft flies again.



## Mask Winterization Kit

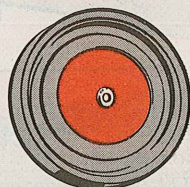


What you see is what you get with the M4 winterization kit for the M17/ M17A1 protective mask.

You can use the all-purpose valve disk, NSN 4240-01-104-0965, in any



M4 winterization kit



Get the all-purpose disk

kind of weather. It fits both inlet valves and the nosecup valve.

You can still use serviceable disks from your old winterization kit. Then switch off to the new disk. Never toss out the winterization kit when the disks go bad. Just go with the all-purpose disk.

Chemical Agent Alarm Mount...

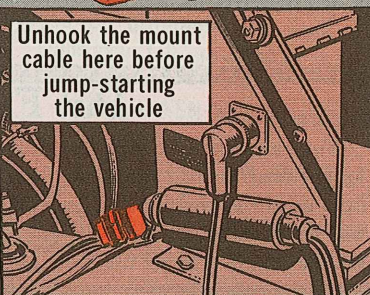
## Jump-Starting Caution



Jump-starting your tactical vehicle can zap the cable to the M8-series chemical agent alarm's mount.

Besides burning out the cable assembly's diode, the power surge can cause a fire.

So, always disconnect the cable from the vehicle before you jump-start. That goes for both the high profile mount and the low profile mount.



## Connie's Mini Minis



## M229 Kit Shelf Life

Eyeball your replacement M229 refill kits, NSN 6665-00-859-2214, for your automatic chemical agent alarms. All M229's made after Jan 83 have an indefinite shelf life. Kits made before then still have a 2-year shelf life.

## M16A1 Riot Control Plate

If your unit needs the locking plate shown in Fig B-6, C5 to TM 9-1005-249-20, you can get it with the NSN 1005-00-233-9031. The plate prevents automatic fire and is for special duty, such as riot control.

## Idler Arm Seal NSN

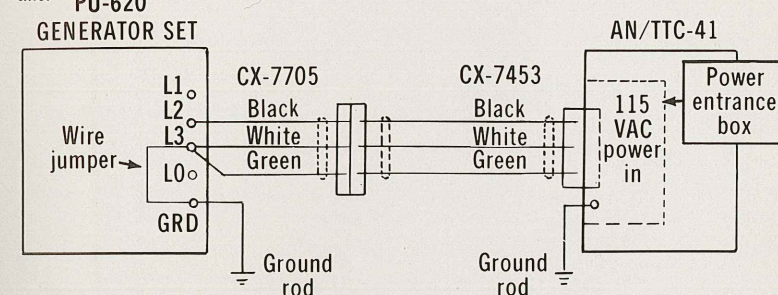
You got a bum steer in PS 357, Page 14, on the NSN for the grease seal for M113A2 idler arms. Check out the chart:

Grease seal	Idler arm	Roadwheel arm
NSN 5330-01-035-9832	M113A1	M113A1/M113A2
NSN 5330-01-060-2531	M113A2	

The idler arms on M113A2-series vehicles are larger in diameter than those on the M113A1-series vehicles.

## AN/TTC-41 Power Correction

The AN/TTC-41 telephone central generator hookup shown on Page 56 of PS 361 should look like this:



★ U.S. GOVERNMENT PRINTING OFFICE: 1983—659-007/2

*Would You Stake Your Life <sup>right now</sup> on the Condition of Your Equipment?*



This Year  
**Stay on TOP**

of Equipment

**PM**

USE YOUR  
INDEXES

**DA Pam 310-1**

AR's, Pams, Circulars,  
blank forms, FM's, TC's,  
TOE's, CTA's, TM's, TB's,  
LO's, SM's, SC's, etc.

**DA Pam 310-9**

COMSEC

**DA Pam 750-10**

MWO's

**DA Pam 310-99**

Obsolete Pubs

