

Issue 264

PS

November
1974

THE PREVENTIVE MAINTENANCE MONTHLY

FIRE YOUR MICRO-LASER
QUICKLY, SERGEANT--
OR EARTH IS
DOOMED!

OH, NO... TH' POWER
CABLE'S FRAYED --
FALLING APART!

NOBODY
DID ANY CABLE
PM!!

MURPHY
ANDERSON

PM CARE OF CABLES
AND CONNECTORS
See Page 29

How About Your Equipment?

Are YOU Ready?

When your CO comes by your area you want to be A-OK. Right?

You figure if you can satisfy him in all ways—training, maintenance, supply, record keeping—you will be with it if your outfit should go into combat.

Right again.

In PM, what are some of the things that cause problems for soldiers these days?

Let's look at a few:

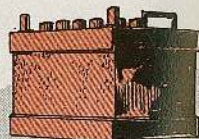
Tires—Inflated wrong, worn unevenly, worn too far for retreading. Keep 'em pumped up right. See your mechanic about the wear.



Oil—Never changed, low. These can destroy your engine.



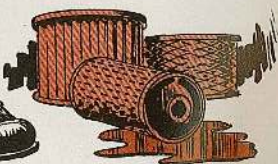
Batteries—Electrolyte low, charge low. Keep 'em up.



Engine coolant—Low, lets engine overheat. Your engine is powerful, but delicate.



Filters—On engines (fuel, oil and air), electronic equipment. Dirty, clogged, not cleaned or changed. A foul filter can destroy your equipment.



Repair parts and supplies—Too much stocked (Does your command have a "free turn-in" policy?) Stock only what you need. Turn in excess.



Reparable items—Not turned in for repair. Move 'em to your DSU. Now.



PLL—Do you order most repair parts on high priority? If so, you're really fouling up the supply system for yourself and your friends in other outfits.



Mechanic not in maintenance? PLL man not in repair parts supply? See your CO about getting these trained men in the jobs they know. They can help keep your outfit combat ready.



PS

THE
PREVENTIVE
MAINTENANCE
MONTHLY

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PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to: OR Call: AUTOVON 745-3503.

MSG Half-Mast
PS Magazine
Lexington, KY
40507

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BE YOUR OWN INSPECTOR . . .

YOUR M17A1

SOME EQUIPMENT YOU CAN CHECK AS YOU USE IT... BUT NOT YOUR M17A1 PROTECTIVE MASK!

THIS IS ONE PIECE OF GEAR THAT BETTER BE READY AT ALL TIMES!

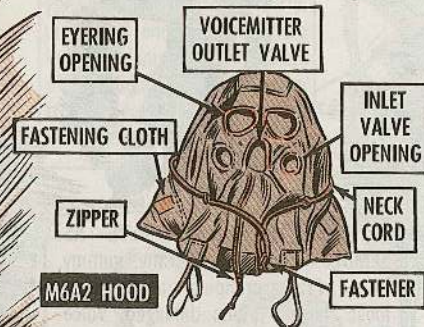
HEAD OFF TROUBLE WITH PM CHECKS SCHEDULED EVERY SIX MONTHS OR AFTER EVERY EXERCISE OR TRAINING MISSION.



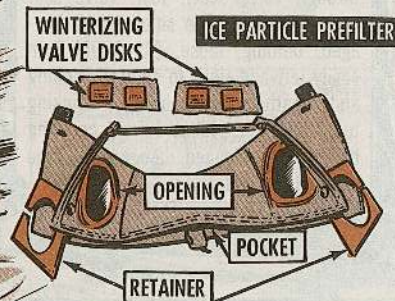
PROTECTIVE MASK

Your PM takes only a few minutes. Eye your mask and carrier for dirt, damage, loose or missing parts. Then put the mask on and clear it to test for leaks and make sure everything is working A-OK.

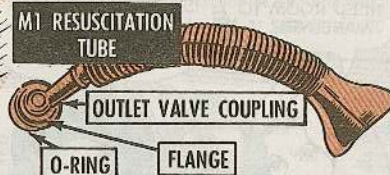
Also give the authorized accessories the once-over. Make sure your M6A2 hood,



attached to the mask, looks clean and free from rips in the fabric. If you're authorized an M4 Field CB Mask Winterization



Kit, see if it includes an ice particle pre-filter and 2 packets of winterizing valve disks. Your M1 resuscitation tube should



be free of dust and grime, hose and mouth-piece clear and unmarred, the outlet valve coupling clean with no parts missing. Don't forget to pull out your M1A1 CB



Mask Waterproof Bag. It should be clean and hole-free.

If you find something you can't handle . . . damage to the facepiece or eyepieces or other damaged, loose or missing parts . . . turn the mask in to your unit supply man for replacement.

Schedule twice-yearly checks on DD Form 314 according to TM 38-750, para 3-3c (1). Do this inspection by the book with your CBR expert standing over you and DA Form 2404 handy for noting problems.

Some jobs you can do as you go, others call for your CB specialist. Or maybe your mask is in such bad shape it'll have to be replaced. Anyway, the closer you check, the healthier you'll be if you ever need that mask!

CHARLIE-BRAVO IS ONE ENEMY WHO DOESN'T NEED ROOM TO MANEUVER.

ALL HE NEEDS IS ONE TINY CRACK TO ESTABLISH A BEACHHEAD ON YOUR MASK.

CHECK THESE **PM** PROBLEMS... 1, 2, 3 EASY AS CAN BE... AND YOU'LL HAVE A HEALTHY MASK-- A SAFE MASK.

VOICEMITTER-OUTLET VALVE ASSEMBLY—Cover loose, grimy, gummy, ripped. Frame crimping ring damaged, loose, locking studs damaged. Voice-mitter diaphragm dirty, damaged, loose. Outlet valve disk dirty, folded, torn, loose (nub at base of disk must be through valve seat), lost; valve seat broken or bent. The small lever damaged, binding, loose. (it should turn easily left and right to control drinking and breathing hoses inside). Drinking tube damaged, loose, dirty, coupling half missing, clogged, damaged. Storage channel split or dirty.

4

OUTSIDE

FACEPIECE—Unusual stiffness, stickiness, brittle surfaces, holes, tears and splits.

Damaged or missing temple pins. Clip and buckle assemblies damaged, corroded, torn or missing. (Note: a white or rust-colored waxlike substance on the rubber is OK. That film protects the mask. Just wipe it off if it accumulates.)

EYELENS & OUTSERTS—Lens broken, scratched, dirty, discolored enough to interfere Eyerings damaged with vision. or corroded, pulled loose from facepiece. Outsert aprons torn, loose, rims cracked.

DRINKING MOUTHPIECE CANTEEN CAP—Damaged, dirty, clogged or stuck. Cap missing, damaged, dirty.

HARNESS—Canvas pad ripped, mildewed, dirty. Elastic straps worn or frayed, floppy, dirty, metal tips missing. Harness on inside out or upside down.

INLET VALVE ASSEMBLIES—Covers loose, dirty, damaged (worn flocking is no problem unless you're working in temps of 0°F and below or under unusual field conditions like lots of sand and dust. Under those conditions you need a full growth of fuzz on the covers.) Assemblies installed upside down (top side is marked on the assembly rim. If it's not marked or the mark is off-center, check the louvers inside the cap. They must slant down.) Valve rubber disks torn, folded, kinked, loose (disks must be flat and centered).

THE INSIDE STORY IS JUST A LITTLE DIFFERENT. LET OUT THE HARNESS ALL THE WAY AND FLIP IT FORWARD GENTLY. TAKE CARE NOT TO PULL THE HARNESS BELOW THE EYELENS. UNBUTTON NOSE CUP AND POUCH FLAPS AND YOU'RE READY TO CHECK THE...

INSIDE

POUCH FLAPS—Buttons missing, damaged, buttonholes split. (Buttons you can replace, but bad buttonholes call for a retread . . . get a new mask. When you replace buttons, put the longer ones in the forward buttonholes nearest the voicemitter and the large

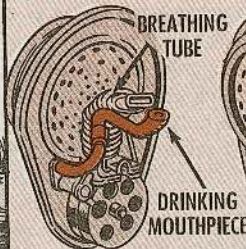
button head facing down into the pouch.) Flaps must be buttoned down tight. The top flap (closest to eyelens) must fold over the outside of the pouch or the sweat and moisture from your breath will get into the filter elements and good-bye filters.

FILTER ELEMENT SET—Wet, discolored, dirty, crushed, installed wrong. (Elements are marked left or right. They are NOT interchangeable and the pointed end goes to the rear fitting into the cheek shape. The facepiece will look warped and leak if the filter elements are put in wrong.) Not matched.

WHILE YOU'RE BUSY WITH THE MASK, DON'T FORGET THE CARRIER.

VOICEMITTER DIAPHRAGM—Clogged, dirty or damaged. Deflector tubes clogged, punctured, split or distorted. Drinking mouthpiece and breathing tubes clogged, punctured or split. Tubes should move freely when facepiece lever is turned.

VOICEMITTER



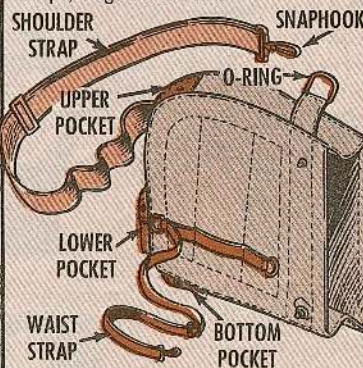
AHHH--



NOSE CUP—Loose, dirty, torn, chin flap tucked under or into pouch area (flap must fold over chin stop to protect the filter elements from moisture.)

Valve rubber disks damaged, dirty, missing; valve seats dirty, damaged, separated from nosecup. Buttons missing or torn buttonholes.

CARRIER—Mildewed, worn, dirty, damaged, torn straps, loose or missing snaps, rings or buckles.



CLEANING

Masks need cleaning occasionally, too, but never, never dunk the mask or carrier with filter elements in. For a good cleaning job get soft cloths, a soft-bristle brush (a small paint brush is fine) warm, soapy water and warm, clear rinse water.



The mask doesn't have to be shiny black. Remember that white or rust-colored waxy-film (called bloom) comes from a preservative put into the rubber.

THE RUBBER WILL 'BLEED' AS LONG AS THE FACE PIECE IS GOOD. SO, JUST BRUSH OR WASH IT OFF WHEN THE WAX ACCUMULATES OR GETS CRUMBLY.

Do not remove the hood if it's assembled to the mask.

Before you start cleaning though, better remove the voicemitter-outlet cover, inlet valve caps and eyelens outserts.



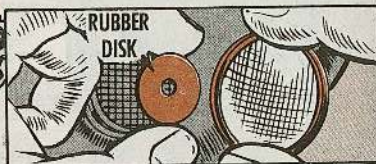
HOLD IT!

Don't remove the filter elements, just be sure the pouch flaps are buttoned tight and keep the water away from the inlet valve connectors.

NOW-- IS EVERYTHING REMOVED THAT OUGHT TO BE REMOVED OR BUTTONED UP TIGHT AS A DRUM?...
...THEN, YOU'RE READY TO CLEAN.



Take your cloth and dip it in the warm, soapy water (soap, NSN 8520-00-531-6484, is fine). Wring it out almost dry and wipe off the mask and hood inside and out. Don't forget the voicemitter outlet valve cover, inlet valve caps and eyelens outserts. But be super careful with the rubber disks in the valve caps.



Then rinse everything with another clean cloth you've dipped in warm, clean water and wrung dry.



Use that soft, DRY brush to reach corners, joints, crimped edges and hard-to-get-at places.

WIPE FACE-PIECE CLEAN WITH A LINT-FREE CLOTH...

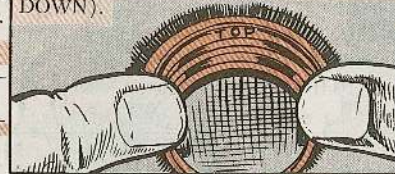
...OR AIR DRY IT!



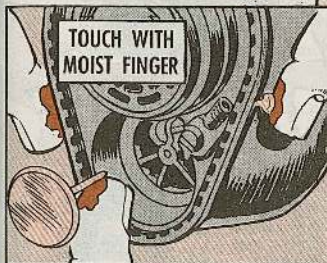
REASSEMBLING

THAT DOES IT! NOW YOU'VE GOTTA PUT YOUR MASK BACK TOGETHER-- BUT CAREFULLY FIRST-- REPLACE THE VOICEMITTER-OUTLET VALVE COVER AND INLET VALVE CAPS.

The rubber disks in the inlet and outlet valve assemblies must be snug and flat. Press the inlet valve covers hard so they snap into place. (The louvers slant DOWN).



TOUCH WITH MOIST FINGER



Here're a couple tips to ease those parts into place. Touch a moist finger to the sealing ring, frame and locking studs before you replace the voicemitter-outlet valve cover. That moist finger also helps you button and unbutton the pouch snaps. And presto! When you're replacing the outlet valve's rubber disk, wet the disk's pigtail and it slips through the valve seat center.

You're doing a great job! Oops, what about the eyelens and outserts? Keep them clear and clean with Plastic Polish NSN 7930-00-634-5340. It'll not only clean the lenses, but also remove surface scratches. It's a CSA catalog item and comes in pint bottles.



USE PLASTIC POLISH

Another way to protect your eyelens is to leave the outserts on your mask permanently. Carefully stretch them over the eyerings and there you are!



EYELENS SAFE FROM SCRATCHES OR BREAKS.

CARRIER CARE

Now you've got a clean mask but don't blow it. Take all the accessories out of the carrier and wipe it off with a clean cloth or a clean brush dipped in clear cold water. Now wait until the carrier is dry.

When it is dry, put all the accessories back in their proper place. Tuck the harness inside the mask and the mask in the carrier head up with the nose facing the carrier closing flap.

NEVER...BUT
NEVER..
PUT YOUR MASK
BACK INTO A
DAMP OR DIRTY
CARRIER.



REPAIRS & REPLACEMENTS

Now you're straight with the M17A1 mask . . . unless you need to replace a part. There're some tricks to that, too. Only one part of the drinking system is authorized for replacement at organizational level, the drinking tube with coupling-half, NSN 4730-00-903-4573.

You can also replace the outlet valve disk, but clip the disk's pigtail almost at the tapered end of the cone. Then wet the shortened stem and slip it through the center hole in the outlet valve seat.

IF YOU HAVE
TO TURN THE MASK
IN FOR REPAIR OR
REPLACEMENT,
REMEMBER THE
MASKS COMES IN
THESE THREE
SIZES:



CHECK WITH YOUR
MASK EXPERT BEFORE
YOU REPLACE PARTS.



FILTER TIPS

One of the most important parts of your M17A1 mask are your filter elements. When you inhale, air comes into the facepiece of your mask through the inlet valves and filters. These filters "clear" the air so you can breathe it. But they must be kept dry. That doesn't mean just keeping them out of the rain or not dunking them in water. These little babies get wet from your breath and sweat if they're not protected by the chin portion of the nosecup. When the bottom of the nosecup is tucked inside or turned under, your sweat and breath moisture drips down on the filters and suddenly your air isn't so clean any more . . . if any gets through to breathe.

Button down those pouch flaps and button the nosecup to the pouch flaps.

THERE'RE
TWO BUTTONS
ON EACH SIDE
OF THE MASK.
SO, BUDDY,
BUTTON UP!



Every time you check your mask, first and last thing, see if the chin of the nosecup protects the filter elements and the flaps are buttoned right.

THE NAME OF
THE GAME IS... **CLEAN
AND DRY!**



You need to protect those filter elements when you're in the field, too. If it's raining, or you just happen to be fording a river, or get a sudden urge to splash through puddles, wrap your mask in its plastic waterproofing bag.

The bag (NSN 4240-00-377-9401) comes in a small plastic pouch and instructions on how to use it are printed on the bag. When you're not using it, stash it in the bottom of your carrier. Don't leave your mask in the bag over 24 hours, and never, never store food, smokes or anything you might chew on in the bag. It could poison you.



Cool, clean and dry . . . and no fiddlin' around.

That's the PM deal for your FADAC (field artillery digital automatic computer) M18 gun direction computer.

It's simple work all the way. But it's a going thing—and that goes double when you're working outside or in a wet or dusty area.

HERE'S THE KIND
OF EASY CARE THAT'LL
KEEP YOUR COMPUTER
CLICKING.

—First off, before you pull any PM checks, make sure the computer's circuit breaker switch is OFF.

—In wet weather or damp climate run your computer at least 2 hours a day to make sure it stays dry inside. If you neglect the daily warm-up, moisture will foul up the computer's guts, or short it out.

—Clean the console panels daily. Use a soft, clean cloth and a clean, stiff-bristled brush. Clean carefully around switches, buttons and keys. If matrix buttons stick or bind, use a dab of alcohol on your cloth to wipe off the sticky grime around them.

—Never force knobs or switches past their stops. You'll bust them for sure. And, never fiddle with stiff buttons or keys. Yell for your organizational mechanic when you have any of these problems.

Also, you're not authorized to remove the computer's case. It's up to you, though, to change indicator lamps on the control panel. Unscrew the tiny lens from the panel—easy-like. Ease out the burned lamp, slip a good lamp into the lens and screw the lens back into the panel.

—Use a soft, lint-free cloth to wipe the windows and read-out display. Never use a cleaner (paste or liquid) on 'em.

—Hands off the tape-reader housing when you're moving or lifting the computer.

—If you're grabby with the computer case latches you'll break 'em. Always press the latch catch out of the way when the covers are off. Same goes for the computer's hold-down clamps on the table.

—Insert the ground jack all the way into the computer's ground connector, and sink the ground rod into the ground under or near the table.

—When you're out in the open it's best to rig up a good shelter of some kind to protect the computer from dust, sun, rain, cold. Keep its covers on when the computer's not in use. Cap all cable connectors you're not using.

FADAC FILTERS

Clean the FADAC's filters daily. That's a PM must to protect the computer's memory and all its other electrical components. Where it's real dusty you may have to check the filters 3, 4 or more times a day. So always make sure you have a clean set of filters stored in the computer's back cover.

Clogged filters cause overheating and let dust blow through the computer. The dust'll cause wear and shorts. It'll settle in sockets and keep the circuit boards from making good contact.

To clean the filters, swish them around in clean, soapy water, or use air to blow out the dirt. But use low air pressure (no more than 10 PSI), and use it carefully; those aluminum mesh filters are fragile. As always, protect yourself with goggles when you use air pressure.

When your washed filters are dry, store 'em in the computer's back cover until you need them. And, be sure they're bone dry before you use 'em.



FILTERS GUARDING

Remove and replace the filters by hand. Never use a tool. If you twist or poke 'em you'll ruin 'em. Reach for the front filter easy-like and pull it out by its frame. You can push the small filters through the case, as you slide the clean filters in through the opposite side.



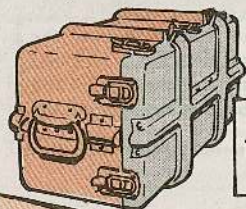
Watch the sharp spring clamps holding the small filters . . . they can stab you.

Replace the filters so the arrows on the frame point toward the ventilation blow-

ers. And, push the large filter all the way to the rear. If you leave it flush with the front of the keyboard there'll be a gap in the back that'll make the filter useless.

Toss out damaged filters. Broken mesh'll be sucked in by the blowers and create shorts.

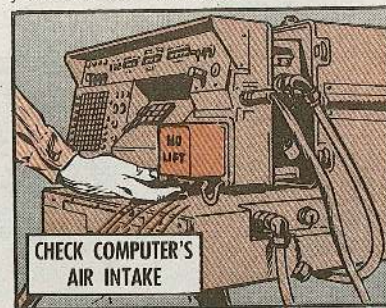
When they're off, keep the computer's back and front covers fastened together. That'll protect your spare set of filters and keep the covers clean inside.



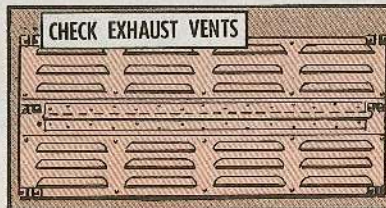
KEEP COVERS TOGETHER WHEN OFF COMPUTER

COOLING CARE

Turn the computer off if the blowers stop working. Report dead blowers to your FADAC mechanic.

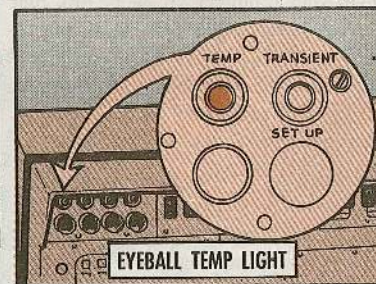


To check the air intake, stick your hand under the front edge of the console—near the filters. Or check the exhaust vents on the back of the computer case.



Never block the front of the computer. You'll cut off its air intake.

When the temperature light on the trouble indicator panel is on, the temp is OK. When the light starts flashing the computer's overheating . . . check the filters and the air intake for blockage.



Keep the back cover off when you're operating. That way the blowers will pull cool air through the computer. Only time you must keep the back cover on is when the temp is -25°F or below. When it's



... AND MAKE SURE THOSE EXHAUST VENTS AREN'T BEING CROWDED.

that cold you want the warm air to circulate inside the computer. Also, only one blower works when the back cover is on, and the computer's lower operating range is extended to -40°F .

ADDITIONAL NOTES

THIRTY SECONDS —

Hold it right there! Any time you lose power, or you turn off your FADAC computer, you must wait for at least 30 seconds before you power up again. The short hold is critical. It gives your computer's memory disk time to run down and get steady. If you restart too soon the disk may wobble and strike the read-write heads. As it hits the heads, strips of memory will be destroyed. The disk will be shot.

CONTAINERS —

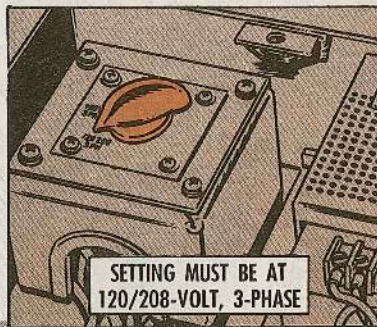
Here's another way you can help to protect your computer's costly memory (its price tag reads \$7995). If you have its shipping and storage container around, be sure to save it. It's a non-expendable item (NSN 1220-00-869-6547). And it'll be needed when your memory's turned in. The container's the best protection the memory can have while it's traveling. A wooden box or similar shipping container just won't do the job right.

SUPPLY — Turn in any unserviceable or excess serviceable memories. The supply system needs 'em to get other units squared away.

FADAC PUBS

Your FADAC pubs are: TM 9-1220-221-10 (Sep 64), TM 9-1220-221-20/1 (Nov 65), TM 9-1220-221-20/2 (Jan 64), plus the -20P (Jan 69). FM 6-40-3 (Aug 70) with changes, TM 9-1220-221-ESC (Aug 69), and FM 6-3-2 (Oct 67) cover FADAC operations.

Your FADAC must be teamed-up with a top notch 3-KW, 120/208-volt, 3-phase, 400-Hz generator.



GENERATOR CARE



To check for the right power setting (120/208 volts, 3-phase) you have to remove the power control box cover.

The generator needs some close PM attention, too. Same goes for your FADAC's standby generator. It's got to be ready to take over in an emergency, and when the one you're using goes in for its scheduled maintenance checks.

Before you lay a hand on the generator, be sure you've memorized its starting and stopping SOP. The info's right there on the instruction plate on top of the power control box. See also para 16, TM 9-1220-221-10 and Chap 2, TM 5-6115-271-14 (Jun 70).

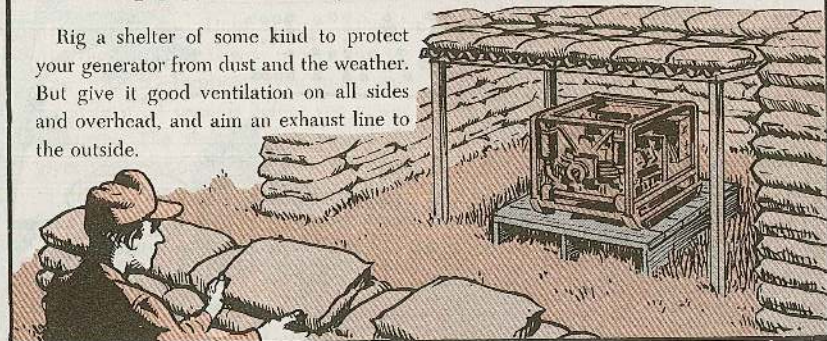
LOCATION

—Set your generator on a well-drained spot and keep it as level as possible. Never let it tilt more'n 15 degrees in any direction. If it slants you won't get a true oil check reading, the engine won't get proper lubing . . . and your generator will be shot fast.

Stand the generator on sturdy boards, or a low stand. Just don't raise it more than 6 inches. The base'll protect your generator from dirt and dampness, and keep it from sinking in soft ground.

SHELTER/VENTILATION

Rig a shelter of some kind to protect your generator from dust and the weather. But give it good ventilation on all sides and overhead, and aim an exhaust line to the outside.



GROUNDING

For a good ground sink a $\frac{1}{2}$ -in solid rod or a $\frac{1}{2}$ -in pipe some 8 feet into the ground. Bolt or clamp No. 6 AWC copper wire to the metal ground and the generator's ground terminal stud.



See page C-2, TM 5-6115-271-14 (Jun 70) for supply info on grounding materials.

DUNNO EXACTLY-- SAID HE NEEDS IT FER A GROUND!

SOMETHIN' ABOUT HOW HIS 3-KW HAS REALLY GOT HALF-MAST TURNED ON!

HEY!

WHA' HOPPEN TO TH' WATER?

?



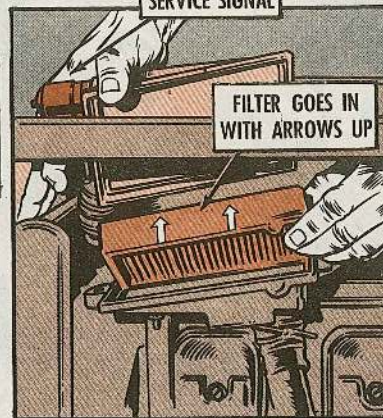
The air filter service signal may not always pop out when the filter needs cleaning—so check the filter often, like daily.



You can use low air pressure to clean the filter (blow from the clean side to the dirty side). Never clean the filter with solvent. Clean the air filter housing and its cover, and replace the filter so its arrows go up. Set the air intake lever to suit the weather: Summer for above 32°F. Winter for below 32°F.

AIR FILTER SERVICE SIGNAL

FILTER GOES IN WITH ARROWS UP



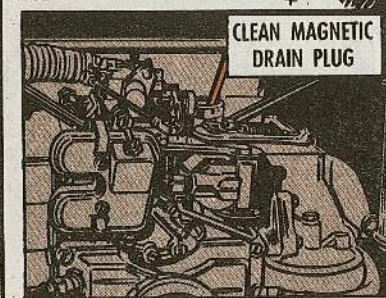
OIL NEEDS

NEVER OVERFILL



The generator's engine needs an oil check every 5 hours of operation . . . every 3 or 4 hours in some situations. See LO 5-2805-203-12 (May 72) for lube and lube changing info. And never add oil past the full mark on the dipstick. You'll not over-fill if you add oil slowly and just a bit at a time. If you goof, drain the excess right then and there—or you'll foul the plugs.

CLEAN MAGNETIC DRAIN PLUG



Handle your lube carefully so it won't get fouled up. Grubby hands, dirty containers, and grimy cleaning rags will mess up your lube job.

Clean the magnetic oil drain plug and the oil filter housing when you change oil. Before and after lubing clean around the oil filler cap and the lube fittings . . . and always check for leaks.

FUEL NEEDS

CLEAN FUEL IS ANOTHER PM MUST.

IT'S THE ANSWER TO BIG FUEL SYSTEM PROBLEMS.

If the fuel-air mixture control needs adjusting, call the generator maintenance man. Never monkey with it yourself.

AUXILIARY TANK
HOOK-UP

FUEL SELECTOR
LEVER

Set the fuel selector lever as needed for your fueling system: Tank or Aux tank.

Keep an extra supply of fuel handy. But forget about using a 55-gal drum as an auxiliary gas tank. For one, there's no easy way to filter out the residue and moisture that'll collect in a drum. For two, the drum'll keep your generator working past its normal 5-hour operating time . . . so you may forget to pull the needed oil and air filter checks.

A 5-GAL GAS CAN IS YOUR BEST BET AS AN AUXILIARY TANK. IT'S EASY TO CHECK FOR CONTAMINATION...

AND IT'LL CUT OUT AT ABOUT THE TIME THE GENERATOR PM CHECKS ARE DUE.

RIGHT ON, CONNIE!

20

WHAT'S TH' STORY ON THE NEW ARRIVAL, JERRY?

HE TRIED TO STOP HIS 3-KW GENERATOR BY YANKING TH' FUEL HOSE... AND THAT'S A REAL NO-NO!

I DIDN'T KNOW THAT!

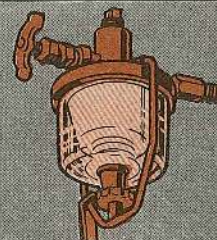
Never yank the fuel hose stop the generator . . . use the generator's ON-OFF toggle switch. That'll keep the generator running a few minutes to help it cool off before it stops.

Also, cutting off the fuel supply will burn out all the gas in the carburetor and suck gas line residue into the carburetor jets. Blocked jets and air-filled lines will give you sweaty starting problems every time.

Never refuel when the generator is running. If the gas tank filler neck is on the same side as the generator's load terminals, never even remove the gas tank cap when the generator's running.

Clean the sediment bowl before you start the generator. That's critical before-operation PM each time you crank up. That helps to keep water and dirt out of the fuel lines and the carburetor . . . saves you heaps of starting and running sweat.

CLEAN
FUEL
FILTER
SEDIMENT
BOWL
BEFORE
YOU
CRANK
UP



Change the fuel filter if it's clogged or damaged. Replace the sediment bowl gasket if it's damaged. Pull out the strainer in the gas tank filler neck and tap it clean. Or wash it in solvent, but make sure it's completely dry before you replace it. Replace it if it's damaged. Same goes for the fuel tank cap.

CHECK FOR FUEL LEAKS AND...

...KEEP YOUR FIRE EXTINGUISHER HANDY!

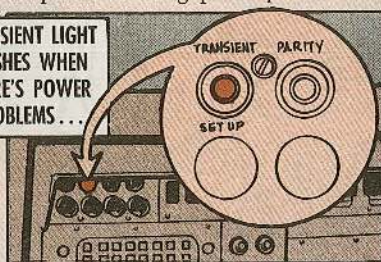
21

PS MORE

POWER CHECK

The transient light on the computer's trouble indicator panel will flash when the computer's suffering power problems. If

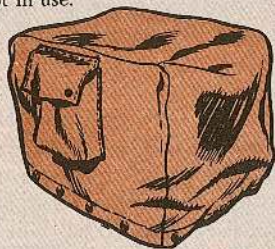
TRANSIENT LIGHT
FLASHES WHEN
THERE'S POWER
PROBLEMS...



it continues flashing after you push the re-set button, turn the computer off and check your power cable connections. If they're OK, call in your organizational maintenance experts.

Keep your generator covered and dry when it's not in use.

KEEP
GENERATOR
COVERED
WHEN NOT
IN USE

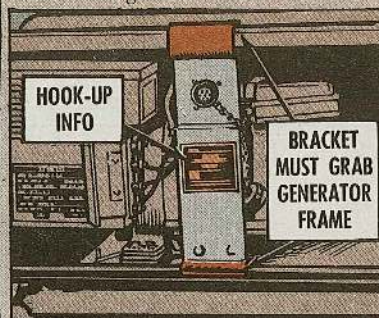


ON A MARCH

Your computer needs careful handling all the time, but especially when you're traveling. First, always replace the case covers when you move. And get hefty (but gentle) hands to help you lift and load it. In the vehicle, set your computer on a good thick pad—like an old mattress, and lash the computer down snug, to make sure it has a gentle ride.

FADAC HOOK-UP

Attach the FADAC cable-adaptor bracket so it grabs both the top and bottom brace of the generator frame.



Cable hook-up instructions are called out on the bracket's data plate and on the data plate on the generator's terminal box.

Hang on to the computer's cable-adaptor bracket. Stash it with the FADAC when the generator goes in for maintenance, or when you swap generators.

WHEN
YOU MOVE
THE
COMPUTER...
GENTLE
IS THE
WORD!



WHEN YOU BREAK CAMP

Take it easy with all your power connections and cables.

Disconnect the power cable from the generator and from the computer, and wind it up carefully on its reel.

Disconnect the computer from the table and pull out the ground. Store the ground rod assembly in its case in the computer's back cover.

Cap all connectors and receptacles.

Replace the computer's back and front covers and unhook the table's hold-down clamps to release the computer. Set the computer aside carefully.

Latch the table's cable in its storage clip under the table and retract and fold its legs.

Take it easy as you pack and load the table and the cable and reel assembly. Same goes for the generator and its components. That's the only way you'll know your gear'll be ready to go when you hookup again.



GENERATOR PUBS

The generator takes: TM 5-6115-271-14 (Jun 70), and a -20P (Jun 71). The pubs for the generator's engine are: TM 5-2805-203-14 (Dec 69), a -24P (Oct 68) plus LO 5-2805-203-12 (May 72)..

NO STEP IS BETTER THAN ONE

NO-NO!

WATCH THE
CLOD-HOPPERS,
SOLDIER!

USE
THIS!

NO STEP

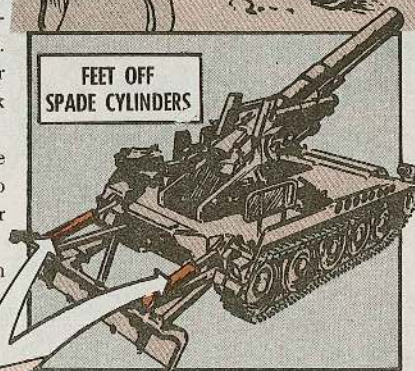
When you're stepping to the big drum beat of your M107 or M110 artillery piece, never make a quick step onto the hydraulic spade cylinder. That's strictly a no-no.

Stepping on the cylinder increases your chances of getting mud, sand or other junk in the cylinder seals.

Sure, when your howitzer is making like a base drum out on the range, it's hard to remember anything else, so put a reminder on the cylinder.

Stencil NO STEP in 1-in size letters on the top like this:

FEET OFF
SPADE CYLINDERS



Use synthetic, gloss-white enamel paint listed in TM 9-2300-216-10.

So, remember . . . Never step on the hydraulic spade cylinder. Dirt and mud in the cylinder seals could change that big bass drum beat to an out-of-tune crunch.

M109
M109A1

HOWITZER
HAZARD

?

!

?!

Like you already know, you got to be a little careful with your equilibrator hand pump assembly or you'll skin your knuckles. 'Course, with the M109A1 you skin your knuckles on a different thing, but that won't make it hurt any less.

But here's something else . . .

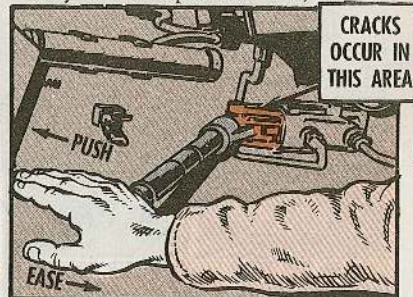
If you push the pump as far as you can and then let go, it snaps back pretty hard,

NSN 4320-00-040-0316).

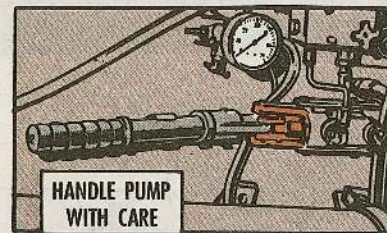
So here's what to do to avoid skinned knuckles:

Push on the outward (pressure) stroke with your hand open and then, instead

CRACKS
OCCUR IN
THIS AREA



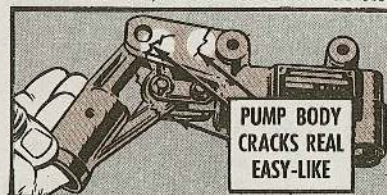
HANDLE PUMP
WITH CARE



if there is any air in the system or if the check valve in the hand pump is faulty or sticking. This snap back can crack your pump body. So if you get a snap back, tell your support maintenance.

The pump body is aluminum alloy and cracks real easy. Look for cracks across

PUMP BODY
CRACKS REAL
EASY-LIKE



the pin recess areas, both top and bottom.

Get a new pump body if you need it. It's NSN 2520-00-318-0228 (or alternate

of letting the pump handle go, ease it back gently until it makes contact with the pump body.

NO, BONNIE...
I WASN'T TRYING
OUT MY KARATE... JES'
TH' PUMP HANDLE!



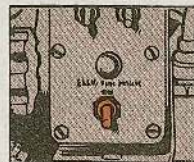
MERVIN LEFT TH' TURRET POWER ON AGAIN!...

SWITCH FOR SAFETY

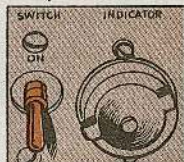


Tune in and turn on to M60/M60A1 tank safety tips!

Etch this one on your eyeball. Make sure... make real sure, the turret power switch is OFF before you turn on the master control switch. Why? Well, if the



FLIP OFF YOUR TURRET POWER SWITCH

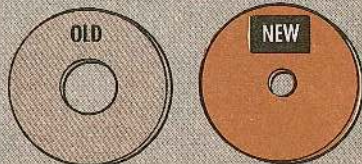


MASTER CONTROL SWITCH

RUBBER PAD POOP



To get these improved rubber pads, use NSN 2590-00-405-1932 only.



NSN 2590-00-405-1932

So what's the harm if your M60/M60A1 tank loses some of its ammo ready-rack rubber pads?

How much harm could a primer do if it fell on a battery terminal and exploded?

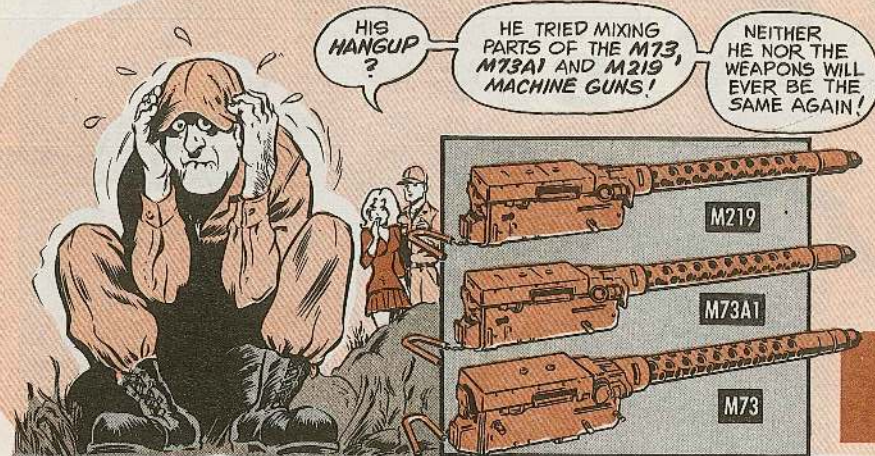
That's what the rubber pads are for—to keep a loose primer from falling on a battery terminal and—POW!

MWO 9-2350-215-20/32 (Dec 67) called for improved rubber pads.

Pad, NSN 2590-00-168-2795, has a large hole that'll allow a loose primer to fall through.

OH, THOSE MACHINE GUNS...

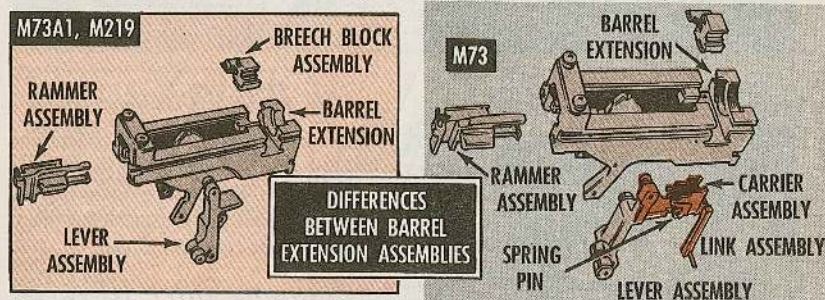
DECEIVING LOOKS



Your M73, M73A1, and M219 machine guns look a heap alike.

But try mixing 'n' matching parts of the M73 with those of other two models and you'll wind up with an unusable weapon.

The biggest changes in the guns are in the receiver and barrel extension assemblies. You won't find a carrier assembly, link assembly or spring pin in the M73A1 and M219. You'll see that they have a different level assembly, too.



If you use the M73's barrel extension assembly in an M73A1 or M219 receiver assembly you'll get a rammer-extractor hangup on the feed tray ejectors.

Never add to your PM woes by assembly-line cleaning methods. Keep parts of each weapon separate from any other weapon's parts during knock down and cleaning. Put each weapon's parts back in the same weapon you took 'em from.

Para 1-7, TM 9-1005-233-24 (Feb 72) has the word on all model differences.



JOE'S DOPE

PM

CARE OF ELECTRICAL CABLES AND CONNECTORS



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 (Aug 73), and Ch 3 (Apr 74), TM's, 1B's, etc.; DA Pam 310-6 (Jul 73), and Ch 3 (Apr 74), SC's and SM's; and DA Pam (C) 310-9 (Mar 73), COMSEC Pubs.

TECHNICAL MANUALS

TM 5-1940-221-12 Jun Boat, Bridge Erection, Diesel Aluminum 27 Ft.

YM 5-2410-208-10 C6 Jul Tractor, Tracked Diesel Model TD 20 (201)

TM 5-2410-209-12 C7 Jul Tractor, Tracked Diesel Model HD16M

TM 5-2410-231-10 C3 Jun Tractor, Tracked DED CAT D-5

TM 5-3805-239-12 C7 Jul Loader, DED, AC645M

TM 5-3805-245-15 C2 Jul Loader, Scoop Type, DED AC12-645

TM 5-4120-312-24P C1 Jul Air Conditioner 3 Phase 18,000 BTUH Cooling, 12,000 BTUH Heating

TM 5-4310-218-10 C4 (Jun) Compressor Air, 15 CFM 3500 PSI (Joy Model 15HGP9-MS-1)

TM 5-4310-251-14 C2 Jun Compressor, Reciprocating, Air, Receiver, Mtd.

TM 5-4320-248-15 C3 Jun Pump, Centrifugal 1 1/2 Inch, 100GPM, Portable

Refueling (Kenco 114MX1A)

TM 5-4520-208-25P C4 Jul Heater, Duct Type, Portable 400,000 BTU/HR B1400, Series

TM 5-4610-204-12 C9 Jun Water Purification Unit 1500 GPH (Met-Pro Model 1500-2600)

TM 5-4610-205-20 C2 Jun Water Purification Unit 3000 GPH; (Met-Pro Model 3000-2700)

TM 5-4610-220-14 C3 Jun Main Water Purification Set; Part 600 GPH (Met-Pro Model VN500)

TM 5-4610-223-15 C3 Jul Water Purification Unit, 3000 GPH; (Met-Pro Model 3000V)

TM 5-4610-224-ESC Jul ESC for Water Purification Units, Met-Pro Mds VN500, 600, 600C, 1500-2600, 1500-2600A, 3000-2700, 3000-2700A, 3000V, and Litton MDL-LPU-420-1

TM 5-6115-234-10 Jun Generator Set, Diesel Engine; 15 KW, AC, 120/208, 240/416V, 3-Phase, 60 Hertz, Convertible to 12.5 KW, 50 Hertz, SKID Mounted (Winpower Model D-15H18M)

TM 5-6115-246-10 C Jul Generator 1.5 KW, DC, 28V

TM 5-6115-365-15 C5 Jul Incl RPSTL Generator Sets GED and DED Trailer Mounted, PU

TM 9-1430-588-10 Jun Radar Set AN/MPQ-49 (FAAR)

TM 9-4935-587-20P Jul CHAPARRAL

TM 55-1510-204-20P Jul OV-1A, OV-1B, OV-1C, OV-1D

TM 55-1510-209-20P Utility U-21A, U-21G

TM 55-2835-203-20P Jul Auxiliary Power Unit, Turbine Engine

TM 55-2840-229-20P Jul Engine Aircraft, Turbine

TM 55-2840-234-20P Aug Engine, Aircraft, Turboprop

MISCELLANEOUS

CTA 50-970, Jul Expendable Items (Except Medical, Cross V, Repair Parts and Heraldic Items)

FM 20-11 Vol I and Vol II, (Jan) Military Diving, (s/s TM 55-375, Mar 70)

TB 9-2320-218-10-1 Jun Safe Operation of Truck, Utility, 1/2-Ton 4x4, M151 Series

TB 55-1500-206-20-21 Aug 540 Series Main Rotor Blades

TB 55-1510-209-30-12 Jul Landing Gear Emergency Extension Installation

SC 5180-90-CL-N39 Jun Tool Kit, Welder's No. 1 (LN WS8075)

NEW MOVIES

TF 9-4670 Safety: Shop and Maintenance Areas--Part I

TF 9-4670 Safety: Field Operations--Part II

New SB 11-131

This new SB 11-131 for vehicular radio sets and authorized installations, dated September 1974, replaces the 1968 edition.

New Hydraulic Filter

Keep an eyeball peeled for a new hydraulic filter element, P/N 205-076-034-7, NSN 4340-00-106-6764, for use on your UH-1C/M and AH-1G choppers. It has a drilled metal core and gets cleaned every 1,000 hours. You replace it only if it's damaged. Continue to use the paper filter element, with the 100-hr replacement interval, on your other Hueys.

Pin PM Policy: Paint

You can unshackle yourself from some repeated PM chores on lifting shackle pins. Just paint 'em. The pins don't need lube because they don't move around that much. Paint will keep 'em from rusting.

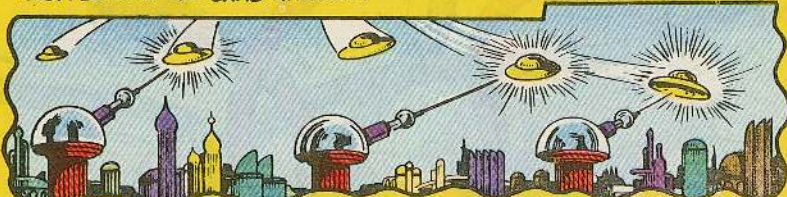
Spin-on Filter Wrench

Bleeding for an oil filter removal-installation tool for your vehicle? You can order one with NSN 5120-00-865-0933. This is the kind that grabs the end of a spin-on filter. To turn the tool, you use a socket wrench or open-end wrench.

"What happened to SFC Buck Gordon," you ask, dear reader? Just flip the pages of *TIME* forward to the year 2974 and look in on a certain laboratory at FORT BRADBURY...



"BASING THEIR PLANS ON THE THEORIES OF PROFESSOR EINMUGG, OUR SCIENTISTS AND TECHNICIANS DESIGNED AND BUILT A COMPLETELY AUTOMATIC SELF-MAINTAINING DEFENSE SYSTEM FOR THE ENTIRE GALAXY... AND FOR 500 YEARS IT HAS STOPPED COLD ALL GRAG ATTACKS...

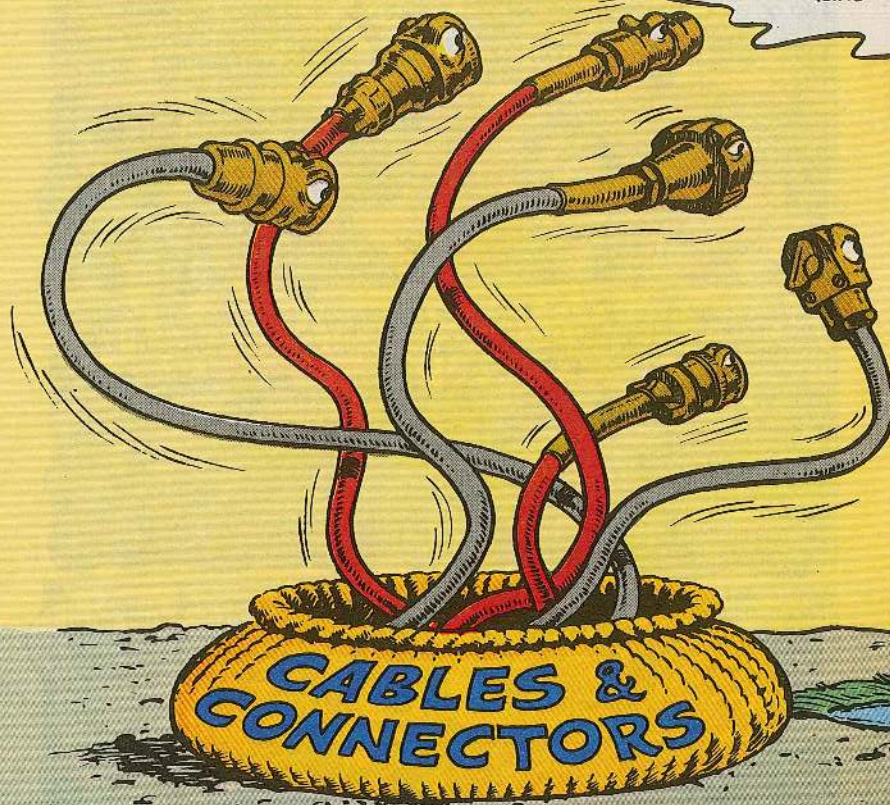


"... BUT JUST 2 MONTHS AGO, THE GRAGS BROKE THROUGH OUR DEFENSES WHEN THROUGHOUT THE ENTIRE SYSTEM ALL OUR WEAPONS WERE SILENCED AS POWER PACKS SUDDENLY FAILED TO DELIVER POWER... NOW, EXCEPT FOR EARTH, THE WHOLE GALAXY HAS FALLEN TO THE GRAGS!!!"



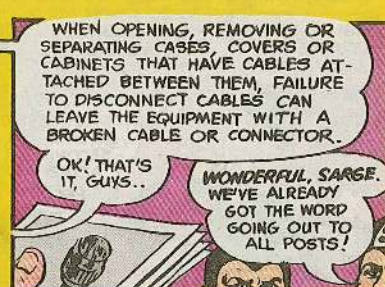
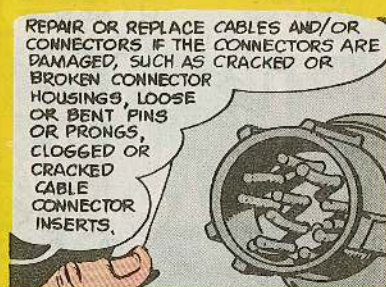
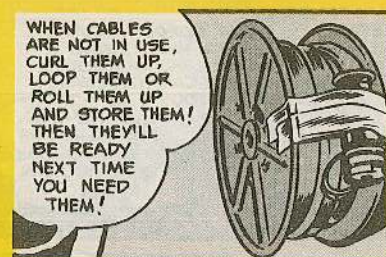
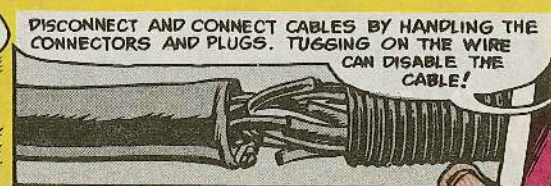
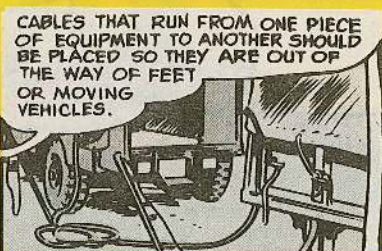
Joe's Dope Sheet

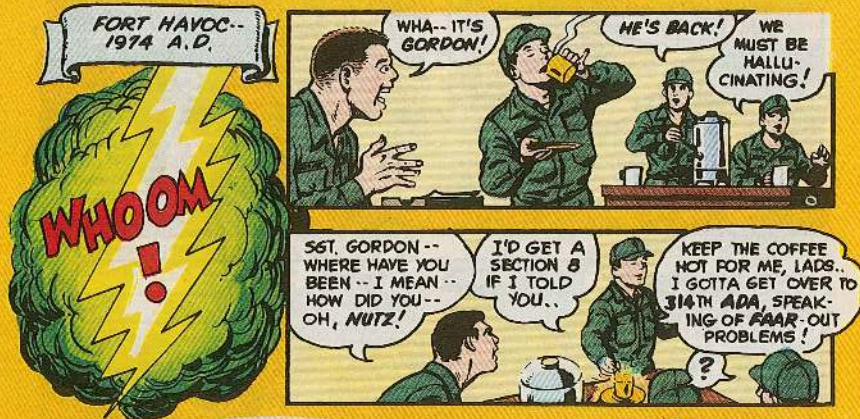
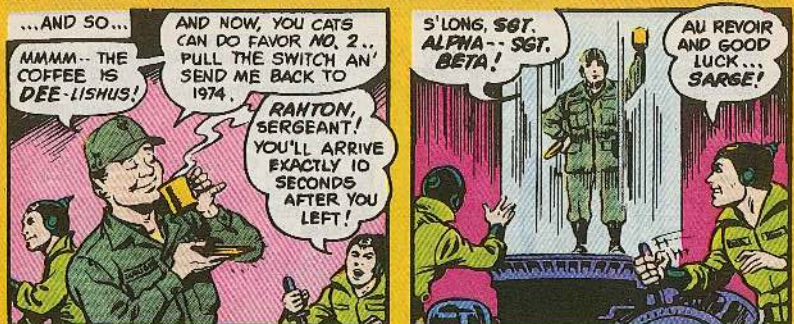
Those cables are arteries, you know,
Thru which the electrons must flow.
Inspect and correct,
Connect and protect
To make sure your equipment stays GO!



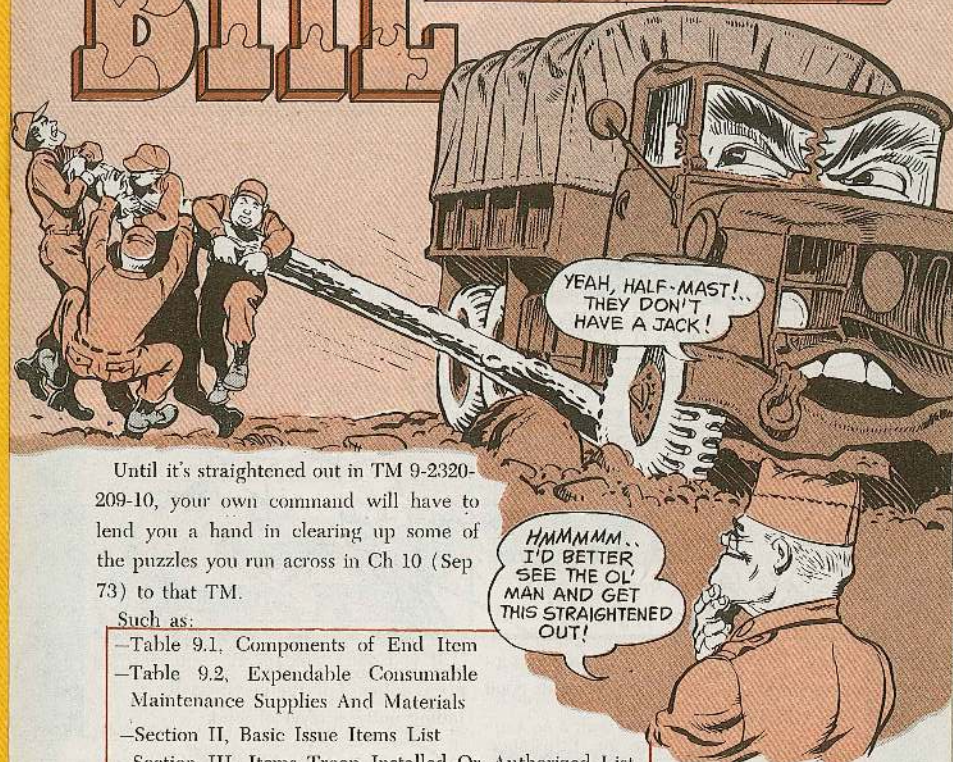
WE HAVE THE WORLD'S BEST EQUIPMENT ... *Take care of it*

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





BILL AND OTHER PUZZLES



Until it's straightened out in TM 9-2320-209-10, your own command will have to lend you a hand in clearing up some of the puzzles you run across in Ch 10 (Sep 73) to that TM.

Such as:

- Table 9.1, Components of End Item
- Table 9.2, Expendable Consumable Maintenance Supplies And Materials
- Section II, Basic Issue Items List
- Section III, Items Troop Installed Or Authorized List

Especially those tools that you need to carry on your truck all of the time. Most of this is not too hard to figure out—but it's up to your command to spell it out. For instance...

If you've got Wrench, socket, wheel stud nut, NSN 5120-00-293-1289, listed on page 236, you need Jack, hydraulic, 3-ton capacity, NSN 5120-00-233-6829—which is not in any of those 4 lists.

And Wrench, plug, NSN 5120-00-708-3302, on page 236, goes along with Wrench, adjustable, NSN 5120-00-449-8083, on page 38.3.

Do you need to carry Block, rigging, NSN 3940-00-111-6693? Not unless your truck has a front-mounted winch.





KNOW YOUR EQUIPMENT . . .
**I AM YOUR
TRUCK'S
BREATHER
VALVE**

Some guys are curious. That can be good.

They want to know how everything works. These guys seem to be the best when it comes to Preventive Maintenance.



HMMMMM...

WONDER WHAT
MAKES IT TICK?...

F'GET IT,
TINKER-- THE
ANSWER IS
NO!

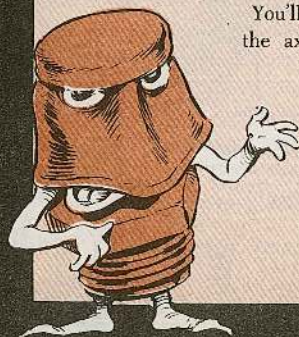
...NOT ON
MY \$300.00
SOLAR
CHRONOTRON!

TOK
TOK
TOK
TOK

When they understand how their equipment works, they know why it needs good PM. And they do it.

Take me, frinstance.

You'll find me on the axle housings, transmission, transfer--probably on every gear case on the vehicle.



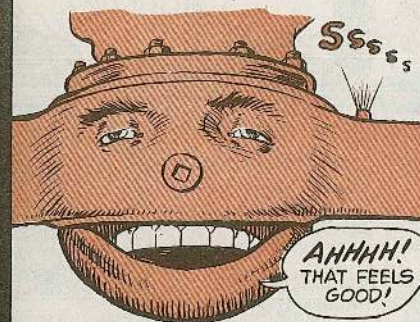
If you don't look for me, you may not even notice I'm there--especially if I'm hiding under a layer of mud.

I KNOW
THERE'S A
BREATHER
VALVE RIGHT
IN HERE...
SOMEWHERE...

MAYBE IF YOU
WASHED YOUR
TRUCK YOU COULD
FIND IT EASIER.

38

I protect your equipment from blown seals. When heat builds up inside of a gear case, pressure builds, too. I let that pressure leak off--if you keep me in good shape.



Inside me there's a weak spring pressing against a rubber disk. This keeps junk from getting into your gear case. But just

BREATHER VALVE



a little pressure inside that gear case will lift the rubber disk. My cap is loose--It turns around and goes up 'n' down--so that pressure can get out.

But it's all up to you.

If my cap gets plugged with dirt, my disk can't lift up. Then pressure builds in the gear case. Pow! Seals start popping! Lube leaks out! Bearings burn up!

WHAT D'YA MEAN YOU
HAD TO PUT IN NEW REAR
WHEEL BEARINGS? I JUST
CLEANED AND REPACKED
'EM A LITTLE WHILE BACK!

Same thing happens if dirt gets piled up on top of me. Pressure can't get out through caked mud.

It's up to you to keep me clean--working free 'n' easy.

Give my cap a twist. This'll shuck out any dirt stuck up inside.



GIVE THE CAP A TWIST



And tap my cap to make sure it bounces. Then you know the spring inside is OK.

**TAP THE CAP...
& MAKE SURE
IT BOUNCES**



If you see any signs of lube leaking from a gear case, get your mechanic to check me out. Maybe I'm not working right. He'll give me a good cleaning, like it says in TB ORD 625 (Jan 56). Or he'll put on a new breather valve.



THAT GAA GOT THINNED DOWN
BY GEAR OIL WHEN THE SEAL IN THE
AXLE HOUSING BLEW --AND GEAR OIL
ISN'T HEAVY ENUFF FOR THOSE BEARINGS.
WE FOUND THE AXLE HOUSING BREATH-
ER VALVE ALL PLUGGED UP. PRESSURE
BUILD-UP IS WHAT BLEW THE SEAL.

39

MACHINE REEKS OF LEAKS? . . .

WHY LET THAT COMPRESSOR, PUMP, AIR CONDITIONER, OR SUCH PERCH IN ITS OWN PUDDLE ANY LONGER?

Leaky joints on hydraulic or fuel tubing shouldn't bug you. Just because they're flareless type, you needn't think they're tough to put on. Fact is, they're the easiest.

Leaks in new fittings usually come from slam-bang knuckle-busting anyway.

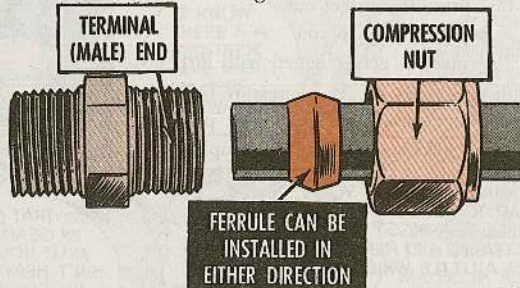
The best fix on fittings is know-how. That's the keep-from-happening tube leak stopper.

THREE FLAVORS OF TUBE SAVERS



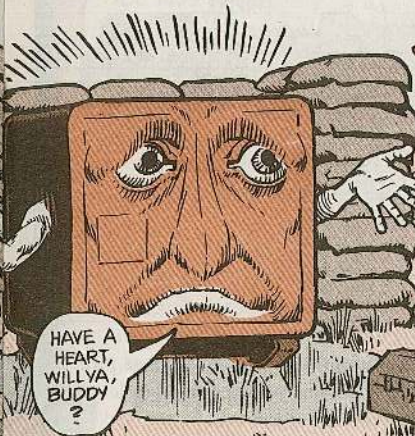
FLARELESS FITTINGS COME IN THREES-- THREE GENERAL KINDS, THAT IS.

First, there are low-pressure assemblies like this—usually brass. Ferrules on this type go either way; parts are standard and sometimes interchangeable between different makes:



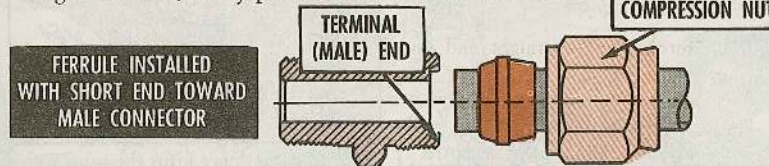
FIT A BIT

WITH A COOL TOOL

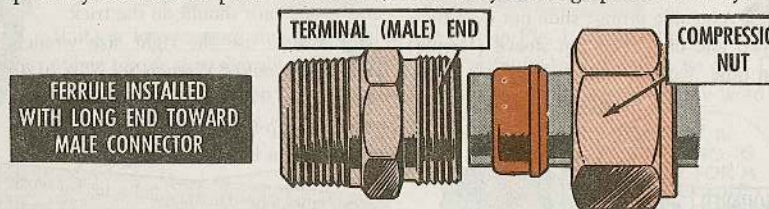


DON'T BE PUT OFF BY FLARELESS FITTINGS-- THEY'RE REALLY SIMPLE TO WORK WITH!

Then come high-pressure fittings with short heavy-end ferrules toward the male fitting. In this kind, usually parts can't be switched between makes.



The third style puts the long end of the ferrule toward the male fitting. You probably can't switch parts on this kind, either. They're a high-pressure variety.



Be sure what kind of fluid you're working with, what kind of line you need, and how much pressure you'll have. That'll clue you to the kind of fitting you need.

STEPS TO SUCCESS

FINALLY GOT BOTH ENDS SQUARE AND DE-BURRED PERFECTLY, CONNIE!

ONLY ONE PROBLEM, YOU NEED A 4-FOOT PIECE, NOT A 4-INCH!



1 Square off the tube end with tube cutter, NSN 5110-00-288-6520 (not with a hacksaw). De-burr the end, inside and out, with the deburring tool—not too much.

SQUARE OFF TUBE WITH A TUBE CUTTER



2 Be sure tubing is straight and unmarred within 2 inches of the fresh-cut end.



3 Assemble fitting: slide nut over tube, open end out. Then put sleeve (ferrule) on tube, "cutting" edge out.

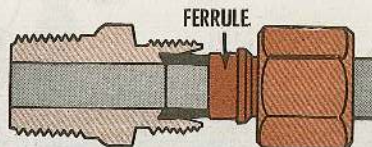
HEAD OF SLEEVE TOWARDS NUT

SQUARED OFF END

FERRULE

COMPRESSION NUT

4 Lubricate the sleeve and threads on both body and nut with oil.



LUBE SLEEVE AND THREADS

5 Seat the tube straight and square into the male fitting.

6 Run down the nut and thread it on. Then tighten the nut until the sleeve just grips the tube. You can tell if you rotate the tube by hand as you draw down on the nut—when you can't any longer turn the tube between your fingers, the sleeve has begun to grip the tube.

CAREFUL! TIGHTEN UNTIL SLEEVE JUST GRIPS THE TUBE



7 After the sleeve grips the tube, tighten the nut one full turn—this can vary with different makes of material. Generally, one turn should do the trick.

8 Always use the right size wrench, such as one out of Wrench Set NSN 5120-00-474-7227, for instance. Never should you use grip-type pliers to tighten down the nuts in a flareless fitting set-up.

NOTE: There are special rules for working on aircraft flareless connectors in Military Standard 33566. If you're a bird mech, that is where you get the word—no place else.

42

CHECKUPS PAY OFF

MAKE SURE YOU HAVE NO LEAKS. NEVER GO BY HOPE OR GUESSWORK!



I HOPED I DIDN'T... BUT I GUESS I HAVE...

eyeball the nut and tube seat for cracks, egg-shaped ends, and ferrule rings cutting tube sides. See whether the ferrule ring has squeezed the tube in much.

If the inside wall of the tube is pinched in much, you just have to start over. Tightening up would just cave the wall in worse and pinch off fluid flow. Make a fresh connection if the tubing is long enough to cut.

ARRGH!

NOT QUITE LONG ENOUGH--I'LL HAVE TO STRETCH IT!

NO! NO! YOU'LL HAVE TO GET A FRESH PIECE OF TUBING, PRIVATE HERKALES!

If it's a low-pressure line instead, like the item in Fig. 1, tighten this way:

When torque rises sharply and you can't jiggle or finger-turn the tube, go only 1/6 to 1/4 turn more, and stop. A sixth is one hex flat. If you still get leaks, the word is a new fitting, a new line, or both.

Remember: except on low-pressure lines, ferrule-fitting combinations from different manufacturers may vary. You usually can't mix brands.

WHEN IN DOUBT, GO TO SUPPLY FOR A NEW FERRULE-FITTING COMBO, AND START OVER.

43

PS MORE

SWITCHOUT TIPS

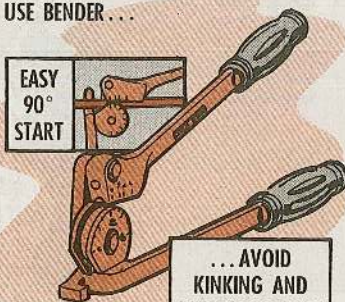
1 Always replace with same-type tubing. Never put in brass or copper to replace steel.

2 Use the old line as a pattern. Shape the new one before you put on ferrules and nuts.

3 Use a tube cutter, no files or hacksaws. Always deburr the tube ends. Make the new tube $\frac{1}{4}$ inch to $\frac{1}{8}$ inch longer than the old one.

4 Be sure the tube is round, the ends seat squarely, and compression nut threads straight.

USE BENDER...

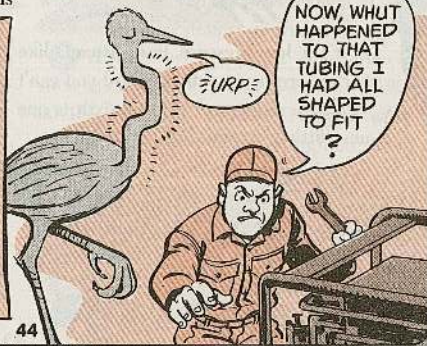


er. Try these numbers from C-5120-IL-A:

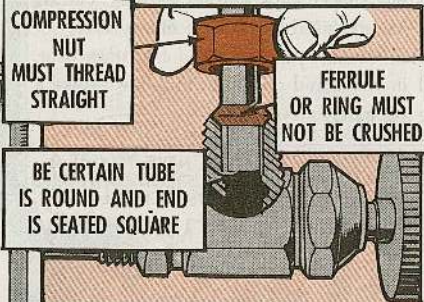
NSN 5120-00-

222-1542 = $\frac{1}{8}$ inch
222-1543 = $\frac{3}{16}$ inch
240-0152 = $\frac{1}{4}$ inch
240-0153 = $\frac{5}{16}$ inch
240-0154 = $\frac{3}{8}$ inch
240-0155 = $\frac{1}{2}$ inch
240-0156 = $\frac{5}{8}$ inch
240-0157 = $\frac{3}{4}$ inch
203-6441 = 1 inch

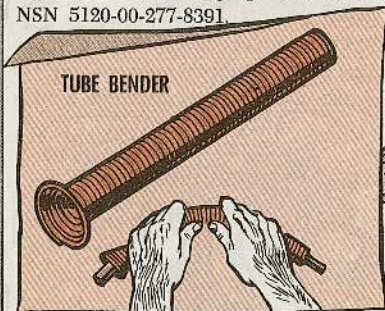
NOW, WHAT HAPPENED TO THAT TUBING I HAD ALL SHAPED TO FIT?



44



5 You can bend the line with a spring bender if you don't need sharp turns or if looks are no big deal. Bender, internal spring type, for tubing up to $\frac{1}{2}$ inch, is NSN 5120-00-277-8391.



THE O-RING CONNECTION



There are two kinds. One is the **POSITIONING TYPE** — These must face a certain way. The O-ring goes into a little recess.

—So run the lock nut back up on its threads to clear the recess, with the recess of the nut facing the O-ring groove.

—Fit the back-up washer on.

—Lube the O-ring and slip it on after the washer.

—Screw the fitting into the boss until the O-ring just touches.

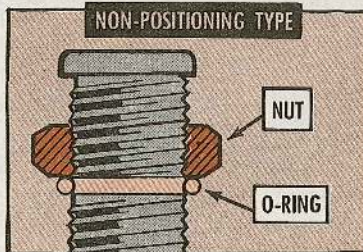
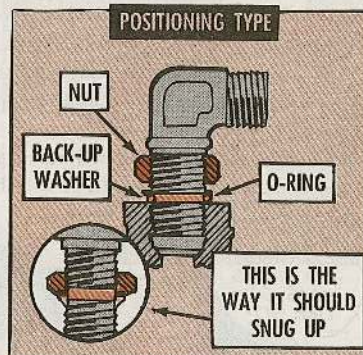
—Position the fitting; never mind if you have to loosen it or screw it in up to a full turn.

—Hold the fitting neck with a wrench; tighten the tube end against it. Then tighten the nut against the face of the boss. Y' got it made.

NON-POSITIONING TYPE — Seat O-ring in groove under hex nut with a thin skin of lube on it.

—Finger-tighten the fitting and boss when you have 'em in line.

—Open-end wrench the joint to a snug fit against the face of the boss.



45

PS MORE

DON'T
BE GUILTY
OF ANY
OF THESE
THREE BIG
MISTAKES
IN TUBE
FITTING!



N O N O N O N O N O N O N

1. Overtightening. Nuts crack, threads strip, tubes twist . . .

2. Wrong-wrenching. Ruins hexnut shoulders and user's knuckles.

3. Grip-type pliers. They crush tubes, nuts, and even castings.

N O N O N O N O N O N O N

1. Overtightening. Nuts crack, threads strip, tubes twist . . .



2. Wrong-wrenching. Ruins hexnut shoulders and user's knuckles.



3. Grip-type pliers. They crush tubes, nuts, and even castings.



The word is, don't rush. Take time to see what the cause is when there's trouble.

Like, see whether a leaky fitting got put together wrong or shaped wrong to begin with.

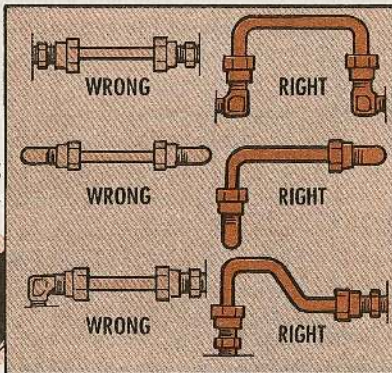
Find ways to keep tubing from running straight from joint to joint with no stretch allowance—that's a wrong bong.

SOME RIGHT
AND WRONG
WAYS GO
LIKE SO!



Stiff lines don't take vibration so well. Licks like from dropped wrenches will break rigid tubes and snap fittings. If you have some "give" built in, they'll take harder licks.

And no, nah, nix on twisting tubing in tightening. Imagine a line drawn on a fresh tube with a grease pencil. The job should wind up with the line running the shortest distance from end to end.



COLOR
LINE WOULD
LOOK LIKE
THIS . . .

... NOT THIS

JUST A
LITTLE EFFORT
WILL MAKE
YOU A PRO.



GAMA GOAT TORQUE



Now there's an inch-pound torque for those brake drum jacking screws on your M561 and M792 1¼-ton vehicles. Give those jacking screws 35-40 in-lb torque. This replaces that foot-pounds torque in TM 9-2320-242-20 (Aug 70), page 2-242, para 2-162f(26). Use the inch-pound torque wrench, NSN 5120-00-853-4538, in your No. 1 Common Shop Equipment.

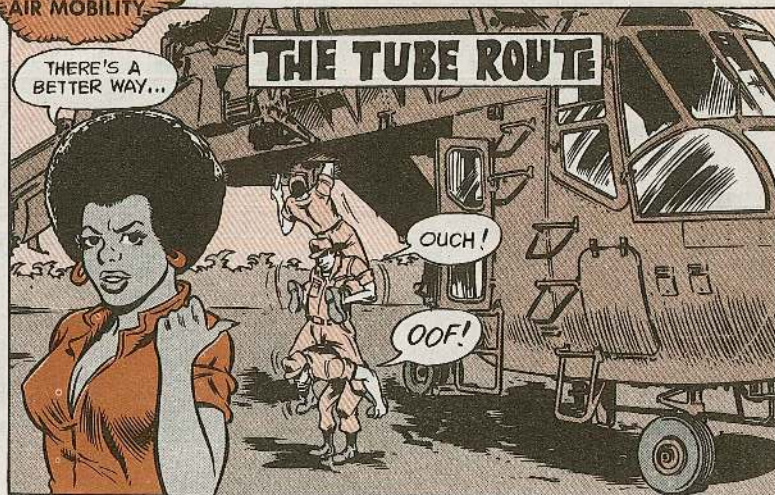
JACKING SCREWS

35-40 IN-LB
TORQUE ON
JACKING SCREWS

3/4-TON HUB SEAL



Use NSN 5330-00-154-8353 when you order Seal, plain, encased: hub (inner) for your M37B1 or other $\frac{3}{4}$ -ton truck. That FSN 5330-291-7951 on page 122, TM 9-2320-212-20P (Mar 72) won't bring it.



Draining an oil sample from the main transmission on your Tarhe (CH-54) can be a bit of a problem when you're out in the boonies.

You have to be 9 feet tall, and then some, to reach the drain. A maintenance stand, which you don't have, would come in handy.



And, with the pod attached, there is no way you can even get to the drain.

Although TB 55-6650-300-15 (Aug 70) with Ch 3 (Nov 73) on oil analysis calls for a drain sample, use your ingenuity.

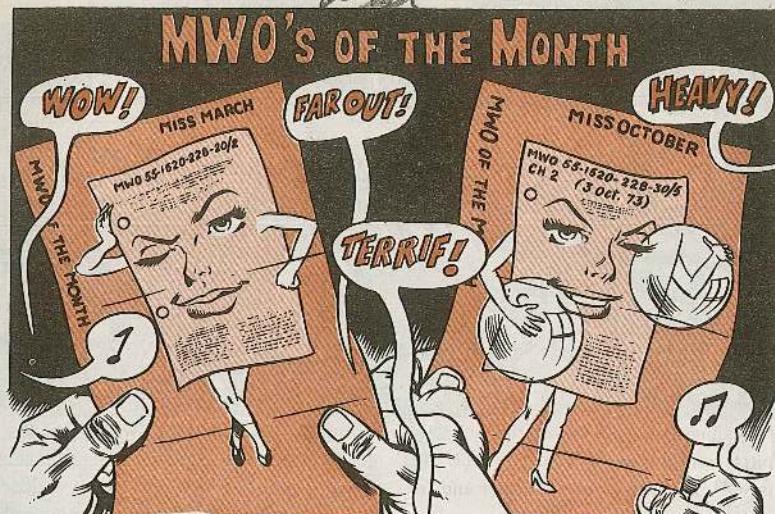
man! The filler neck route is the answer. Take a tube sample.



Just be sure you check block 8a "tube" instead of "drain" on the DA Form 3253.

Also, make a note in the remarks column of the form that you took a tube sample. This is important because the lab types may get one reading from a drain sample and another reading from a tube sample. They have to make some allowances, so, always stick with either the tube or drain method of sampling.

CPT 4451 401-3853 4119



There're a couple of "must" mods you may not have on your Kiowa (OH-58A), bird types. So, eyeball the log book for:

MWO 55-1520-228-20/2 (23 Mar 72), Engine Oil Hose Assembly Modification. You get a new engine oil vent line with different fittings . . . prevents a Murphy

of the vent and oil return lines during an engine change.

MWO 55-1520-228-30/5 (2 Mar 73), with Ch 2 (3 Oct 73), Relocation of Pilots Standby Compass. This baby prevents the pilot from getting a bum steer due to electrical interference.



If a lens in your aviator sunglasses turns up broken or cracked, return 'em to supply for a new pair. Vision compromise

can result from a repair job . . . So, no repairs, please. Ask for NSN 8465-00-753-6261, authorized by CTA 50-901.

WANTED...A COMPLETE SEAL



Sealing the threads on the collective pitch control tubes of your Huey (UH-1) is SOP. The idea is to keep water and corrosion out of the tube.



But did you know that water can also get into the tube thru the witness hole? It can—if all the thread area is not sealed!

So, after final adjustment of the control tubes, use sealing compound, MIL-S-8802, on the threads, including the witness hole.

If necessary, the compound in the witness hole can be removed for inspection and replaced.

ON THE GROUND WILL DO



IFR conditions getting in the way of Daily Engine Recording (DER) checks on your U-21? If you can't always get the same altitude, you can run the checks on the ground.

The pressure altitude you record has to fall inside a 500-ft spread. So, set your

altimeter at 29.92 inches of mercury. The altimeter should read within plus or minus 250 feet of field elevation for the DER to be valid.

O' course, you should always use the same field or base of operations.

COVER ON, PLEASE!



Sometime in your career as a knuckle-buster it may seem logical for you to leave a part off a bird to get rid of an interference problem. But that's not quite what the engineers had in mind.

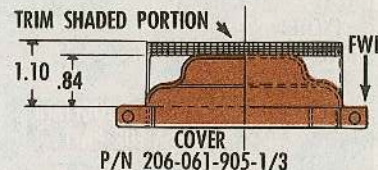
Take the drive shaft cover on the Kiowa (OH-58A). Sure, you only have about 1/8-in clearance between the cover and shaft. And a dent in the cover could chafe the shaft, meaning big trouble.

Never remove the cover permanently, tho, because it's part of the firewall. The airflow around the shaft is restricted by the cover. This prevents flames from spreading from the engine compartment to the transmission area in the event of a fire.

Tain't healthy to fly your bird without a complete firewall!

So, if the 2-piece cover is damaged and is too close to the shaft ask for a new one.

When you've made all the positioning adjustments possible and the cover still doesn't give you enough clearance try this for size:



Trim off no more than 0.26 inch of material from the cover lip.



HOOKUP OR HANGUP

AW, COME ON T-195, BABY! WHAT'S YOUR HANGUP?

WE HAD A GREAT RELATIONSHIP 'TIL I CONVERTED YOU TO CW AND AM!

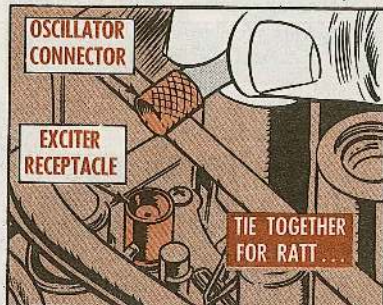
... BUT NOW... *SNIFF* YOU WON'T EVEN SPEAK TO ME...

You say your T-195 transmitter was going great guns when it was set up for FSK or teletypewriter use, but it sank into silence when you converted to CW and AM.

Wait one!

Before heading that heavy job into the shop for repairs, eyeball the oscillator and exciter hookups.

Disconnect the oscillator connector for RATT operation and connect directly to

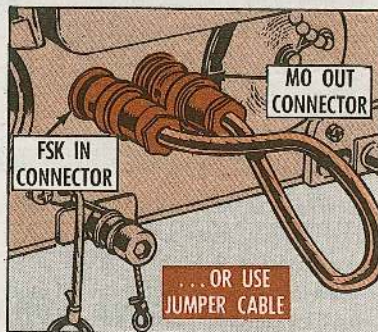


the exciter receptacle. Change 1 to TM 11-5820-335-20 (Dec 61) lays it out for you.

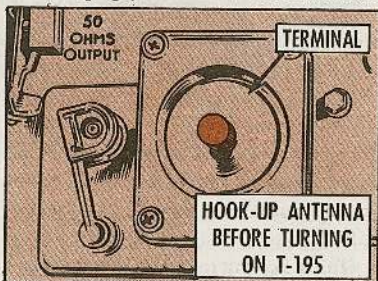
O' course, if you have a cable assembly, like a CG-409/U, handy you could save yourself some handling of that big hulk of a transmitter.

Just connect the cable from the FSK IN receptacle to the MO OUT, using it as a jumper.

And presto, you're ready for CW and AM operation and not for repairs.



Remember to connect the antenna cable to the terminal on the front panel before firing up your T-195. 'Cause, without



the antenna tied in you'll wind up with transmitter damage you wouldn't want to even think about.

MWO WOES...

AH! THERE'S THE RUB

WHOOOPS! I DIDN'T MEAN TO RUB YOU THE WRONG WAY!

FRESH!

THAT'S WHAT THEY ALL SAY!

C'MON, LINDA... LET'S GET OUT OF HERE!

Rubbing the Equipment Mod Record decal the wrong way on COMSEC equipment could leave you in the dark on the status of MWO's.

That's right.

'Cause, if you accidentally rub or scratch out any MOD numbers, it'll look like you've got more changes to your gear than you're supposed to have.

Then, the equipment will have to be sent into support to see how it stands on the MWO scale.

EQUIP MOD RECORD											
28	34	37	40	43	46	49	52				
29	32	35	38	41	44	47	50	53			
30	33	36	39	42	45	48	51	54			

OLD WAY

EQUIP MOD RECORD											
28	34	37	40	43	46	49	52				
29	32	35	38	41	44	47	50	53			
30	33	36	39	42	45	48	51	54			

NEW WAY

ONLY TOTALLY DELETED NUMBERS ARE APPLIED MWO'S

So, your best bet's to leave those numbers alone, except to check 'em to make sure the MWO's have been applied.

CABLE CONFUSION



When plugging in cables on your AN/TRC-110 radio repeater set or AN/TRC-117 radio terminal set, remember this: A CG-409H/U and a CG-1040B/U look like identical twins. To be sure you're hitching the right cable to the right receptacle, eyeball the cable's designation band be-

fore you make the connection. To be double-sure, stick some white tape, NSN 7510-00-550-7127, on each end of your CG-409H/U cables and on their receptacles. Use blue tape, NSN 7510-00-550-7124, and do the same to the CG-1040B/U cables.



COMBAT SUPPORT

ROLLERS CAN'T FLY . . .

TONGUE
SHOULDN'T
GO HIGH

NO!
NO!
NO!

CUT
THAT
OUT!

THIS IS
TH' WAY!

SLURP

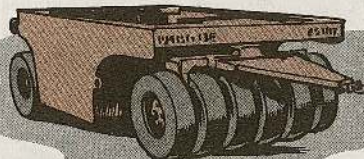
Never tow your 13-wheel roller with the tongue too high in the air.

A high hitch will get body corners knocked off and draw bar frames bent. It'll make your roller easy meat for rocks and stumps to tear out the ball and socket joint.

That means you never raise the tongue eye up as high as the winch rollers.

So get 'em down, trooper, down.

25-35 PSI TIRE PRESSURE
ON ALL 13 WHEELS!



GASH WITH A FLASH

HERE COMES OLD
"THREE FINGERS" WITH
ANOTHER LOAD OF
NSN 5110-00-892-5071'S.

If you have a Knife, craftsman, NSN 5110-00-892-5071, made by Flash Mfr Co, turn it in to supply-gently. The handles can come apart, allowing the blade to come thru and cut you.



If your supply officer gets over \$10 worth of these knives, he can send 'em back to GSA for credit.

WEIGHING CO₂ CYLINDERS

Dear Half-Mast:
TM 5-4220-201-12, para 4-2e, says to check the weight of the CO₂ gas cylinders on B-7 parachutist life preservers. Problem is, what do we use for a scale?
CW2 J.E.H.



Dear J.E.H.,
You might have to use an exception-data supply request to get one, but Scale, beam, gram graduations, NSN 6670-00-514-4117, will back it.

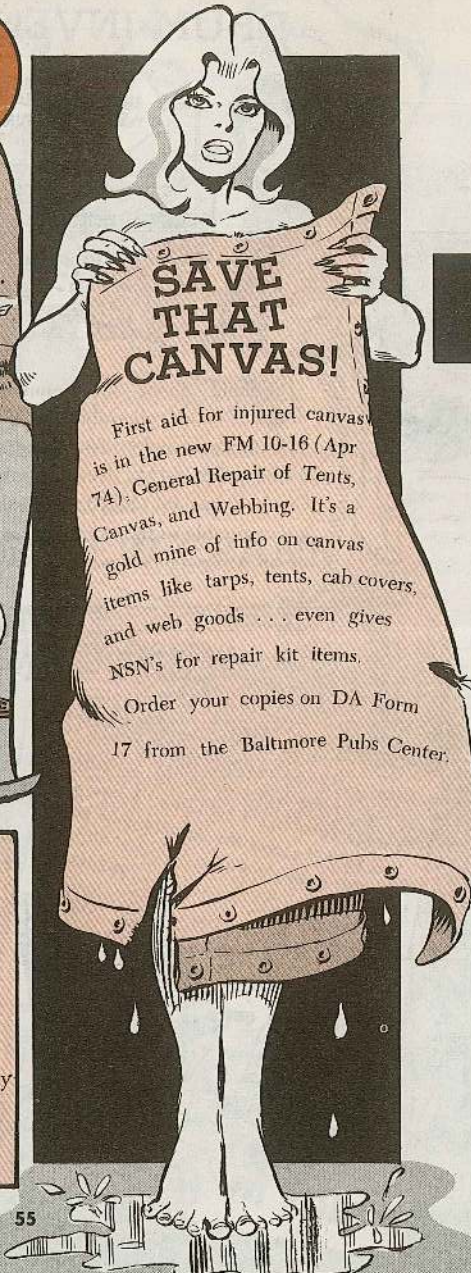


AND TAKE CARE OF
IT... THE LITTLE
BUGGER COST \$108.00.

CLEAN... BUT—

Cleaning parts with gas is as smart as brushing your teeth with battery acid. It gets them clean, but it's a little risky.

—Screwdriver 5
XVIII Airborne Corps Arty
Fort Bragg, NC



SAVE
THAT
CANVAS!

First aid for injured canvas is in the new FM 10-16 (Apr 74), General Repair of Tents, Canvas, and Webbing. It's a gold mine of info on canvas items like tarps, tents, cab covers, and web goods . . . even gives NSN's for repair kit items.

Order your copies on DA Form 17 from the Baltimore Pubs Center.

DRUM INVENTORY NEEDED

YOUR COMMAND CAN HELP
UNCLE'S FINANCIAL BIND
BY DRUMMING UP SOME
BUSINESS.

Talking about those unserviceable-repairable 500-gallon drums . . . the collapsibles. Fill out a DA Form 3590, and send to Commander, USA General Materiel and Parts Center, ATTN: STSGP-IM, New Cumberland Army Depot, New Cumberland, PA 17070. List all these drums you have that are repairable so the top shop can figure out whether to set up an Army repair operation.

TB 43-0140 (MAR 74)
HAS THE WORD.

TENT-PIN ORANGE

Dear Half-Mast,
How come tent pins are issued with an orange color but most units I know paint 'em OD? It seems the Army would supply 'em OD to begin with.

SGT H. M. D.

DRAT!
FERGOT WE
PAINTED 'EM
OD!

Dear Sergeant H. M. D.,
They're issued orange for safety reasons. This light color makes 'em easy to spot and keeps personnel from falling over 'em. It also helps cut down on the loss of the pins.
They can be repainted, though, if camouflage is the order of the day.

IT'S UP TO THE
LOCAL COMMANDER
TO DECIDE WHAT'S
MORE IMPORTANT
AT A GIVEN
MOMENT.

56

KEEP IN TOUCH ..ON DA FORM 2408-10

RIGHT
ON,
CONNIE!

It's smart to record the serial numbers of the 2380 RT crane carriers that get the new engine mounts. (See page 70, PS Issue 250.) To look at the mounts you can't tell the old from the new. So, use DA Form 2408-10, puh-l-e-e-s-e.

WARNING FOR NEW CRANE

Dear Editor,
We discovered our new 25-ton P&H commercial crane has a 12-volt system. To head off several thousand dollars' jump-start damage, we stenciled a warning on the cab doors and battery box compartment.
Now, maybe nobody will be crazy enough to jump-start it with 24 volts and burn it up.

CW2 H.A. Spooner
Fort Knox, KY

(Ed Note—Sadly, somebody already has . . . on another post . . . and a class of students saw it happen. The new IH 20-ton dump truck with a Field dump body needs a stencil, too. It has four 6-volt batteries in series-parallel. So, stencil the new crane and dump:

**WARNING
12-VOLT SYSTEM
DO NOT SLAVE TO 24 VOLTS**

... AND,
CONGRATULATIONS!
SHARP IDEA!

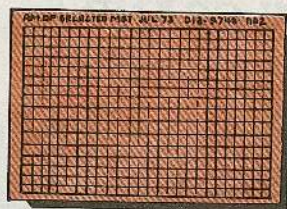
57

GO MICRO FISHING



If you're in supply, you're going fishing—microfiche, that is.

The cross-reference list, management-data lists, the AMDF and beaucoup other things are fiche on film, with as many as 270 "pages" on a sheet a little bigger than 4 x 6 inches.



AMDF
LISTING
ON
FICHE

That's microfiche.

To make any sense of that fiche, you have to have a microfiche viewer, or "reader."



MICROFICHE
VIEWER
(READER)

You get microfiche of the Management Data List (ML) or Tailored Master Cross Reference List (TMCRL) just like you got the old supply catalogs—on pinpoint distribution. Order them on DA Form 12-21.

A new set of ML's comes every 90 days and TMCRL's every 180 days. Be sure to toss out the old ones when the new come in.

The Selected Management Data File is part of the Army Master Data File (AMDF) Retrieval Microform System (ARMS).

None of the ARMS/AMDF fiche come automatically. Your unit may be able to get the AMDF, the Interchangeable and Substitute Group file (I&S),

SEND
REQUESTS
TO:



REQUESTS MUST
STATE WHY EACH ITEM
IS NEEDED



Chap 8, AR 708-1, tells what's available. First, get approval to establish a microform system per AR 340-22 (Nov 73).

The AMDF comes every month. Again, toss out the old one—promptly!

Your viewer is ordered through your S&S or S&T battalion. They send a funded requisition to Defense General Supply Center, ATTN: DGSC-OS, Richmond, VA 23297.

If you're in CONUS, you probably need Viewer, 110-115-V, NSN 6730-00-074-2729, \$80.

If you're in a quick-reaction outfit that jumps back and forth overseas and takes its equipment along, you need Viewer, dual capability, 115/230-V, 24X/48X Magnification, NSN 6730-00-116-1618, Price \$124.

You can get a filing cabinet for your microfiche with NSN 7110-00-292-2301, a



GSA item at \$4. State on your request that DA Cir 340-11 does not apply. Give your MICRODIS Number, stating you have approval under AR 340-22. Again, cite the appropriate DA Letter.

NEED MICROFICHE LAMP?

If you need a lamp for your unit-level microfiche reader, NSN 6730-00-074-2729, get it this way:

Wollensak-made rigs take NSN 6240-00-102-9648.

Micro Design readers need NSN 6240-00-409-8295.

For Washington Scientific readers, make out an exception-data request for MFR Code 08808, P/N ELD (or Washington Scientific P/N WS192242.) If you're in haste, your support can order directly from Washington Scientific Ind., Inc., Long Lake, MN 55356.

YOUR TM 38-750
GETS A . . .

YOU
CAN STILL
RECOGNIZE
TM 38-750
BY ITS COVER
BUT **CHANGE 1**
IS THE BIG
NEW NEWS.

Slimmer, Trimmer SILHOUETTE

Ch 1
1 Apr 74

TM 38-750

TECHNICAL MANUAL

Change 1
(1 Apr 74)

THE ARMY MAINTENANCE
MANAGEMENT SYSTEM
(TAMMS)

NOTE—
CHANGE 1 (1 APR 74) TO TM 38-750 (NOV 72)
HAS JUST BEEN DISTRIBUTED BY PIN-POINT.
IF YOUR OUTFIT DIDN'T GET A COPY,
ORDER NOW ON DA FORM 17 FROM
THE AG PUBS CENTER AT ST. LOUIS.

HEADQUARTERS, DEPARTMENT OF THE ARMY
NOVEMBER 1972

EQUIPMENT
REPORTABLE ON
DA FORM 2406
HAS BEEN TRIMMED—
AND SO HAS THE LIST
OF EQUIPMENT
THAT'S REQUIRED
TO HAVE A
LOG.

These changes—and more—are in Change 1 (1 Apr 74) to the TM. The change is effective 1 Oct 1974.

The slimmer list of log book items is found in Appendix E—which combines the former Appendix E and Table 4-1. Except for a few instances where logs are required for “all models” of equipment, logs are now required only on specific models listed in Appendix E (commanders still have the option, tho, to require other records for local use).

A new Chapter 8 is added on records required for rail equipment (Log records

are listed, as for other equipment, in Appendix E.) The first DA 2408-9 submitted on these items must show gain code U from Table A-20.

Besides the reduced number of items to be reported on DA 2406, each reportable communication equipment item that's mounted in a vehicle will be reported as a communication system—with the vehicle a component of that system. (A non-reportable communication item, when mounted in a reportable vehicle, will continue to be considered a component of that vehicle system.)

Changes

DD FORM 314
1 DEC 63

PREVIOUS EDITION
THIS FORM MAY BE

1	2	3	4
JAN	FEB	MAR	APR
MAY	JUN	JUL	AUG
SEP	OCT	NOV	

DD 314 — ESC ratings need not be recorded on this form since the rating is kept on DA 2404 in the equipment log. Not-operationally-ready (NORS/NORM) time of 12 hours or less in a day will not be recorded. Such downtime of more than 12 hours in a day will be recorded as 1 day. DD 314 will no longer be used for calibration scheduling (instead, use DA 2416).

DA FORM 2407
1 JAN 64

DA 2407 — Use code R in block 9 for DA Form 2406 reportable items. For aircraft avionics and subsystem repairs put aircraft serial number in block 16. Also for aircraft PMD, PMI and PMD use code 00 in column 20d.

DA FORM 2408-1
1 May 67

DA 2408-1 — When DA 2400 is used for dispatch, dispatcher transcribes entries from this form to DA 2408-1.

DA FORM 2408-5
1 JAN 64

DA 2408-5 — For all equipment this form will be initiated only when notice is received (AG bulletin, EIR Digest TB, DA Pam 310-7 or other means) of the first published MWO on the equipment or component. Use L in column c for a Limited Urgent MWO.

DA FORM 2408-9
1 OCT 72

EQU
For use of this form, see TM 38-760
REPLACES

DA 2408-9 — Rules on this form are completely re-written to give details for each use: (1) Acceptance, (2) Usage Report and (3) Transfer-Gain-Loss Report (including rebuild and overhaul).

on Forms

DA FORM 2408-14, 1 JAN 64

DA 2408-14 — Will list sources of supply such as QSS.

DA FORM 2408-18, 1 JAN 64

DA 2408-18 — Now used only for scheduling certain PM on aircraft, use of this form is expanded to include some combat vehicles. See Appendix E for items that require it.

DA FORM 2410, 1 JAN 64

DA 2410 (aircraft) — Detailed rules changes include requirement to use code 674 for cannibalized items.

REPAIRED BY
SUPPORT MAINT.

NOT REPAIRABLE THIS
STATION/TEAM

20	TYPE OF STANDARDS										21	UPDATE	
MICRO	LOCAL	NECH	T.R.	RAD	ADD	CHANGE							
A	B	C	D	E	A	B	C	D	E				

23 REPAIR M.W. 24 INITIALS 25 CALIBR GATE

DA FORM 2416, 1 JAN 70

DA 2416 — Requirement to use the back of this form for reporting repairs incidental to calibration is deleted. Use DA 2407 instead.

In addition to the other TAMMS forms, rail records will include the DD 862 worksheet, DD 1335 for rail car inspections, DD 1336 for locomotive and crane inspections and DA 4171-R for airbrakes.

CHAPTER 7 WILL BE ADDED TO THE TM LATER FOR ARMY MARINE EQUIPMENT!

Note these other changes in appendixes:

App A — Code changes.

App B — New addresses for forwarding specific forms.

App C — Commercial vehicles that require DA 2408-9.

FOR ALL THE DETAILS SEE CHANGE 1 TO TM 38-750.

PS END

NON-STOCKED ITEM FILE

HALF-MAST CLUE ME ON CHECKING MY NON-STOCKED ITEM CARDS.

EASY, NO ENTRIES NEEDED. JUST A FILE CLEAN-UP CHECK.

Dear Half-Mast
At the 90 day review—
What entries do I make on my 3318's
in the non-stocked item file?
Some say the review line and the R
entry must be made on the cards. Others
say no entries are needed. What's the
scoop?

A. R.

Dear A. R.,
The no's have it. You don't need any
review entries on your non-stocked item
cards.
You review the file simply to toss out
any cards that've not collected 3 separate
demands in two most recent review periods
(180 days), and cards covering items for
equipment you no longer support.

Half-Mast

FORM
DA FORM 3318

RECORD OF DEMANDS
RECORD OF DEMANDS

RECORD OF DEMANDS—TITLE INSERT
(AR 765-38)

STOCK NUMBER 6105-00-511-5496

ORGANIZATION OCCUPANT NUMBER	QUANTITY DEMANDED	CUMULATIVE QUANTITY DEMANDED	BALANCE	ORGANIZATION OCCUPANT NUMBER	QUANTITY DEMANDED	CUMULATIVE QUANTITY DEMANDED	BALANCE
3082-005	2						

TOSS OUT CARDS NOT NEEDED ...
POST ACTIVE FILES

NEW UNIT ... NEW EQUIPMENT?

GET HELP ON

PLL

Going thru the pains of figuring out your Prescribed Load List as a new unit or on new equipment? Well, there's help to be had.

Have your commander fire a letter off to Commander, USA Maintenance Management Center, ATTN: AMXMD-SE, Lexington, KY 40507.

In the letter, state the level of maintenance (organizational, direct, and/or general) of requesting unit. State the number

of days' supply required in increments of 15 days (30, 45, etc.) Give NSN's from your TOE, and include make, model, and series designators if available. State density figures—number of each end item authorized or on hand.

Then USAMMC experts will work up your initial PLL and get you a PLL List. It's just the way Para 2-37, Ch 1, AR 710-2, says it.

64

Connie's
Mini Minis



Chaparral Fumes

One thing you gotta remember about the rear electrical compartment door on the Chaparral launch station: close the door tight and be sure the vent fan has been going at least a minute before you start the MPU engine. That allows the vent fan to pull gas fumes from the MPU compartment... and prevents explosion. Keep the door closed. If the vent fan doesn't work, get it fixed before starting the MPU.

No Metal Ladders!

Have you got an aluminum ladder on your M726 1½-ton telephone maintenance truck? It's dangerous—it's an electrical safety hazard! So replace that metal ladder with a wooden or fiber glass job. All major commands got the word from the US Army Tank-Automotive Command in TWX AMSTA-MVA 261512Z Jul 74.

Either One Will Do

You say you have a R-390A receiver instead of a R-725 as a part of that AN/TRD-23(i) direction finder set. Don't let it bug you. As long as you are using the R-390A for monitoring and communicating, it will do the job with your direction finder.

FFAR Out Reports

EIR's and ACR's on the 2.75-in Folding Fin Aircraft Rockets (both rocket and launcher) just came up with a change of address. The reports now go to Army Missile Command, ATTN: AMSMI-NMD, Redstone Arsenal AL 35809, Ammo malfunction reports go to USA-MICOM, ATTN: AMSMI-N.

Snaps No Snap

If you're ordering the snap assembly for your M14 aircrew protective mask carrier with NSN 5325-00-721-7424, you're being short-changed! That NSN only delivers the stud. So, until the numbers are straightened out, order NSN 5325-00-209-2631, socket assembly, and NSN 5325-00-141-7520, stud. It takes both NSN's to get the entire snap assembly.

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FM'S For Riggers

If you're in the parachute rigging business, all your TM 10-500-series manuals are being changed to FM 10-500-series pubs when they are reissued. Units with accounts now on DA Form 12-34 will be changed over to the field manuals automatically. For new listings or new accounts, tho, send a DA Form 12-11 to the Baltimore pubs center.

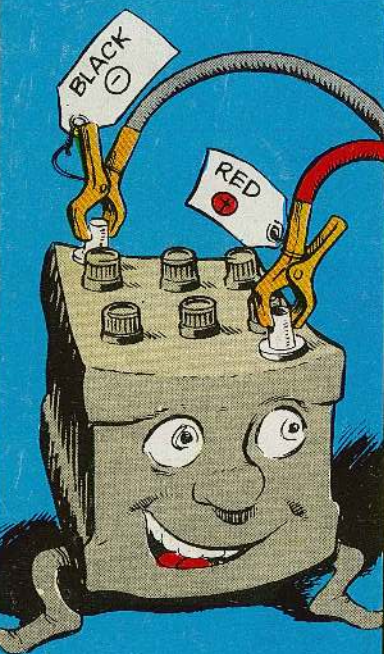
Would You Stake Your Life ^{right now} on
the Condition of Your Equipment?

JUMP

STARTING?

DO IT
RIGHT!

--OR YOU'LL RUIN ELECTRICAL PARTS!



HOOK-UP—

RED

(POSITIVE)
CABLE
FIRST...

BOTH ENDS

THEN

BLACK

(NEGATIVE)
CABLE



UNHOOK—

BLACK

CABLE
FIRST...

BOTH ENDS

THEN

RED

CABLE

