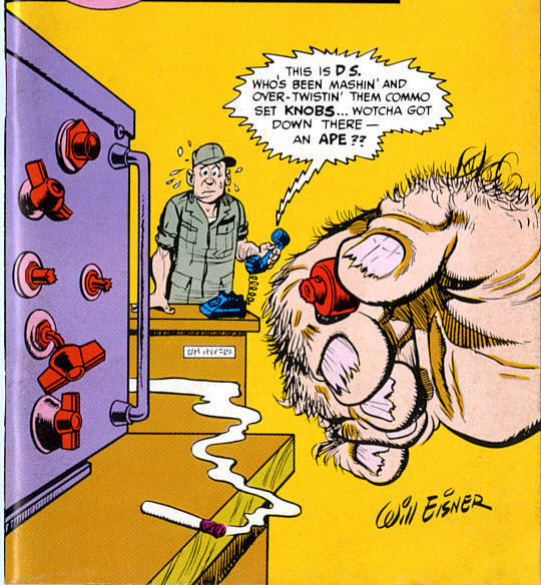
Issue 196

PS

1969 Series

THE PREVENTIVE MAINTENANCE MONTHLY



FILTERS STAND GUARD... CLEAN 'EM or CHANGE 'EM

Except for you—the operator—just about the most important thing on a piece of equipment is the filter.

"How come?" you ask.

Look at it this way: That filter on your equipment is there like a policeman to protect your equipment from its worst enemy—Dirt.

Dirt is the big, big equipment killer. It gets inside, on and around everything and does its murderous work. A few ounces inside a big engine like on a tank or dozer, and that engine's dead, shot.

Filters are put on your equipment to stop this. You have air filters to clean dirt from the air that goes into things like engines and electronic equipment. You have fuel filters to keep dirt, water and other goop out of the delicate parts of engines. And you have oil filters to trap dirt that gets in engine oils and hydraulic fluids.

Your job is to make sure the filters do their job. It's real simple: Clean them or change them—just like your tech manual says. The more loose dirt there is around your area, the more often you'll have to clean or change.

Do it as often as need be to make sure your equipment stays in the fight.

PS

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THE PREVENTIVE MAINTENANCE MONTHLY

Issue No. 196 1969 Series

IN THIS ISSUE

New Publications 28

Supply 10, 12, 13, 14, 15, 19, 22, 26, 27, 37, 38, 41, 42, 47, 50, 53, 56, 59, 60, 61, 63 and 64.

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PS wants your ideas and contributions, and it's glad to answer your questions. Name and address are kept in confidence. Just write to:

Sgt. Half-Mast
PS Magazine
Fort Knox, Ky.
40121

BE YOUR OWN INSPECTOR ON YOUR...

M108-M109 HOWITZER

PART II

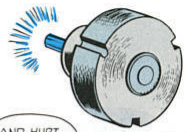
IN PS 195 WE COVERED THE GENERAL INSPECTION ON YOUR M108 OR M109 HOWITZER. NOW WE WILL CONTINUE WITH CANNON CARE, FIRE CONTROL AND A LOT OF OTHER GOODIES...

SO TUNE IN AND TURN ON.

WHY CHECK TH' FOLLOWER GROUP?

WE GOTTA MAKE SURE THE BREECH CLOSES COMPLETELY.

FIRING PIN— If the tip of your firing pin is mushroomed it possibly was caused by snapping the firing mechanism with the firing block in the open position. That way the tip of the pin hits solid steel instead of open air of the primer. So-o-o-o, cut it out already.



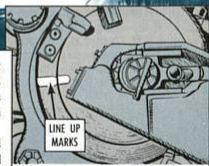
RIGHT! THAT WAY WHEN A ROUND'S FIRED, THE BACK PRESSURE CAN'T TEAR UP THE GUN.

AND HURT SOMEBODY... NAMELY ME!

The follower group of the firing mechanism block can easily be damaged or removed. If this happens, you can fire the howitzer without the breech being completely closed.

The back pressure of a round fired that way could tear up the gun and there's a good chance that some crewmen would get hurt.

So this is the way to make sure the block is completely closed before you fire—



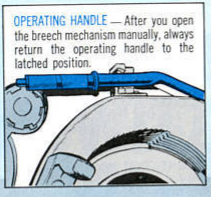
Paint a white alinement mark on the breech ring and breech block when you have it in the completely closed position. Then, whenever you have the marks lined up you'll know the breech is closed. MWO 9-2350-217-30/13 (May 67) is your authority.

MORE

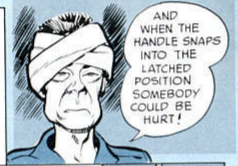
The follower group works like an interlock. It's good to have and should be replaced if lost or broken.

GAS CHECK PAD — Use only soap and water to clean the pad and don't use too much oil in the tube. Lubricant or cleaning solvent will damage the pad.

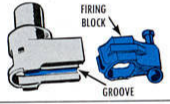
OPERATING HANDLE — After you open the breech mechanism manually, always return the operating handle to the latched position.



. . . If you leave it unlatched, the handle will be damaged when the breech closes.

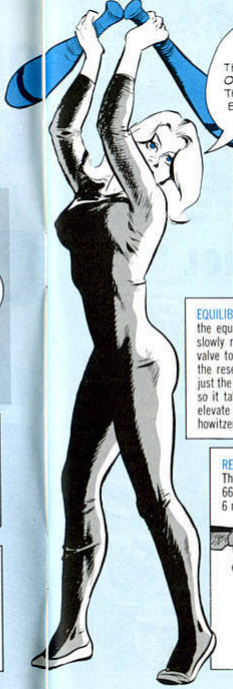


FIRING BLOCK — Firing block slide freely? If there're burrs in the follower shaft groove, file 'em off.

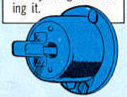


DETENT PLUNGER — Wears out too quickly if the closing springs are not adjusted right. Check it after every 5 rounds during firing and have it replaced if it's broken or worn. (Note to mechanic: There is a wear tolerance of only 1/32 inch on the detent plunger.)

BREECH RING — The lower interrupted threads are getting cracked because projectiles are being dropped on them during hand loading. Prevent this by using the tray even when you hand load. If you absolutely have to load without the tray, be careful not to hit the threads.

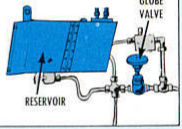


REPLENISHER — Exercise by filling or bleeding it.

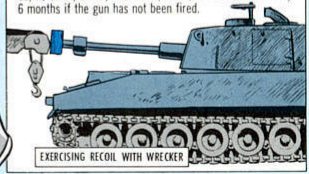


ELEVATING CYLINDER —Exercise with power handle or hand pump. Oil the piston shaft if not used within a week or so.

EQUILIBRATOR — Exercise the equilibrator system by slowly releasing the globe valve to let fluid return to the reservoir and then adjust the equilibrator system so it takes equal effort to elevate and depress the howitzer manually.



RECOIL SYSTEM — Get your support to help you with this. They will do it the way it says in TB 9-1000-234-35 (May 66) w/Ch 1 (Feb 67) and Ch 2 (Jun 68). This is needed every 6 months if the gun has not been fired.

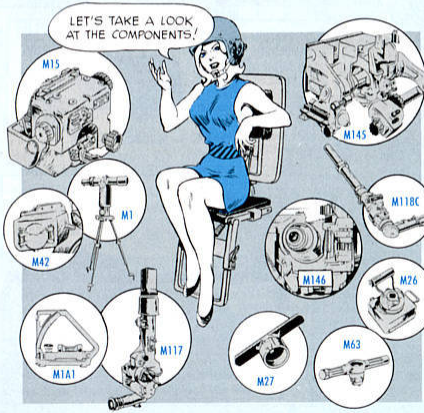


MORE

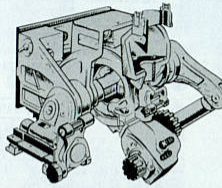
TOO HOT TO CLEAN? — If you can put your hand on the tube without being burned, the tube is cool enough to clean with rifle bore cleaner.

NO BORE CLEANER? — If you're fresh out of rifle bore cleaner (RBC) you can make up a soap solution from a pound of soap (castile or GI) and 4 gallons of water. For best results, both the water and the tube should be hot. If this is used the tube has to be rinsed, dried, inspected and lubed, after each daily cleaning.

FIRE CONTROL



M145 TELESCOPE MOUNT

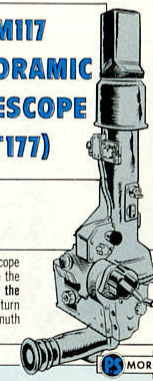


(NOTE: The nameplate will probably identify the M145 as T208 but think nothing of it.)

M145 TELESCOPE MOUNT — All 4 vials (Quadrant Crosslevel, Elevation Level, Pitch Level and Crosslevel) light up when toggle switch is turned ON. Vials not broken, covers turn easily, bubbles can be centered, red gradation lines easy to read. All knobs and wheels present, easy to turn. Glass over elevation and correction counters not cracked or dirty. Both pairs of correction dials can turn through full range of 00 to 99. All electrical wiring in good shape. (Replace any burned out bulbs.) Linkage adjusted right, not binding or sticking. Catch holds M117 telescope securely. Nameplate not painted over. Nitrogen valve cap present.

M117 PANORAMIC TELESCOPE (T177)— Rubber eyeshield not hardened, cut, or torn. Eyepiece rotates within its arc of movement without binding. Nitrogen valve cap in place. Reset knob moves freely and stops by itself when the reset counter reads 3200. Azimuth (deflection) counter latch and door in working condition. Azimuth knob turns freely and moves azimuth counter numbers without backlash or lost motion. Azimuth knob rotates the cap assembly as the numbers in the azimuth (deflection) counter change. Gunner's aid knob turns easily and moves the numbers in the gunner's aid counter windows through full range from 00 to 50 mils. Both rheostat knobs (bottom knob for counter windows, top knob for reticle) work through their entire range.

M117 PANORAMIC TELESCOPE (T177)

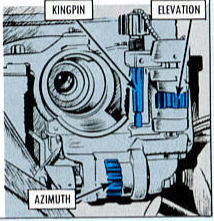


BORESIGHTING M117 — You can ruin your M117 telescope unless you know the right way to boresight it. To make the adjustment **push in** the boresight adjusting shaft **all the way** with a screwdriver and **keep it pushed in** as you turn the shaft until you get a 3200-mil reading in your azimuth counter. **Then** you let it out.

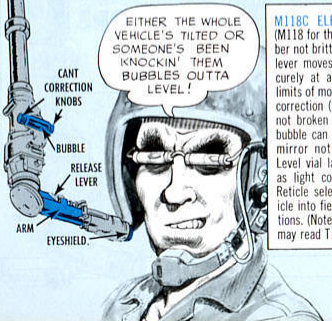
MORE

M146 TELESCOPE MOUNT

M146 TELESCOPE MOUNT — (Data plate may read T206). Elevation boresight knob and deflection (azimuth) knobs both turn without slipping. Kingpin metal lightly lubed. Kingpin knob complete with chain attached at both ends. Electrical connector in good shape, wire not frayed. Connector arm, yoke and elevation bracket not nicked or burred.



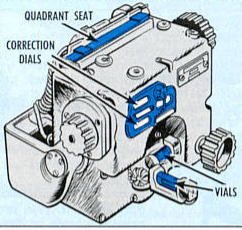
M118C ELBOW TELESCOPE



M118C ELBOW TELESCOPE — (M118 for the M108). Eyepiece rubber not brittle or torn. Arm release lever moves easily. Arm locks securely at any position within its limits of movement. The 2 red cant correction (crosslevel) knobs turn, not broken or cracked. Level vial bubble can be adjusted. Level vial mirror not cracked or clouded. Level vial lamp brightens or dims as light control knob is twisted. Reticle selection lever moves reticle into field of view in both positions. (Note: Data plate for M118C may read T176E3.)

M15 ELEVATION QUADRANT

M15 ELEVATION QUADRANT—Both vials (crosslevel and elevation) light up when control button is turned ON, and bubbles can be centered by moving elevation and crosslevel knobs. Hand light works, wire not frayed. Quadrant seat smooth, without burrs or nicks. Numbers in correction dials change smoothly as correction knob is rotated. Glass in all counter windows not cracked or cloudy. Counter and vial lamp covers complete with chains secure at both ends.

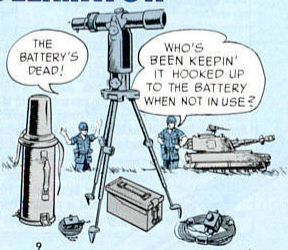


M42 OFFSET PERISCOPE

M42 OFFSET PERISCOPE (M109 only) — Mounting screws tight, window not cracked or dirty, quick release pin and chain present and secure. Cover can be moved easily into open or closed position.

M1 COLLIMATOR

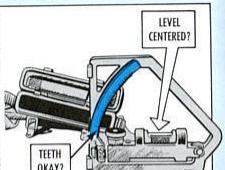
M1 COLLIMATOR — Level assembly in good shape, vial not scratched. Lamp and spare lamp both in working condition. Optics clean, no moisture inside. (If there is moisture, a nitrogen recharge is needed.) Sights, latches, straps and legs OK. All adjustment and knobs easy to move and lock securely in place. Remote light control works. Switch and rheostat do their job. Cable not frayed. M9 battery power supply in good shape. Batteries OK. (Connect 'em up only when you plan to use them.)



MORE

M1A1 GUNNER'S QUADRANT

GUNNER'S QUADRANT M1A1—Shoes smooth and without nicks or burrs. Figures easy to read. (If necessary, gently clean the dirt out of the numbers with a small brush.) Micrometer knob turns freely but without play. Level bubble can be centered. Teeth not chipped or burred. Error, not more than 0.4 mil on end-for-end test. (If the error is greater than this turn the quadrant in to support as soon as possible.) M82 case in good shape with all cork gaskets and protective strips present and secure. Latches not broken.

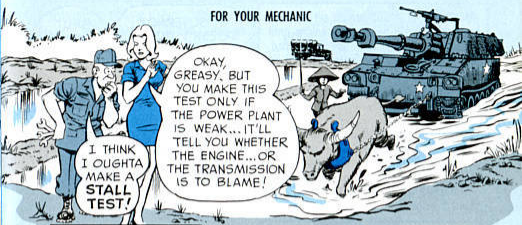


M26 FUZE SETTER—All screws present and tight. Battery compartment in handle not corroded. The 2 BA-42 (C batteries) not burned out. Bulb lights up when handle is in straight-up position and handle button is pressed. (NOTE: It takes quite a bit of pressure to seat the cap even when the threads are clean and unburred—which they should be. Wing nut holds pointer securely at indicated number. Both inner and outer scale numbers easy to read. (Clean 'em if they're not.) Arrow showing direction of turn clear. Use only on left turn fuzes.

M27 FUZE SETTER—No big cuts or nicks on inner bearing surface. Screwdriver end not broken or chipped.

M63 FUZE SETTER—This is used with **right** turn fuzes M562, M563, M564 and M565, and its stock number is FSN 1290-966-9318 (5800967). Until you get one you can use wrench M16. If you already have one, check these points: Prongs on socket not broken off. Recess on handle fits locking latch on socket securely without play. Red night glass not cracked or broken. Night switch turns on light.

AIMING POST M1A2—Paint OK in alternate white and red bands. Bare metal lightly lubed. Pin not broken off. Spring strong enough to hold post in position. Posts not bent. (Roll 'em on a flat surface or use a level to make sure they're straight.)



After checking engine and transmission oil levels, bring engine up to normal operating temperature (170 F).

With brakes locked and transmission in high range, run engine at full throttle for 15 seconds. Never run engine over 15 seconds or you'll overheat the transmission oil.

If engine speed at full throttle is below 1,800 RPM, the engine is not up to par. Get your direct support to check it out.

If the engine speed is over 2,000 RPM there's clutch slippage in the transmission. Check the shift control linkage adjustment. If this is correct, have your direct support check the engine.

YOU CAN ALSO USE THE **STALL TEST** TO CHECK THE LOW AND REVERSE RANGE BANDS FOR ANY SLIPPAGE... HERE'S HOW IT'S DONE!

After checking engine and transmission oil levels, bring engine up to normal operating temperature.

1 With brakes locked, shift into low range and run engine at full throttle. If the transmission slips, check linkage adjustment.

2 If linkage adjustment is OK, tell your support to check transmission.

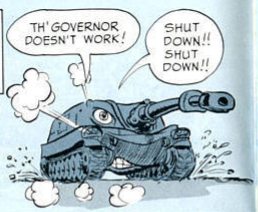
3 You check reverse range the same way.

NOTE: This does not eliminate the stall check requirement called for in Ch 2, (Sep 66) Item 5, of TM 9-2350-217-ESC/1.

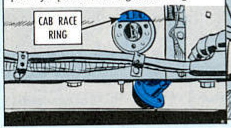
MORE

NO-LOAD TEST — With brakes set at maximum and shift in neutral, run engine until normal operating temperature is reached. Gradually press on the accelerator until its limit is reached.

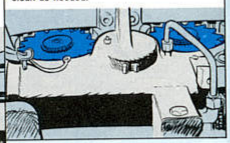
Engine speed will generally go over 2,450 RPM for a second and then stabilize at 2,450. If the governor repeatedly cuts in and out or surges at this speed, get your support maintenance to make adjustments. If the governor won't work, speed could go out of control. Be prepared to shut down so speed will not go over 2,450 RPM for more than 2-3 seconds.



CAB RACE RING—Too much lube on the race ring can cause vehicle deadline. Open the inspection door and make sure it really needs lube before you pull a pipe plug and temporarily replace it with a grease fitting.



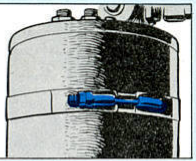
TRAVERSE MECHANISM — Grease and dirt tend to pile up near the traverse mechanism pinion gears. Open the access plates and clean as needed.



FUEL TANKS CRACKED? — Your support can repair 'em now the way it shows on pages 63-65 of TM 9-2350-217-34/1 (Jan 65). They'll have the right repair kit—FSN 2910-078-4065, on page 25 of the -25P/1 TM.

HYDRAULIC TUBES — (M109 vehicles with Serial No. 1123 and up)—With the new elevating cylinder the hydraulic tubes tend to break. An MWO for a damper bracket is in the works but for now loosen all 4 tube clamps. After letting the tubes get in a relaxed position, retighten the clamps and wind several turns of green tape around the tubes and the cylinder. These tubes are not subway straps. No. 1 cannoneer, 'nuff said?

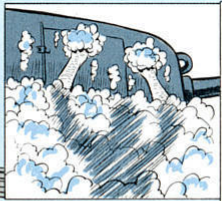
HYDRAULIC POWER PACK — The retaining clamp FSN 5340-081-6707 can loosen which will allow too much vibration which may rupture the lines. Getting the clamp too tight can be just as bad. So ask your mechanic to tighten the adjusting nut with a .002 feeler gage under it so tight he can not pull the feeler gage loose. Then he will back off enough to get the gage out after which he will retighten 1-¼ to 1-½ turns.



SLINGS AND THINGS

POWER PLANT SLING — Get the right one — FSN 4910-084-0790 (10913779) — and make sure MWO 9-2350-217-20/5 (Nov 65) has been applied. The MWO offsets the cross bars so they're shorter on the left side.

(On some of the slings the hooks are too large for the transmission lifting brackets — so widen the holes, at the bottom, not at the top, as this would weaken the bracket.)



VEHICLE WASHING — Clean but do not wash your vehicle before inspection. Be careful not to get any water inside the exhaust system because it will cause severe engine damage. Never use a steam or water hose in the engine or cab compartment or around seals, exhaust deflector or other openings.

TB ORD 548 (Jan 54) tells you not to wash the interior of hulls or turrets with steam or water under pressure — you could damage your fire control instruments. Be careful of the range finder and periscope openings when you wash the outside.

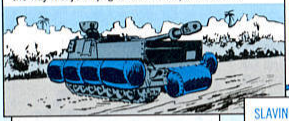
HOT WEATHER — In real hot weather your vehicle needs more frequent and more careful inspection. Check your instruments and gages more frequently. Lube more often.

MORE

COOLING SYSTEM — If you have an M108 with serial 3 to 453 or M109 serial 5 to 454 make sure MWO 9-2350-217-20/4 (Aug 65) has been applied. It gives you a better pressure relief valve for your coolant surge tank.

When adding water or anti-freeze, first make sure the crossover tube drain cock is open. Fill the radiator, and when liquid flows in a steady stream from the drain cock, close the cock. Keep on filling until the radiator is full. Run engine for 5 minutes with filler cap closed. Check level again and add coolant if you need it. On some first-year vehicles there are 2 drain cocks, one on the crossover tube and one on the surge tank.

FLOTATION EQUIPMENT — If your vehicle has it, check the way it says on pages 107-111 of your -10 TM.

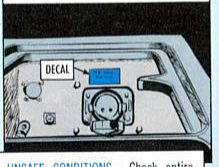


SEALING COMPOUND—You only get enough with your kit for 2 flotation operations. If you need more ask for Sealer, fording, FSN 8030-056-0196, in your -25P/1 TM.

PAINTING — Clean and paint bare or worn spots on painted surfaces if there is any danger of rusting or a reflection from metal that could give your position away.

SLAVING DECAL — Reverse polarity during slaving can ruin the diodes in your regulator and rectifier. Decal FSN 7690-912-3504 (P/N 10944793) tells how to do it right. This decal should be stuck on the wall near the slave receptacle, which will be in the driver's compartment (early vehicles) or the battery compartment (late vehicle).

INFRARED OPERATION — Your M109 has lights, switches, and everything else needed for IR operation except there is no IR periscope. Keep this equipment in good shape because IR capability may be added later, if and as needed.



DECALS, STENCILS — The word on all decals, stencils and instruction plates: If you can't read it, replace it.

ELECTRICAL COMPONENTS — Check all exposed electrical cables, boxes, terminals and controls. Tighten things that shouldn't be loose. Tape cables that are frayed or have broken insulation.

UNSAFE CONDITIONS — Check entire vehicle for any unsafe condition which could hurt a member of the crew. Safety inspection includes brakes, steering and shifting linkage and fire extinguishers. Anything cracked with a sharp edge that a crewman could fall against?

PUBLICATIONS — All needed pubs up to date including changes?

YOUR M16'S MAXI-SKIRT...

ALL THE WAY WITH NÉGLIGÉ

Now that you've got a plastic coverall bag (FSN 1005-809-2190) to protect your M16A1 rifle against dust, sand, mud, water and such, here's how to use it in good health—yours and your weapon's.

First, make sure your rifle's cleaned and lubed **before** you bag it. This cover's an aid to PM, but it'll never replace the cleaning and lubing you'll always have to do regularly. In fact, with a rubber band closing—not to mention rips and tears—the bag's not guaranteed watertight, so-oo-o. . . .

Second, if you're gonna keep it bagged more than 24 hours, be sure you eyeball the weapon every day for signs of corrosion from any moisture or condensation that might form in the bag.

Putting it on—Stick the rifle in the cover, muzzle first. Then fold the cover end over the butt stock and slip the rubber band on.

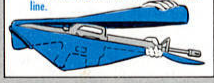
Taking it off—Slip the rubber band off and unfold the cover end. Then slide the rifle out.

Put it on and off gently and you can use the cover several times.

IN A FIREFIGHT

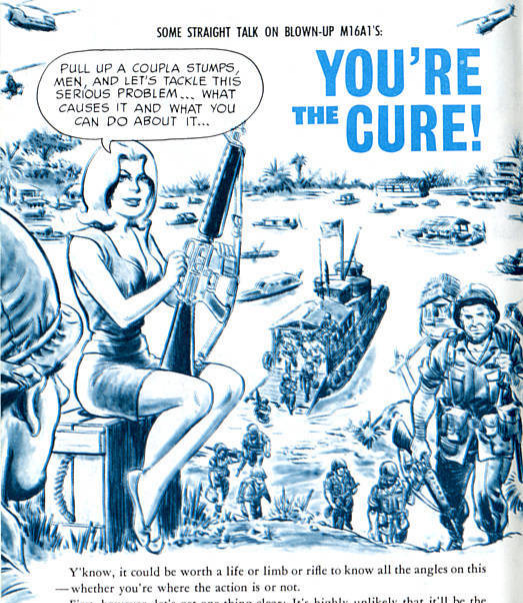
Comes a sudden opportunity to bag an enemy, here're 2 ways you can work it:

1. Quick-rip the bag off with one steady yank. The bag'll come apart at the tear-line.



2. If absolutely necessary, you can fire right through the bag. You can operate the selector lever and trigger easy with the bag on. But, remember this: Ejected cases will be trapped in the bag and could cause a malfunction after the first round. So get it off as quick as you can.

Natch, after "emergency" use, you'll need a new bag.



Y'know, it could be worth a life or limb or rifle to know all the angles on this — whether you're where the action is or not.

First, however, let's get one thing clear: It's highly unlikely that it'll be the rifle's or the ammo's fault if one blows up. It's usually the rifleman's — something you do or don't do. And **you** are the only guy who can prevent it. OK?

Now, **why** they blow up. Simple: If the bore gets clogged, too much pressure builds up in the chamber and/or bore when you pull the trigger . . . and wham!

What-all could clog it up? You name it. It doesn't take much to clog a rifle barrel, that's for sure.

Things like...

... Swabs, cleaning rod sections, sticks—dopey stuff like that which you could detect with ordinary heads-up inspection.

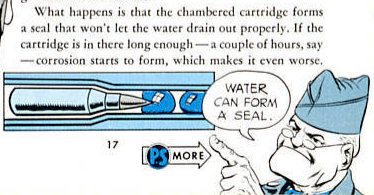
... Oil, grease, mud, **corrosion**—things you could prevent or get rid of by doing a careful cleaning and lubing job. (Cleaning—run the brush and patch **all** the way through the flash suppressor before pulling it back. Lubing the bore—just a very, very **thin film** of LSA, remember?)

... Water in any form—rain, or water from fording or falling in a paddy. Ho-Ho-Ho! H_2O's usually your biggest problem!

WHY WATER'S SO DANGEROUS

Water's the sneakiest villain for a number of reasons. For one, there're several ways it can get in your bore ... like when you slip while crossing a stream, or you get caught in a heavy shower. For two, even if you know it's in there ... like after fording or operating in a monsoon ... it's mighty hard to get out—especially if you've got a round chambered.

What happens is that the chambered cartridge forms a seal that won't let the water drain out properly. If the cartridge is in there long enough—a couple of hours, say—corrosion starts to form, which makes it even worse.



P.S. MORE

Even without a round chambered, water in the bore can give you the sweats. The small diameter of the bore keeps the moisture from draining easily. So, if you chamber a round while there's **still too much water** in there that same-type of seal forms and . . . blooey, when you fire!

Yessir, getting that water out of there before firing is more important than mail call.

Only trouble is, just pointing the muzzle down won't hack it. You have to **break that seal** by pulling back on the charging handle to pull the round part-way out of the chamber and then shake the water out . . .

Smart Operating Procedure

So, OK, here're a couple of situation-type solutions for when you get water in the bore from any cause—rain, fording, whatever.

When Round's Not Chambered . . . like when you're heading out first thing in the morning and your CO says you don't need to keep the chamber loaded.

1. Seat your loaded magazine, with the dust cover closed.

2. Drain the bore often by pointing the muzzle down and shaking the water out.

3. When you're ready to fire, charge your rifle. It'll take a clean round into a clean chamber . . . and you can fire without sticking.

When Round Is Chambered . . . like you're in combat—just forded a stream or came out of a heavy rain . . . and Charlie's maybe everywhere.

Be mighty sure you do these before pulling that trigger:

1. Point the muzzle down.

2. Pull the charging handle back a ways so that air can break that "seal." Then shake the water out.

3. Press the forward assist to make sure the round's seated in the chamber and the bolt is locked.

4. Fire!

WAIT! REMOVE CAP FIRST!

One big thing, though: If you're using one of those plastic protective caps (FSN 5340-880-7666) on your muzzle, be sure you take it off before you start draining the bore.

Incidentally, this cap'll help keep water from entering the mouth of the bore, but it won't stop seepage from the chamber end when your rifle gets dunked.

WATCH YOUR BUTT, TOO!

While we're gabbing about water, let's hammer home the importance of keeping it out of the lower receiver, too. This may not have anything directly to do with blowing up your shooter, but it could keep it from firing—which is the next worst thing.

Right, every time you clean your M16—and every time you drain water from the bore—take an extra second to make sure the drain hole in the butt stock capscrew is open . . . and drain the butt, too.

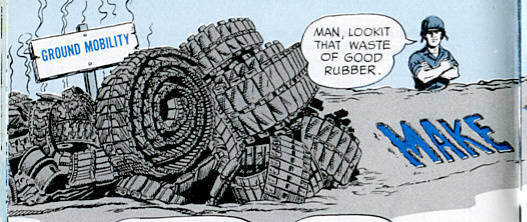
A pipe cleaner's about the handiest thing for keeping this hole clear.

If water stays in the lower receiver, it'll foul up the working parts . . . cause corrosion and dampen your ammo.

So, remember, huh?

All of this boils down to one thing, then: Your **Prevention** is the **cure.**

END

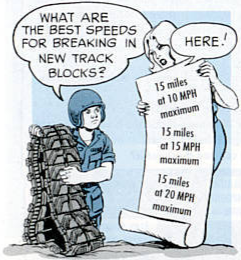


Keep the track at the exact tension called for by your vehicle TM. Too tight is not bright, and there is no excuse for too loose. The experts keep the tension exact, and their track rubber wears longer.

Cure: Switch the tracks, left on right and right on left. That way you'll even up the wear. (Course, with some tracks there is a left and a right type of track which can't be switched. Also, you don't want to wind up with the V of chevron grouser track pointing backward.) You'll find the inner road wheels wear faster than the outer, so switch 'em when necessary to equalize the wear.

WITH YOUR TRACKS

Track in storage loses a lot of its "snap back," but if you break it in right much of the bounce comes back.



Break in new track pads on a paved road or a smooth secondary road and stop after each 15-mile phase and tighten up end connectors if they need it.

This expert break-in will add hundreds of miles of life to the track rubber. On tuther hand, if you run the rubber fast without a break-in you lose those hundreds of miles.

Driving—after you break in your track like an expert, operate it like an expert—no piyot turns in rocky, rough terrain and no sustained high-speed operation.

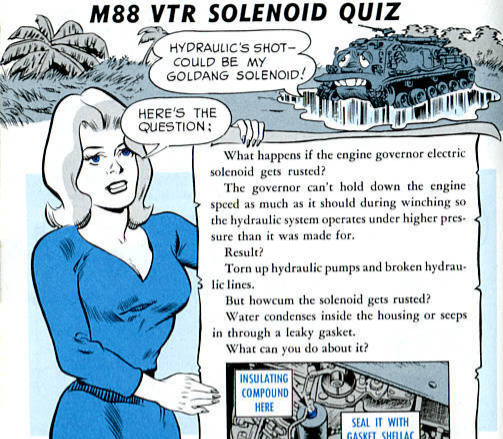
Avoid going over 20 MPH for long periods when the outside temperature is above 85°F.

Turn-in—The expert always takes the good track off a tank before he turns it in for rebuild. At the depot new track is put on as part of the overhaul job, so any kind of junky track is OK when you turn in a tracked vehicle.

Follow these tips and you'll get more good miles out of your track, and your vehicle will behave better too.

See TM 9-2630-200-14 (Oct 62) and Ch 7 (Dec 67) for poop on maintenance and wear limits for all kinds of track and track components.

M88 VTR SOLENOID QUIZ



First take the solenoid off and dry it.

Next you gently get the rust off with a little fine sandpaper.

When you put the solenoid back, use the gasket but also seal around the opening with a couple dabs of gasket shellac. FSN 8040-664-4134 gets you a pint can.

You also rub a little insulating compound on the rubber of the electrical connection. FSN 5970-159-1598 is good for an 8-oz tube.

This works fine for years but after several cleanings the solenoid gets too worn down to do its job. Then you put on a new one. Governor solenoid repair kit FSN 2990-893-5931 includes the solenoid and a new solenoid gasket.

When you put on a new solenoid you also adjust the governor the way it says on page 149 of TM 9-2320-222-20 (Aug 66).

HOWITZER HAPPENING

When you see Item 13 in TM 9-1025-200-ESC/1 (Mar 68) does it make you blink?

Item 13 tells you to inspect your M12A7Q panoramic telescope.

So what do you do if you have an M12A7C telescope and what is an M12A7Q anyhow?

The M12A7Q telescope is an M12A7C, M12A7F or M12A7H telescope after MWO 9-1240-236-50/1 (Aug 67) has been applied. This MWO, which by now should have been done to all M12A7-series telescopes, provides a different reticle.

Regardless of what type of M12A7 telescope you have, give it an ESC rating on DA Form 2404. The ESC rating standards are the same for all versions of the M12A7.

If your telescope has not been converted yet, have this done and fill out the Equipment Modification Record (DA Form 2408-5). Pages 4-24 to 4-28 of TM 38-750 (May 67) tell you how.

BRUSH-OFF FOR ARCING

Burned up because you have electrical brush contact burn-outs in the power cupola for your M114A1 command and reconnaissance carrier? You know . . . the kind you get when you have arcing between the brush contacts and contact ring.

Burn no more by getting rid of dirt, oil and other unwanted junk from around the brushes and ring. Please—no steam or water.

Instead, get yourself a piece of soft dry cloth. A small arms cleaning swab will do. Using a handy finger, hold the cloth against the contact ring—on either side of the contact brush at the rear of the cupola. Then, with all electrical switches OFF, manually traverse the cupola as you hold the cloth against the ring. Traverse the cupola at least one 360-degree turn to make sure you don't miss anything.

If the dirty valve is on the transfer or steering gear housing, you may find the shaft and control valve oil seals bursting.

If it's the grimy one on the differential or axle housing, you'd better inspect the brake drum for lubricant blown out through the seals.

You may even suffer an outbreak of failures if enough pressure has built up from many paint-blocked breathers on new and rebuilt trucks.

TB ORD 625 (Jan 56) gives you good pointers on cleaning ventilating valves.

Along with the TB, be sure you read the TM of your own vehicle and replace a valve according to the TM word. Check your -20P for the breather you need.

Keep in mind to clean the area around the valve too. Otherwise, any dirt there will drop into the case when you're removing the vent.

You clean all ventilating valves by soaking them in a drycleaning solvent or in mineral spirits paint thinner. After that, brush them with a stiff brush.

The whole idea is to make certain you've cleared the passages, and that the valves move freely.

If you have to, use a soft metal rod to remove obstructions.

Then, after you've dried the valves with compressed air (10 PSI or less), you finish the job by lubricating them **sparingly** with clean engine oil.

You'll see new life in your truck after this small PM chore.

BONE YARD BUMPERS

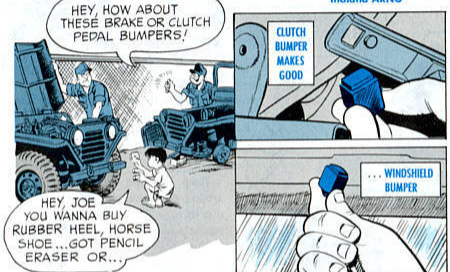
Dear Editor,

Rubber hood bumpers on our M151A1 ¼-ton trucks don't stay too well in those square holes in the top windshield frame.

Adding trouble to trouble, those bumpers are a non-stock item. And there're none to be had at the cannibalization point, because everyone else has the same trouble.

But you can get replacements at the bone yard, anyway, if you know where to look. Those brake and clutch pedal bumpers (FSN 5340-678-1431) in the M151A1 seem to be the same thing and fit just dandy.

SSG Chester E. Maupin
Indiana ARNG

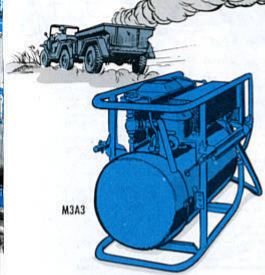


(Ed Note—That's usin' the ol' bean—and it's in the spirit of that vehicle's maintenance policy in TB 750-98-23 (Mar 68), Appendix B, and in TM 9-2320-218-34 (Jul 68). One suggestion, though—dab some epoxy cement on those hood bumpers before you install 'em and they'll stay better. Get adhesive, paste-type, FSN 8040-847-6387, MIL-A-8623, listed in Fed Cat C8000-IL-A, (Jan 68).

ADAPTER FOR M151

You'll have no more trouble getting to those U-joints of your M151 1/4-ton truck if you use the 6-in grease gun coupling adapter, FSN 4930-204-2550, which is found in your lubricating kit. This kit, FSN 4930-357-6301, is a part of your No. 1 and No. 2 Common Tool Kits.

YOUR SMOKE CAN GO



Yes, you can tote the M3A3 smoke generator on the M151 or the M38 1/4-ton trucks—or on the M100 or M416, 1/4-ton trailers. But first support has to work over the generator's M2 mount like it says in MWO 3-1040-202-45/1 (Apr 68).

With the MWO fix the generator can be easily swapped from one truck or trailer to the other and you can load and unload the generator faster, too. And, by the way, the stock number for the M3A3 in the MWO's para 5 is really FSN 1040-587-3618.

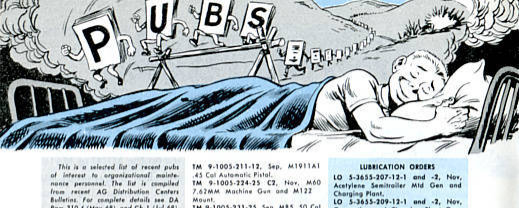
The M3 mount for the oil drum needs MWO 3-1040-255-45/2 (Apr 68), so you can lug the oil in either one of the trailers.

M561 AND M792 ESC's

Better check with your pubs people to make sure they've ordered Equipment Serviceability Criteria pubs for your M561 1 1/4-ton cargo truck or your M792 1 1/4-ton ambulance truck. There're write-in's on DA Form 12-38.

M131A5C TURN SIGNAL

Order under FSN 6220-903-6647 if you need a door-and-lens assembly for that new type turn signal light on your M131A5C 5,000-gal fuel servicing tank semi-trailer.



This is a selected list of recent pubs of interest to organizational maintenance personnel. The list is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4 (May 68), and Ch 1 (Jul 68), TM's, TB's, etc., DA Pam 310-6 (Jul 68), and Ch 1 (Oct 68), and SM's. DA Pam 310.7 (Oct 68), MWO's.

TECHNICAL MANUALS

TM 3-1040-264-23P, Oct, M106 Port 450 CFM Dispenser Riot Control Agent.
TM 3-1040-257-12, Aug, M9E1-7 Port Flame Thrower.
TM 3-1325-237-10, Sep, XM925 Bomb Fuse and Burster System.
TM 3-4240-237-15 C1, Oct, M5 Protective Outfit.
TM 5-1940-200-20P, Oct, Bridging Boats.
TM 5-2805-203-24P, Oct, 10-20 HP M.S. Gas Eng.
TM 5-2805-257-14, Sep, 3 HP Gas Eng.
TM 5-3610-229-25P, Oct, Web Offset Printing Press.
TM 5-3655-217-15, Oct, 150 Gal Skid Mtd Argon-Nitrogen-Oxygen Liquid Storage Tank.
TM 5-3895-322-20P, Oct, Gradation Control Unit Aggregate Trailer Mtd 100-150 TPH Mdl KA-60.
TM 5-3910-309-20P, Oct, 100-150 TPH Asphalt Bucket Type Comp of Mixing Plant Elevator.
TM 5-4120-226-20P, Sep, 18,000 BTU Floor Mounting Air Conditioners.
TM 5-4120-259-25P, Sep, 36,000 BTU Floor Mounting Air Conditioners.
TM 5-4120-289-25P, Sep, 6,000 BTU Air Conditioners.
TM 5-4310-222-20P, Oct, 125 CFM Air Compressors.
TM 5-4310-225-15, Sep, 55 CFM Compressors.
TM 9-1005-211-12, Sep, M1911A1 .45 Cal Automatic Pistol.
TM 9-1005-224-25 C2, Nov, M60 7.62MM Machine Gun and M122 Mount.
TM 9-1005-231-25, Sep, M85 .50 Cal Machine Gun.
TM 9-1015-215-12 C3, Oct, M30 4.2 Inch Mortar on M24A1 Mount.
TM 9-1015-223-24P, Sep, M67 90-MM Recoilless Rifle.
TM 9-1055-201-12, Oct, M20A1 M70A1B1 3.5 Inch Rocket Launcher.
TM 9-1430-250-15P/5/1, Oct, Nike Hercules.
TM 9-17208 C1, Nov, M42, M42A1, M41, M41A1, M41A2, M86I, M8A2, M52, M52A1, M44A1, M75.
TM 9-2320-209-20 C3, Aug, 2½ Ton Trucks.
TM 10-3610-228-25P, Sep, 220 V 60 Cyc 3 Ph Web Offset Printing Press.
TM 10-3930-252-20P, Oct, Elec Fork-lift Truck 4000 Lbs Cap.
TM 10-3930-408-20P, Sep, Wheeled Warehouse Tractor Gas Pneumatic Tires 4000 Lb Drawbar Pull.
TM 10-7210-217-14, Oct, Heavy Duty Oil Burning Range.
TM 10-7310-218-14, Oct, Heavy Duty 4 Burner Gas Range.
TM 10-7310-219-14, Oct, Gas Baking and Roasting Oven.
TM 10-7310-220-14, Oct, Gas Deep Fat Fryer.
TM 10-7310-222-14, Sep, Elec Deep Fat Fryer.
TM 10-7320-305-14, Oct, Elec Food Mixing Machine.
TM 11-5820-642-25P, Oct, R-903 (AT-3)/PRD Radio Receiver.
TM 11-5820-686-25P, Oct, R-1420/URR Radio Receiver.
TM 11-6625-586-12, Oct, AN/URM-103 Sig Gen.
TM 55-2330-207-10-2, Nov, M129A1C and M129A2C Semitrailers.

LUBRICATION ORDERS

LO 5-3655-207-12-1 and **-2**, Nov, Acetylene Semitrailer Mtd Gen and Charging Plant.
LO 5-3655-209-12-1 and **-2**, Nov, Generating and Charging Plant Oxygen and Nitrogen Semi-Trailer Mtd.
LO 5-3805-201-15-1, Nov, Earth Moving Equip Loader.
LO 5-3820-238-12-1, Oct, Gas Powered Percussion Well Drilling Machine.
LO 9-1450-585-12, Aug, XM730 Chaparral GME Carrier.
LO 9-2320-209-12, Oct, 2½ Ton Trucks.
LO 55-1905-217-12-1 and **-2** and **-3**, Oct, ICM-8500 Thru ICM-8519 74 Ft Lg Oil Per Drvn Steel Mechanized Landing Craft.

MISCELLANEOUS

AR 750-53, Dec, Alteration of Materiel.
MWO 9-2320-211-30-12, Nov, M61A2, M63A2, M54A2, M55A2, M52A2, M543A2, M51A2 5-Ton Trucks.
MWO 9-2320-244-20/1, Oct, M715 and M725 1½-Ton Truck.
MWO 9-2350-217-20/13, Nov, M108 and M109 Howitzers.
SB 11-613, Oct, Mk 693A Maint Kit.
SB 11-616, Oct, Control of First Gen Night Vision Equip.
SC 3433-95-CL-A02, Oct, Cutting and Welding Torch Outfit.
SC 3439-95-CL-A01, Oct, AC 115 V Resistance Heating Soldering and Brazing Outfit.
SC 4220-97-CL-A01, Oct, Lors 1 Person 30 Ft Depth Diving Equip Set.
SC 5180-95-CL-A47, Sep, Chaparral Guided Mi Org Maint Tool Kit.
SC 5180-99-CL-A06, Nov, Elec Repairman's Army Aft Tool Kit.
TB 9-1425-324-25, Oct, Sergeant

THE DATE'S IMPORTANT!

Here's news for you M728 combat engineer vehicle cannoneers: There's a new obturator pad (FSN 1025-072-6655 . . . P/N 8769416) in supply for your 165-MM weapon. It's got a date—1-1968, for example—stamped on the inner ring. Use it every time.

Here's the kicker: If the obturator pad you've got doesn't have the month and year stamped on its ring, you **must** replace it with one of these new ones. Whatever you do—**don't fire off** with the old-type pad in there!

JOE'S DOPE

THE GUN TUBE DROP-OUT

A SORROWFUL STORY! SLICED FROM THE SEETHING SYSTEM OF SUPPLY... OR

A TRUE, TURGID TALE OF TROUBLED, TIRED, TORTURED GUN TUBES.

IT BEGINS AT A BATTALION H.Q. WHICH HAS JUST BEEN ALERTED TO MOVE UP AND SUPPORT AN ATTACK.

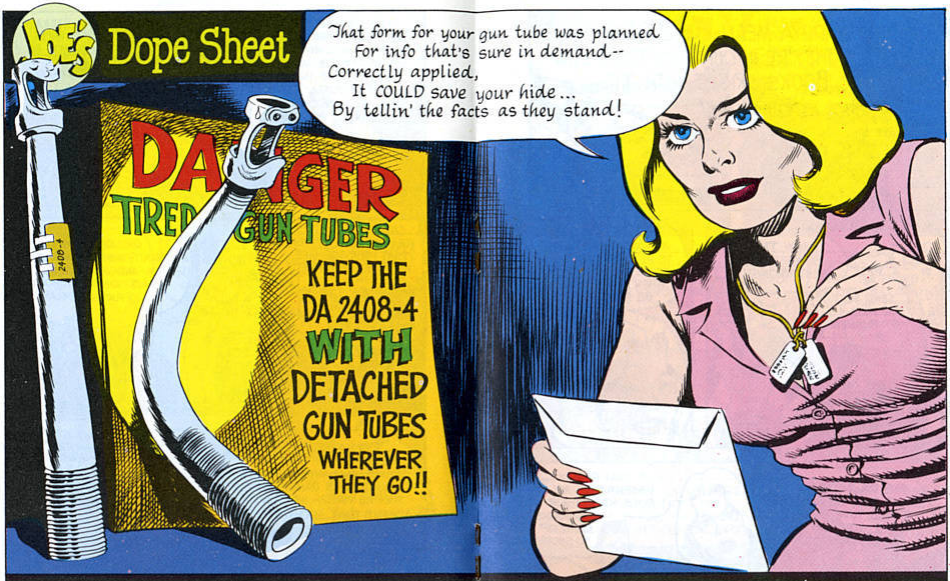
A READINESS BRIEFING IS UNDER WAY... THE LOGISTICS READINESS OFFICER SPEAKS...

WHA?

READINESS STATUS

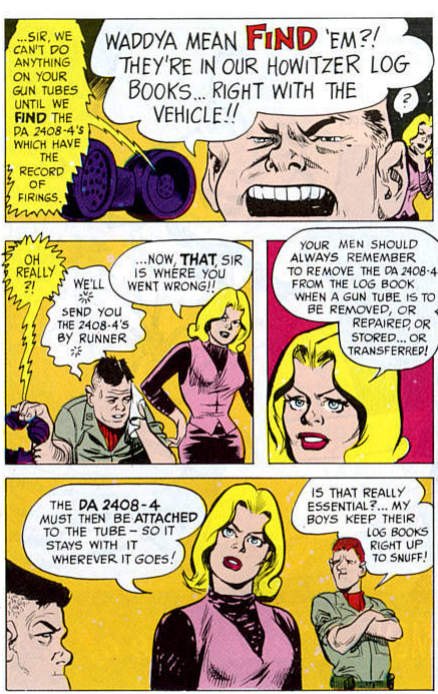

YES, SIR!! . . OUR SP HOWITZERS' GUN TUBES ARE AT SUPPORT FOR REPAIR!!
GET THEM BACK HERE!! WE'VE GOT A MISSION LAID ON US!
HELLO...GET ME SUPPORT... HELLO... HEY, GEORGE, ABOUT OUR TUBES— WE NEED 'EM NOW!!
YOU ... WHAT???? ...OH, NO!!
WHAT? WHAT? WHAT? WHAT?
THEY'VE ALL BEEN REMOVED AND EVACUATED TO GENERAL SUPPORT FOR REPAIR OR REPLACEMENT!
OH NO! CALL G S. TELL 'EM TO PUSH THAT JOB THROUGH... WE'RE HURTIN'!
HELLO, HARRY, ABOUT OUR HOWITZER GUN TUBES... YEAH... YEAH... YOU WOT? ... OH, REALLY??
SIR, G S SAYS THEY'RE TRYIN' TO FIGURE OUT IF THEY'RE STILL SERVICEABLE!
REPLACE 'EM ANYWAY!


...BUT WE DON'T HAVE A TEST GAGE THAT WILL REVEAL THE CONDITION OF METAL FATIGUE WITHIN THE TUBES... WE'D HAFTA CUT "SLICES" OUTTA 'EM FOR ANALYSIS WHICH WILL DESTROY THE TUBES...
SO, CONDEMN 'EM AND DO IT!!
CAN'T SIR... WITHOUT REASONABLE EVIDENCE THAT SERVICE LIFE HAS BEEN EXPENDED!
OK... OK... HOW-ABOUT- JUST- REPAIRING 'EM-AND-SENDING 'EM BACK-TO-US - WITHOUT-FURTHER-DELAY!!
...TOO HAZARDOUS, SIR... THE SAFETY OF YOUR GUN CREWS AND ANY BYSTANDER WOULD BE IN DANGER WHEN THEY'RE FIRED - WE DON'T WANT THAT... DO WE, SIR?
SIR, CONNIE WANTS TO KNOW WHERE YOU WANT THE PS PIN-UP.
I'LL JUST PUT IT HERE. HE'S GOT A FLAP GOING!



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.


...SIR, WE CAN'T DO ANYTHING ON YOUR GUN TUBES UNTIL WE FIND THE DA 2408-4'S WHICH HAVE THE RECORD OF FIRINGS.
WADDYA MEAN FIND 'EM?! THEY'RE IN OUR HOWITZER LOG BOOKS... RIGHT WITH THE VEHICLE!!
OH REALLY ?!
WE'LL SEND YOU THE 2408-4'S BY RUNNER
...NOW, THAT SIR IS WHERE YOU WENT WRONG!!
YOUR MEN SHOULD ALWAYS REMEMBER TO REMOVE THE DA 2408-4 FROM THE LOG BOOK WHEN A GUN TUBE IS TO BE REMOVED, OR REPAIRED OR STORED... OR TRANSFERRED!
THE DA 2408-4 MUST THEN BE ATTACHED TO THE TUBE - SO IT STAYS WITH IT WHEREVER IT GOES!
IS THAT REALLY ESSENTIAL?... MY BOYS KEEP THEIR LOG BOOKS RIGHT UP TO SNUFF!

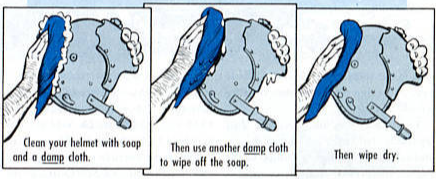

YES... THE 2408-4 IS THE TUBE'S RECORD OF FIRING ... IT'S LIKE YOUR SERVICE RECORD IS TO YOU!!
UNLESS SUPPORT... OR THE NEXT USER, KNOWS ITS HISTORY — THAT GUN COULD BE AS DANGEROUS TO THE USER AS IT IS TO THE ENEMY!
BOY, THAT 2408-4 IS PRETTY VITAL!! ... SAY, WHAT HAPPENS WHEN THE FORM IS SENT TO THE NMP??
YOU STILL TRANSFER ALL THE ACCUMULATED INFO FROM PREVIOUS FIRING ON TO A NEW 2408-4 AND KEEP IT — WITH THE TUBE!
SO, NO MATTER WHAT, THE FIRING RECORD WILL STAY WITH THE TUBE!!
AND BY THE WAY... MAKE SURE THE DATA YOU PUT ON THE DA 2408-4 IS FOR THE RIGHT PROPELLANT AND CHARGE USED!
GOT A MESSAGE FOR CONNIE RODD!!


SO, YOU SHOULD BE SURE **TOTALS** ARE TRANSCRIBED TO THE NEW FORM WHEN THE **OLD** ONE GOES TO THE **NMP!?**
PSST!
PSSST!
YES... SURE... GREAT!!
SIR, I'VE GOT GOOD NEWS. YOUR **DS** HAS BROUGHT YOU A COUPLE OF TUBES. SO YOU'RE IN BUSINESS!!
HMM, I SEE!
WAIT-A-MINUTE!
DON'T MOUNT THOSE TUBES YET... THERE'S **NO** 2408-4 ATTACHED TO 'EM... HOW DO WE KNOW HOW TIRED THAT TUBE IS? MAN, ONE COULD **BLOW APART,** FIRST ROUND FIRED!
BEFORE YOU ACCEPT A REPLACEMENT TUBE... MAKE SURE ITS DA FORM 2408-4 IS WITH IT.

AIR MOBILITY

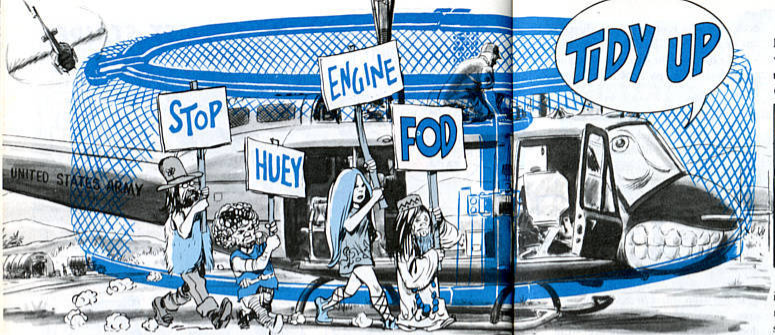
FLYING HELMET STRIPES

HERE'S HOW TO APPLY IT:



Cut 2 strips 5 inches long, 1 strip 8-3/4 inches long, and 2 strips 7-1/2 inches long.

Remove the paper backing from the tape and press the tape on to the helmet. Smooth it out and trim the extra tape from the center of the visor housing track and housing edges.



It took some doin' but the battle against foreign object damage is being won.

First, there was the sand and dust separator that corralled dirt in the air and kept it from causing erosion of the engine compressor blades.

Now, along comes a screen that goes outside of the separator on the UH-1B, C, D, H and AH-1G models to keep out nuts, bolts, cotter pins, safety wire, dzus fasteners and other large objects.

Screen Kit, P/N 1-010-680-01, FSN 1560-167-8113 is the screen you want. And Ch 1 (16 Aug 68) to MWO 55-1520-210-30/17 and Ch 5 (4 Sep 68) to MWO 55-1520-211-30/35 on installation of the particle separator puts it on most models. An MWO to put the screen on the HueyCobra is in the mill.

You get a maximum power loss of 1 per cent, but it makes your engine safe from FOD about 99 per cent of the time.

It's that 1 per cent possibility you crewchiefs and mechanics want to keep in mind.

FSN 1560-167-8113

The separator does a first-rate job of trapping sand and dirt to eliminate erosion of the engine compressor blades. Blade erosion reduces efficiency — robs an engine of power.

The engine screen takes over where the screen leaves off to get rid of large objects.

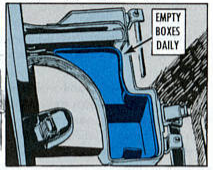
But what about hardware — even tools — left behind after maintenance is pulled with the separator and screen off? That's the rub.

When you pull line maintenance try these PM tips to help prevent engine FOD.

KEEP SEPARATOR CLEAN

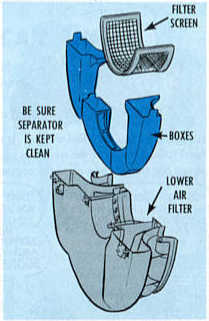
Remember that during the dry season dirt in the separator is going to build up fast. Before you know it you've got several inches collected in the box assemblies.

If you don't empty the boxes regularly the dirt will build up and the whole shebang will unload right into the engine... doesn't make for a healthy (cough! cough! cough!) engine.



The PMI checksheets call for cleaning the separator. But if the dust is really flying where you are it's a right-smart idea to clean it more often.

Like — empty the dirt out of the boxes on the Daily.



MORE

For a thorough cleaning job wash mud from the plastic boxes and foam insert by using clean cold water. Shake off the excess water. Let the boxes air-dry or wipe them with a clean cloth.

Clean out any sand or water from the well of the lower air filter. Wipe the well with a clean cloth. If the filters are in place be sure you don't puncture the screen.

Take out the filters and shake out any loose dirt. If they're really dirty, wash them in clean water and scrub with a soft-bristle brush. Shake off the excess water. Let 'em air-dry or use a cloth for drying.

That's all it takes to keep your separator sparkling clean, man.

COUNT YOUR TOOLS

When you mount your bird leave the tool box on the ground—or in the

troop compartment in bad weather. It's hard to keep track of the tools you use if you lug the tool box up to the engine deck or to the roof and work directly out of it.

Take out only the tools you need and count 'em. Then go to work on your baby.

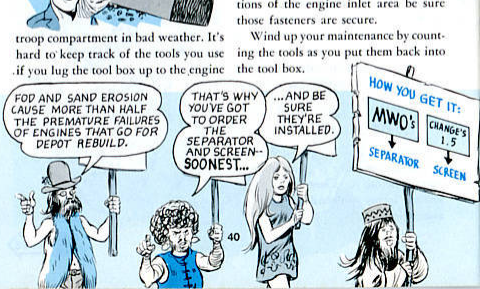
SEARCH OUT DROPPED, LOOSE HARDWARE

While you're making with the wrenches keep track of the hardware—nut, bolts, washers, cotter pins, safety wire.

If you drop a part in the engine inlet area, like under the separator which doesn't have the new screen, dig—dig—dig, man! Go in there and find it or the stage will be set for engine FOD.

Loose cowling and inspection plate fasteners are a real problem. If one little dzus fastener comes out and hits the fan, C-A-R-U-N-C-H!! It's umpteen hours of down-time and much moola for an engine change. During inspections of the engine inlet area be sure those fasteners are secure.

Wind up your maintenance by counting the tools as you put them back into the tool box.



TWIST 'ER EASY, MISTER!

When you birdmen handle Huey (UH-1) flight control tubes for looseness or binding on a bearing check, go easy on the muscle power.

Using too much twisting force on tubes with bearing, P/N AN206DSP4, FSN 3110-198-0336, in 'em can overload the bearing and pop out the bearing retaining clip . . . exit the ball bearings.

Never use a screwdriver (or any other tool) in a clevis when twisting the tubes. Use hand pressure **only**, on the tubes.

If a clip does pop, tho, fire off an EIR (DA Form 2407) to the Aviation Command, ATTN: AMSAV-R-EU, giving the manufacturer's part number, assembly number, bird model and serial number plus the total hours on the failed bearing.

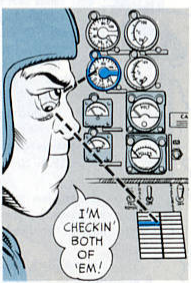
PILOTS . . . USE THE SCAN LINE

The transmission oil pressure caution light on your Huey (UH-1) can give you the cold clammy sometimes without any real reason for sweat.

The light switch can short out if water gets into the housing, causing a short across the contact points. The short causes the caution light to glow — normally an indication of low transmission oil pressure.

If the transmission light comes on in your bird, look sharp! Run your peepers up to the transmission oil pressure gage. If it's in the green you've got a faulty light switch and you can complete your mission. Be sure you write up the faulty switch.

Remember that the purpose of all bird caution lights is to get your attention. Scan your instruments for the real status of your bird.



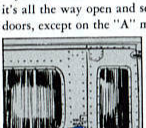
Now you see it—now you don't??

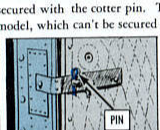
That's the way it is with the passenger doors on your Huey. Fly with a door partly open, and the wind can yank it off.

More tail rotor blades get FOD that way than you can shake a wand at!!

No magic needed when you fly a doors-on bird, tho.

Just make sure the door is latched closed. If you want the door open be sure it's all the way open and secured with the cotter pin. This goes for all Huey doors, except on the "A" model, which can't be secured in the open position.


CLOSED-SECURE-OK



OPEN-SECURE-OK


PARTLY OPEN-NO. 10!

AIRBORNE SMOKE SCREEN

The XM52 smoke-generating subsystem used on the Huey (UH-1D) needs a strainer in its fog-oil filling-line assembly. And, it needs it now.

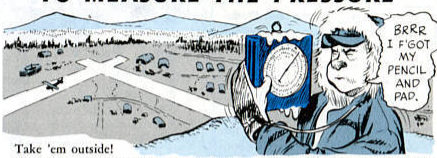
The strainer will catch any scum that may form in the fog-oil drum. Without the strainer the scummy stuff will get fed into the system and it'll cause wear and damage in the pump and motor assembly.

The strainer (Part No. U6697) is for free from your general support outfit.

To install it you just remove the bulkhead quick-disconnect fitting from the dip tube assembly, clean the dip tube and hose assemblies, insert the strainer into the flared end of the dip tube and then replace the fitting on the tube.

Then you can check the filling-line assembly at every filling and clean it as needed with solvent.

TO MEASURE THE PRESSURE



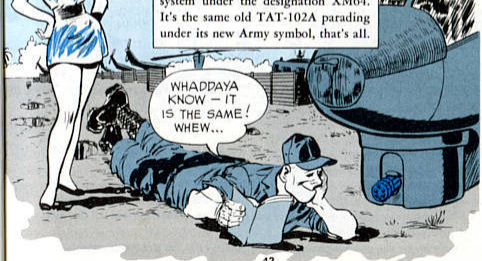
Take 'em outside!

Yessir, you aircraft control-tower types . . . when it's time for a pressure reading on your ML-102( ) barometer, be sure you take that reading outside your shelter.

Thing is, ML-102 barometric pressure readings taken inside your AN/TSQ-70A aircraft control central, or AN/TSQ-72 landing control central, can be wrong because of the pressure-temperature differential between the inside and outside of the shelter.

So when it comes to barometric pressure readings . . . take 'em outside!

TAT's NOW XM64



RADIO REPAIRMEN, CREWCHIEFS...

SPRUCE UP YOUR BABY

The unusual is "the usual" in-country, weather-wise.

You have to fight dust and rain every inch of the way to keep your workhorse in the blue.

With the Chinook (CH-47) main rotor blades whipping dirt into the electronic equipment compartment, the AN/ARC-51X UHF receiver-transmitter, for one, really takes it on the chin. The blower filter gets packed with dirt right-quick.

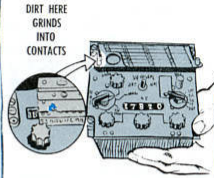
'Course, the periodic PM checks spelled out in TM 11-1520-209-20 (May 65) call for radio-types to eye the filter for cleanliness every 200 hours.

If the bird is operating in a dust bowl, tho, better move this check up to the intermediate. The same goes for other set checks, depending on your experience. A little compressed air (low pressure) on the filters should get rid of the dirt and give you cool-running sets.

Don't forget the control panel, C-6287/ARC-51BX, on the lower console.

Dirt gets under the cover and grinds into the contacts as the drum turns around . . . can shorten the life of the control. A blast of compressed air should get rid of the dirt and grit.

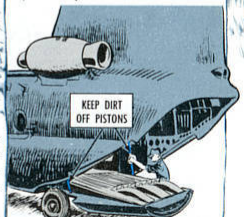
Fact is, you want to go all-out with the cleaning bit. Get rid of all moisture and loose dirt from your radio equipment and shelves by using a clean, lint-free cloth. Use cleaning compound to remove grease and ground-in dirt.



CLEAN HYDRAULIC SYSTEM — A MUST

Crewchiefs—always keep a clean, lint-free cloth in your tool box. It comes in mighty handy for cleaning all the actuator pistons and SAS links.

Wiping dirt and sand off the pistons once in awhile will keep grit from cutting into the actuator seals, causing ruined seals, leaks and a contaminated hydraulic system.

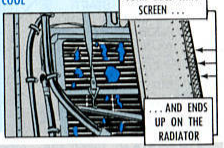


MORE

Of course you also want to wipe the top of oil and hydraulic cans before you open them so you don't end up with a dirty bird—deadlined for a system cleaning.

When you disconnect hydraulic and oil lines keep a container handy to catch the run-off. Otherwise, this stuff will drain into the bilge . . . makes removing the floorboard and cleaning the bilge a real tough proposition.

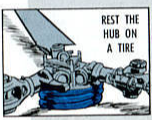
KEEP COOL



Never overlook the transmission fluid cooler, either. Straw will sail right thru the screens on the clamshell doors and lodge on the cooler radiators . . . cut down on the cooling air flow.

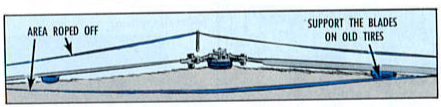
Keep those radiators clean by brushing out any debris.

PROTECT MAIN ROTOR



Before you take the main rotor off your bird latch on to some old bird tires from the salvage yard. They make excellent shock absorbers for the hub and blades . . . much cleaner than placing the main rotor on the bare ground.

To further protect the blades from vehicle and foot traffic be sure you rope off the area.

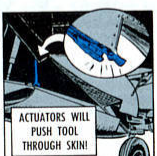


STOP RAMP FOD

The hydraulic pressure in your baby brings the ramp up with a "womp!"

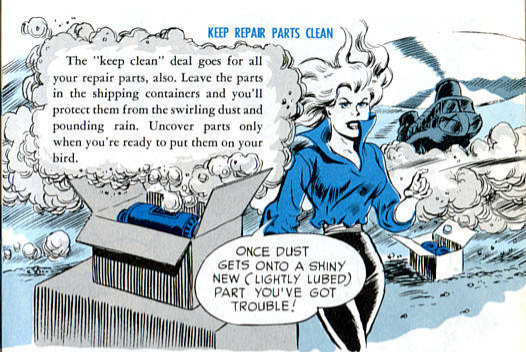
If there just happens to be a tool or part laying on the edge of the ramp it won't make any difference, as far as ramp closure is concerned. The actuators will push the tool right thru the skin . . . what a revoltin' development!!

Keep that ramp clear.



KEEP REPAIR PARTS CLEAN

The "keep clean" deal goes for all your repair parts, also. Leave the parts in the shipping containers and you'll protect them from the swirling dust and pounding rain. Uncover parts only when you're ready to put them on your bird.



SCREEN OUT FOD

If your Chinook (CH-47) engines don't have an air inlet screen to protect them from foreign object damage get a move-on, man. MWO 55-1520-209-20/59 (26 Aug 68) has the scoop for your bird. Before you can put the screen on some models, tho, MWO 55-1520-209-30/67 (27 Jul 67) has to be applied.

So, let's get those screens on. Protect your engines.

Before you supply types request Sioux (OH-13) engine cooling fan belts, make sure you eye Ch 1 (9 Feb 68) to TM 55-1520-204-20P. Only belt, P/N 47-661-041-3, FSN 3030-879-6507, is authorized. Accept no substitutes.

COMMUNICATIONS

FINGER TORQUE

You're not doing any control gismo a good turn when you use more finger-power than needed. So, no fiddling while the knobs turn—no swinging just to hear 'em snap. Unlock any locking devices, turn everything in sequence, never override the range limits...

IS THAT BUILT-IN-ARM TORQUE AN ISSUE ITEM?

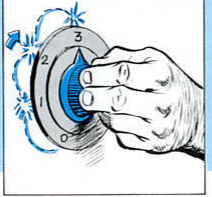
NAH, I WUS BORN WITH IT... SO, THE REST OF YOU ORDINARY GUYS BETTER READ THIS WITH BOTH EYES!

... and come to a standstill at all stop signs. Forcing a turn by applying extra finger pressure can put a dial out of adjustment, strip a knob from a shaft, snap a switch spring or set a control up for a binding breakdown.

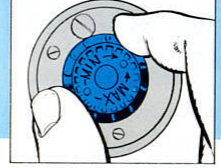
THIS GOES FOR ANY EQUIPMENT WITH KNOBS, DIALS, LEVERS OR SWITCHES!

1. Unlock first — if there's a control locking device. Pressure on a locked control may put it in a shop for repair.

2. Follow the sequence. If it's 1-2-3, don't start with 3. And never work both ways from the 2.



3. Stay "home on the range." Trying for just one notch more or less than the rated range is just asking for trouble. This type of "fudging" for a little extra may soon cause you to get nothing at all.



4. Never finger your way past a stop point. The best you can get from this is fuzzy operation and early breakdown. And your arm could get twisted by a statement of charges and a payless payday.

The contact pins in your H-189/GR headset usually do what's expected—make contact.

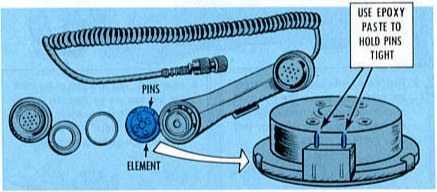
But slippage of the 2 pins in the earphone element—and microphone element, too—can often cause a short with the metal shield covering the elements.

That, o' course, can knock out your element.

Trouble is, the contact pins aren't any too secure in their plastic mold, so-o-o-o, rough handlin' or incorrect installation in the headset can shake 'em up.

Then the pins can slip and come into contact with the metal shield on the element.

Here's what you can do for a temporary fix:



Use a fast-drying epoxy paste as a filler around the contact pins to hold 'em tighter.

This'll cut down chances of a short caused by the pins touching the metal shield.

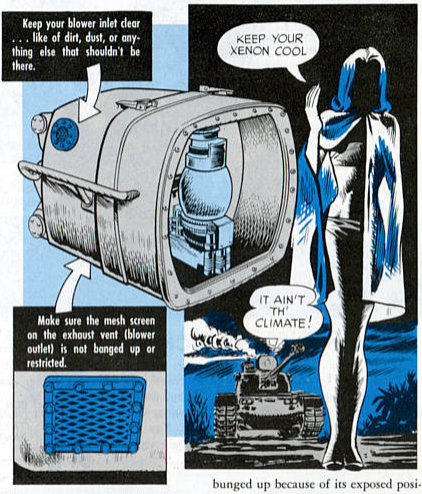
To request the epoxy paste, use FSN 8040-847-6387, as listed on Pages 88-89 of Fed Cat C8000-IL-A (Jan 68).

Nix on trying to repair failed elements. These should be discarded, and only working elements should be given the epoxy treatment.

COOL AND CAPABLE

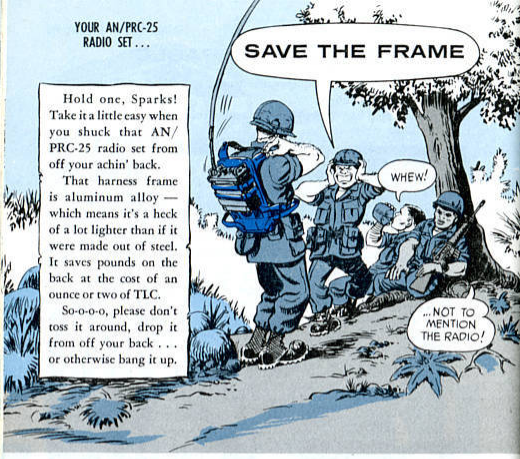
If there ever was a piece of equipment intended to keep its cool, that item's your 23-in Xenon searchlight.

And you can help keep it that way by heeding this:



This means you don't install any aluminum bars or a protective shield—'cause they can cause the lamp to overheat and give plenty of trouble.

What's more, a shield could get bunged up because of its exposed position stickin' out from the bottom surface of the searchlight. You could repair damaged screens by rewelding—then keep them in shape with careful handling.

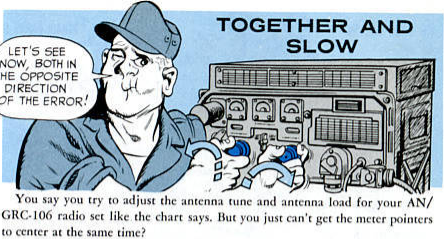


DON'T BE SHOCKED, BUT...

That handy TL-13A pliers handle fix mentioned in PS 191, Page 6 is no guarantee that you can go out and grab 10,000 volts. No, sir! Even with milk can rubber tubing, keep away from hot wires and possible shock sources. You get some insulation benefit from the tubing, but don't trust it all the way.

TELETYPEWRITER TIP

Take a listen, you teletypewriter types! If you yearn for the best and most specific poop on lubing your machine, take a gander at TB 11-5800-204-20/1 (Feb 66). The TB also lists stock numbers so you can order the lubricants.

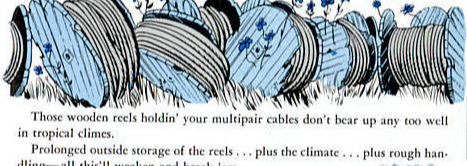


TOGETHER AND SLOW

You say you try to adjust the antenna tune and antenna load for your AN/GRC-106 radio set like the chart says. But you just can't get the meter pointers to center at the same time?

Before you send the set back to your support unit, give this deal a whirl: Turn both knobs together in the opposite direction of the indicator error . . . and do the twisting real slow. It's almost a sure thing that the pointers will center when you do your adjusting this way.

REEL TROUBLE—THAT'S WHAT



Those wooden reels holdin' your multipair cables don't bear up any too well in tropical climes.

Prolonged outside storage of the reels . . . plus the climate . . . plus rough handling—all this'll weaken and break 'em.

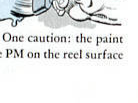
But you can extend their usefulness by extra-careful handling.

Metal reels do better. They don't break and they can be re-used.

You do have to watch for corrosion on those big metal spools, though.

If your metal jobs have rusted and need emergency attention you can hit the rust spots with some semi-gloss paint (MIL-P-13596):

5-gal pail, FSN 8010-584-3157
55-gal drum, FSN 8010-584-3158

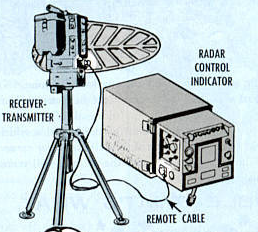


Both are olive drab, and the color number is X24087. One caution: the paint is not effective over spongy or scale-type rust, so do a little PM on the reel surface before applying the pretty stuff.

ON YOUR AN/PPS-5 RADAR SET . . .

PINS, PINS,

THERE'S NO CONNECTION!



If you're comin' up with bent or broken pins in the connector plugs of your Pippsy-5 CX-8666 cable assembly, it might be high time to take a good look at the situation . . . also the pins.

Y'see, there's no guarantee of an exact matchin'-up of the connector plugs before contact so you've gotta be gentle and careful all the way.

If you cock your connector plugs during the matching, you can bend or break the pins.

Or there can be damage when you forget and reverse the cable—and end up trying male to male mating.

Take pains to line up the male plug to the receiver-transmitter unit and the female plug to the control-indicator unit.

GENERAL SUPPLY

REPAIR-PARTS SPECS . . .

WORK YOUR DX

You're missing a real good thing if you're not tuned-in to the DX (Direct Exchange) section that supports your outfit.

The DX system is authorized by AR 711-16 (para 14-8), the bible for your supply support outfit. Its stocks normally include the repair parts and assemblies that're coded R (recoverable, repairable) in your maintenance supply manuals—plus any other fast-moving, high-density items that can be repaired by your maintenance support outfit.

MORE

To let you know what items you can swap, the DX section puts out a DX list. The list is updated quarterly, or so, and it's up to you to keep the current list handy. The list provides FSN, item description info, etc.

To trade with DX all you do is fill in a DA Form 2402, Exchange Tag, for the unserviceable item, attach the tag to the item and deliver the works to DX. (The section is normally located close to, or part of, your maintenance support outfit.)

TM 38-750 (May 67), para 3-2, gives the scoop on filling DA Form 2402.

The DX-types see to it that the unserviceable stuff you bring in gets repaired and back on the DX shelves quick-like . . . so it'll be ready and waiting next time you need a replacement.

Your big job in the DX business is handling the unserviceable items with a fair measure of respect. That is, making out the 2402's correctly, and packing, wrapping, boxing or loading the unserviceable, repairable items so they'll arrive safely at DX.

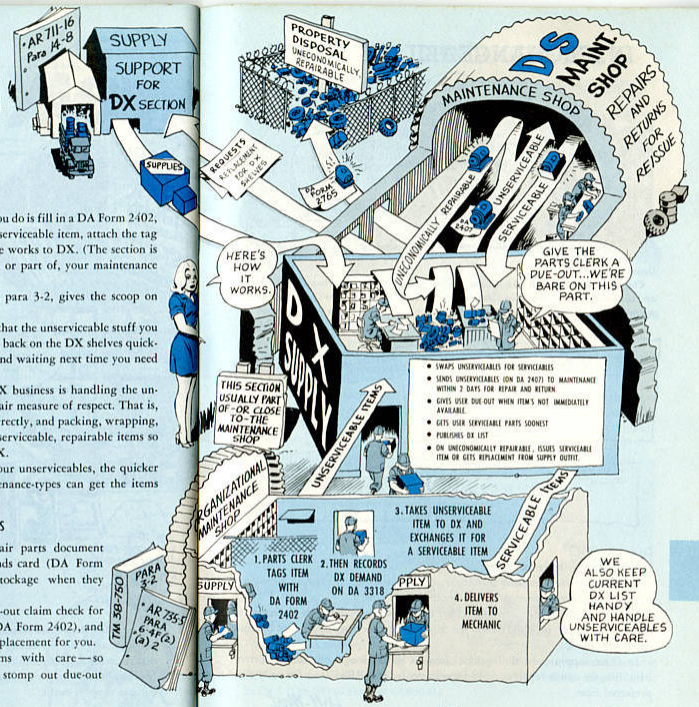
The better you treat your unserviceables, the quicker (and cheaper) the maintenance-types can get the items back on the DX shelves.

KEEPING TABS ON DX ITEMS

You needn't record DX swaps on your repair parts document register. Just note 'em on your record of demands card (DA Form 3318). DX items may be authorized for PLL stockage when they collect the required demand info.

When a DX item is out of stock you'll get a due-out claim check for your unserviceable item (usually section 4 of DA Form 2402), and you'll get buzzed as soon's DX can rustle up a replacement for you.

And, incidentally, handling unserviceable items with care—so they'll be easier to fix up—is one way to help stomp out due-out delays.

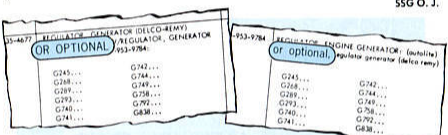


INTERCHANGEABILITY SCOOP

Dear Half-Mast,

Change 1 (May 68), AR 735-35, para 6-4e(1)(e)2, calls for interchangeability data on PLL items. Does that mean the FSN and description of any other repair part that can replace the item recorded on the title insert?

SSG O. J.



Dear SSG O. J.,

Not just any other repair part.

A part's interchangeability info must come from a supply manual, or whatever publication authorizes the part recorded on the card.

Interchangeability of parts is decided by the people responsible for maintenance and supply procedures for the equipment concerned . . . not by the equipment users.

In older supply pubs the optional item is listed along with the preferred item. But, the newer repair parts and special tools lists (RP&STL's) list only the preferred item.

Half-Mast

PLL FOR SPACE HEATER

Here's how you read the allowance column for PLL items in TM 10-4520-202-25P (Apr 63).

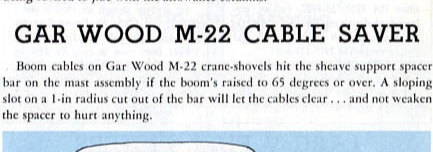
For less than 10 space heaters (or assemblies) you can consider all parts in the TM as "as required" (*) items.

For 10 or more major items some of the parts are "as required", but others show an allowance —which makes 'em MS (Minimum Stockage) parts.

So, for now, don't sweat the initial allowance info in the TM's para 3b. It's being revised to jibe with the allowance columns.

GAR WOOD M-22 CABLE SAVER

Boom cables on Gar Wood M-22 crane-shovels hit the sheave support spacer bar on the mast assembly if the boom's raised to 65 degrees or over. A sloping slot on a 1-in radius cut out of the bar will let the cables clear . . . and not weaken the spacer to hurt anything.



CO_2 cartridges for inflating both the LPU-2-P life preservers and the new LPU-10-P underarm type now come under FSN 6830-543-6693. You'll find it in Ch 5 (Oct 68) to Fed Cat C6800-IL.

MIL-STANDARD PUZZLE? TRY —

NUMBER BLOCK FOR AIR CLEANERS

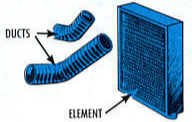
Air Cleaner stock numbers for 1-1/2 HP and 3 HP models of Military Standard engines can be confusing, but here's help.

Models 1A08-I and -II and 2A016-I and -II use oil-bath type air cleaners, FSN 2940-865-6312, Mfrs code 88408, P/N ERF-4360.

Models 1A08-III and 2A016-III use the dry-core type, P/N 13211E8448, FSN 2940-832-5673 code 97403.

For oil-bath cleaners, use pipe-to-tube elbow FSN 4730-263-4980; Packing, preformed, air-cleaner cup FSN 5330-608-6432; clamp assembly FSN 4730-908-6292; and duct, air cleaner FSN 2940-439-8081.

On 1A08-I and -II, elbow, air cleaner duct, is P/N ERF 439, code 88408; on the 2A016-I and -II models only the elbow is FSN 2940-972-7954, code 97403, P/N 9787E19-3.



For dry-type cleaners on 1A08-III and 2A016-III, use Elbow, Air Cleaner Duct, FSN 2910-867-8730, code 97403, P/N 13214E7052. Ducts come in Parts Kit duct, Air Cleaner, FSN 2805-953-1563, code 97403, P/N 13214E8187. Cores are Element, filter, air cleaner, FSN 2940-225-4842, code 97403, P/N 13211E8449.

LARC V FUEL FILTERS

Water, water everywhere, including in the fuel filters of your LARC V. If you're in that warm, wet, and woozy climate where you have water in your LARC whether you're in the water or on land, then you have to drain those fuel filters often.

When you take those fuel filter drain plugs out and put them back so often, there's a chance you'll damage the threads and filters.

To make those fuel filters easier to drain, remove the present drain plugs, and use brass drain cocks, FSN 4820-275-2224, in place of the plugs. You find the drain cock listed in Fed Cat C-ML-A (Aug 68).

Don't replace those plugs for the drain cocks unless you are in that wet climate.

USE BRASS DRAIN COCK FSN 4820-275-2224

RUMOR 50 – FACT 30

Dear Half-Mast,

Some people here in RVN say we're supposed to use 50-weight oil in our small Mil-Std engines, like an generators 1-1/2 KW to 20 KW. I say OE-30 is right, or 9250 at least—like the LO's say. Who is right?

SSG D. C.

Dear Sergeant D. C.,

You and the LO's.

The only time you'd put OE-50 into these engines would be in an emergency. It's too heavy to do a good lube job on these engines.

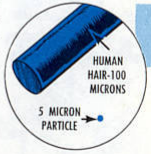
Half-Mast

FILTER ELEMENTS

The standard filter elements you use in your filter separators have a 5-micron filter that'll filter particles 5 microns and larger in size. To give you an idea of the size of a micron, a human hair is 100 microns in diameter.

So, if you have a filter separator, you'll want to make sure you get the standard filter element, FSN 4330-983-0998, that meets Specification MIL-F-52308 (ME). That means it must come through your regular Army supply channels and not direct from the manufacturer.

You know what can happen to your equipment when it gets dirty fuel. Never take that chance, make sure you get the right filter.



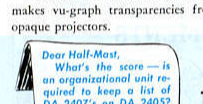
FOR SUPPLY AND MAINTENANCE TRAINING

Could be you've missed 'em . . . the 37 DA pamphlets in the 350-series. They cover maintenance on the gear you work with. And, several cover unit supply. You can find 'em listed in Ch 2 (Aug 68) to DA Pamphlet 310-1.

You can get training aids for a few of these pamphlets from your audio-visual center. They are:

SLIDE NO.	USED WITH
T38-11-1 (49 slides)	DA Pam 350-21-1 Organizational Supply
T38-11-2 (10 slides)	DA Pam 350-22-1 DS Supply
T38-11-3 (28 slides)	DA Pam 350-23 Commanders' Maintenance
T38-11-4 (7 slides)	DA Pam 350-26-1 M151 Organizational Mechanic
T38-11-5 (5 slides)	DA Pam 350-32-1 M151 Driver

These come in the form of vellum reproducibles. Your audio-visual center makes vu-graph transparencies from them. Or, you can use the vellums in opaque projectors.



WHO KEEPS THE LIST?

SUPPORT MUST— USING UNIT MAY

Dear Sergeant O. F. W.,

Nope—but you may keep such a list, like TM 38-750 says.

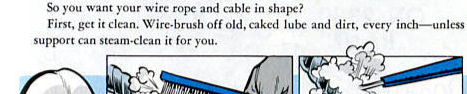
The requirement depends on whether a unit is on the sending or the receiving end. Support units receive maintenance requests (DA 2407's) and are required to list 'em on DA 2405. Normally organizational units send DA 2407's only. They keep a list on DA 2405 only if they find it useful—for control of DA 2407's used as job orders within the unit or large numbers of DA 2407's sent to support.

Half-Mast

wire rope DOPE

So you want your wire rope and cable in shape?

First, get it clean. Wire-brush off old, caked lube and dirt, every inch—unless support can steam-clean it for you.



WHAT'S NEXT... DEPENDS ON CLIMATE.

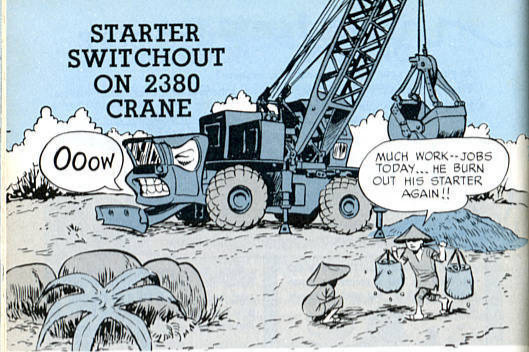
In dry, sandy country, just keep it clean and dry. Using any kind of preservative grease would just catch grit and grind up the wire strands.

In wet tropics, you use Lubricating Oil, Exposed Gear, Spec VV-L-751, 100°F pour point, Grade C, Type II. FSN 9150-234-5200 is for 5 lbs.; FSN 9150-264-2918 for 35 lbs. Heat it to apply, enough so it'll soak in good.

In CONUS or Europe, Grade B is summer standard—80°F pour point, FSN 9150-246-3276 for 35 lbs. Grade A goes in cool weather, 60°F pour point, FSN 9150-261-7891, also 35 lbs. Heat to apply either kind. The FSN's are all in Fed Cat C9100-IL.

When VV-L-751 can't be had, you can use OE30 but you'll have to give it more attention. But it's best to get the right stuff when you can. VV-L-751 has anti-corrosive in it, and OE30 doesn't. Whatever you use, the object is to get lube down into the cable core and a coat thick enough to stick.

You can wrap rolled-up cable to travel—but take off covers from drums and winches when you get to your new work point. Otherwise, condensation can collect inside and rust will gnaw up your wire.



Burning up starter armatures on your 2380 rough terrain crane?

The cure is in a new Repair Kit, P/N SP6029, for the solenoid clutch in the starter switch.

You ought to install the kit even if you haven't had trouble — because the original-issue return spring is weak, and could hang up on you.

Order the kit from: U.S. Army Mobility Equipment Command, ATTN: AMSME-MCC, 4300 Goodfellow Blvd, St. Louis, Mo. 63120. They come for free—and will be available until 30 March 1969.

BRUNING DUST COVER

Dust and more dust . . . one of the biggest equipment killers in the Army. You can keep the dust out of your Model MS 300 Bruning reproduction set, FSN 3610-753-2263, if you order the heavy-duty, 8 gage, dust cover, Mfr Code 09177, Part No. 20504. It costs $3.40.

CAREFUL: Be sure your machine has cooled before you cover it.

Not For Aircraft!

Self-locking nuts used in aircraft are precision-made so never try to restore one with a locally-made tool, like the one shown on page 55 of PS 194. Use a new nut.

Die-Alco-MX

Yes — you can winterize your multi-fuel, diesel and gasoline fuel systems with alcohol during freezing temperatures. Use ½ pint of Grade III, Spec O-E-760B denatured alcohol FSN 6810-543-7415 (1 Gal can) to every 10 gallons of fuel. Although some tech manuals haven't been updated to reflect this new poop, USATACOM Msg 1-23033 (23 Jan 68) says it's OK. Regardless of the alcohol mix, be on constant guard against water getting into your system. Keep it water-free.

For UH-1C Also

The bit in PS 192, page 19, about using 4 steel bolts and associated hardware in the HueyCobra main rotor trunnion housing also goes for the Huey UH-1C model. Dig up a copy and make a note.

S...L...O...W...L...Y

Change 3 to your 155-MM towed howitzer's TM 9-1025-200-12 says you should jack up your M114A1 till the tires are off the ground when you're putting it in firing position. Fine. But watch this: If you have to extend the firing jack plunger all the way to get those tires airborne, slow down in your cranking when you near the limit. Else you might hurt the firing jack stop.

Gas Can Gasket

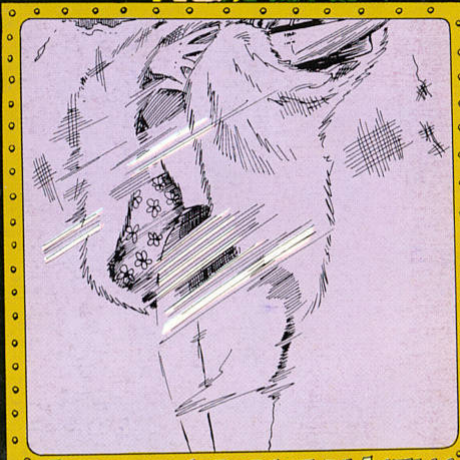
No need to play with fire because the gasket on your gas can is lost or in bad shape. You can replace it with a synthetic rubber gasket, Type III, FSN 5330-298-7165. TB 385-3 (Jun 68), Fire Prevention and Protection, Military Gasoline Cans, gives you the authority.

Shortcut Brushoff

Now, just a cotton-pickin' minute there! Don't wrap a cleaning patch around your brush when drying the bore or chamber of small arms. It won't get it any drier — and it's likely to ruin the brush. Use the swab holder section of your cleaning rod — that's what it's for.

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

IT'S YOUR BABY, BABY



PROTECT AIRCRAFT PLASTICS FROM SCRATCHES AND CRAZING

See TM 55-405-3 for details