

Issue 340

PS

March
1981

THE PREVENTIVE MAINTENANCE MONTHLY

WHY AREN'T YOU
WEARIN' GOGGLES?

...NOT T'MENTION
TH' WRONG CHISEL!

YOU'RE USIN TH'
WRONG HAMMER...

HOW LONG
D'YA SUPPOSE
HE'S BEEN
FROZEN IN
THERE?

COLONEL
LEAKY SAYS AT
LEAST 10,000
YEARS!

TOLD YOU
NOT T' FREE
HIS MOUTH
FIRST, HARRY!

MURPHY
ANDERSON

Electricity... See Page 16

It's **NOW** or (Maybe) **NEVER**

That blankety-blank ARTEP is finally over. You passed, and you've got celebration on your mind.

Hold off on the foamy, tho, until you turn in any gear that needs fixing.

Some troops figure, "what the hey...we won't need that gear again for weeks...we're not going anywhere 'till then." So, they turn it in for repair just days before they need it.

AW... WE GOT
PLENTY O' TIME T'GET
THAT STUFF FIXED,
BONNIE...

YEH-- WE'LL LOOK AFTER
IT NEXT WEEK!

Bad idea for a couple of reasons. One, everybody else might be doing the same thing and support is suddenly overwhelmed.

Two, even if the CO doesn't hand you your head, there's the little matter of a real live emergency.

Maybe it's not the balloon going up...maybe it's "just" a natural disaster and your unit is picked to help. Are you the one who's going to tell your CO you're not ready 'cause your deuce-and-a-half needs a battery; or, 5 of your tents need patchwork; or, your FM radios have burned-up modules?

GULP! SORRY,
SIR...

...ER... OUR GEAR'S
AT SUPPORT!

YOU KNOW IT!
LET'S TRACK DOWN A COOL
ONE TO CELEBRATE!

HEY--GLAD
THAT'S OVER!

JUST A SEC,
TROOPS...

PS

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.

ISSUE NO. 340 MARCH 1981

FIREPOWER

8-15

T142 Track	8	M109A2	12
Transmissions	8	Ring Mount	
M4B/M60/M60A1 RISE 9	9	Brackets	12
Frozen Starters	10	Vulcan	13
M109	11	M240 MG	13
		M60 MG	14-15

GROUND MOBILITY

16-27

Basic Electricity	16-24	Oil Pressure Gages	25-26
		M911 C-HET	27

AIR MOBILITY

37-45

M129 Grenade Launcher	37	Electrical Connectors	42
Restraint Equipment	38-39	Cobra Washer Check	43
UH-60A	40-41, 43	Aviation Messages	43
Cleaning Materials	42	Chinook PM	44-45

COMMUNICATIONS

46-51

AN/VRC-12 Radio	46-50	AN/PVS-5 Goggles	51
		RATT Rig	51

TROOP SUPPORT

Torquing New Publications	2-7	Dispensing Pump	58
Hand Tools	28	CS Capsules	59
Abuse	29-36	Training Aids	59
CP Clothing	52-56	Watercraft	59
Air Compressors	57	MUST PM	60-61
290M Tractor	58	DA Form 2408-9	62-63
		DA Form 2408-13	64

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

RIGHT
NOW?

ER...

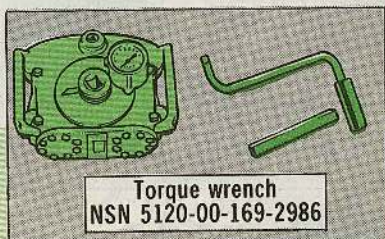


A torque wrench with multiplier gears and a readout dial and its reaction bar are authorized in your No. 2 Supplemental Shop Set.

Torque wrench NSN 5120-00-169-2986 comes with its own carrying case, a handcrank and a 6-in long $\frac{3}{4}$ -in square-drive bar. The 3-piece reaction bar is NSN 5120-01-008-3632.

This 1,200 lb-ft capacity wrench weighs about 19 pounds. Its 800:1 gear ratio means you need only 6-7 lb-ft input torque on the handcrank to get 1,200 lb-ft output torque at the nut. You let your fingers do the torquing.

Reaction bar
NSN 5120-01-008-3632



Torque wrench
NSN 5120-00-169-2986

THE WRENCH IS
SUPER ACCURATE
AND EASY TO
USE ...

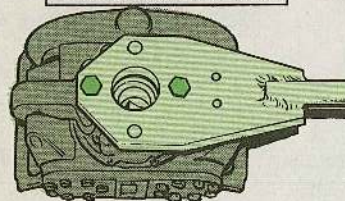
AND IT'S SAFER
THAN OTHER TORQUE
WRENCHES FOR
APPLYING HIGH
TORQUE ... OVER
200 lb-ft.

the
Torquing

HERE'S HOW TO
Get It Ready
FOR TORQUING...

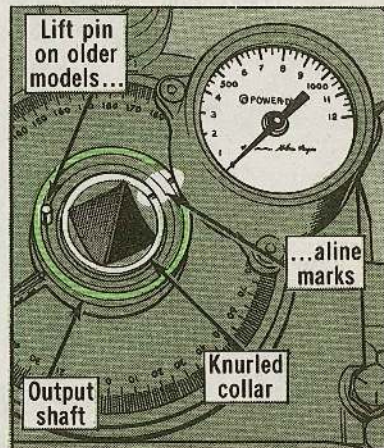
Mount the paddle-shaped reaction adapter to the base of the wrench. Use the shoulder screws provided.

**Mount reaction adapter
with shoulder screws**



Set the ratchet for clockwise output. Turn the knurled collar until the mark on the collar lines up with the mark on the output shaft. (On older models you have to lift the ratchet locking pin to turn the collar.) Insert the drive bar. Turn it clockwise to make sure the

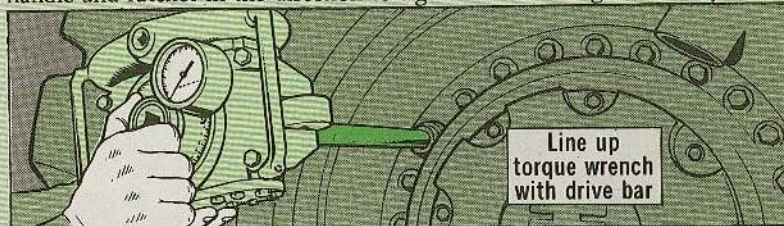
ratchet pawls have engaged. You don't want the ratchet to let go when you start to apply torque.



Run down the nut to be torqued until it's tight.

Place a 3/4-in drive socket on the nut. Put the drive bar in the socket.

Line up the torque wrench with the drive bar. You can use the torque wrench like a regular ratchet wrench to seat the nut. Just use the reaction bar as the handle and ratchet in the direction to tighten the nut. Tighten until you see



about 100 lb-ft on the dial.

Rotate the wrench until the reaction bar rests against a rigid surface. This is always in the opposite direction you're torquing. When you torque clockwise, the reaction is in the opposite direction—counterclockwise.

Now you're ready to torque.



USE THIS 3-step Torquing PROCEDURE AND YOU WON'T HAVE TO RECHECK TORQUE AGAIN!

1. Tighten the nut to the required torque. Take your hand off the handcrank and wait 1 minute. The torque will back off. This's because the torqued bolt's twist is relaxing and the thread surfaces are seating.

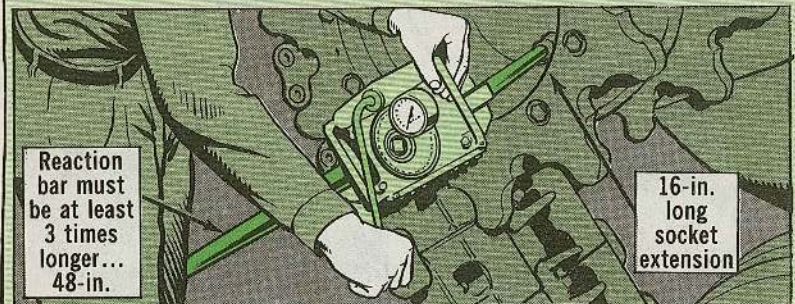
2. Retorque. Wait again 1 minute for the torque to back off.

3. Retorque. The torque should stay put.

HEED THE 3-to-1 Extension Rule

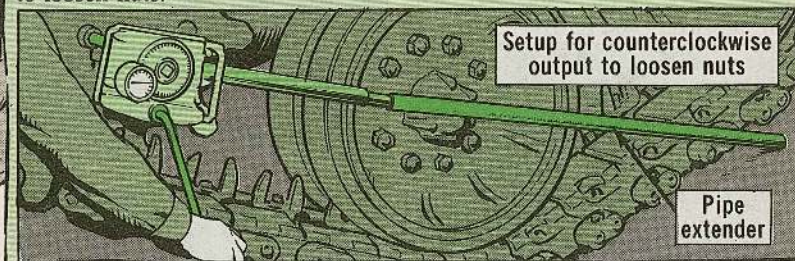
This wrench, unlike other torque wrenches, is made to work with extensions.

When you use socket wrench extensions, the reaction bar must be 3 times longer than the extension. For instance, if you're using a 16-in long socket wrench extension, your reaction bar must be at least 48 inches long. Since the reaction bar is only about 30 inches long, use a 3-5 ft length of iron pipe to extend it.



IT'S GREAT FOR Loosening Nuts, TOO!

You can use this torque wrench to loosen nuts, too. Turn the knurled ratchet collar in the counterclockwise direction. Turn the handcrank counterclockwise to loosen nuts.

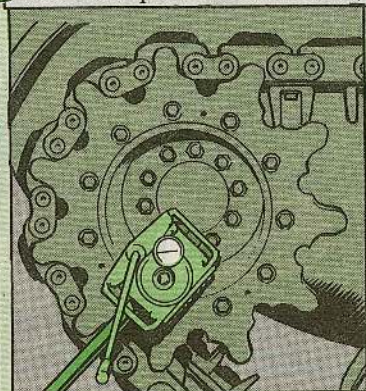


USE THE CORRECT Socket Wrenches

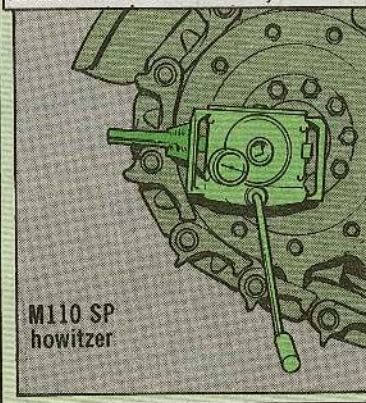
Standard 3/4-in square drive sockets are rated at 600 lb-ft. If your torque requirements are over 600 lb-ft, get heavy duty sockets and extensions. Impact wrench extensions and sockets are heavy duty.



1 Final drive sprocket nuts on tanks,

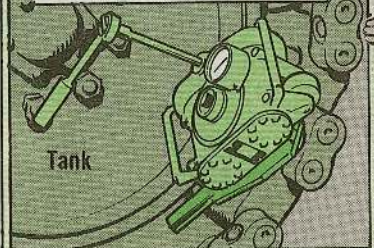


SP howitzers and recovery vehicles.

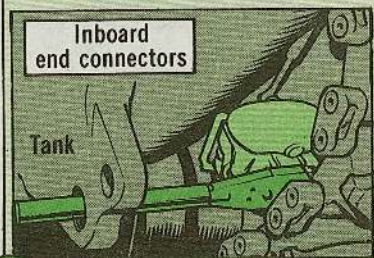


M110 SP
howitzer

2 T142 track end connectors.



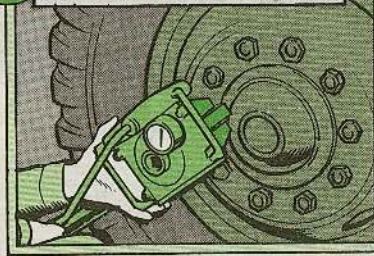
Tank



Inboard
end connectors

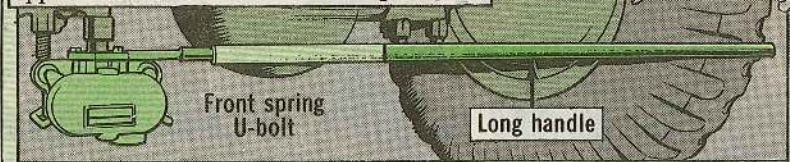
Tank

3 Tactical truck wheel lug nuts.



4 Front spring U-bolts on tactical trucks.

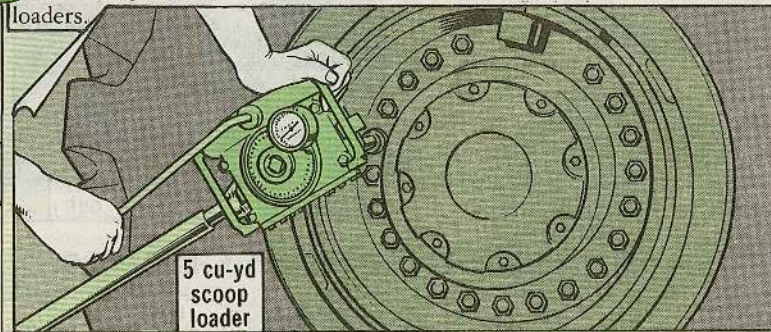
Use a long handle to react against the tire opposite the side the U-bolt is being torqued.



Front spring
U-bolt

Long handle

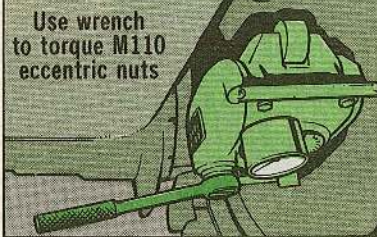
5 Wheel lug nuts on big-tired vehicles—like the Goer and the 5 cu-yd scoop loaders.



5 cu-yd
scoop
loader

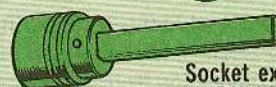
6 And you can use it to make the track adjustment for the M110 SP howitzers and M578 recovery vehicles. You have to put 600 lb-ft wet torque (oil on threads) on the trailing idler eccentric nuts to hold track tension. The eccentric nuts are under the vehicle. It's nearly impossible to get that much torque with the standard torque wrench. But this wrench'll do it.

You'll need a special reaction kit, tho. It's PN 1430. You get a reaction bar PN 1430-1 and an extension socket PN 1430-2. Use FSCM 30891 and order the kit from RIC S9C. It'll cost about \$373.00.



Use wrench
to torque M110
eccentric nuts

Reaction bar
PN 1430-1



Socket extension
PN 1430-2

OWWW!

Ring Off on Test Ring

B-BUT... HASN'T HE HEARD? THE HAMMER RING TEST HAS BEEN DELETED!

DEVERS?

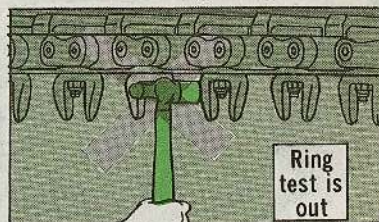
OH, HE'S TESTING HIS RING!

That blacksmith's delight, the hammer ring test for T142 track, has now been deleted.

Some tank -10 TM's have it in their Preventive Maintenance Checks and Services section and some do not.

In either case, the test has been deleted because of "inconsistency of results", according to TARCOM Msg DRSTA-MCA 281901Z Apr 80.

If it's in your PMCS, just skip over it and do the other tests. Skip it also in TB 43-0001-39-4 (Jan 80).



Transmission Torque Change

I'M GONNA TORQUE YER GEAR BANDS, WHY?

GOOD IDEA! BUT...

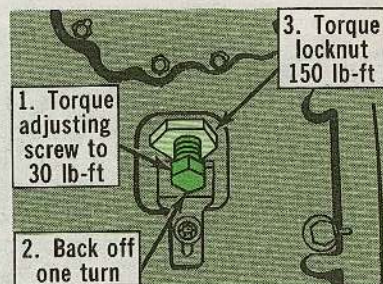
... HAVE YOU GOT TH' WORD ON TH' NEW TORQUE VALUE?

You hull mechanics on M48A5- and M60-series tanks need to know the new torque value for the low-range and reverse-gear bands of CD 850-5A and CD 850-6A transmissions.

Where the tank -20 or -20-1 TM says to tighten the adjusting screw to about 150 lb-ft, the new figure is 30 lb-ft.

Then you back off the adjusting screw 5 to 6 flats and you tighten the locknut to about 150 lb-ft, just as you are used to doing.

TB 43-0001-39-4 (Jan 79), page 2-8, had the word.



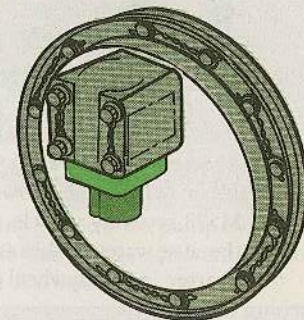
Left Fuel Tank Not "Right"

URRGH-HH!

SARGE TOLD MCKNAUGHT T' FIX YOUR PROBLEM WITH A FLIP-FLOP!



Unprotected electrical housing can lead to grief



The left fuel tank in all M48/M60-series vehicles has an unprotected electrical connector housing. People step on it, 'specially when the power plant is out of the vehicle, and they short-circuit the wires. This ruins both the capacitor and connector assembly and sometimes the electrical fuel pump inside the left fuel cell.

In any case, the fuel system won't work.

This is generally discovered only after the power plant has been put back in the vehicle.

So get your friendly hull mechanic to take care of it the next time the

Final to look like this

power pack is out.

He will flip-flop the capacitor and housing assembly so that the connector is pointing down instead of up.

You'll find this good stuff in the EIR Digest, TB 43-0001-39-3 (Oct 80).

So Blow That Smoke!

The CAUTION on page 2-521 of TM 9-2350-257-10-2 for M60A1 RISE and M60A1 RISE Passive Tanks is not necessary. Tests show that prolonged usage and short off cycles will not damage the solenoid valves of the smoke generating system.

Frozen Starters Won't

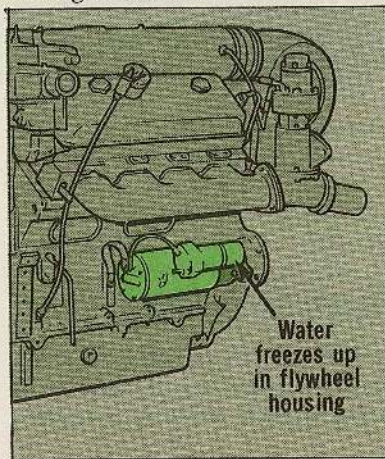
WHAT'SAMATTER WITH THIS THING, CONNIE? IT JUST WON'T START WHEN IT GETS BELOW FREEZIN'!

THIS LITTLE GASKET MAY LEAD TO A SPEEDY RECOVERY FOR YOUR VEHICLES, SOLDIER!



Yep! Frozen starters won't start your M109 or M110-series howitzers or your M578 recovery vehicle.

That's because water sloshes around in the starter and flywheel gear housing and freezes.



Water freezes up in flywheel housing

The water gets in because these vehicles have no flywheel-housing-to-transfer-case and starter-flange gaskets.

Your direct support unit will correct this problem with a mastic type sealant, NSN 8030-00-252-3391, between the flywheel-to-transfer-case housing, around each bolt hole and on the mating surfaces inside the bolt circle.

The starter flange gasket, NSN 5330-00-980-1546, is listed in the organizational maintenance manuals and as Item 75 in Fig B-2 on page B-12 of TM 9-2815-202-34&P (Aug 80).

ORGANIZATIONAL MECHANICS SHOULD INSTALL THIS GASKET WHENEVER THEY FIND A STARTER WITHOUT ONE!

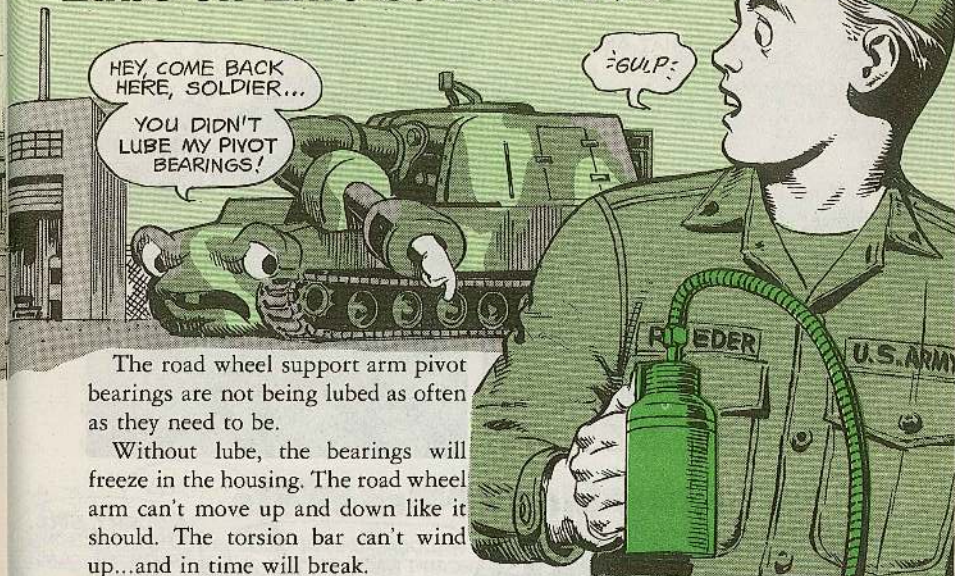


Lube on Line Saves M109

HEY, COME BACK HERE, SOLDIER...

YOU DIDN'T LUBE MY PIVOT BEARINGS!

"GULP!"



The road wheel support arm pivot bearings are not being lubed as often as they need to be.

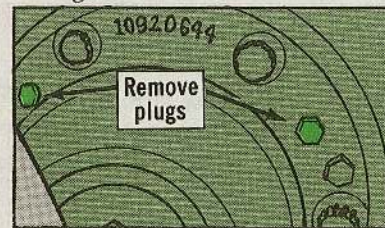
Without lube, the bearings will freeze in the housing. The road wheel arm can't move up and down like it should. The torsion bar can't wind up...and in time will break.

Getting out a frozen bearing and a broken torsion bar is one tough job.

LO 9-2350-217-12N, Note 31, calls for a semiannual service. The lube points are oil can points and you have to pull pipe plugs to lube. Some troops forget them—or won't take time to lube the arms.

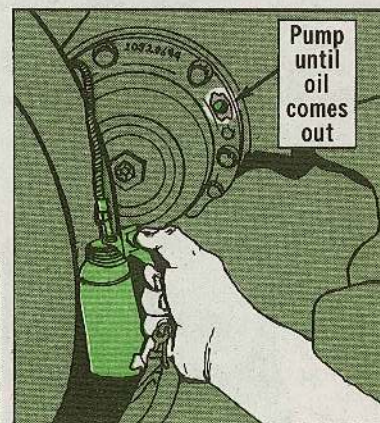
It only takes a few minutes and a few cents worth of oil. Here's how:

Pull both plugs on each support arm bearing.



Remove plugs

Using a hand oiler, pump OE/HDO oil into one of the holes until it runs out of the other.



Pump until oil comes out

Clean and put the plugs back; wipe off the excess oil.

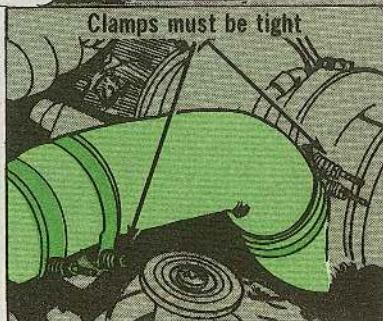
Turbo Hose Goes



You can lose your turbo-charger-to-blower hose real quick. Vibrations work it loose and it'll come off.

Dust 'n' dirt will get in the blower...and in your engine. They'll grind your engine's moving parts to bits.

Keep the clamps on both hoses tight.



Ring Mount Brackets



Dear Half-Mast,

Our shipment of .50-cal machine guns and M36A2 ring mounts didn't have mounting brackets to fasten the mounts to my M35A2 2½-ton truck cab. What hardware do I need?

SSG J.R.M.

Dear Sergeant J.R.M.,

The mounting brackets were left out of the ring mount package.

HERE'RE THE NSN'S AND THE QUANTITY OF ITEMS YOU NEED...

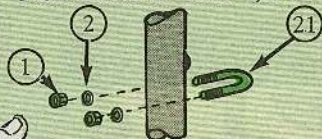


Bolt, U-post, NSN 5306-00-772-4443 (4)

Nut, plain, NSN 5310-00-842-1490 (8)

Washer, flat, NSN 5310-00-809-3079 (8)

Fig C-15 of TM 9-1005-245-14 shows these as Items 1, 2 and 21.

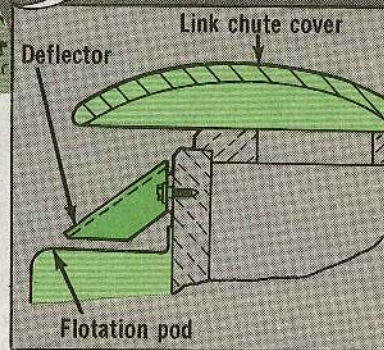


Prevent Link Pile Up



Spent links can jam the link disposal system on your M741 SP 20-MM anti-aircraft artillery gun chassis. The links pile up on the top of the flotation pod.

But your mech can fix it for you. He'll put a link deflector under the link chute cover. TB 43-0001-39-1 (Apr 80) tells him how to do it.



Dear Half-Mast,

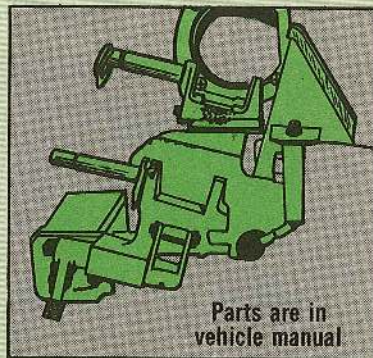
I need parts for the M240 machine gun mounts, but I can't find a parts manual on them. Can you help?

SGT R.D.F.

Dear Sergeant R.D.F.,

Sure can. Parts for the M240 mounts are listed in the parts manuals for the vehicles in which the mounts are attached. The mounts and parts are considered a part of the vehicle. For example, if you've got an M60-series tank, look in the tank's parts manual.

Half-Mast



M60 MG Reminders



A little lube, a little caution and a lot of common sense can keep your M60 machine gun ready in any climate.

Here're some common problems and the ways to cure them:

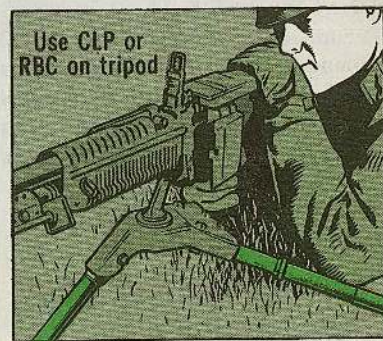
Improper cleaning and lubing put weapons down. The cure, naturally, is to do the job right...by using only authorized cleaners and lubes. If you've got a doubt, check your pub.

When you clean, steer clear of the trap that has put many weapons down. Do not use abrasives, such as the Scrunge pad you can pick up in the PX, steel wool and so forth.



Forget abrasives. They might remove rust, but they also remove the weapon finish. That means the rust'll come back with a vengeance. Best bet, dab LSA or CLP (the new cleaner/lube/preservative) on a cleaning patch and rub it in till the rust is gone. Then put fresh lube on the area.

The caution goes for your tripods, too. Many of them get rusted from water baths and bouts with scouring pads. For tough rust, use RBC or CLP...and save the finish.

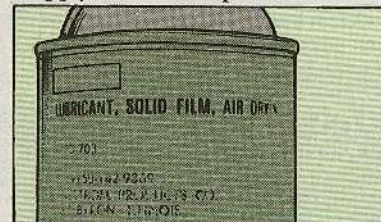


WOT'S HE BEEFIN' ABOUT?

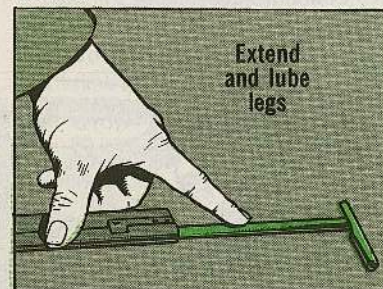
I LUBE HIM ONCE A MONTH!

NOT GOOD ENOUGH, SOLDIER... YOU'VE GOT TO LUBE AT THE FIRST SIGN OF RUST!

Armorer's can apply solid film lubricant on problem areas...and reapply it till the weapon is refinished.

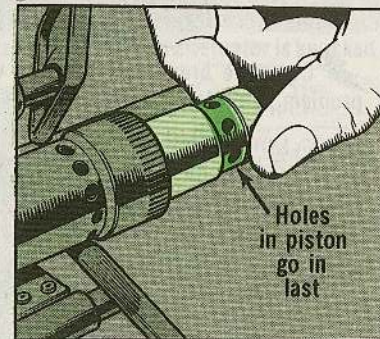


Bipods on the M60 tend to bind if overlooked during lubing. Don't forget the pivot assembly...and extend the legs and lube them, too. That way, the bipod won't be jammed when needed.



One constant problem area is the gas piston. Gunners and armorers put it in wrong...which means one shot gets off and that's it.

Doing it right is easy. The gas piston end with the holes (gas ports) goes in last. The holes match those in



the gas cylinder attached to the barrel. In other words, the end with the holes goes toward the rear of the barrel...away from the muzzle.

For M60's in humid or rainy areas, once a month lubing is a must. Twice a month will really cut down rust. In other words, TM's are for general conditions, but your SOP should adapt to where you are.

If rust pops up more often, lube more often. There's no magic formula for preventing it.



May the
Force
Be With
You...

Getting E!



A LOT
OF ARMY
EQUIPMENT
SUFFERS FROM
ELECTRICAL PROBLEMS
JUST BECAUSE A LOT
OF PEOPLE DON'T
KNOW HOW THEIR
ELECTRICAL
SYSTEM
WORKS!

Complete breakdown happens when operators fail to spot a simple problem like a loose battery cable—and the engine won't start.

YOU GUYS
SURE TOOK LONG
ENOUGH --

I'VE BEEN
WAITIN' 5 HOURS

THIS HEAP
WON'T EVEN TURN
OVER!

LOOK HERE--ALL YOU
HAD TO DO WAS TIGHTEN
UP THIS BATTERY CABLE!
NO SWEAT!!

IF YOU'D CHECKED IT BEFORE
YOU STARTED, YOU WOULDN'T
HAVE HAD ANY TROUBLE AT ALL!

Components are replaced needlessly when mechanics fail to troubleshoot thoroughly—and miss a simple problem like a poor ground connection.

HEY, WAIT A MINNIT
BEFORE YOU TRASH-
CAN THAT GAGE!

DID YOU CHECK TO SEE
IF IT HAD A GOOD GROUND
CONNECTION TO THE
INSTRUMENT PANEL?

GROUND?
WOT'S THAT?

ectricity Across

Equipment is damaged or even ruined when maintenance-types don't know the difference between "positive" and "negative" or the difference



M'GOSH, YOU
REALLY DID IT!

YOU BLEW THE ALTERNATOR
BY HOOKING UP THE CABLES
BACKWARDS!

AND, TO TOP IT
OFF, YOU'RE TRYIN'
TO JUMP A 12-VOLT
SYSTEM FROM A
24-VOLT SYSTEM!

between voltage testing and resistance testing—and an alternator is knocked out or a multimeter is wrecked.



HE SAID SUMPIN' ABOUT THE
MULTIMETER BEIN' SET WRONG...

I WUZ CHECKIN'
VOLTAGE, BUT
I HAD IT SET
FOR RESISTANCE!

And, for some troubleshooters, the electrical wiring diagram (schematic) in their TM has no more meaning than the muddy trail of a wandering earthworm. How about you? Do you know the symbol for a chassis ground? Do you know what a chassis ground is?



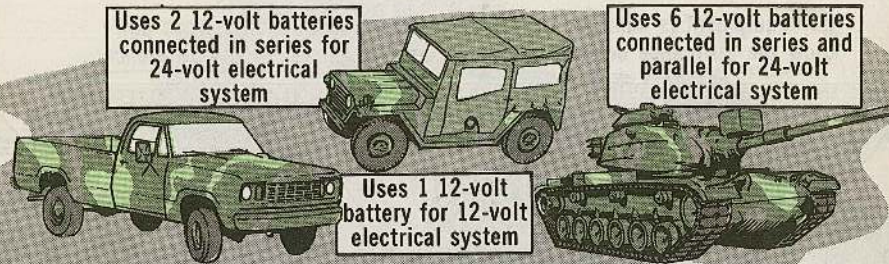
I B'LIEVE I
COULD FOLLOW
THIS... CAN
YOU?

WOT' TH' HECK
IS IT...

...SOME KINDA CRAZY
BOARD GAME?

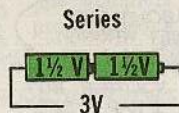
It Starts at the Beginning

Your equipment's electrical system starts in the battery (or batteries, if there's a combination of batteries connected in parallel or in series—or both).

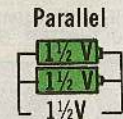


These vehicle batteries are made up of 6 cells. Each cell produces 2 volts. The cells are connected in "series" inside the battery. In a series connection, the voltages are added. So the total voltage of the battery is 12 volts.

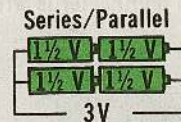
To understand "series" and "parallel" battery hookups, let's start with ordinary 1-cell flashlight batteries. These batteries produce only 1½ volts.



The voltages are added. This is the 3-volt power supply in a common 2-cell flashlight.

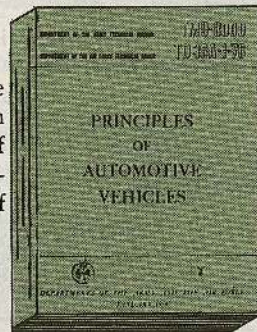


Total voltage stays at 1½ volts. This 2-cell power supply lasts longer than 1-cell.

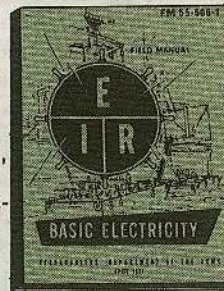


Each "series" pair is 3 volts. When the 2 pairs are connected in "parallel", the voltage stays at 3 volts. But it's a long-life 3-volt power supply

You can get the whole story on "Basic Principles of Electricity" in TM 9-8000, Principles of Automotive Vehicles, page 151.



Even better is FM 55-506-1, basic electricity!

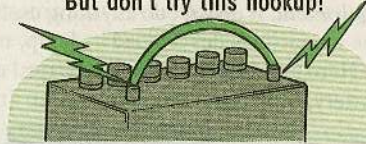


22AP 77
506-2 Marine
engine motor
210C HND8C

Energy Flows In Complete Circuit

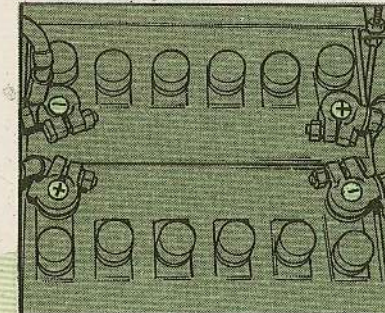
Take a look at your battery. You'll find + (for positive) on top of one post. Or the + is on the case next to the post. Or POS is printed next to the post. The other post is identified by - or NEG (for negative).

But don't try this hookup!



It's a "short circuit"—the wire'll get mighty hot. You could get hurt!

You can control energy flow through a circuit with an ON-OFF switch. With the switch ON, energy will flow through the circuit until the battery's discharged—dead. You'll discover this the hard way if you leave



Inside your battery is chemical energy—waiting to be turned into electricity.

This energy stored in your battery wants to get across from the negative (-) post to the positive (+) post. But it



can't get across unless there's a connection—like a wire—from one battery post to the other. The wire completes the circuit. As battery energy moves through a complete circuit, the energy becomes electricity.

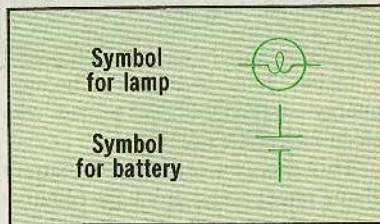
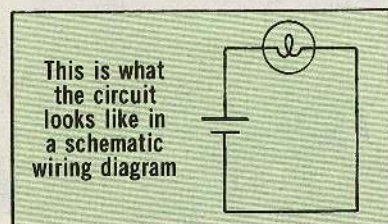
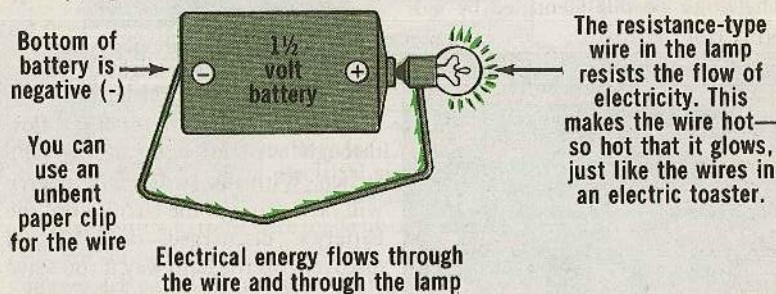
your headlights turned ON when you shut down your engine. You'll come back to a dead battery—and you won't be able to start your engine.

Your battery can be recharged and given new life.

Electricity at Work

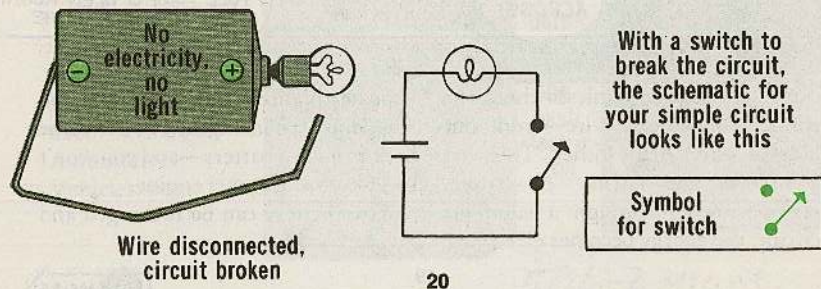
A wire connecting the battery posts is not a circuit you'll find in your equipment. It doesn't do anything useful. Electricity goes to work for you when the circuit includes a "load"—lamp, motor, gage, etc.

Here's a simple working electrical circuit using only an ordinary flashlight battery, a piece of wire and a lamp (the load):



One end of the wire contacts the negative (-) end of the battery. The bottom of the lamp base contacts the positive (+) end of the battery. The other end of the wire contacts the side of the lamp base. The lamp lights up! Touching the wire to the lamp and then removing it is the same as operating an ON-OFF switch.

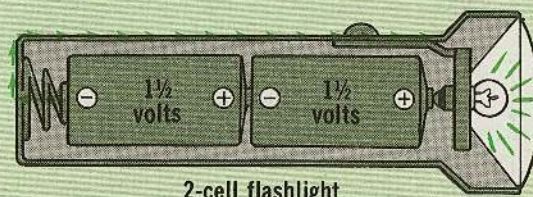
Most of the electrical circuits in your equipment work pretty much the same way.



Chassis Ground—"2nd Wire"

A flashlight that has a metal case is a lot like the electrical system in your truck, tank, generator, etc. The metal case is part of the electrical circuit—just like the chassis (frame, engine and instrument panel) of your truck or the hull of your tank or personnel carrier. Most of the electrical components in your equipment are chassis grounded.

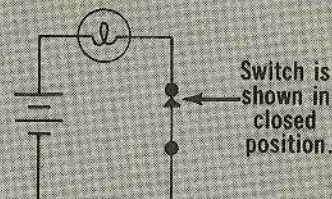
Electricity travels thru the contact spring... thru the metal case... thru the closed switch... thru the contact plate where the lamp's screwed in... thru the side of the lamp base and thru the lamp wire.



Series connected batteries

This flashlight uses a lamp rated at 3 volts. This is because the 2 batteries are connected in "series". The voltages of the batteries are added... to give a power source of 3 volts.

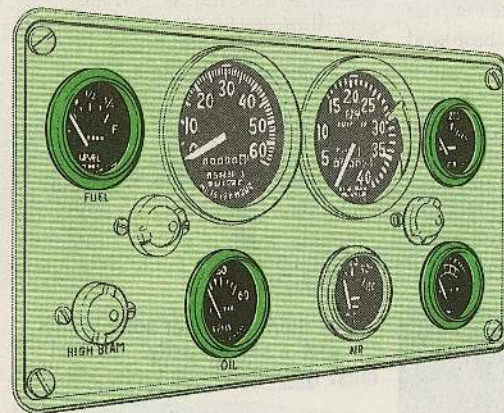
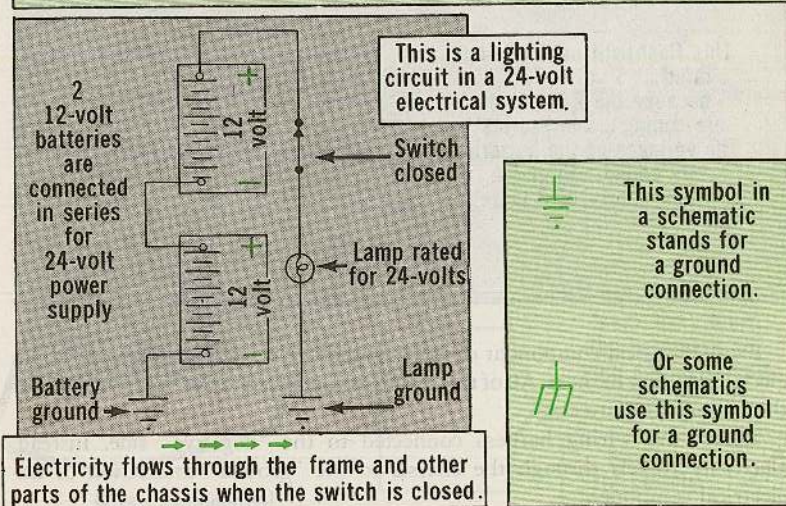
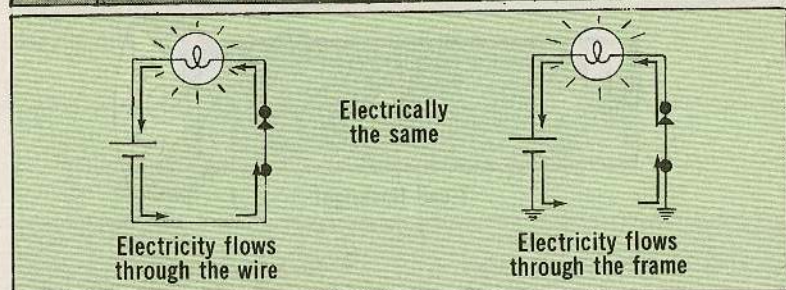
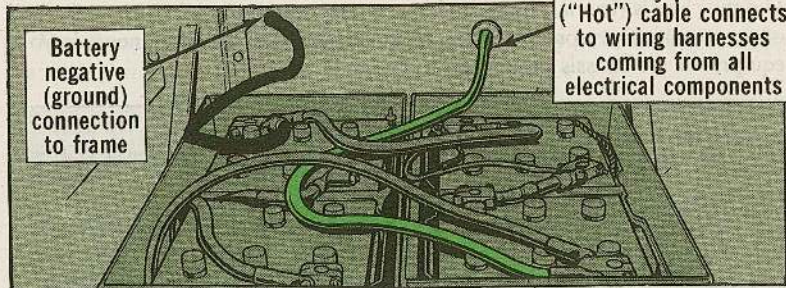
The schematic for this flashlight shows 2 battery-cells.



Every electrical component of your equipment is connected by wire to an electrical wiring harness. All of this wiring is connected to the "positive" side of the battery (or batteries).

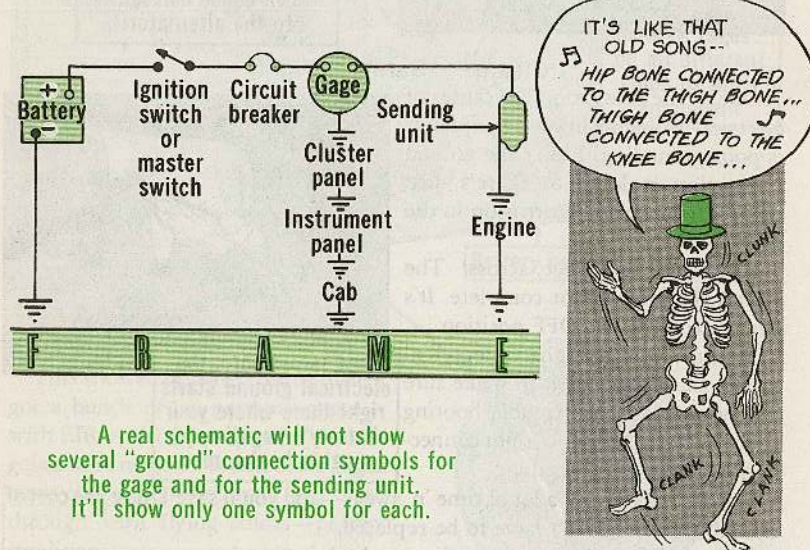
There's no wiring harness connected to the "negative" side. Instead, electricity travels through the chassis to the "ground" connection of the electrical component.

In some equipment, the battery "negative" (ground) cable is connected directly to the frame. In others, the ground cable is connected to the engine—and, of course, the engine is connected to the frame.



There are no wires connecting these electrically-operated gages to ground. There's just metal-to-metal contact—the gage case (or mounting bracket) to the gage cluster panel...the cluster panel to the instrument panel...the instrument panel to the truck cab...the cab to the frame

A "sending unit" is in the circuit for certain gages, like the oil pressure gage. Oil pressure controls the amount of electricity going through the sending unit. This electricity controls the electricity that operates the gage. That's how low oil pressure makes the gage show a low pressure reading.

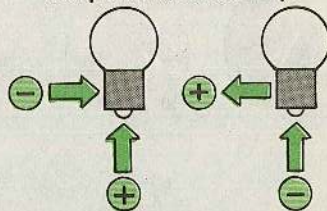


A real schematic will not show several "ground" connection symbols for the gage and for the sending unit. It'll show only one symbol for each.

"Polarity" and Your Alternator

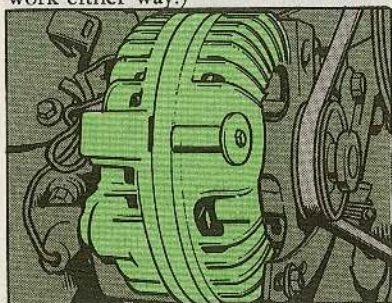
You can light a lamp using only a wire from the battery positive (+) post to the bottom of the lamp base and then touching the side of the lamp base to clean, bare metal almost anywhere on your equipment. (Or you can make the positive (+) connection at the side of the lamp base and then ground the bottom of the lamp base. Most—but not all—of the electrical components in your equipment will work either way.)

The direction of current flow makes no difference in some electrical components, like a lamp.



But there are other components with a set "polarity." Current must flow thru in only one direction.

Your alternator is one thing that can't take "REVERSE POLARITY"... Battery cables or jumper cables hooked up wrong can cause damage to the alternator!



Clean! Bare! Tight!

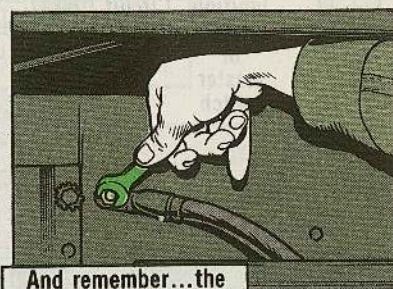
One of the most common causes of electrical problems in your equipment is poor grounding. Either the ground connection is loose or there's dirt, paint, grease, rust or corrosion in the connection.

Electricity can't get across! The electrical circuit is not complete. It's like a switch in the OFF position.

When you've got electrical problems, always check to make sure the component you're troubleshooting is properly grounded—a tight connection to clean, bare metal.

You'll save yourself a lot of time 'n' sweat—and you'll save Uncle the cost of components that don't have to be replaced.

Best of all, you'll get your equipment back into action.



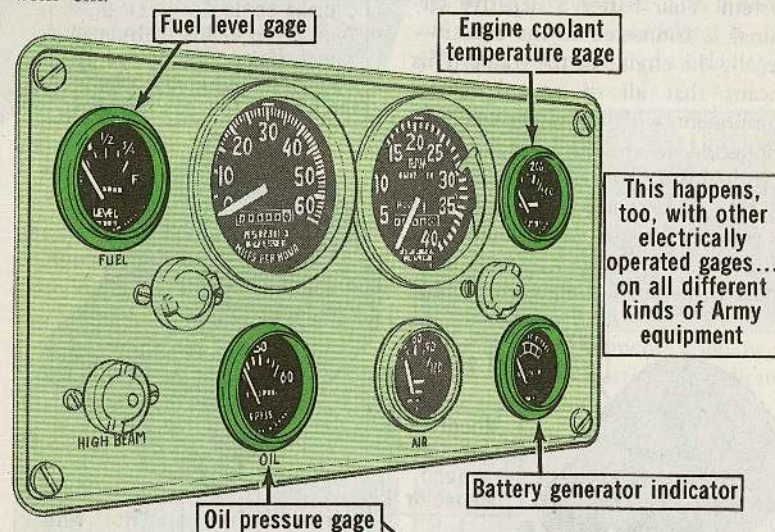
And remember...the electrical ground starts right there where your battery's negative (-) cable hooks up!

Oil Pressure Gage...

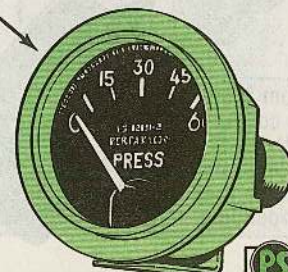
Getting Back to Ground Rules

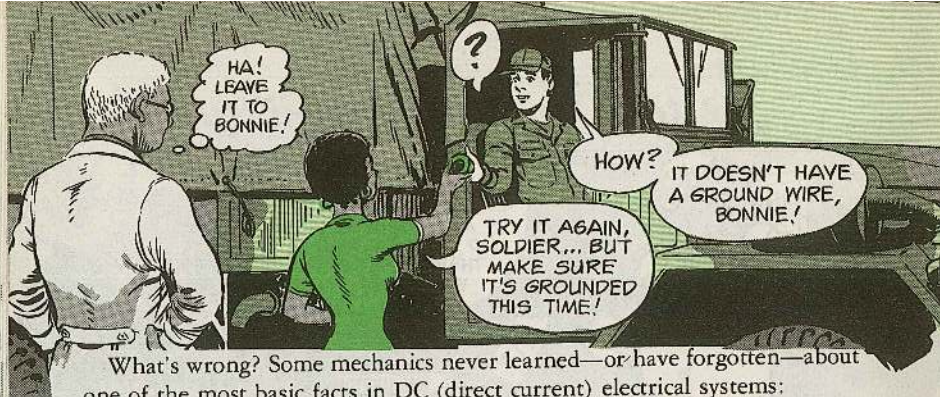


A lot of oil pressure gages are being tossed out when there's nothing wrong with 'em.



This showed up when the headshed got a bunch of oil pressure gages—with EIR's—from troops who said the gages were no good. When these gages were checked out, many of 'em came through with flying colors—perfect condition.

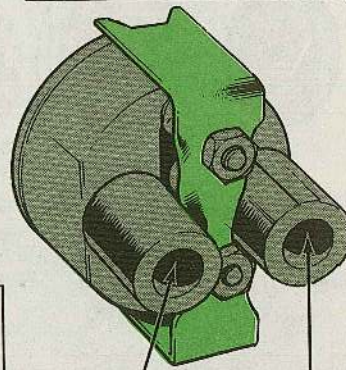




The chassis of your equipment is the "second wire" in the electrical system. Your battery's negative terminal is connected to the chassis—usually the engine or the frame. This means that all of your electrical components with "chassis ground" are connected to the battery's negative terminal through the chassis.

That oil pressure gage, for instance, is connected to ground by the mounting bracket. The mounting bracket must make solid contact with clean,

At least 1 of the 4 points on the mounting bracket must make contact with clean, bare metal of the instrument panel. Make sure! Scrape off paint, dirt or grease where the bracket touches the panel



Gage inserted thru instrument panel

Mounting bracket and ground connector

"Hot" wire connection from sending unit

"Hot" wire connection to positive side (+) of battery

The bottom mounting stud is connected directly to the electrical system inside the gage for grounding

bare metal—no paint, dirt or grease. Poor contact between the mounting bracket and the chassis means poor—or no—contact with the battery's negative terminal. The gage won't work!

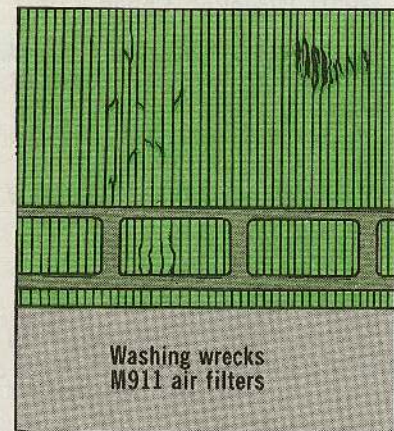
M911 C-HET...

Don't Clean Air Cleaners

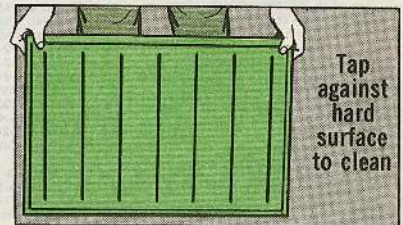


Those are throw-away air filter elements on the M911 C-HET. You don't clean 'em.

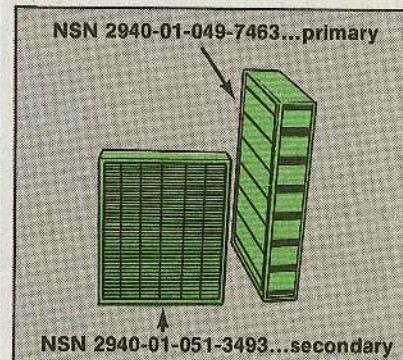
TM 9-2320-270-20, Page 3-6, Task 13, says to clean the elements with compressed air or by washing them. Both methods are taboo. Fibers are disrupted—some filtering capability is lost.



What you do is take out the filter elements quarterly. Tap them lightly against a hard surface. This'll knock off the outside particles. If the elements are punctured or damaged, replace 'em.



Replace both elements annually or when the air restriction indicator turns red. Here they are:





This is a selected list of recent pubs of interest to organizational maintenance personnel. This list is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4, DA Pam 310-6 and DA Pam (C) 310-9.

TECHNICAL MANUALS

C 2, TM 5-3805-250-20P Sep Loader, scoop type 2-1/2-cu-yd J. I. Case Mod MW 24
C 2, TM 5-3805-251-12 Nov Loader, scoop type, DED, 2 1/2-cu-yd, J.I. Case Mod MW24B
TM 5-3805-254-14&P-1 Aug Truck, dump, 20-ton, IHC Mod F-5070 (CCE)
C 3, TM 5-3895-271-20P Sep Roller, motorized; GED 3 rolls; Buffalo-Springfield Mod KX-25E (A86)
TM 5-3895-371-10-HR Aug Bituminous

distributor M918, Mod D-63
TM 5-3695-372-20 Aug Concrete-mobile mixer body M919, Mod 6 CM-24/F
TM 5-4120-367-14 Nov Air conditioner, horiz, compact, 18,000-BTU Mod F18H KECO
C 1, TM 5-4310-358-24P Oct Compressor, air, recip 5-CFM Champion Pneu Mach Co
C 1, TM 5-4310-451-14&P Oct Compressor, air, rotary screw, 750-CFM Sullair Mod 750DP
C 2, TM 5-4320-272-12 Nov Pumping assy, flammable liquid, 350-GPM Peabody Barnes Inc. Mod US3TACG
C 1, TM 5-4930-225-12&P Sep Nozzle assy, E.B. Wiggins Mod CCN 101/13
TM 5-5420-204-10 Oct MOFAB transporter
TM 5-5420-210-10 Nov MAB transporter
C 1, TM 5-6115-596-14 Oct Generator set: GED, 4.2-KW
TM 5-6115-596-24P Sep Gen set, GED 4.2-KW, 28V
TM 9-2320-209-10-2 Sep 2-1/2-ton trucks (multifuel)
TM 9-2320-209-10-3 Sep 2-1/2-ton trucks (multifuel)
TM 9-2320-211-10-3 Sep 5-ton, M39-series trucks (multifuel)
TM 9-2320-242-10-1 Sep Truck, 1-1/2-ton, M551 and ambulance M792
TM 9-2320-242-10-4 Sep Truck, 1-1/2-ton, M551 and ambulance M792
C 6, TM 9-2320-266-10 Sep M880-series truck
TM 9-2330-356-12&P Oct Semitrailer, tank, 5,000-gal, M957; fuel disp M959; fuel disp underoverwing aircraft M970
TM 9-2350-222-20-2-3-1 Sep M728 CEV
TM 9-2350-222-20-2-3 Sep M728 CEV
TM 9-2350-260-20-2-2 Sep M60 tank
C 2, TM 10-3930-603-20P Dec Tractor, GED, 4-wheel, 4,000-lb Northwestern Motor Co. Mod JG-40P74
TM 10-3930-638-24&P Oct Truck, forklift, DED, 4,000-lb cap RT, Army Mod MHE 237
TM 11-5820-401-10-4 Oct RT-246 (*) & RT-524 (*) receiver-transmitters
C 2, TM 11-5820-477-12 Oct AN/GRA-39, -39A and -39B radio set control groups

TM 11 5820 882 10 HR Oct AN/PRC-68 radio set
TM 11-5895-1047-23P Oct AN/TRS-2 (V) 1-6 platoon early warning sys
TM 11-5895-1051-24P Nov AN/ALQ-147A (V) 1, 2 countermeasures set
TM 11-6130-412-20P Nov PP-2926D/U battery charger
TM 11-6625-2946-14 Sep TS-3354/PRC-68 test set
C 4, TM 55-1510-209-23-2 Mar 80 U-21A, RU-21A and RU-21D
C 16, TM 55-1520-210-23-1 Nov UH-1D/HV/HI-1H
C 6, TM 55-1520-210-23-2 Aug UH-1D/HV/HI-1H
C 9, TM 55-1520-210-23-2 Oct UH-1D/HV/HI-1H
C 23, TM 55-1520-219-20 Nov UH-1B
TM 55-1520-220-23-1 Sep 80 UH-1C/M
TM 55-1520-220-23-3 Sep 80 UH-1C/M
C 5, TM 55-1520-221-23-1 Nov AH-1G, AH-1H
C 2, TM 55-1520-227-23-5 Aug 80 CH-47B and CH-47C
TM 55-1520-228-PMD Aug OH-58A/C
C 12, TM 55-1520-234-23-1 Nov AH-1S (mod)
C 5, TM 55-1520-235-CL Nov OH-58C
C 1, TM 55-1520-236-23-2 Oct AH-1S (prod), AH-1S (EGAS), AH-1S Mod Cobra

MISCELLANEOUS

C 6, AR 710-2 Oct Supply
DA Form 12-4 Nov Pinpoint order for admin pubs other than regs and cir; replaces DA Form 12-4 (Aug 75)
ML-A Dec Management data list (ML) (fiche)
PAM 310-3 Oct Index of FM, training pubs (fiche)
PAM 310-99 Oct Index of obsolete pubs (fiche)
SC 5180-90-CL-N26 May Tool Kit, general mechanic's automotive
SC 5180-90-CL-N26-HR May Tool kit, general mechanic's automotive
SC 6420-97-CL-E52 May Bridge, fixed: Hy, AL UK med girder bridge
SC 5420-97-CL-E52-HR May Bridge, fixed: Hy, AL UK med girder bridge
TB 43-180-1 Oct Calibration

Circuit Tester Bulb

NSN 6240-00-019-3102 will get you the light bulb for the Firing Circuit Tester NSN 1015-00-446-6231 used with M60 and XM1 tanks.

M151 Companion Flanges

Differential Flanges NSN 2520-00-912-3056 are in short supply. You're in for a long wait if you need one. If the U-joint end is still good, use the flange seal and wear sleeve kit, NSN 2520-01-054-0803. The kit has seals and wear sleeves for all the differential flanges. Pages 38-39 in C5 to TM 9-2320-218-20 tell you how to install the sleeves.

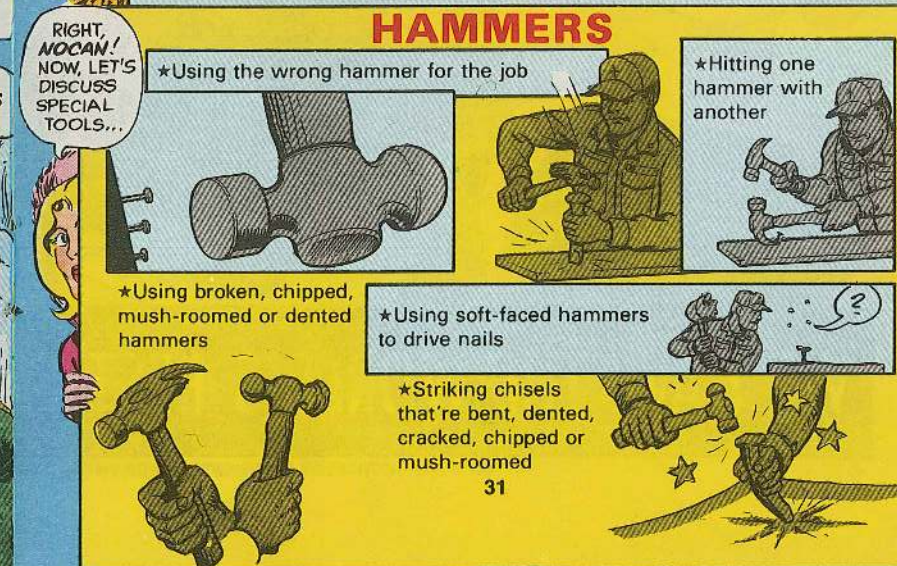
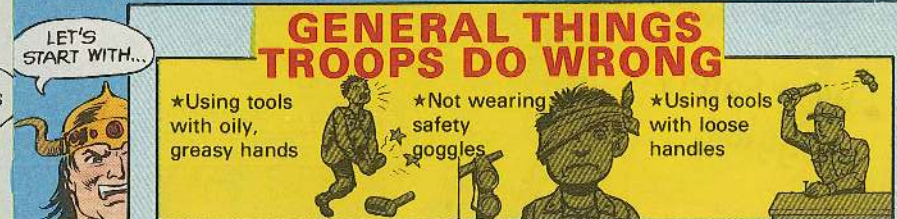
M819 Wrecker Speed Limit

Don't drive those M819 5-ton tractor wreckers over 30 MPH. The front tires could blow out! The wrecker's too heavy for the front tires, causing early tire failure. To be on the safe side, keep your speed down to no more than 30 MPH. TARCOM Msg DRSTA-CZ051430Z May 80 has the word.

Mask Carrier in Stock

The M15A1 mask carrier is in the supply system again. So, you can stop making emergency repairs on those bum snap fasteners. Turn in your unserviceable carrier and get a replacement, NSN 4240-00-933-2533.





The logo for 'Joe's Dope Sheet' features the word 'Joe's' in a stylized, red, bubbly font with a yellow outline, set against a yellow circular background. To its right, the words 'Dope Sheet' are written in a yellow, sans-serif font on a dark brown rectangular background.

Joe's

Dope Sheet

- Save Your Sight
- Use Right Tools
- Wear Safety Goggles

Tools help take the sweat out of work...
A person who'd abuse them's a jerk!
With a little instruction
You can head off destruction:
Correct use is a job you can't shirk!

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.

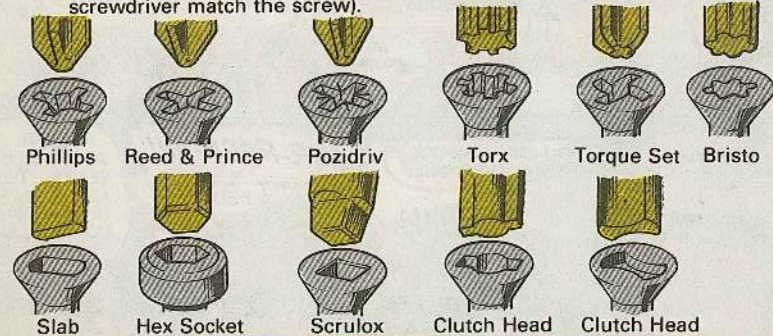
HERE ARE SOME COMMON ERRORS
MADE WITH SCREWDRIVERS...

SCREW DRIVERS

*Mismatching screwdrivers to the heads of screws:

- 1 A tip that's too narrow bends or breaks.
- 2 A rounded or worn tip rides out of the slot.
- 3 A tip that's too thick chews up the slot of the screw.
- 4 A chisel-ground tip rides out of the slot.
- 5 A tip that's too wide tears up the wood.
- 6 The right tip fits snug in the slot.

*Using flat-tipped screwdrivers on recessed slot screws (make the screwdriver match the screw).



*Using screwdrivers as chisels, punches, pry bars and scrapers



*Using screwdrivers with worn or broken handles

*Driving screws into material without making a pilot hole



*Using screwdrivers near a live wire or for electrical testing



*Starting screws in hard to reach places without a screw holding tool.

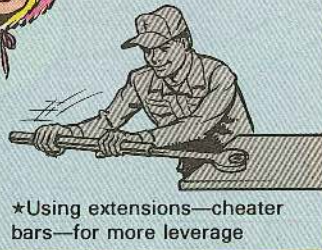


*Using pliers on screwdriver handles for more holding power.



HERE ARE SOME NO-NO'S WHEN
WORKING WITH WRENCHES AND PLIERS!

WRENCHES/PLIERS



*Using extensions—cheater bars—for more leverage

*Mismatching wrench openings and the fasteners

*Using pliers and wrenches with plastic handles for electrical work

*Using the wrong kind of wrenches on fasteners



*Using the wrong kind of sockets with wrenches ...like using hand sockets on power drive or impact wrenches

*Using hammers on box or open-end wrenches.



Power
Impact



*Over torquing

*Under torquing

*Using pipe wrenches for bending, raising or lifting pipe



*Using open-end wrenches to break torque or loosen nuts

*Using adjustable wrenches to free nuts



*Using hammers on pliers to cut wire or tighten jaws

*Using torque wrenches as hammers or pry bars

*Using pipe—or cheater bars—for more leverage on locking pliers



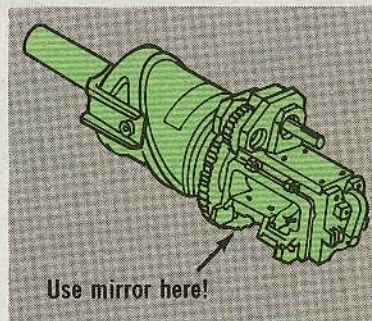
Then, with the ejection chute already removed, use inspection Mirror NSN 5120-00-448-2455 in the chamber, inserting it thru the bottom of the chamber. The mirror is part of your Tool Set, Aircraft Armament Repairman, NSN 4933-00-987-9816.

When a Cobra comes in to roost with a live round in the barrel of your M129 grenade launcher, it's bad news.

There's no way you armorers can safely remove the 40-MM round so you have to call in the ordnance disposal types.

How do you determine if you have a live round? You surely don't want to peek into the barrel...could ruin your whole day!

Instead, follow the clearing info in Para 2-22 a thru g of TM 9-1090-203-12 (Jan 76).



If you don't see daylight, there's a round in the barrel—for real!

YOU'RE the DOCTOR!

With the 5-year service life removed from all aircrew restraint equipment, it's now a condition item. Use the equipment as long as it passes your eagle-eye inspection.

TSARCOM Msg DRSTS-MAPL (1) 021950Z Jun 80 removed the 5-year service life.

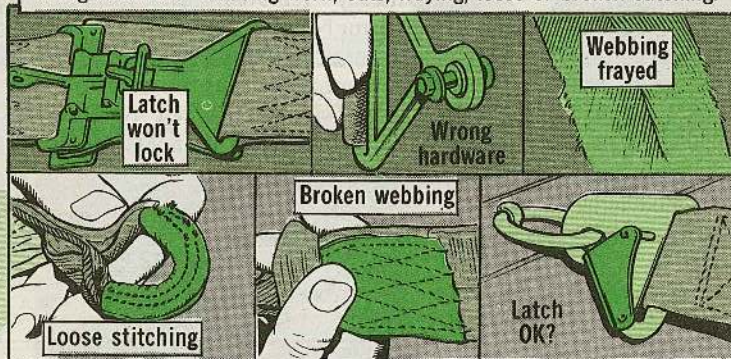
You can go thru checks of safety belts, shoulder harnesses, restraint harnesses and hardware in no time when you know what to look for.

DURING THE PREVENTIVE MAINTENANCE DAILY, LOOK FOR THESE FAULTS...



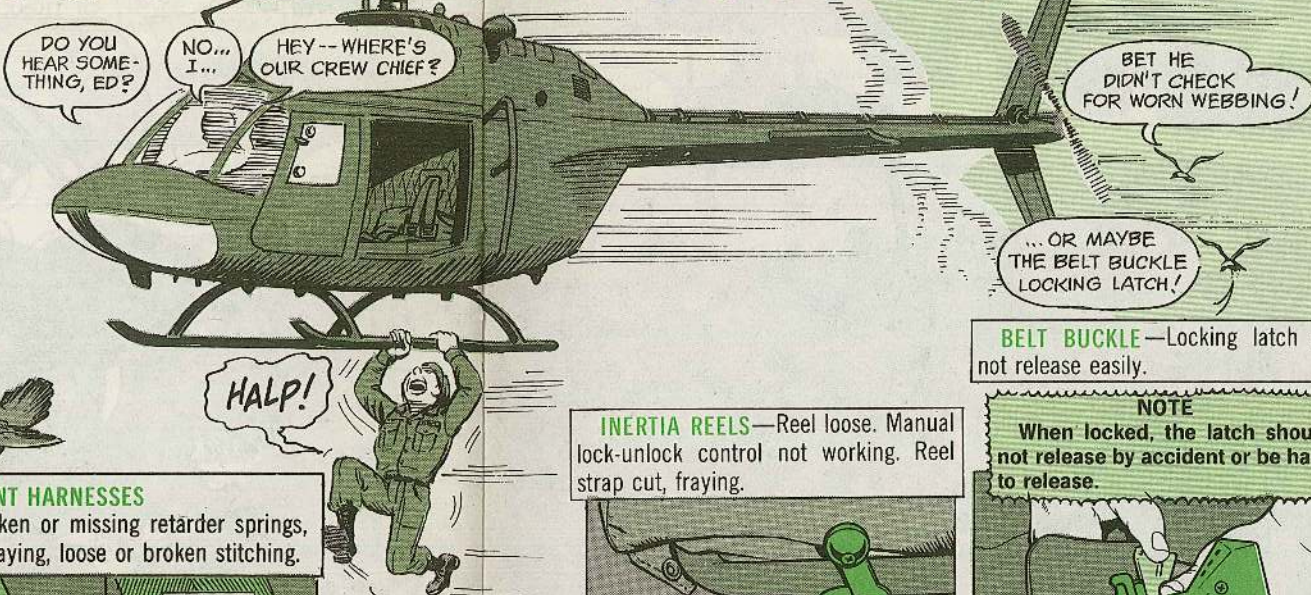
UNDER RESTRAINT HARNESSES

—Loose bolts, latch lock broken, broken or missing retarder springs, wrong hardware. Webbing worn, cuts, fraying, loose or broken stitching.

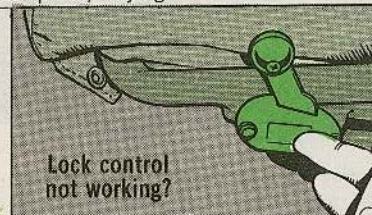


NOTE ON ALL WEBBING

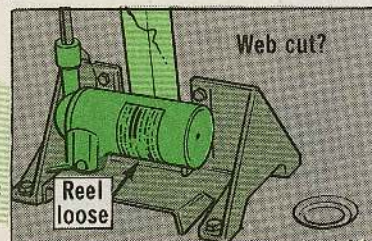
Replace any webbing or fabric that has been in contact with grease, oil, fuel, liquid oxygen, strong caustic soaps, acid or abrasive material or shows any signs of damage, deterioration or discoloration. Replace restraint assemblies made of cotton webbing, except the leg garter assemblies on the OV-1.



INERTIA REELS—Reel loose. Manual lock-unlock control not working. Reel strap cut, fraying.



Lock control not working?



Reel loose

Web cut?

NOTE

Sunlight discoloration or fading of webbing that causes a marked difference between exposed and unexposed sections means you have to replace it.

BELT BUCKLE—Locking latch does not release easily.

NOTE

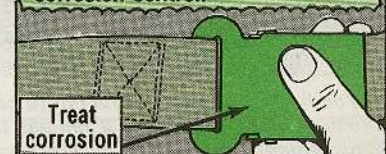
When locked, the latch should not release by accident or be hard to release.



Bent—does not release easily

NOTE

Corrosion of metal hardware is not cause for rejection of a seat belt. Treat it according to the info in TM 43-0105 (Apr 76) on aircraft corrosion control.



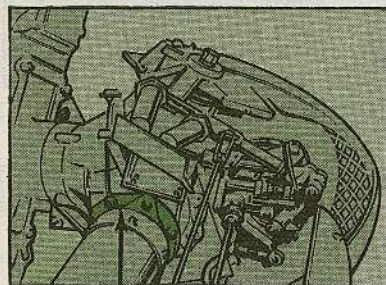
Treat corrosion

SAVE the Gear Box

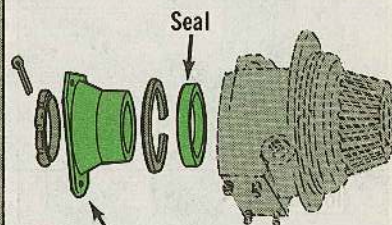


Dear Editor,

In order to replace the UH-60A tail gear box input drive seal. NSN 1560-01-H62-0712, the retaining flange has to be removed.



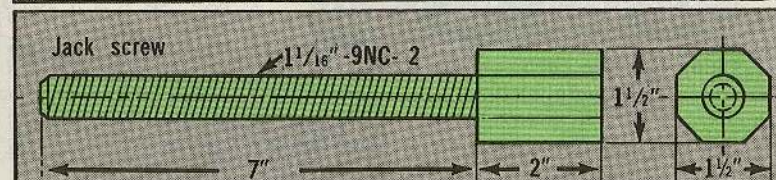
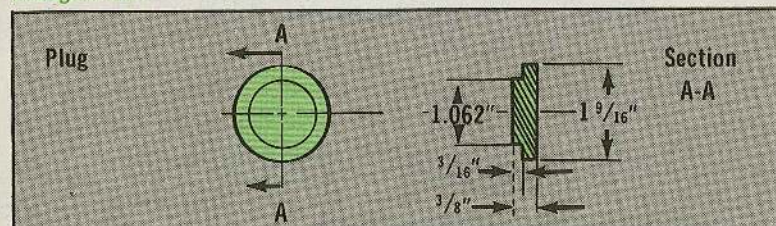
Input drive assembly



Use puller on flange

You have to be real careful not to cock the flange on the splined coupling to the drive shaft. If not, you'll damage the splines, and that means removal and replacement of the whole gear box assembly.

To overcome this problem we made a puller. The puller plug is made from aluminum stock, which protects the end of the gear shaft and provides a bearing surface for the jack screw. The jack screw is milled from 1½-in steel hexagon rod.

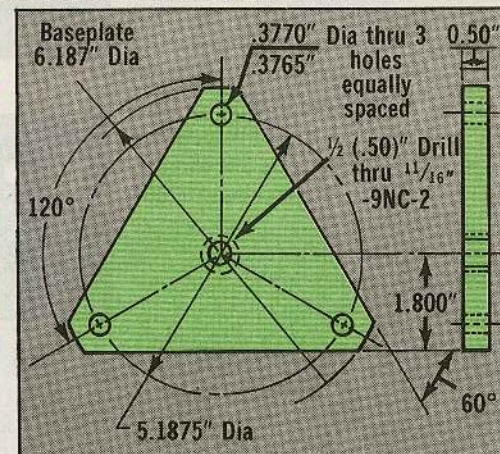


The base plate is made from ½-in steel plate, cut and drilled to fit the flange and accommodate the jack screw.

We use 3 suitable bolts and nuts to hold the base plate to the flange.

With the tool installed, you just turn the jack screw, and the flange is lifted evenly without damaging the splines.

Works like a charm!



Black Hawk Unit
101st Airborne Div (Airmobile)
Fort Campbell, KY

(Ed Note—That's real coping!)

Good Numbers

Dear Windy,
Using the wrong cleaning materials on plastic windshields and windows will scratch 'em for real, leading to an early replacement. So we stick with the info in TM 55-1500-333-24 (Oct 74) on cleaning aircraft.

We can't seem to identify Flannel Outing and Chamois, tho, listed in Para 2-37 of the pub.

Do you have a couple of good stock numbers to use on transparent plastic, Windy?

SFC R. D. E.

GOT A GOOD NUMBER FOR ME?



GOT TWO OF 'EM, LAD!

Dear Sergeant R. D. E.,
Sure do!

Ask for Cloth, Flannel, NSN 8305-00-656-1259, and Chamois, NSN 8030-00-965-1725. Those items are already on the AMDF and are being added to the cleaning pub.

Windy

Dot Marks the Spot!

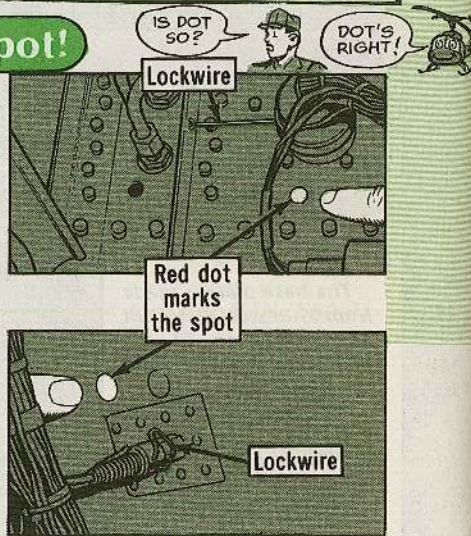


Looking for "the word" on which aircraft electrical connectors require a safety?

You'll find it in Para 16-17 of TM 55-1500-323-25 (Aug 68) on installation practices for aircraft electrical wiring.

Connectors in engine nacelles, in all areas of high vibration, and in areas not accessible during maintenance inspections of aircraft are lockwired to prevent opening of the connector due to vibration.

You'll find a 1/2-in red dot on the structure next to each connector requiring lock wire.

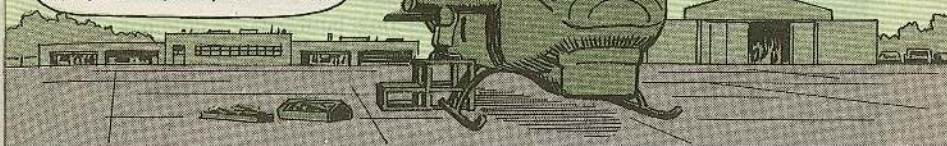


A Little Droop, to Boot!

When you Black Hawk mechs tie down the main rotor blades, leave a little slack in the lines, OK? Never apply any tension to the lines that would pull the blades down from their normal drooped position. Too much downward pressure on the blades can damage the spindles.

Washer Check

YOUR PYLON CYCLIC AND COLLECTIVE CONTROL SEEM IN GOOD SHAPE, OL' BUDDY!



Be sure you aircraft types have checked the pylon cyclic and collective control system on your Cobras per TSARCOM Msg DRSTS-MEA (2) 052200Z Sep 80. Replace any defective Washers NSN 5310-00-774-9428.

More Umph!!



You Black Hawk birdmen can now haul 8,000 pounds on the cargo hook. TSARCOM Msg DRSTS-M 101905Z Jun 80 raised the lift capacity listed in TM 55-1520-237-10 from 7,500 pounds.

Aviation Messages

If your unit has not received these messages, check with your next higher headquarters.

CH-47-80-13 Maint Notice: Per AR 95-18, advising CH-47 users of additional calendar time inspections DRSTS-MEA 132010Z Nov 80.
CH-47-80-14 Maint Notice: Advising maint personnel of CH-47 pitch link bearing wear limits DRSTS-MEA 191545Z Nov 80.
OV-1-80-12 SOF: Correction, maint of temp sensing element, P/N 74865, NSN 2915-00-892-1138 on T53 engine fuel controls, UH-1, AH-1, OV-1 (UH-1-80-14, AH-1-80-22, OV-1-80-10) DRSTS-MEA

061900Z Nov 80
OV-1-80-13 SOF: Technical: OV-1-80-13 One-time inspect all OV-1B, OV-1C, OV-1D, RV-1D aircraft chafing of propeller reversing wires, TB 55-1510-217-20-2 DRSTS-MEA 262205Z Nov 80.
GEN-80-27 SOF: Technical: RCS CSGLD-1860, MS dispersing system DRSTS-MEA 142010Z Nov 80.
UH-60A-80-47 SOF: Technical: RCS CSGLD-1860, inspect UH-60A Black Hawk APU/engine fuel shutoff valve, P/N 70307-03024-101, TB 55-1520-237-20-10 DRDAV-EEB 031500Z Nov 80.
UH-60A-80-36 SOF: RCSGLD-1860, Maint notice for UH-60A Black Hawk tiedown assays, P/N 70700-20433-041.

NSN 1730-01-N94-7869 DRDAV-EEB 142300Z Nov 80.
UH-60A-80-35 SOF: Technical: RCS CSGLD-1860, inspect UH-60A Black Hawk main transmission input module free wheel unit nut, P/N 70351-08023-101, TB 1520-237-20-11 DRDAV-EEB 202010Z Nov 80.
OH-6-80-07 SOF: Technical: One-time OH-6-80-11 inspection, treatment of all OH-6 and OH-6A/C governors and fuel controls on T63-A5A, T63-A-700, T63-A-720 engines, TB 55-2840-255-20-1. This message rescinds SOF Msg OH-6080-06, OH-60-80-10 DTG 232200Z Oct 80 and Change DTG 262200Z Oct 80 DRSTS-MEA 262200Z Nov 80.



HEY, GREAT!



A Winning

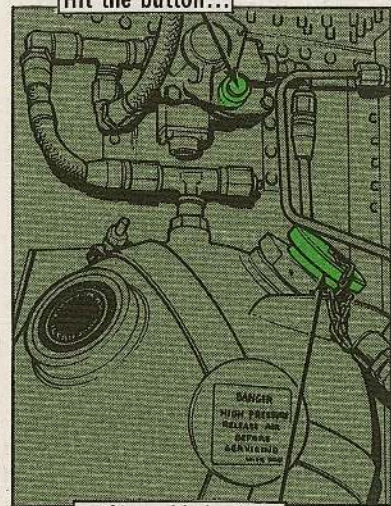
Maintenance procedures on your Chinook will usually change when the equipment is modified...a powerful reason for reading the tech manual before making a move.

Take the flight control hydraulic system, for example.

MWO 55-1500-210-30/20 pressurized the reservoir. This means there's a change in the way you add hydraulic fluid to the reservoirs.

You have to press the Water Drain button to release the pressure—before you open the filler cap. If you don't "hit the button," you'll get doused...smarts somethin' awful!

Hit the button...



...then add the fluid

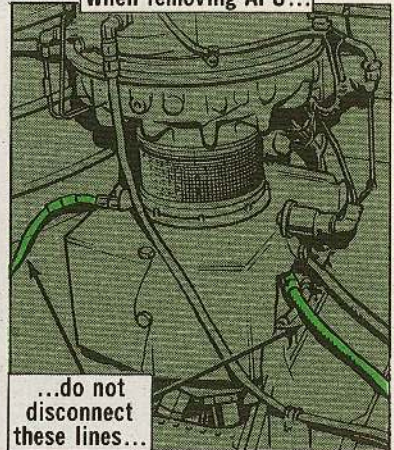
The only button in the system is on the right side of the bird. If you're about to add hydraulic fluid to the left reservoir, make the trip around the chopper to the right side and release the pressure.

If the reservoirs are serviced with fire-resistant Hydraulic Fluid, MIL-H-83282, stick with it. If you add Hydraulic Fluid, MIL-H-5606, you'll lose the fire-resistant feature of the red juice.

APU Change?

You can prevent hydraulic fluid from dripping all over the ramp during an auxiliary power unit change by not disconnecting the hydraulic drain hose and hydraulic return line. They're attached to the motor-pump, which is not removed.

When removing APU...



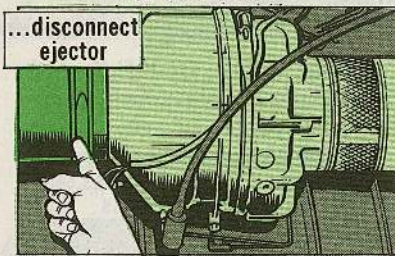
Combination

MY HEROES!

Also, disconnect the ejector assembly. This will give you enough clearance so that you can drop the APU straight down. You won't have to go thru the usual "seesaw act" to remove the unit.

That's ingenuity for you!

...disconnect ejector

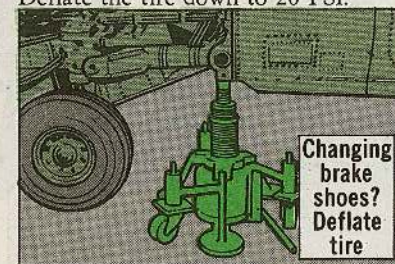


Safety First

Any time you have to repack wheel bearings or change brake shoes, do it by the book.

The Warning in Para 3-18 of TM 55-1520-227-23-2 (Aug 78) says you should never remove the wheel axle nut with a tire fully inflated. If some of the rim bolts are sheared due to a hard landing, the whole shebang will explode and ruin your whole day. Deflate the tire down to 20 PSI.

Changing brake shoes? Deflate tire



MEBBE WE CAN DO THIS...

GOOD IDEA!

THEN, MAYBE WE CAN'T...

In addition to using a tire pressure gage to check air pressure, there's another way you can tell if the jacked-up tire has been deflated:



The axle nut should turn easily after you back off $\frac{3}{4}$ of a turn or so. If the nut doesn't move freely, the tire hasn't been deflated.

In case you're called upon to service tires on other birds, like the OV-1, U-8, U-21, C-12 or UH-60A, the same deflation deal applies.

While you're at it, never remove the valve core from the stem to speed up the deflation process. A valve core flying out of a Black Hawk tire—with 73-78 PSI nitrogen/air pressure—can really give you a black eye!

YESIR-E-E-E, CHINOOK MECHS, A LOT OF BOOK LEARNIN' AND A LITTLE INGENUITY... THAT'S THE WAY T' GO!

KEEP 'EM FLYING!



FM
PM
Will
Do
It...

Make Your

Its shape may not even rate a "T", but a top operating AN/VRC-12 series radio set will net you a perfect "10" at field problem time.

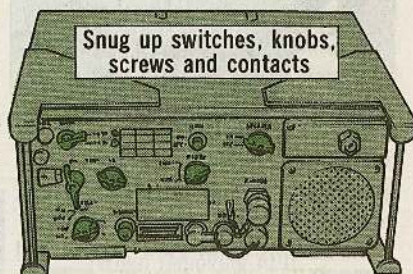
'COURSE, YOUR SCORE IS PRETTY WELL MADE BEFORE YOU HIT THE DUSTY TRAIL!

HERE'S HOW YOU AND YOUR ORG SHOP CAN MAKE SURE YOUR NUMBER COMES UP HIGH!

YOU'RE "10" IN OUR BOOK, BONNIE!

ONCE OVER, TIGHTLY—Make sure all those knobs, switches, screws and connectors are snug. Never

Snug up switches, knobs, screws and contacts



overtighten. Receptacle lock nuts must be tightened. Seating a cable to a loose receptacle can twist what's behind it.

IF YOU'RE MISSING SOME SCREWS ON RT PANELS, ORDER WITH THESE NSN'S...

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

Watch it, tho. The MWO handle screw is threaded all the way to the head. If you don't press the cover down

-12 a "10"

HEY-- THIS IS GREAT INFO, BONNIE!

YEAH-- HOW 'BOUT DEMONSTRATING PROPER SNUGGING TECHNIQUE FER US!

PERSONALLY-- I 'D RATHER THEY SENT MACON SPARKS!

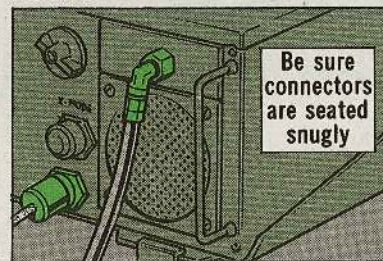
when starting the screw, you get a gap. That lets in water and dust to plug things up. File off about 1/4 inch of threads from the head down. That'll give you a tight cover.

While you're snugging things up, be sure all cable connections are tight, too.

Making sure power is off, eyeball the J21, J22 and J23 receptacles under the MT-1029 mount. Make sure connectors are alined correctly and tightly.

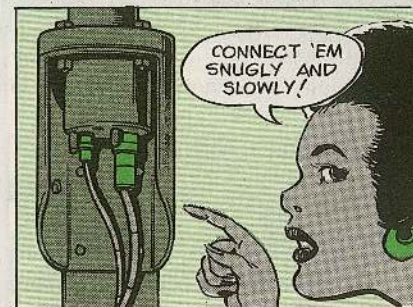
Next, see that the CX-4722 and CG-1773 cables are seated right on the front of your RT and also on the MX-6707 matching unit. Remember, the L-shaped end of the CG-1773 goes to the RT.

Be sure connectors are seated snugly



Take your time hooking up those 2 cables to your matching unit. They're not easy connections to make—mainly because you can't always see 'em.

CONNECT 'EM SNUGLY AND SLOWLY!



Avoiding a set of mangled pins is worth a few minutes of your time.

Another possible trouble spot is the CX-4720 cable to your vehicle's battery. Red/white leads go to positive. Black/green go to negative.

IF YOU DO IT WRONG, YOU CAN FRY THE RADIO!

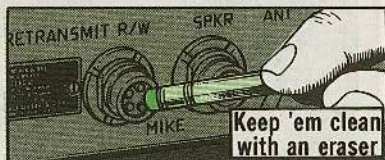


STAY IN TOUCH—'Course, you can have snug and proper connections and still be out of commo. Dirty contacts or no contact at all will do it.

On the other hand, if you think you need covers—use 'em. It's up to your local command. They're the same ones your back-pack radios use, and go by NSN 5340-00-973-1732.



Head off these commo killers by cleaning audio connectors with a plain ol' rubber eraser. Then, be sure audio



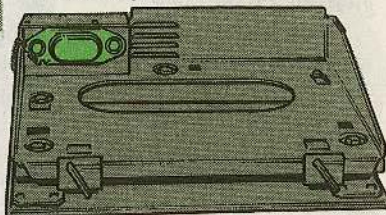
accessory connectors have O-rings. If your O-rings are too dry, grease 'em with a little (and little is right) Silicone NSN 6850-00-880-7616. Use spit to lube an O-ring only as a last resort. It can corrode and cause shorts. Freezes in cold weather, too.

One way to ward off connector damage, of course, is to cover 'em when not in use. Don't worry about the audio connectors, tho. They need no covers. They're built sturdy and waterproof enough to stand uncovered.



For the MT-1029's power connectors, use NSN 5935-00-933-3752 for a cover. For the mount's junction box, use NSN 5935-00-911-2323.

Cover keeps out dirt, moisture



To keep inside RT contacts clean, move 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'll insure proper channel changing.

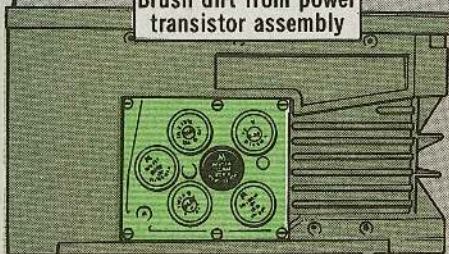


KEEP IT COOL—Keeping your receiver-transmitter cool means keeping it clean. Follow your TM's cleaning info. Hit the heat exchange vanes,



blower motor fan and power transmitter assembly at least monthly with a toothbrush. Do it more often if

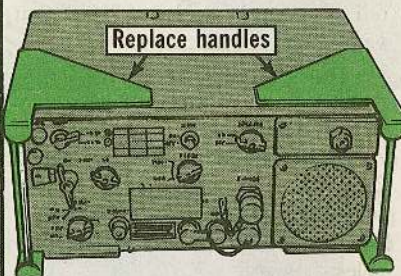
Brush dirt from power transistor assembly



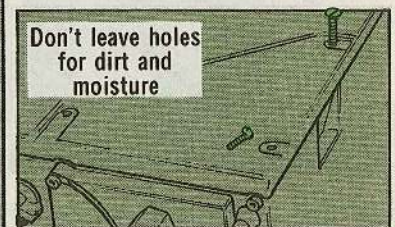
you're in a dusty area. Be sure you replace the panels.



CARE WITH HANDLES—Leave MWO handles on. Some troops are told to take 'em off before sending an RT in for repair. That defeats their purpose, which is to protect the front



panel. It can leave that set open for moisture damage if you forget to put 'em back on when the set comes back.



Don't leave your -A model RT's without handle protection, either.



ON THE AIR—Staying that way's not too hard. Just follow a few simple rules.

Like, turn the darn thing off before you start your vehicle. Repair types'll tell you they lose a lot of "10's" that way.

You also lose 'em by sliding an "ON" RT into its mount while the vehicle is running.

Another zapper is hooking up the CX-4722 cable assembly from the matching unit to an operating RT. Blooey goes the ANT CONT receptacles.

You can also burn it up by failing to hook up the CG-1773 antenna cable before transmitting.



You get a couple of breaks if your radio is track-mounted. One, you've got a MX-778 transient suppressor which could stop voltage spikes from zapping your radio.

Two, you can put ON/OFF control of all commo into one component, the AM-1780 amplifier. The organizational shop does it by moving a link in your MT-1029 mount's junction box from the E23 terminal board holddown screw to E22.

Be sure to cut all power from the mount before you do it. See para 2-10b, TM 11-5820-401-12 (Sep 72) for details.

THE RIGHT SITE—Once you're operational, give your set a fighting chance. Site yourself properly.

Move to the highest spot available. Point the vehicle in the direction you want the signal to go. Stay away from obstacles like trees and buildings. Put your antennas up. Line of sight gives best results, natch.

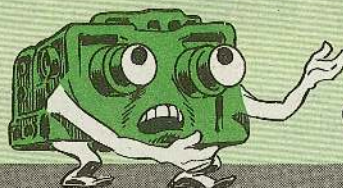


Test yourself to known targets during your PM checks. Judge your set on power, sensitivity and frequency accuracy.

OK, your "10" held up in the field. You're back in garrison and ready to clean up and go home. Don't blow it now. Do your regular PMCS's. Keep water, especially that from high-pressure hoses, away from your commo.

If you don't, you'll start from "0" getting ready for your next trip.

No Cracks, Please

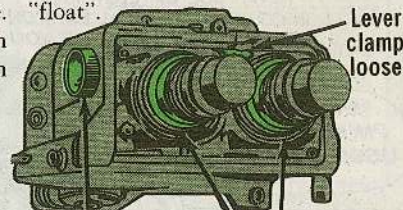


If your AN/PVS-5 night vision goggles are cracking up, maybe it's tension.

Like from improper storage. Latching the carrying case with monoculars in the wrong position can strain the face mask assembly.



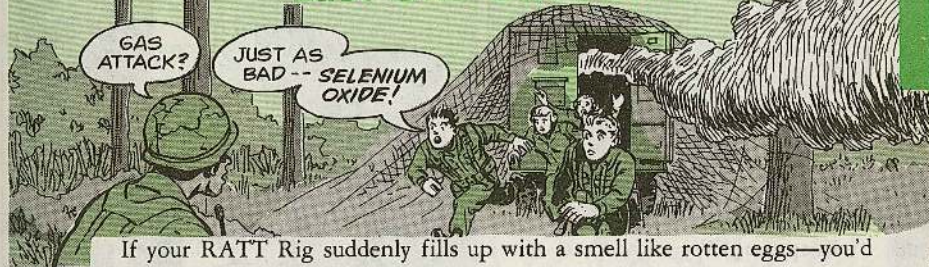
To cut down on the stress, be sure the lever clamp and clamp knobs are loose. This allows the monoculars to "float".



Draw lenses back with focus knobs

Another face-saver is using the focus knob to draw the objective lenses back into the set.

Last One Out's A...



If your RATT Rig suddenly fills up with a smell like rotten eggs—you'd better cut the power and beat it.

That smell could mean a selenium rectifier has shorted or burned out. That releases selenium oxide, a toxic—and maybe fatal—gas.

Those rectifiers are found in TT-76 and -98 teletypewriters and other commo gear. So, no matter where you smell it, get away fast. Then, notify your maintenance shop.

PM for a

That's right. Taking care of your 2-pc, 2-layer Chemical Protective—CP—clothing during training gives you a big edge in personal survival if you have to use it for real.

You're allowed some leeway with your CP PM during training, but it's no-nonsense PM when it's for real.

NEVER USE CP CLOTHING
IN COMBAT CHEMICAL ENVIRON-
MENT OPERATIONS THAT YOU
WORE IN TRAINING!

EYEBALL THIS...
PM for Clothing
Used in Training

Be on the lookout for holes, tears, punctures and heavily worn spots. Turn in any damaged clothing.



Watch for
holes, tears,
punctures,
worn spots

Keep your CP overgarments—used in training exercises—clean.

Bear in mind, tho, that washing the overgarments—coat and trousers—destroys the charcoal impregnated inner layer...and your protection goes down the drain.

WAY TO GO,
SARGE... AND
HERE'RE SOME
WASHING
TIPS...

Life... YOURS!

The headshed recommends that field and post-laundry units wash your CP overgarments...but you can wash 'em in a home laundry unit.

Here's how—

1 Close the zipper, flaps (snap fasteners) and the hook and pile fasteners so they won't be damaged during the wash/dry cycle.



4 Never overload the washer and never use chlorine bleach or strong alkali in the wash water.

5 Dry on hangers—or tumble dry for about 25 minutes with the dryer set on the same cycle setting as the washer...**KNIT, DELICATE FABRIC, PERMANENT PRESS.**

Note: Don't overload the dryer. Use a load that's about two-thirds of the dryer's rated capacity...and the temperature no more'n 220°F.

Always wash the CP overgarments in a separate load because the carbon from the charcoal will permanently stain any other clothing.

Wash the white cotton glove inserts in cold water and mild detergent. Get new inserts with NSN 8415-00-268-8353.



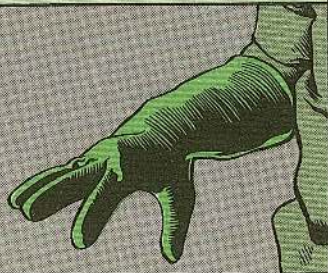
2 Set the washer's temperature dial on the **KNIT, DELICATE FABRIC** or **PERMANENT PRESS** cycle. This cycle washes the clothing in a maximum amount of warm water—100-110°F—and then cold water rinses it.

3 Use a low sudsing synthetic detergent. NSN 7930-00-252-6797 gets a 50-lb box of non-phosphate detergent that works OK.

TAKE PROPER CARE OF
Combat Overgarments

NEVER
WASH YOUR
COMBAT CP
OVERGARMENTS!

1 Any cuts, tears, holes or punctures in the CP gloves, overboots or overgarments call for replacement right now, no questions asked.

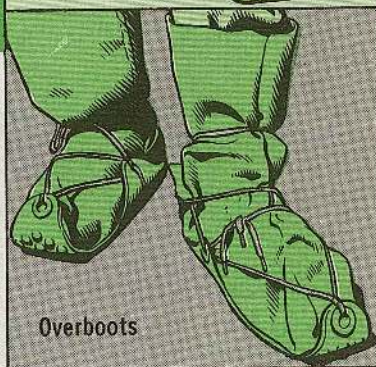


2 Replace your overgarments after 14 days' wear if they have not been exposed to chemical agents.

3 Replace CP overgarments within 6 hours after they have been exposed to chemical agents.

4 Rinse off—fast—any POL products that get on your CP clothing. Oils, solvents, and lubes make the butyl rubber gloves and overboots expand and you'll have less protection.

Rubber gloves



Overboots

5 Keep the overgarments dry. A wet overgarment does not protect you as well as a dry one. Wear a poncho or wet weather parka and trousers to keep the overgarments dry.

6 Wear leather gloves over the butyl rubber CP gloves when you handle rough objects.

CP Overgarments...

Store 'Em Right

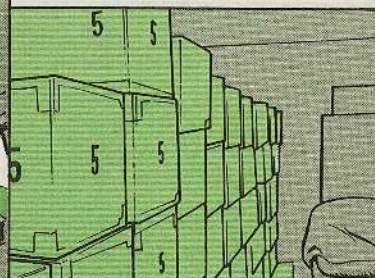
HERE ARE SOME POINTERS ON
STORING CHEMICAL PROTECTIVE
OVERGARMENTS.

- When you get a damaged box containing CP overgarments, open it and check the vapor barrier bags for damage.



- Return overgarments found in damaged carrier bags to your support unit...and replace 'em with new ones. You can use overgarments that come in damaged carrier bags only for training.

- Store boxes in easy-to-reach areas.

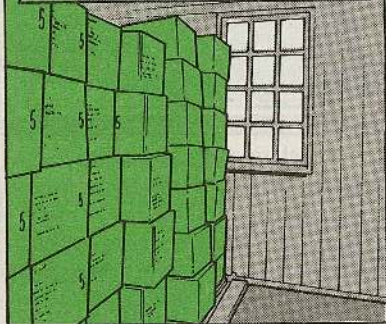




NO-NO!! SGT. BULLDOZER--YOU MUST FIND ANOTHER SPOT FOR YOUR NAP!

- Never store heavy items—over 200 pounds—on top of CP overgarment boxes.

- Never store boxes in high traffic areas—corridors, for instance—where they could be damaged.



- Store boxes so you can read the labels and markings.

8415-00-177-9499
S EA 8/80
A/B 27 CU 35
CLAL00-79-C-3210 LOT NO. 10
BENCHMARK INDUSTRIES, INC.
BURNSVILLE, MS 38833
SHIPMENT #1
CO. 26473
MFD 8/80
INSPECT/TEST DATE 8/85

Protect That Bag

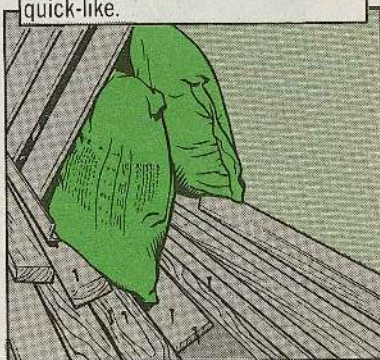
The vapor barrier bag is the only protection the CP overgarments have to keep them from getting contaminated by moisture, POL items and solvents.



HERE ARE SOME TIPS ON KEEPING YOUR OVERGARMENTS READY FOR THE BIG SCENE...

- Inspect the vapor barrier bag your overgarments come in. Replace it—and its contents—if it's torn or punctured.

- Never cram or wedge the barrier bag into a small space. Rough handling damages the bag real quick-like.



- Never sit on the bag

- Never use it for a pillow

- Never drop any heavy or sharp objects on the bag.

- Never leave the bag where sharp objects can puncture it.

750-CFM Air Compressors...

Catch This Latch



Towing your Sullair Model 750 DP air compressor could give you a bad case of maintenance heartburn.

The toggle action-type latches on the hinged air inlet ducts can come undone...letting one or both of the air inlet ducts swing forward and outward when you slow down. A swinging duct can do a heap of damage to equipment and people.

'Course, you can padlock the latches to keep 'em in place while the compressor is being towed. But the padlock won't provide total security since a thief can pry the spring-loaded hook part of the latch off the catch.

You can stop the swinging and thieving with a new foolproof air inlet duct latch system. It's free from the manufacturer.



Sullair Corporation
ATTN: Factory Parts Dept
3700 E. Michigan Blvd
Michigan City, IN 46360

When you write for the kit (PN 1169), tell the manufacturer the serial number of the air compressor to be improved and your unit's address. Installation drawings come with each kit.

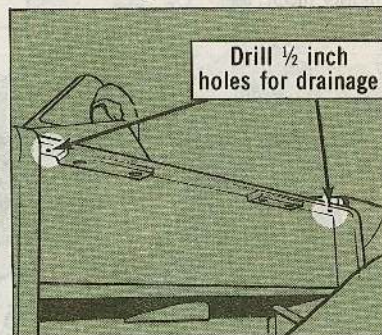


Water trapped in the trough under the universal coupler on your 290M tractor causes big rust problems.



Drill a 1/2-in dia hole on each side of the trough about 2 inches in from the edge of the frame and 3 inches below the top edge.

Be sure to check the holes after you wash the tractor or after a rain. No water build-up...no rust problem.



TB 43-0001-41-1 (Apr 80) Chap 3 has the word.

No. 1, 2 Common Shop Sets... Dispensing Pump Part

Dear Half-Mast,

We need to replace the intake pipe on our hand-driven Dispensing Pump NSN 4930-00-287- 8293.

Is there an NSN for this adjustable pipe?

SGT. S. M. L.

Dear Sergeant S. M. L.,

An NSN, no...a PN, yes.

Two manufacturers make the pump under Mil Specs but you can't interchange pump parts.

HERE'S THE PIPE SETUP...

PN	FSCM	Mfg
64858	94349	Wm. M. Wilsons Sons, Inc
P2-696A	2R925	Federal Standards Corp

Use RIC S9C and be sure to identify the pump by manufacturer, serial number, NSN, and contract numbers.

Leftover CS Capsules...

Save 'Em!

TAKE NOTE, SOLDIER... THERE ARE 10 OF US!

Your squad never uses a heap of riot control agent capsules during NBC training. So you always have a few left over. After all they come 50 to the box.

Save the leftovers to use another time. Here's how to reseal the capsules in their containers:

TEAR-STRIP CANS: Peel off the tear-strip that comes on the can and toss it. Line up the top and bottom sections. Seal 'em with tape. NSN 7510-00-663-0199 gets a 60-yd roll of 1-in wide pressure-sensitive adhesive tape.

MULTI-FRICTION LID CAN:

Clean the top of the can and lid real good. Press lid firmly in place.

SCREW-CAP CAN: Clean the threads of the screw-cap and the neck of the can. Screw the lid on real tight.

Before you turn in the can to supply, mark on the cans the number of capsules inside.

Note number of capsules in can



Training Aids...

Your Ideas Needed

Got an idea for a training device? A gismo to make some maintenance training easy...an aid to turn rookies into experts...or whatever? The Army wants to get your ideas.

Describe yours on a DA Form 1045 Suggestion Form and send it thru your suggestion award coordinator...

...SEND IT WITH A WORKING MODEL (IF YOU HAVE ONE) TO...

Commander
US Army Training Support Center
ATTN: ATTSC-DS
Fort Eustis, VA 23604

Marine Motors Muzzled

Maintenance and supply support for 115-VDC, 1/6 -HP watercraft boiler, burner or blower motors NSN 6105-00-323-8859 and -8861 are no longer available. Fix 'em yourself or use a commercial repair shop.

IF THEY STILL WON'T RUN, CONTACT...

TSARCOM
ATTN: DRSTS-MMM
4300 Goodfellow Blvd.
St. Louis, MO 63120

EXPANDABLE Shelter Savvy

HERE'RE SOME PM TIPS ON YOUR MEDICAL UNIT, SELF-CONTAINED TRANSPORTABLE, THAT'LL EASE THE REPAIR PARTS COST AND MAINTENANCE DOWNTIME!

PAINTING—

Before you camouflage paint the shelter, be sure to cover all the data plates with tape. Peel it off after painting.



Use masking tape here

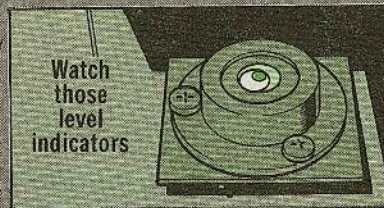
JACK ASSEMBLIES—Be sure the plates are on solid ground and as level as possible.

Keep an eye on the area where the jack assembly is bolted to the shelter. Raising/lowering the shelter in an uneven or jerky manner can pull a jack assembly out of the aluminum-faced foam-filled honeycomb panel.

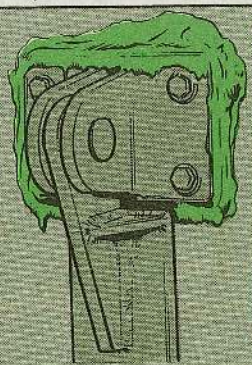
If walls are damaged, tape over the area to stop water damage to the honeycomb until permanent repairs are made.



Place on level ground?



Watch those level indicators



Seal damaged panel areas

FOLD-UP OPERATIONS.

When you fold up an expandable shelter, be extra careful you don't damage the RH/LH frames on the folding end panel assembly.

Leave 4 inches of floor space in the center section free of cabinets or other equipment. When the floor is folded up, you'll have plenty of clearance for the door panel.

I KEEP JACKIN'—AN' NOthin' HAPPENS!...

WHAT'S GOIN' ON?

Watch those frames when folding your shelter

Keep 4-in space clear of equipment

DUNNO, CHARLIE... THE PLATE'S DISAPPEARED!

CONNIE-- THEM GUYS ARE RUINING MY BURROW!

SEALS—Eyeball the seals in the door, shelter top and floor for

looseness, damage. Replace if necessary.

Getting Accepted

GULP!

YER NEW 'ROUND HERE, AREN'TCHA, FELLA?

WHY'RE YA SHAKIN', SAM?

YOU FROM TH' STICKS?

DRESSES FUNNY, DON'T HE?

HEH HEH!

Getting accepted by the gang is hard when you're the new kid in town. Equipment that doesn't have a DA Form 2408-9 or 2408-8 Acceptance Report has the same problem, but with a little help from you, it'll fit right in. Does the equipment have an X under the DA Form 2408-9 column in Appendix E of TM 38-750? If so, it needs an Acceptance Report.

Maybe the equipment arrived with the Acceptance Report, but was later lost or destroyed. No problem, just follow the instructions in para 4-9b (2) a of TM 38-750. Fill out a permanent copy of the Acceptance Report.

Fill in as much of the original information as you can find. Put "UNK" for "unknown" in the blocks you can't fill.

201670		1. ORGANIZATION		2. LOCATION		3. UNIT IDENT CODE		4. UTILIZATION CODE		5. VEHICLE USE CODE	
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Tuck Utility 4 Ton		M151A2		1320.00-117-9452		215516		N07534			
12. YEAR OF MFG		13. MANUFACTURE (MFG) CODE		14. CONTRACT NO.		15. PURCHASE ORDER NO.		16. SHIPPED TO		17. SHIPPED TO UIC	
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DA 2408-13...

Status Symbol Roulette

Dear Half-Mast,

TM 38-750 tells us not to erase a status symbol in Block 7 of the DA Form 2408-13—even if it's wrong. So how do you correct a bad entry in Block 7?

SSG R. L. B.

Dear SSG R. L. B.,

Enter the erroneous symbol on the first open line in Block 16. Explain the goof in Block 17—"Status symbol in Block 7, box (whichever) is in error." Explain the correction in Block 18—"Correct status symbol entered in Block 7, box (next open line)."

When you just put the status symbol in the wrong box or write the wrong status symbol in Block 7, you have a clerical goof. No equipment (other than a pen or pencil!) or judgement is involved. The original status symbol was right. Para 4-13c (3) (r) 1 and 2 have the word on that.

But if the goof concerns the equipment—you change your mind over the need for a write-up or the status symbol—judgment comes into it. Treat that entry like an equipment fault.

IN EITHER CASE, YOU NEED A TI'S CHECK AND SIGNATURE FOR A RED X OR CIRCLE RED X STATUS! Para 4-12c (3)(r)3 COVERS THAT!

Connie's
Mini Minis



Check Oil Filters

Inspect the engine oil filters on your U-21 and RU-21's every 75 flying hours. Look for contamination or damage. This check will show up in the next change to the TM's but, 'til then, the word's in TSARCOM Msg DRSTS-MEA (1) 131345Z Jan 81.

Special Accident Reports

Accidents involving brake failure on 2½-ton and 5-ton tactical trucks must now be reported on DA Form 285-1 (Aug 80). This requirement is spelled out in DA Msg DAPE-HRS 262330Z Sep 80. The 285-1 is also normally used as the continuation sheet for the DA Form 285 accident report.

ALICE Buckle NSN

Use NSN 5340-01-070-9440 for the 1-in non-slip steel buckle used on ALICE gear. The NSN is not on the AMDF so use an exception data supply type request. The RIC is S91.

Battery Recall

The headshed is recalling all BA-1328/U batteries manufactured before Sept 80 under contract DAAB07-79-D-6751 (code marked 0880 or earlier). The batteries, NSN 6135-00-274-4035, have too small a contact and won't mate with some equipment. If you have some, turn 'em in for batteries made under a different contract or made September 80 or later.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1980—757-003/5

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

No Fuel Leaks Allowed

When you're checking the Not Ready/Available status of your generator sets, any fuel leak deadlines the equipment. The oil leak limit poop noted in PS 329 is still good, tho.

Need Pubs? Read On!

You now order pubs and blank forms only from the Baltimore Pubs Center. Forget St. Louis! Reason: Data processing facilities have been consolidated...at Baltimore. The AUTODIN RI is RULNBPC. Mail requisitions go only to Baltimore. Any requisitions that do not go the Baltimore route will be rejected. The word's in DA Msg DAAG-PA 301601Z Dec 80.

Cat I EIR's

To get priority handling for aircraft Category I EIR's, send them in by priority message, according to TM 38-750. If you call in your report, follow up with a priority message. To call an aircraft EIR, use AUTOVON 693-3325, -3326 or -3329 or commercial 314-263-3325, -3326 or -3329.

5-Ton Dump Bows

Need the bows to support your M51-series 5-ton dump truck's tarpaulin? Use NSN 2540-00-860-0519. If you need the end curtain, use NSN 2540-00-860-0516. The tarpaulin is NSN 2540-00-860-0518, the same one used on the M817 5-ton dump truck. The complete rundown is in Fig. 33-33, TM 9-2320-260-20P.

Do Your **PM** by the **TM**



**Unauthorized Disassembly
Has Put Down More Gear
Than You Can Shake a TM At!**