

Issue 262

PS

September
1974

THE PREVENTIVE MAINTENANCE MONTHLY



YESSIR, CONNIE --
HALF-MAST! WE'VE
GOT TH' NEATEST,
CLEANEST TM LIBRARY
IN TH' WHOLE
DIVISION!

MURPHY
ANDERSON

PUT MORE THUMBPRINTS
on this copy—pass it along

CONNIE SAYS... FILTERS... (OR

GREAT... NOW... HOLD UP YOUR RIGHT HAND AND REPEAT AFTER ME...

"Today I will make sure my engine's filters are OK. If they're not, I'll clean 'em, (or change the elements.)"

FEEL BETTER? **OK, NOW, GO DO IT!**

I'M STARTING A PERSONAL CAMPAIGN AGAINST DIRTY, CLOGGED FILTERS.

THERE'S A SLEW OF THEM AROUND THE ARMY THESE DAYS...

...AND THEY'RE DESTROYING SOME EXPENSIVE ENGINES!

HEY, YOU OUT THERE!

YES, YOU!

HOW ABOUT GIVING ME YOUR UNDIVIDED ATTENTION FOR JUST A FEW MINUTES?

YOU WON'T BE SORRY...

I PROMISE!

CHANGE 'EM CLEAN 'EM"

SO, BEFORE I, OR **HALF-MAST**, OR **BONNIE** COMES BY TO SEE HOW YOUR FILTERS ARE, HOW ABOUT IT?

GET YOURS SHAPED UP-- CLEAN 'EM OR CHANGE 'EM. YOUR **TM** TELLS YOU HOW.

AIR FILTERS

OIL FILTERS

FUEL FILTERS

THEY'RE WHAT I'M TALKING ABOUT!

PS THE PREVENTIVE MAINTENANCE MONTHLY

Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from Editor, PS MAGAZINE, c/o US Army Maintenance Management Center, Lexington, KY 40507.

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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: call: Autovon 745-3503.

M&G Half-Mast
PS Magazine
Lexington, KY
40507

Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 17 July 1973.
DISTRIBUTION: In accordance with requirements submitted on DA Form 12-5.



FILTER for

Yet these are the sad facts...

Without clean air, clean oil, and clean fuel, your tank-type vehicles break down.

Without vehicle filters, screens and breathers in good shape, you won't have clean air, clean oil and clean fuel.

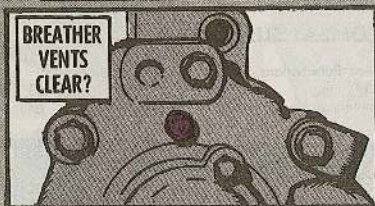
CHECK
VEHICLE
FILTERS
OFTEN



SCREENS
FREE OF
DEBRIS?



BREATH-
ER VENTS
CLEAR?



Without you to service the filters, screens and breathers they won't stay in good shape.

SO HERE'S
A HANDY,
BY- THE-
NUMBERS
GUIDE...

...TO
HELP YOU
TAKE
CARE OF
THE AIR,
FUEL AND
OIL
FILTERS
ON THESE
VEHICLES.

FACTS OF LIFE TANK CREWMEN

YUP, I'M
POOPED...



WHAT'RE
YOU GRINNIN'
ABOUT?

MY MECH
JUST DID
PM ON ME...

...MAYBE
YOU HAY-BURNER
TYPES OUGHTA
HAVE YOUR
FILTERS CHECKED!

AIR CLEANERS

1. Make sure the covers for the air intake screens—both left and right—are installed and the passageways open. Dirt and stuff can get into the air intake system if the covers are off. It takes less than half a pound of dirt to completely ruin a tank engine.

IF I COME OUTTA
THIS A HALF POUND
HEAVIER...

...I'VE
HAD IT!



MAKE SURE
SCREENS ARE
CLEAN

Ground-hopping (operating with the power pack out of the vehicle) is one of the biggest causes of dirt in the engine. Since the engine is without air cleaners to filter the air during ground hopping, you should do as little of it as possible and even that little in as dust-free an area as you can find. It just takes 15 minutes of ground-hopping in a dusty area to draw that half pound of dirt into the engine.

2. Make sure gaskets are seated right. Set the air intake openings to draw air from the crew compartment—except in cold weather. This gives you a settling chamber that lets the air cleaners run about 50 times longer before clogging up. Keep intake screen free from leaves and dirt.

CREW COM-
PARTMENT AIR
INTAKES ARE
GREAT!

YEH...
IF THE CREW
WOULD ONLY
WASH ITS FEET
MORE OFTEN.



MORE



3. If any of the 4 hoses (2 air cleaner-to-air intake and 2 air cleaner-to-turbo-supercharger) is cut, torn or worn out, replace it. Have your mechanic look it over if you're not sure.

EYEBALL HOSES FOR WEAR AND TEAR



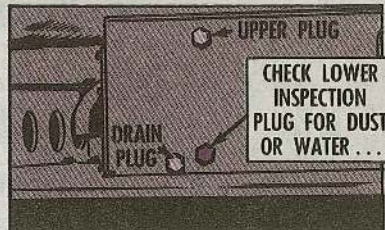
4. Packing on both ends of every hose must be replaced unless it makes an air-tight contact.

5. Keep hose clamps tight. Replace missing or damaged clamps.



6. Remove drain plug (the bottom plug) and let out the water (if any).

7. Unscrew the lower dust inspection plug, shine a light into the hole and look for dust or water. If there is none, screw back the 2 plugs and skip the next step.



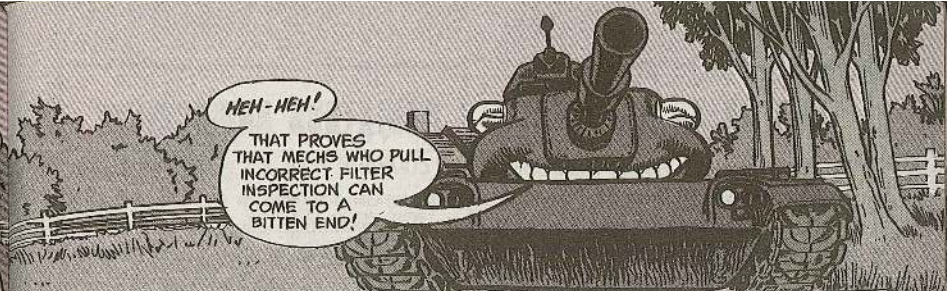
8. If you've found dust or water, take out the upper inspection plug. Put a compressed air hose into this hole to blow dust/water out the lower holes. (Note: The filter must be in place when you do this.) Be careful not to strip the threads on any of the 3 plugs. Lightly lube threads with GAA before screwing each plug back.

9. With engine running, check for air leaks at elbow and air intake flange.

10. With your hand, feel if there's an air blast at the blower outlet. If the motors are not working, tighten the electrical connections. Call your company mechanic if this doesn't do the trick.



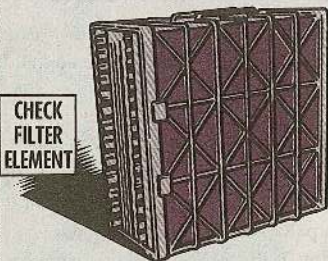
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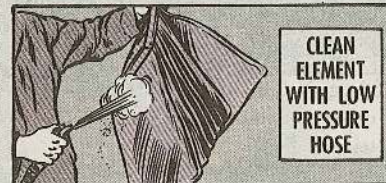
11. Air cleaner door gasket without chunks or rips? Make tight seal? Replace if necessary.



12. Take out filter element (if it is removable), pull out the baffles and make sure both the dacron filter element and the



rubber seal are clean and in good shape. If damaged, replace with a new one, NSN 2940-00-678-4701, element, air cleaner filter. Look it over carefully for small holes. Hold element by gasket end and shake out



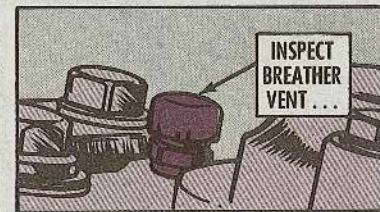
the dust. Get the rest of the dust out with a low pressure hose or by washing. You can use either warm or cold water with or without a non-sudsing detergent. The filter must be completely dry before you put the element together again. The element should never be steam cleaned.

13. Filter compartment gasket NSN 5330-00-411-2060 loose or damaged? Replace if needed.



TRAVERSING GEAR BOX

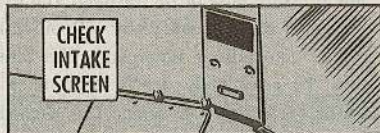
BREATHER VENT—Remove, clean and inspect the breather on your traversing gear box every quarter. Use NSN 4730-00-591-3405 for a replacement. See your LO for cleaning info.



5

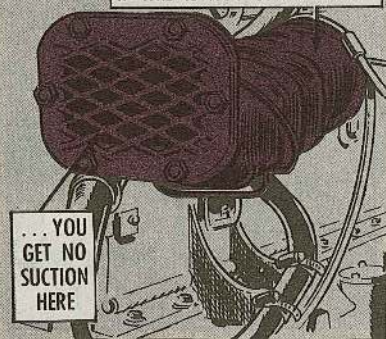
GENERATOR AIR INTAKE

INTAKE SCREEN—Hold a piece of cloth or paper in front of the air intake screen. If the material is not sucked against the screen, it means your generator blower has quit on you. So stop your engine and call your mechanic. Otherwise your generator will overheat and burn out.



FLEXIBLE CONNECTOR—Course if the mechanic forgot to reconnect the generator duct flexible connector when replacing a power pack, the blower motor could be running. It would pull in dirt and dust even though there'd be no suction on the air intake screen. Your blower would overheat and fail and the generator would burn up. Even in that case the fact that there was no suction at the generator air-intake screen would tell you something was wrong. So call your mechanic and save your generator if there is no suction at the air intake screen.

IF THIS IS NOT CONNECTED...



RADIATORS AND SCREENS

CLEANING INFO—Clean the 4 oil cooler radiators and screens as often as needed. In dusty conditions this may be weekly. If you operate where there are tall weeds with lots of seed pods, you may have to clean daily. Quarterly (Q) service cleaning may not be often enough.

OIL CLEANING TOOL—Use steam or water under pressure the way it says on page 2-213 of Ch 6 to TM 9-2350-215-20 (Feb 65). Make sure no water or crud gets in the oil cooler openings. Better yet, use oil cleaning tool, NSN 2815-00-494-8257.



COOLER CARE—Your coolers take care of all the heat from the transmission and half of the heat from the engine so they need your best care.

Here's the way to keep 'em in shape:

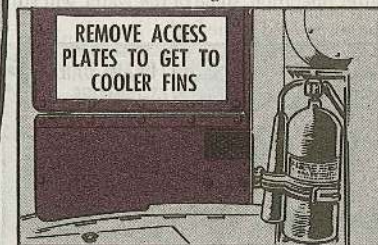
1. Take the radiator (cooler) screen off by unscrewing the 4 cap screws. Clean it with a paint brush and drycleaning solvent or soapy water. (Note: If the screen is



clogged, dust and dirt get through to the cooler and this makes the cleaning job tougher.)

WANNA BE
FOXY WITH
YOUR
PACK?
JUST FOLLOW
THESE COOLER
CARE TIPS!...

2. To clean the radiator (cooler) fins, take out the access plates—one behind each cooler—in the cooling shroud. With steam or high pressure water, hose down the cooler from the engine side. It is easier

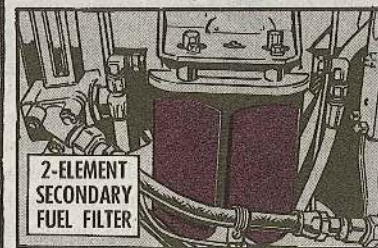


to do this when you have the pack out.

If you're doing it with the pack in place, take out the engine compartment floor plate and run the front roadwheels up on a ramp. This raises the front end so the wash water can drain out the floor plate hole.

FUEL FILTERS

Fuel filters are specially important with diesel fuel because the diesel makes a corrosive mixture with water. That's why your AVDS series engines have both a primary fuel filter and either a 2-element secondary fuel filter or the newer 3-element fuel/water separator filter. It will

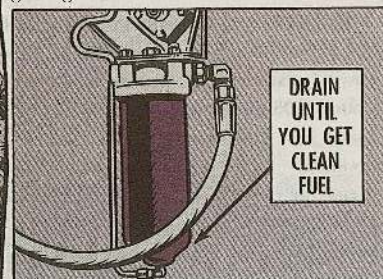


also have a manifold heater fuel filter and possibly a fuel injector pump filter.

Daily draining of fuel filters can prevent fuel system damage. It's best to do this before operation because then the water is settled out of the fuel. If you drain right after operation, some of the water will still be suspended in the fuel.



1. PRIMARY FUEL FILTER—Drain daily. Use drain cock if you have an early, unmodified, model or the spring-loaded valve if MWO 9-2300-382-20 (Jan 68) has been applied. Drain into a container until you're getting clean fuel without water or dirt.

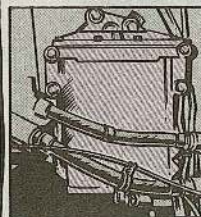


Crewmen will help the mechanic with the quarterly (Q) service or 750 mile cleaning of the primary fuel filter. After cleaning, the brass disks will be reassembled with a new gasket. Once the initial issue brass disk element gets damaged, replace it with the disposable element that comes in filter parts kit NSN 2815-00-808-2407.

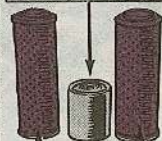
2. SECONDARY FUEL FILTER — Service this like the primary. The filter parts kit is NSN 2910-00-967-9870.

Or you might have...

FUEL/WATER SEPARATOR FILTERS — Drain daily through drain tube. Replace 2 outer elements every quarterly (Q) service or every 750 miles. The parts kit is NSN 2910-00-801-1152. The center element, NSN 2815-00-808-2421, is replaced annually by organizational maintenance.



REPLACE ANNUALLY



REPLACE QUARTERLY

When you have all elements of the fuel/water separator out for cleaning/replacement, take off the fuel line.



3. MANIFOLD HEATER FUEL FILTER —

Quarterly servicing includes cleaning bowl, element and spring with mineral spirits, paint thinner or drycleaning solvent. Blow dirt out of element with compressed air. If element is damaged, put in a new one, NSN 2910-00-203-3322.

Regardless, if you put in a new element or clean and replace the old one, you'll need a preformed packing, NSN 5330-00-265-1089. The gasket is issued only with a new element, so if you re-use an old element, save the old gasket as well.



4. FUEL PRIMER FILTER—M48A3 tanks with serial numbers 601W to 726W have a filter on the fuel primer line. (Other vehicles don't.) It's identical with the manifold heater fuel filter, has the same NSN's and is serviced in the same way.

5. FUEL TANK STRAINERS — At each Q-service, remove and clean the metal screen strainers in left and right fuel tank filler necks. If you need a new one it's NSN 2910-00-886-5854.



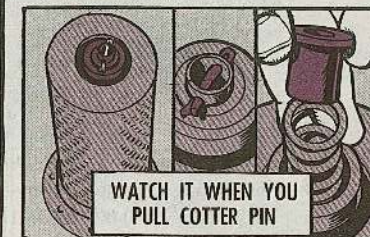
ENGINE OIL FILTERS

1. MAIN OIL FILTER—Wash in drycleaning solution, mineral spirits or paint thinner, every Q-service. Dry each screen (element) with low-pressure compressed air. Individual metal screens are NSN 2940-00-939-7123 and you need a spacer, NSN 5340-00-737-4145, between each screen.



CLEAN AND DRY QUARTERLY

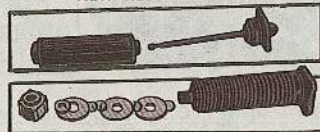
2. AUXILIARY OIL FILTER—When you take this apart to replace the element and clean the other parts, be real careful because the spring is up tight and the bushing will shoot out when you pull the cotter pin. Put in a new filter element every Q-service. NSN 2940-00-884-4801 gets you the parts kit for the job.



TRANSMISSION OIL FILTERS

1. MAIN OIL FILTER—Remove and clean quarterly. You may have the metal mesh type, NSN 4330-00-770-7862, issued with the vehicle, or the reusable replacement filter, NSN-2520-00-407-6752. Only the replacement filters can now be ordered for the CD 850-series transmissions.

NEW REUSABLE TYPE

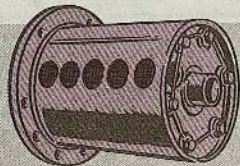


METAL MESH TYPE

2. SIDE OIL SCREEN—Whenever you pull the power pack and drain the transmission, clean and inspect the side oil



screen. For a new one get NSN 2520-00-679-4499. This package includes everything except gasket NSN 5330-00-102-3651 of which you'll need 2.



... AND INSPECT
SIDE OIL
SCREEN

TRANSMISSION VENT FILTER

M60A1 TANK FILTER—Your M60A1 tank may have a filter on the vent line that runs



from the top of the transmission to the engine exhaust. This is supposed to keep exhaust carbon from getting into the transmission oil.

However, if the filter gets plugged up it causes back pressure on the transmission. If you have any trouble with it, replace the line and filter with ordinary vent line without a filter. Bulk vent line is NSN 4710-00-200-0277.

The filter is not required and it's not stocked as a replacement item. If it is doing good work for you... Great! If not, replace it with ordinary vent line.

FINAL DRIVE BREATHERS

BREATHER VALVE—Clean the breather valve on both final drives every Q-service. It's inside the hull above the universal joint.



NSN 4820-00-537-8931
WILL GET YOU A NEW
BREATHING VALVE.



HYDRAULIC POWER PACK

1. FILTER—Reservoir oil filter assembly, NSN 2520-00-566-3841, is cleaned by your



SUPPORT
CLEANS
FILTER

support unit when the power pack is disassembled for repair or overhaul by your support unit.

2. STRAINER—You clean the metal mesh hydraulic power pack strainer, NSN 1015-00-566-3816, whenever it needs cleaning.

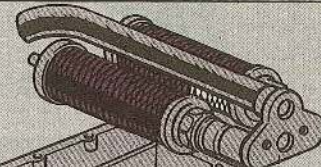


YOU CLEAN STRAINER

TANK BULLDOZER KIT

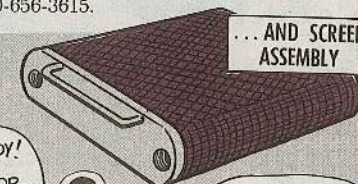
If you have the M9 bulldozer kit on your M60/M60A1 tank (or the M8A3 kit on your M48A3 tank) you'll have other items to inspect, in the bulldozer hydraulic reservoir.

The M9 kit has a filter, NSN 2590-00-806-1127, in the reservoir.



YOU INSPECT
OIL FILTER...

The M8A3 kit has a screen, NSN 2590-00-656-3615.



... AND SCREEN
ASSEMBLY

DOWN, BOY!
I'VE GOT
SOME IMPORTANT
PM
ADVICE FOR
MECH
TYPES!

ARF!
ROWF!
BARF!

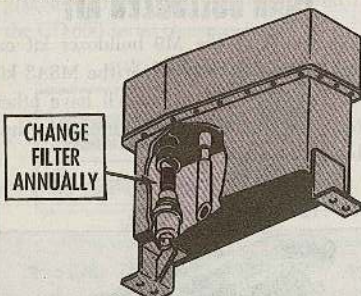
THE FILTERS
OR SCREENS ON
THESE BULLDOZER
KITS ARE CLEANED
ANNUALLY OR WHEN
EVER THE HYDRAULIC
FLUID RESERVOIR IS
DRAINED.

MORE

M728 COMBAT ENGINEER VEHICLE

Your M728 Combat Engineer Vehicle has these extra goodies...

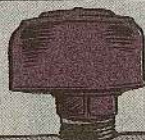
1. EQUILIBRATOR MANIFOLD FILTER—Change this disposable filter, NSN 1650-00-554-7430, once a year. (See Note 14 in



LO 9-2350-222-12 and Page 2-597 in TM 9-2350-222-20.)

2. HYDRAULIC RESERVOIR BREATHER—No service interval is listed for this breather, either in the -20 TM or in the

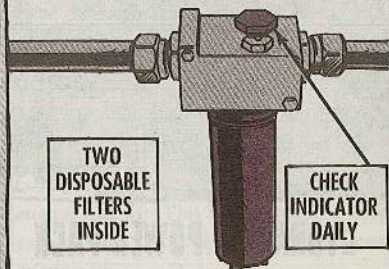
CLEAN
DURING
OIL
CHANGE



LO. However, it should be cleaned every year when you change the oil in the reservoir. (See Note 15 in LO 9-2350-222-12 for services on the reservoir.)

3. HYDRAULIC LINE FILTERS—There are 2 disposable filters, one for forward hydraulic lines and one for rear hydraulic

lines. Look at the red indicator on top of



each filter every day. (If an indicator is in the up position, reset it. Operate the system and if the indicator won't go down, service the filter.) Replace filters every year when you drain the hydraulic reservoir. For this you need parts kit, filter element, NSN 2590-00-229-5723 (P/N 5703567).

FINALLY, FELLAS...
ONLY YOU CAN FRUSTRATE
FILTER FOUL-UPS!

FREQUENT FILTER
PM IS THE ANSWER!

FOXY,
MAN...
FOXY!



12

END

RIGHT
ON...

A HOLE-IN-
ONE IS GREAT
IN GOLF...

... BUT IN THE **M551
SHERIDAN
REPLENISHER**

RESERVOIR FILTER...
IT'S A GOOF!



The filter in the replenisher reservoir keeps dirt out when you pour hydraulic oil in.

It can't do this job so good if there's a hole in the filter screen.

Some screens get broken when the spout of the filling can is pushed in too far. Others—sad to say—are punched out because somebody poked a screwdriver through the screen to get the oil moving faster.



So check out your filter screen with eyeball and with finger. If it's beat through, get a new one—filter, reservoir, NSN 1025-00-417-2916, (11652730).

BACK WITH THE TRACK!

Turning in a tracked vehicle for repair or overhaul? Jot this down as important: Always—like always—make sure the intercom, fire control, searchlights or infrared items are in place. They're permanent parts of your tracks.

IF YOU HANG ON
TO 'EM, YOU'LL FOUL
UP THE REPAIR OR
OVERHAUL OF YOUR
VEHICLE!



13

WHEN DOES 4
REPLACE 3?

GAS-PARTICULATE

FILTER ACTS

When a 3-outlet manifold assembly on an M2A1 air purifier wears out, you replace it with a 4-outlet manifold assembly NSN 4240-00-018-3079. The M2A1 is part of the M8A2 gas-particulate authorized for a variety of combat vehicles.

The 4-outlet manifold needs 4 airflow control caps, NSN 4240-00-763-2465 gets you one.

COVER ONE
UNUSED OUTLET
WITH SOLID CAP.
(NO HOLE)

AIRFLOW CAPS
WITH HOLE IN
CENTER FOR
ALL OTHER
UNUSED OUTLETS

M2A1
AIR PURIFIER

IF YOU ALREADY HAVE
THE 4-OUTLET MANIFOLD AS
PART OF THE M2A2 AIR
PURIFIER ON THE M8A3
GAS PARTICULATE, OR IF
YOU ARE JUST GETTING IT
ON AN UPDATED M2A1,
YOU MUST:

1. Cover one of the unused outlets with a solid airflow cap. (The cap has to be solid—no hole.)
2. Cover all the other unused outlets with caps that have a hole in the center.

DO THESE
2 THINGS, AND
YOU'LL GET THE
RIGHT KIND OF
AIR FLOW TO
YOUR MASK.

UNH!
THERE'S
GOTTA BE
A BETTER
WAY!

TOWED HOWITZER HELPER

THERE IS
PRIVATE HERNIA!

Dear Editor,

The M102 towed howitzer is a little hard for one man to manhandle even in a paved parking area.

No problem, tho, if you make this handy little helper.

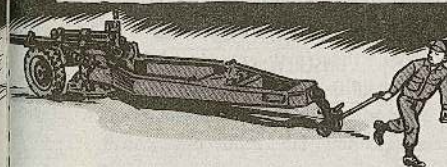
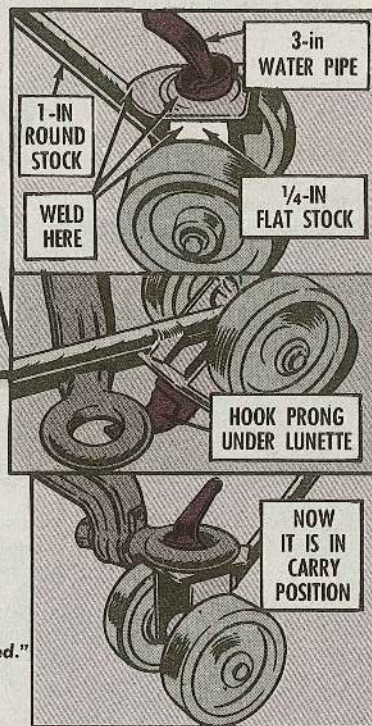
All you need is:

2 rubber tire wheels—(8-in are the best.)
1 piece of 1-in round steel stock drilled at each end for cotter pins.
4 small pieces of 1/4-in flat stock.
1 piece of 3-in water pipe.
1 T-handle from 2 pieces of 1-in water pipe.

After you get it welded together, put it in the Lock Position and hook the prong of the Howitzer Helper under the lunette of the howitzer. Now move to the Carry position and you can take your M102 wherever you want it.

One of these helpers per battery can change M102's from towed to "self-propelled."

Edward Harrington
Fort Campbell, KY



THIS LOOKS
LIKE A FINE
IDEA!

M1 COLLIMATOR CLEANING

It's surprising the number of people who don't know you can take out the protective window on the M1 collimator for cleaning.

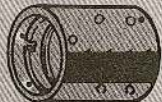
The window is there to protect the lens from water and from the sandblasting action of helicopter downdraft or weapon muzzle blast.

TAKE IT OUT AND
CLEAN IT WHENEVER YOU
SEE ANY WATER ON
THE BACK SIDE OF
THE WINDOW!



REMOVE PROTECTIVE
WINDOW FOR CLEANING

With the early model protective window, the retainer ring is held in place with 3 setscrews which you have to loosen to



LOOSEN SET SCREWS
ON EARLY M1'S

get the window out for cleaning. With the later model the retainer ring is threaded.



... UNSCREW RETAINING
RING ON LATE MODELS

Mox nix! Either way, if the window needs cleaning, take it out and clean it.

81-MM MORTAR MEN

Be sure you're lubing your weapon everywhere it's needed. Word is out that some tubemen forget to lube the M23A1's bipod elevating mechanisms and fittings. Follow the poop on page 3-1 of TM 9-1015-200-12 (Apr 71). Fig 1-4 will show you where to put the squeak stopper.

MISSING MOUNTS

Turning in your .30-cal, .50-cal or 7.62-MM machine gun mounts for overhaul? Then be sure to send along pintles, traversing and elevating mechanisms and adapters—the whole mount. You'll help save downtime, costs and delay.

MOUNT UP!

All tactical and combat vehicle gunners should have a copy of TM 9-1005-245-14 (Feb 73) on vehicle type machine gun mounts and combinations. This pub supersedes 23 TM's, LO's, ORD 8's and ORD 9's on operation and maintenance of machine gun, pedestal gun and gun ring mounts,—including the M48 tank cupola.

NEW HYDRAULIC FLUID

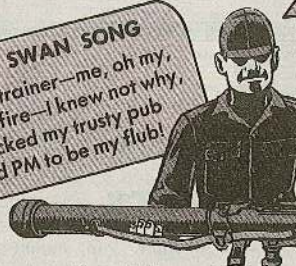
A new fire-resistant hydraulic fluid is on its way to you guys with M60-series and M48A3 tanks, the M728 CEV and the M551 Sheridan. It'll have a military symbol: FRH. You'll get the new fluid and instructions on how to changeover thru your command. Also, you'll get the word on how to mark your hydraulic system so everybody will know your equipment has the new fluid.

BE YOUR OWN INSPECTOR . . .

M76 REDEYE TRAINER SET

ONE GI'S SWAN SONG

My Redeye trainer—me, oh my,
It wouldn't fire—I knew not why.
Until I checked my trusty pub
And found PM to be my flub!



Familiar tale, eh? Let's hope it's never your story.

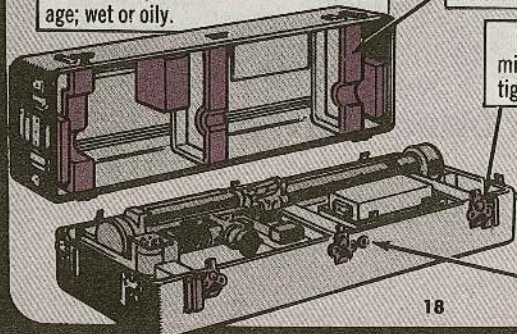
You can keep your nose clean. Know your pubs: TM 9-6920-428-12 (Aug 69) & -20P (Jul 71), FM 23-17. And one more thing . . .



BEFORE YOUR NEXT M76 REDEYE TRAINING MISSION, PULL THIS QUICK INSPECTION—FAULTS IN **BOLDFACE** ARE MOST SERIOUS.

M590 SHIPPING AND STORAGE CONTAINER

GENERAL—Paint scratched, chipped or blistered; external or internal damage; wet or oily.



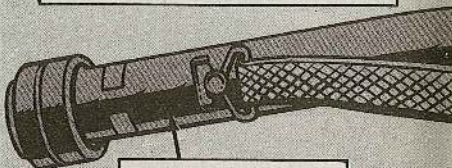
CUSHIONS & SUPPORTS—Bent, torn, rotted or missing; out of place.

CATCHES—Loose, bent, broken or missing; won't close container right & tight.

PRESSURE RELIEF VALVE—Mud- or gunk-plugged; won't move freely. (Note: Before opening container, always depress relief valve to equalize pressure inside and out. Use your finger only; a screwdriver, knife, stick or similar object is a no-no—could damage the valve.)

18

LOW PRESSURE GAGE—Plastic window dirty, obscured, scratched, cracked or broken; needle broken; reading won't decrease after pump handle is worked. (Note: the low pressure gage must read below 60 PSI to run a complete mission. If the reading is too high, repressurize the trainer by working the pump handle.)



LAUNCH TUBE — Damaged; wet or oily.

(Note: Before inspecting, make sure that the receptacle cap, not a battery, is in the launcher. If a battery is in the launcher, put the safety and actuator device in SAFE position, then remove battery and replace with receptacle cap.)

M49 TRAINER

TO START WITH, EYEBALL THE M49 FOR SIGNS OF MIS-HANDLING... LIKE DIRT, OIL, PAINT CHIPPED OR BLISTERED AND THE ID MARKINGS OBSCURED OR MISSING.



HIGH PRESSURE GAGE—Plastic window dirty, obscured, scratched, cracked or broken; needle broken; gage doesn't read within the green band for the temperature reading on the thermometer when low pressure gage reads 20 PSI. (Note: if the gage reads beyond the green band for the temperature reading indicated on the thermometer, turn your launcher in to DS.)



SLING ASSEMBLY — Webbing moldy, rotted or torn; clips and sling adjuster bent, broken or missing; swivels damaged or missing.

GRIPSTOCK — Damaged; butt bumper cracked, rotted, loose or missing.

TRIGGER—Gummy, gritty, oily or rusted; won't "click" when pulled all the way back; sealing boot rotted, cracked, torn or not airtight.

RETAINER WINDOW ASSEMBLY—Clouded, dirty, scratched or broken.

ERROR TONE ON-OFF SWITCH (Screwdriver actuated) — Recess gunk- or mud-plugged.

BATTERY RECEPTACLE—Dirty wet, oily, cracked or broken; contacts dirty, corroded or wet.

BATTERY RECEPTACLE CAP—Dirty, wet, oily, cracked or broken; preformed packing ("O" ring) broken, or missing.

19

M49 TRAINER

LAUNCH TUBE COVER—Cracked, broken or missing; wet, oily, gritty or gunked-up; fits too loose.

PERFORMANCE INDICATOR ASSEMBLY—Wet or gunked-up; indicators obscured or broken; loose on mount; cover plate loose; screws missing; frayed or bared wires; rubber bumpers damaged or missing.

UNCAGING SWITCH—Won't depress or release; won't "click" when pressed alternately at each end and in the middle; won't return to original position when released; sealing boot rotted, cracked or torn.

EYESHIELD—Dirty, scratched, cracked, broken or missing.

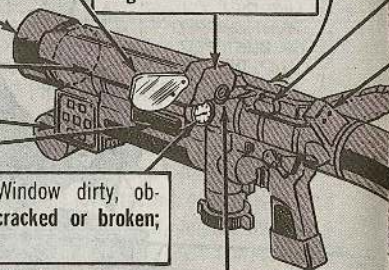
RANGE RING—Bent or broken, gunked-up.

THERMOMETER—Window dirty, obscured, scratched, cracked or broken; needle broken.

FACE GUARD—Cracked, torn or missing.

SIGHT FRAME CUSHION—Cracked, torn or missing.

PEEPSIGHT—Hole gunk- or mud-plugged.



BA-523/PSO BATTERY

A BATTERY IS GOOD FOR 15 OR MORE 31-SECOND MISSIONS BEFORE IT NEEDS RECHARGING. TO HELP CONSERVE THE CHARGE, REMOVE THE BATTERY FROM THE LAUNCHER WITHIN 30 SECONDS AFTER THE LAUNCHER MISSILE (L/M) POWER IS REMOVED.

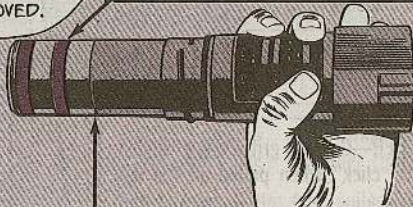
PREFORMED PACKING ("O" ring)—Broken or missing; not bonded in groove (use sealing compound, rubber base, synthetic, NSN 8030-00-836-1793).

CONTACT RINGS—Dirty, wet or oily.

KNOB—Cracked or broken; won't seal tight with receptacle case.

HEAT-SENSITIVE INDICATOR—Damaged or gunked-up.

PLASTIC SHIELD—Dirty, wet, oily, cracked, broken or missing.



(Note: Handle charged batteries with care. Never touch the contact rings or let them get shorted across by metal objects or liquids. You can get a bad shock or burn. Never submerge the batteries in water.)

20

(CONT.)

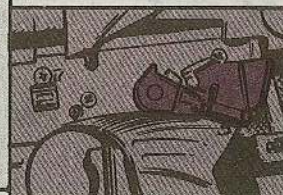
ACQUISITION INDICATOR—Cracked, torn or visibly damaged.

SIGHT BRACKET CUSHION—Loose, cracked, torn or missing.

PUMP HANDLE ASSEMBLY—Gritty or gunked-up; bent or binding; loose. (Note: save possible hurt to your fingers by using only the open palm of your hand to return handle to stored position.)

PROTECTIVE SHOCK RING & DISK—Dirty, oily, iced or gunked-up; scratched, cracked, broken or missing.

SAFETY AND ACTUATOR DEVICE—Gummy, gritty or oily; won't "click" when pressed and rotated out and all the way forward; won't return to SAFE position and lock in place when released.



PP-6118 (XO-1)/PSO BATTERY CHARGER

IF YOU WANT TO STAY "SUPERCHARGED" KEEP THIS HOT NUMBER IN TOP SHAPE!

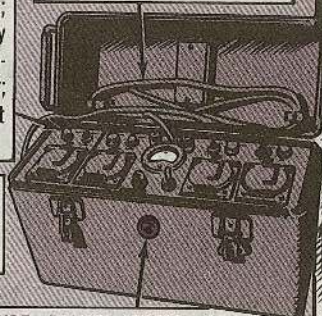
PANEL—Broken or damaged indicators, buttons, switches or gage window; springs bent or broken; fuse and battery receptacles dirty, wet or oily; heat-sensitive indicators not gray in color; POWER and HEATER ON lamps won't light; instruction plate missing.

HINGES & LATCHES—Rusted; bent, sprung, broken or missing.

COVER & CASE—Rusted; gouged; handles and rubber seal damaged or missing.

(Note: Never slip a battery into a charger receptacle if the receptacle's heat-sensitive indicator is black, or if the interior contains dirt, moisture or any foreign matter. If battery charger doesn't work, turn it in to DS.)

CORD & PLUG—Cut, cracked or frayed; prongs bent; ground prong missing.



PRESSURE RELIEF VALVE—Mud- or gunk-plugged; won't move freely. (Note: Before using the charger, always depress valve with finger only to equalize pressure inside and out.)

21

END

NIGHT SIGHT FOCAL POINTS



NO
JIVIN'—
THE LATEST
THING IN
"COOL" IS
NIGHT
VISION
SIGHT
PM!

If your outfit has night vision sights, focus in real sharp on these points of interest. They're important to your "field of vision" on night sight maintenance.

Latch onto TB 11-5800-212-24 (Aug 73) for a good serviceability check-out of your night sight.

Whenever something goes wrong with your sight, get it in to DS for repair. Never try to take it apart, except to replace the BA-1100/U battery.

Batteries need replacing if the sight image is weak, blurred or not lit up. Before installing or replacing the battery, make sure the power switch is in the OFF position. Insert the BA-1100/U with the raised end (positive) first, and flat end (negative) last. The sight won't work if the battery gets put in backwards.

POSITIVE GOES
IN FIRST

RAISED
CENTER
(+)

+ PLUS

- MINUS

FLAT END
(-)



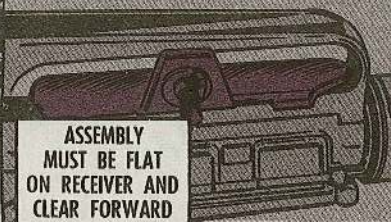
dirt, dust and sunray damage. Store the scope in its carrying case when it's not in use.

Your scope can't stand rough treatment. Never carry it by grabbing the rubber eyepiece—you'll tear the rubber. Always use the carrying strap.

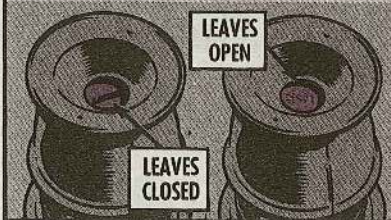


AN/PVS-1, -2, -2A, -3A SIGHTS

The adapter mounting assembly's gotta be on right 'n' tight. A mismounted adapter can shift and throw off your aim. Be sure the assembly is flat against the top of the receiver of your rifle and shove 'er all the way forward.



Course, always follow the steps on page 21 of TM 11-1090-268-13 (Jan 67) for the PVS-1; page 22 of TM 11-5855-203-13 (Apr 67) for the PVS-2 and -2A; and page 5 of Ch 2 (Mar 70) to TM 11-5855-209-10 (Dec 67) for the PVS-3A.



Hands off the leaves in the eye-shield. Normal pressure of your eye against the eyeshield will recess the leaves. They're made to close so you don't have give-away light beams when you look away and the sight's still on. So never cut 'em off because

you think they shouldn't be there. They also keep out sand, dust and dirt when you're not using the sight.

Try to keep from pointing your scope into the wind. Dirt in the air just loves to chip away at that delicate objective lens.

When humidity or temperature changes fog up your objective lens or eyepiece assembly, pump the eyeshield several times, or take the shield and/or lens cap off and wipe them with a clean rag.

Clean 'n' dry is the only way to be. If your scope gets wet from salt water, dunk it in fresh water, then dry all parts—every crack and crevice—completely. When the sight's cased and stored, open it regularly to make sure it's free of harm-causing moisture.

Remember, on the PVS-1 you must release the locking lever before turning the objective lens focus knob. Then relock when the lens is focused. If the knob binds



after you've freed the locking lever, check it for sand, dirt or other crud.

COULD BE IT'S CLEANING TIME.



Never force the objective lens focus knob. You'll strip it or bust up the objective lens housing.

Go easy on the PVS-2 power switch. It'll move with the slightest pressure. Too much muscle torque'll zap it.



PASS THIS ONE ON TO YOUR REPAIR-MAN!

Intensification tubes for the PVS-1 and -2 are not interchangeable. The MX-7854 tube—NSN 5855-00-051-2792—goes with PVS-1. The tube for the PVS-2—NSN 5855-00-087-2948—has the reticle pattern on the tube itself. Watch, if you put NSN 5855-00-087-2948 in the PVS-1, you get a double reticle pattern. Put the MX-7854 in the PVS-2 and you get no reticle pattern at all.

WELL, FELLAS... GUESS WE FINALLY HAVE THE ANSWER TO THAT QUESTION IN PS-- TH' ONE ABOUT STAKING OUR LIVES *RIGHT NOW* ON THE CONDITION OF OUR EQUIPMENT...

RATZ! THE OBJECTIVE LENS HAS BEEN FRACTURED BY A TOO-LONG HOOD SCREW!

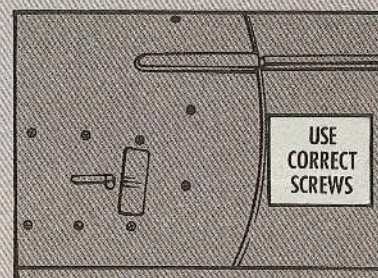
WOTTA TIME FOR A *NIGHT SIGHT* MALFUNCTION!



AN/TVS-2, -2A SIGHTS

Never pry the reticle power cable loose. That hard rubber shield is intentionally glued to the chassis. A loose power cable means your sight is due in for a support repair job.

The sight's hood screws—NSN 5305-00-402-4558—must be in place and snug. All 5 of 'em. Never substitute any other screw.



A screw that's too long could damage the objective lens.



Go easy on the reticle intensity adjustment knob. Forcing it past its stop can tear the inside wires loose and zap your sight.

END

TOP HAWK'S

Components of the Improved Hawk missile system demand and need the same kind of basic preventive maintenance that kept their forerunners on the job for years.



LIKE ALL THE EARLIER HAWK SYSTEMS, THE IP HAWK MISSILE SYSTEM NEEDS LOADS 'N' LOADS OF TENDER LOVIN' PM!

For instance:

WIRING—On all component drawers, the idea is to keep loose wiring from dangling, snagging, bruising and breaking.

Simply lace the wires to the wiring harness with plastic ties . . . and pull them up and away from chassis or other snags.



... WHENEVER YOU LEAVE A TEST PROBE INSERTED IN A JACK OR A TEST POINT, REMEMBER IT'S THERE. DON'T BREAK IT OFF OR BEND IT BY A CARELESS SWEEP OF AN ARM OR LEG... OR TOOL.

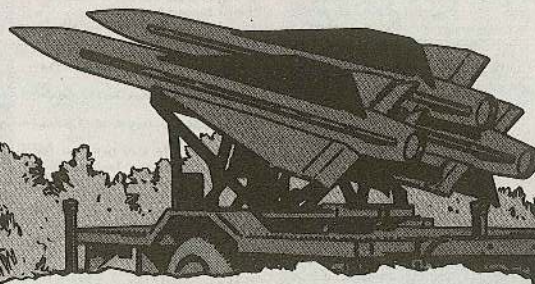
"SQUAWK! HOW 'BOUT PROBES—CONNIE?"

GOOD QUERY...

SQUAWKS

CONNIE SURE KNOWS WHAT SHE'S HAWKING ABOUT!

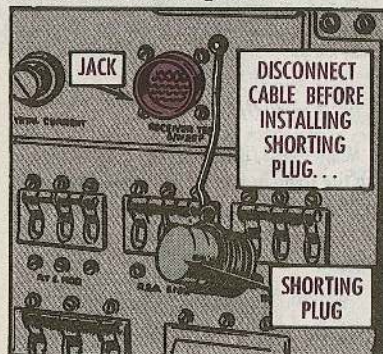
RIGHT ON!



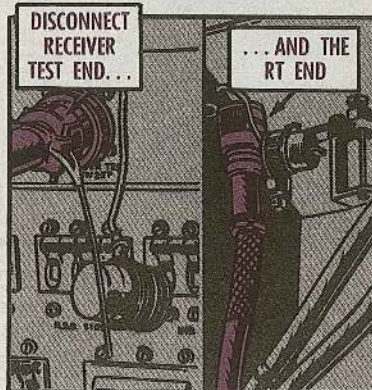
CHASSIS—One difference you should remember in the Hawk systems: You can't switch chassis in the Improved Hawk to make checks or tests . . . as you probably did with Basic components.

Circuit boards in Improved components, and especially the ICC and AN/MPQ-48, make chassis switching a no-no.

jack on the control panel of the AN/MPQ-51 IROR.



IROR—With checks and tests fresh in mind, don't forget to disconnect both ends of the W25 test cable before you reinstall the shorting plug in the RECEIVER TEST



The W25 connects between the RECEIVER TEST jack and the RT unit on the antenna assembly. Some Joes disconnect it at the control panel jack only . . . and when the shorting plug is reinstalled the antenna can slew around. That does one of two things: it either tears the cable out at the RT end, or it whips the cable around and damages the opposite end.

PUBS

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 2 (Dec 73) TM's, TB's, etc.; DA Pam 310-6 (Jul 73) and Ch 3 (Apr 74); SC's and SN's; and DA Pam (C) 310-9 (Mar 73), COMSEC Pubs.

TECHNICAL MANUALS

TM 5-3805-237-12 Ch6 May Road Grader, (LeTourneau-Westinghouse Mod 440HA)
TM 5-3805-245-20P Ch1 May Scoop Loader 2½ Cu. Yd. Allis-Chalmers Mod TL-645
TM 5-3805-251-20P Jul Scoop Loader 2½ Cu. Yd. J. I. Case Mod MW248
TM 5-3815-200-13P Apr. Clomshell Mod 4½ W, 3½, 1½ and 2 CU Yds
TM 5-4210-217-20P Apr. Truck, Fire Fighting, Mdl 0814 Mdl. FT 750
TM 5-5430-209-12 May Tank Steel, types I and II: 100, 250, 500, 1000, 3000 and 10,000 bbl
TM 5-6115-457-24P Jun Gen Set Diesel 100 KW DOD Mod MEP007A MEP108A MEP116A
TM 5-6115-545-12 Ch1 Apr Gen Set Diesel 60-KW
TM 5-6115-545-24P Ch1 Apr Generator Set, Diesel 60 KW 3 120/208 and 240/416 V
TM 5-6350-262-14/4 May Sensor, Magnetic DT-547
TM 9-1005-286-FSC May Towed Vulcan TM 9-1425-470-1 May List Pubs for TCOW
TM 9-1425-500-1 Jun List of Pubs Basic and Self-Propelled HAWK
TM 9-1425-525-1 Jun List of Pubs IM-PROVED HAWK

TM 9-1425-550-1 May List of Pubs Land Combat Support System
TM 9-1425-560-1 May List Pubs for AN/TSQ-51
TM 9-1430-533-24P May AN/MPO-46
TM 9-1430-588-20P Jun AN/MPO-49 Radar Set
TM 9-1450-501-10 May XM727 Guided Missile Carrier
TM 9-1450-585-10 May M730 SP Guided Missile Carrier
TM 9-2330-285-14 May Dolly Set Lift, Transportable Shelter, 3-Ton M720
TM 9-2350-230-10/2-1 Ch2 Apr M551 Sheridan Turret Operation
TM 9-2350-247-10 May M548 Cargo Carrier
TM 9-2350-300-ESC May M163 Vulcan
TM 9-6140-200-12 Sep Lead-Acid Batteries
TM 11-5805-201-12 Ch2 May TA-312/PT Telephone
TM 11-5805-243-12 Ch5 May TA-1/PT Telephone Set
TM 11-5815-334-12 Ch2 Mar AN/GRC-142(1)-122(1) Radio teletypewriter set
TM 11-5820-357-10 Ch4 May R-390 Radio Receiver
TM 11-5820-358-10 Ch3 Apr R-390A Radio Receiver
TM 11-5820-469-10 Ch7 May AN/TRC-80B Radio Terminal Set
TM 11-5820-512-12 Ch4 May AN/TRC-90 radio terminal set
TM 11-5821-204-12 Ch5 May AN/ARC-44 radio
TM 11-5821-229-12 Ch6 May AN/ARC-45 Radio Set
TM 11-5821-248-12 Ch3 May AN/ARC-102 Radio Set
TM 11-5821-227-20 Ch2 May AN/ARC-134(1) Radio Set
TM 11-5895-205-15 Ch10 May AN/MSC-29 Telegraph Terminal

TM 11-5895-225-15 Ch3 May SB-675 communication patching panel
TM 11-5965-262-13 Ch1 May H-1610 headset-microphone
TM 11-6130-225-12-1 Ch2 PP-2926A/U Manual Battery Charger
TM 11-6425-200-15 Ch2 Apr ME-26(1) multimeter
TM 11-6625-203-12 Ch5 May AN/URM-105 Multimeter
TM 11-6625-274-12 Ch5 Apr TV-7(1) electron tube Test Set
TM 11-6720-206-20P May KE-3 Still Camera
TM 11-6720-215-20P May Camera KS-7A
★ TM 32-6615-201-25 Mar MX R584/U
TM 55-1520-214-10 Apr OH-6A Helicopter
TM 55-1520-214-20 May OH-6A
TM 55-1520-214-20P Jan OH-6A
TM DPSC-4500-RPT Jul Medical Repair Parts List

★ This pub available only from US Army Security Agency, Material Support Command, Vinal Hill Farms, Warrenton, VA 21786

MISCELLANEOUS

AR 95-34 May Non-Standard Aircraft Policy
LO 5-1940-221-12-2 Feb Bridge Erection Boat Detroit Diesel Mod 5032 4000 Engine
LO 5-2410-214-12-1 Mar D7E Tractor
LO 5-2410-214-12-2 Mar D7E Tractor
LO 5-6112-457-12 Mar Gen Set 100-KW DOD Mod MEP007A DOD Mod MEP-108A DOD Mod MEP116A
LO 5-6115-458-12 Mar Gen Set 200 KW DOD Mod MEP009A DOD Mod MEP-108A
TB 43-180 May Calibration Requirements

Nice To Have, But...

Special mission OH-58A birds have some extras that are only authorized for use at certain locations. If your unit is not on the list for things like IR suppression kit, auxiliary fuel system, winterization kit, float installation, high skid gear and ski kit—forget it... your request won't make the grade.

2 1/2-Ton LO

Make that "Do not use below +32°F" instead of "-32°F" in LO 9-2320-209-12 (Oct 71), page 3, temperature limits.

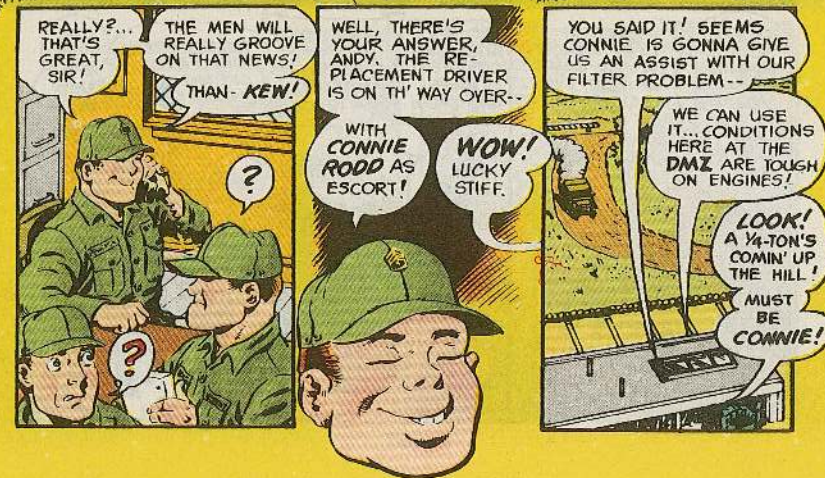
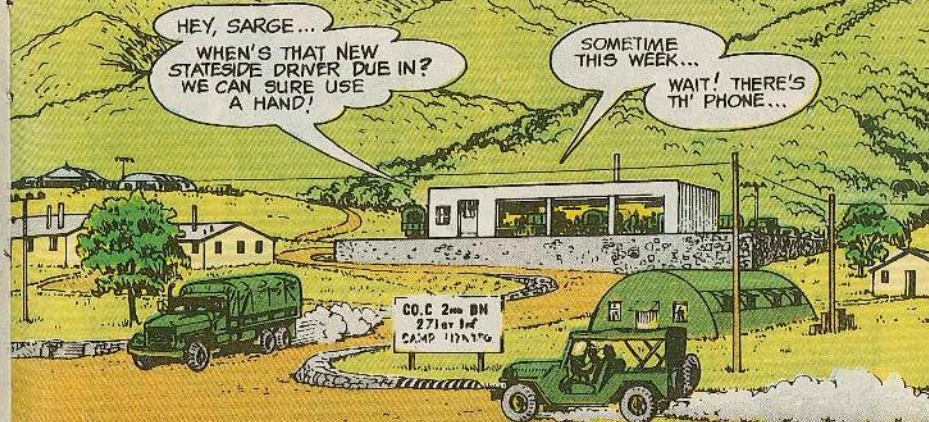
5-Ton Tire ESC

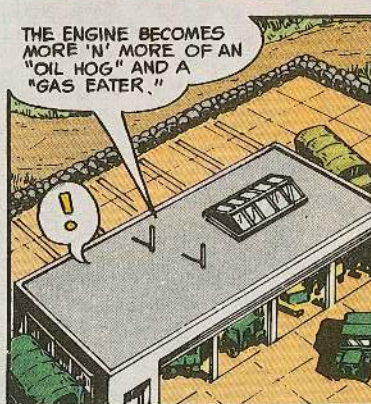
Make that 1/8 inch, not 1/3 inch, remaining tire tread in the "Green" rating for Item 2 in TM 9-2320-211-ESC (Apr 73). Then you'll be in line with the ESC's for all other tactical trucks.

One And The Same

Several models of the PU-543(I)/A motor generator (inverter), made by different manufacturers to the same MS-21983, are used in the Huey. They're interchangeable on all UH-1 models. Ask for either NSN 6125-00-865-9683 or NSN 6125-00-938-6539.

JOE'S FILTER PM DOPE





Joe's Dope Sheet

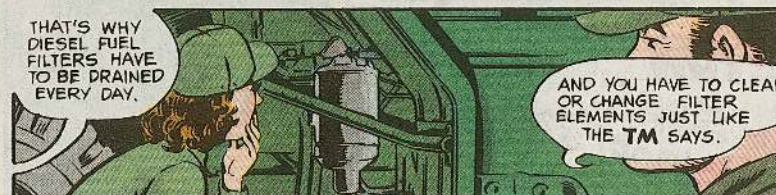
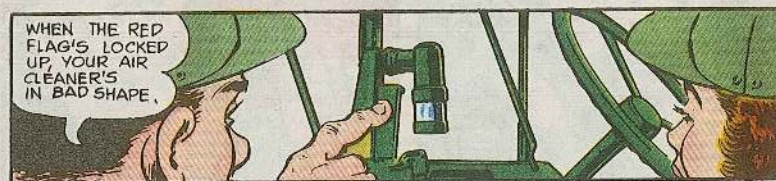


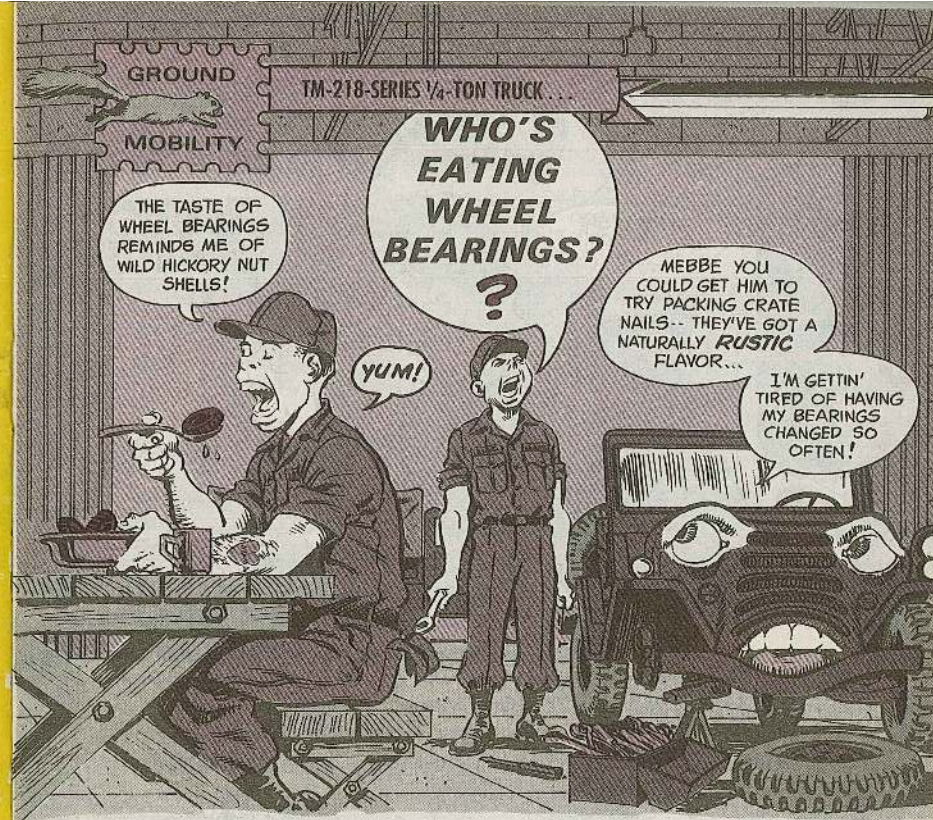
It's an unending job that they do,
And they give their all fightin' for you--
They filter the flow
And clobber the foe...
So award them the service they're due!



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.





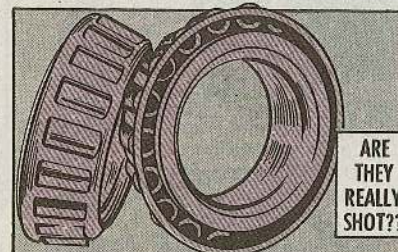
Come on now, you guys. Some of you are really putting a drain on the supply bins for wheel bearings.

Maybe, even, you're being issued new bearings that aren't up to snuff.

You install and adjust wheel bearings like it says in para 2-142 and 2-143, TM 9-2320-218-20 (Sep 71).

There's some good 'poop on wheel bearing inspection in PS 226 and PS 244. If you need copies of these back issues, just write in and ask for 'em.

And be sure to get those EIR's (DA Form 2407) in if you find that wheel bearings are not holding up. Send some of the bad bearings along with your EIR's to-- Commander, US Army Tank-Automotive Command, ATTN: AMSTA-MTA, Warren MI 48090.



Maybe you're replacing wheel bearings that don't need replacing.

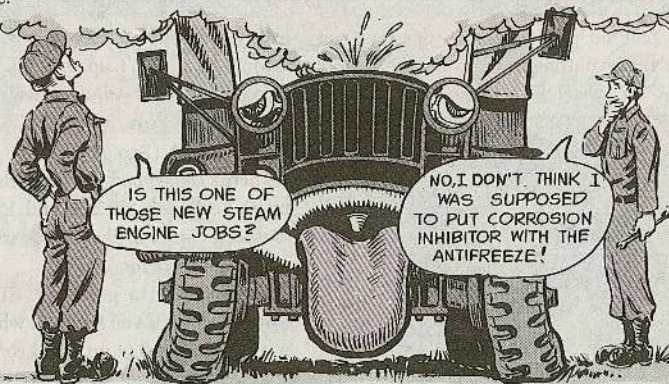
Maybe you're not adjusting bearings right--so they wear out too quick.

COOLING SYSTEM RECIPE



Any gal knows . . . y'gotta follow the recipe. This goes for baking cookies in the kitchen and for servicing your engine's cooling system.

Some guys are fouling up their cooling systems in their military-design equipment. They're winding up with gaskets giving out, water pumps quitting and leaks all over the place.



They're not going by the recipe. That's in TB 750-651 (Jan 71), Use Of Antifreeze Solutions And Cleaning Compounds In Engine Cooling Systems. They're adding corrosion inhibitor when they don't need it. Let's get it straight:



CAREFUL! THESE INSTRUCTIONS YOU GET WITH THE CLEANING COMPOUND KIT DON'T FIT IN EVERY CASE!

BUT ANTIFREEZE MIL-A-46153 AND MIL-A-11755 HAVE ALREADY GOT ALL THE INHIBITOR THEY NEED!

INSTRUCTIONS FOR USE

MIL-C-10597C (Ord)

COOLING SYSTEMS MUST BE CLEANED, CONDITIONED, AND INHIBITED

STEP 1 - CLEANING PROCESS

THE CLEANER CONSISTS OF A DRY POWDER "OXALIC ACID" AND CHLORIDE.

DRAIN CONTENTS
DRAIN COMPLETELY.

INHIBITING

FILL A 5 GALLON CAN TO WITHIN THREE QUARTERS INCH FROM THE TOP. ADD POWDER FROM THE BAG (10 oz.) MARKED "INHIBITOR". EITHER STIR UNTIL DISSOLVED OR CLOSE CAN TIGHTLY AND IMMEDIATELY ROLL CAN BACK AND FORTH FOR 5 MINUTES. FILL CLEANED AND CONDITIONED SYSTEM WITH THIS SOLUTION. WHEN ANTIFREEZE IS USED, INSTEAD OF ADDING WATER, ADD THIS SOLUTION. FOR OTHER SYSTEMS, USE INHIBITOR IN SAME PROPORTION OF 10 oz. FOR EACH 5 GALLONS OF WATER.

ONLY WITH ANTIFREEZE
O-A-548, TYPE I, OR
WITH PLAIN WATER

CLEANING

Sure, you get a package of corrosion inhibitor with the cleaning compound kit— that's Cleaning Compound w/ Conditioner and Inhibitor, MIL-C-10597.



NEVER-- BUT **NEVER**-- DUMP THIS INHIBITOR RIGHT INTO YOUR COOLING SYSTEM. YOU'LL PLUG 'ER UP FOR SURE! MIX IT WITH WATER FIRST, LIKE THE INSTRUCTIONS SAY TO DO!



But you don't always use that inhibitor. Not if the antifreeze you're putting in your cooling system is —

— Antifreeze, Ethylene Glycol, Inhibited,

ed, Heavy Duty, Single Package, MIL-A-46153

OR

— Antifreeze, Arctic-Type, MIL-A-11755

So, when you get done using the cleaning compound and conditioner, don't use the corrosion inhibitor—you don't need it. You'll cause leaks and mess up your cooling system if you use it with either of those 2 anti-freezes.

But you use the corrosion inhibitor—if you're putting in—

— Antifreeze, Ethylene Glycol, Inhibited, O-A-548



OR

— Plain water—like if you're where the temperature never goes down to freezing (+32° F)

NOT SURPRISING BONNIE! HE HAS NO INHIBITOR IN HIS ANTI-FREEZE!

KEEP ON TRUCKIN' BABY!

TA-WEEE
TA-WOOO!



REPLACING COOLANT

Maybe you're not getting into the cleaning act — you're just replacing your antifreeze. Your tester or test kit told you that the stuff wasn't good enough for freeze protection or for corrosion protection.

Or, if you're in a warm place, you're just replacing the water you carry in your cooling system. Your test kit says the corrosion inhibitor is worn out. Or your cooling system is dirty — but not bad enough to need a full cleaning job.

HERE-- D'YA WANT THIS CLEANING COMPOUND KIT?

NOPE, DON'T NEED IT! I'M JUST REPLACING WORN OUT ANTIFREEZE.



If you're putting in Antifreeze, Ethylene Glycol, Inhibited, Heavy Duty, Single Package, MIL-A-46153, all you mix with the antifreeze is water. How much water? You go by Table I in TB 750-651 to figure how much freeze protection you need.

If you're using Antifreeze, Arctic-Type, MIL-A-11755, you don't add anything. You put it in your cooling system just like it comes.

But you add corrosion inhibitor to your new coolant if you're putting in —

— Antifreeze, Ethylene Glycol, Inhibited, O-A-548 (and you add water according to Table I in the TB)

— Plain water

You add 1 ounce of Inhibitor, Corrosion, Liquid Cooling System, O-1-490, for every 2 quarts of water you put into your cooling system.



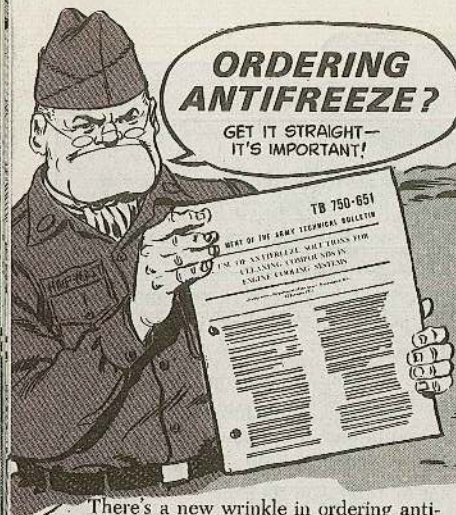
READ 'N' HEED—TB 750-651

You can't do right by your cooling system if you're not up on the poop in TB 750-651. If you don't have this TB, ask your publications people to order it for you on a DA Form 17 from the St. Louis Publications Center.

This TB lists NSN's for antifreeze, cleaning compound and corrosion inhibitor, testers and test kits.

Most important, TB 750-651 gives you the "recipe" for cooling systems in military-design equipment.



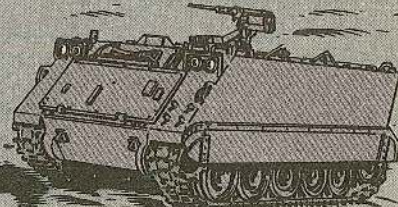


ORDERING ANTIFREEZE?

GET IT STRAIGHT—
IT'S IMPORTANT!

TB 750-651

MEAT OF THE ARMY TECHNICAL BULLETIN
FOR THE ANTIFREEZE AND THAWING
CLEANING EQUIPMENT
ENGINE COOLING SYSTEMS



There's a new wrinkle in ordering antifreeze for your engine's cooling system. It comes from a shortage of Military Specification (MILSPEC) antifreeze. For a couple of years, you may not be able to get MILSPEC antifreeze. That's the antifreeze you see identified by O-A-548 and MIL-A-46153 in TB 750-651 (Jan 71), para 2b.

Only certain equipment will get MILSPEC antifreeze—all combat vehicles, the Gama Goat (M561 and M792 1½-ton vehicles), LARC V, LARC XV and Propulsion Unit Outboard. This's because their engines have to have the special protection offered in MILSPEC antifreeze.

All other engine cooling systems will get a commercial-type antifreeze. This goes for all tactical trucks (except the Gama Goat) and for all engineer-type equipment—tractors, graders, generators, compressors, etc. They can get by OK with the commercial-type antifreeze.

If your equipment requires MILSPEC antifreeze, you have to order it by "exception data" request. You have to specify the equipment that's authorized to use MILSPEC antifreeze. Use the NSN's given in TB 750-651, para 2b.

Any orders that do not include this special justification will be filled with a commercial-type antifreeze.



THESE GET MILSPEC ANTIFREEZE



HOW ABOUT MIXING?

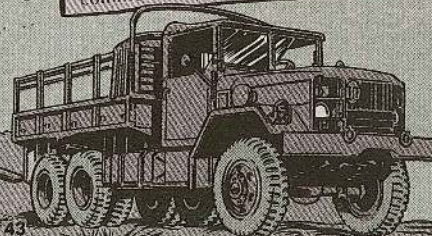
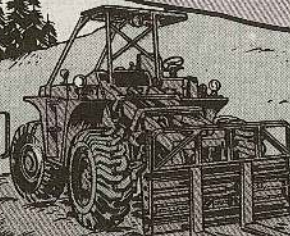
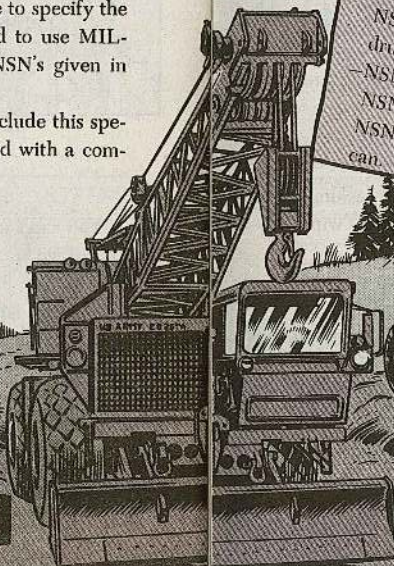
Careful! Do not mix different commercial-type antifreezes in the same cooling system. You can wind up with trouble. And you keep commercial-type antifreeze in the cooling system for only one season—drain in the spring and put in new antifreeze in the fall. Be sure to follow the instructions on the container exactly.

ORDER A COMMERCIAL-TYPE ANTIFREEZE IF THAT'S ALL YOUR EQUIPMENT NEEDS:

—NSN 6850-00-135-2879 or
NSN 6850-00-135-2864 or
NSN 6850-00-135-2878 for a 55-gal
drum.
—NSN 6850-00-135-2839 or
NSN 6850-00-135-2850 or
NSN 6850-00-135-2841 for a 1-gal
can.

HERE'S THE ONLY
ANTIFREEZE
MIXING THAT'S
SAFE:

—MIL-A-46153 with O-A-548
Type I
—MIL-A-46153 with any ONE
commercial-type listed above
—O-A-548 Type I with any ONE
commercial-type listed above



THESE GET COMMERCIAL TYPE ANTIFREEZE

By the LO ? or by GUESS?



YEH, I KNOW YOU SAID EVERY PIZZA GETS TOMATO SAUCE, BOSS...

...BUT THE GUY SAID ALL HE WANTED WAS PEPPERONI!



P-PHOOEE

I'D HATE TO SEE HIM LUBING A TRUCK BY THE LO!

PIZZA

DOUGH RECIPE
FLOUR • SHORTENING
SALT • WATER

TOMATO RECIPE
TOMATOES • SALT
PEPPER • OREGANO
GARLIC • ROMANO CHEESE
OIL • MOZZARELLA

WITH CHOICE OF
PEPPERS • SAUSAGE
MUSHROOM • MEATBALLS
PEPPERONI • ANCHOVES
OR COMBINATIONS

A great pizza! Perfect in every way — except one. Someone forgot the tomato sauce! And just about everybody will agree that a pizza without tomato sauce is not really a pizza. Right?

Well, a lubrication service on your truck has to cover every point in the LO or it's not really a lubrication service. Right?

Take that "friend" of yours. He's got that ol' grease gun in hand. And he's tackling an M54A2 or some other TM-211-series 5-ton truck. And he's doing a great job — wip-

HERE I COME, OLD GIRL...

NOTHIN'S TOO GOOD FOR YOU, BABE...

NO DIRT IN **YOUR** LUBE... I ALLUS WIPE TH' FITTING CLEAN FIRST!

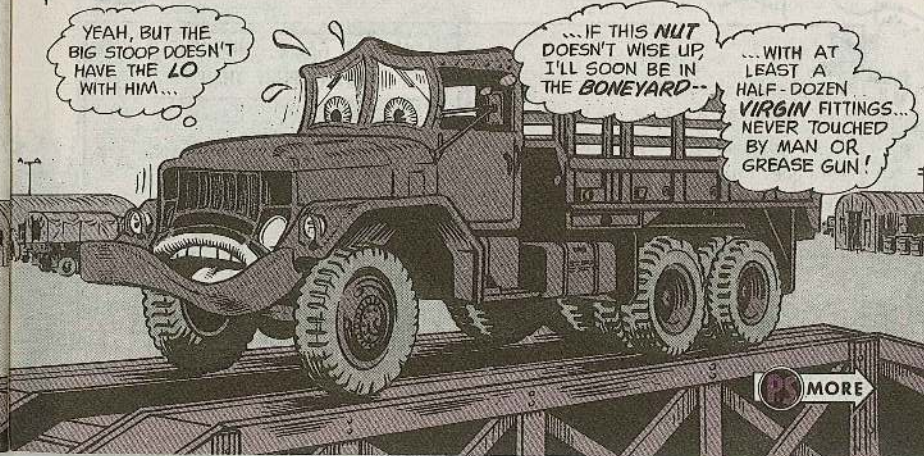
AND NO POPPED SEALS... I GOT TH' SLOWEST, EASIEST OL' GREASE GUN IN TH' U S ARMY!

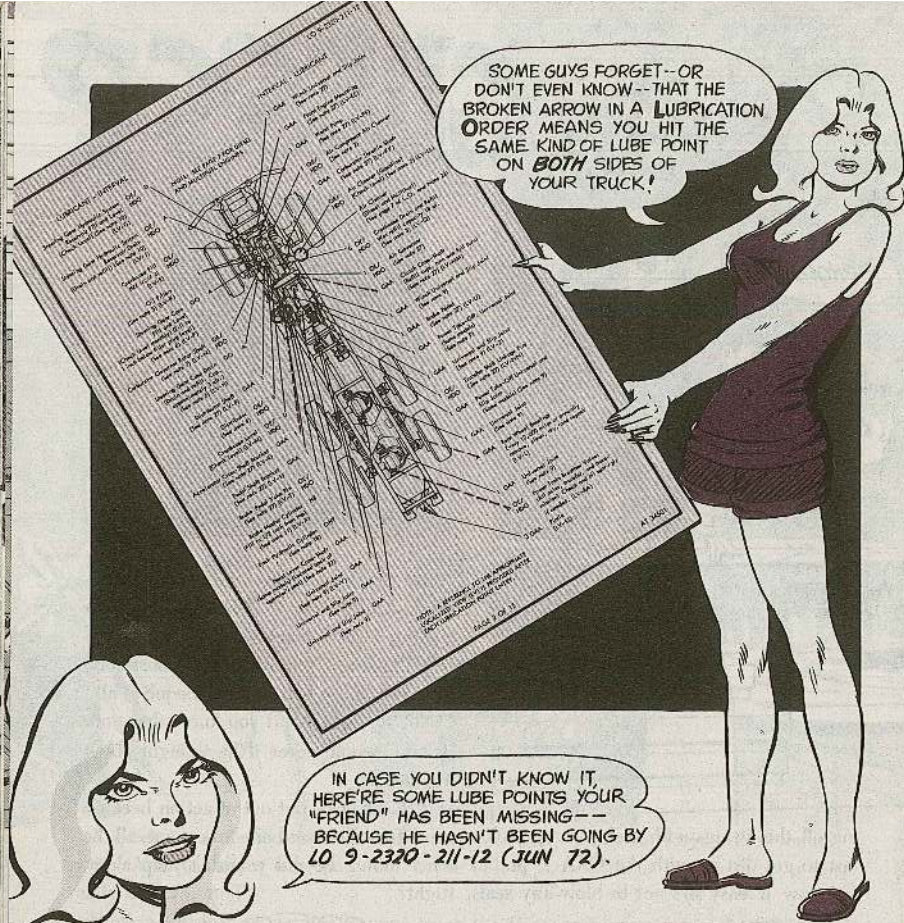
YEAH, BUT THE BIG STOOP DOESN'T HAVE THE LO WITH HIM...

...IF THIS **NUT** DOESN'T WISE UP, I'LL SOON BE IN THE **BONEYARD**...

...WITH AT LEAST A HALF-DOZEN **VIRGIN** FITTINGS... NEVER TOUCHED BY MAN OR GREASE GUN!

ing off the fittings with a clean rag so's your "friend" missed one lube point, all the not to get dirt in with the GAA — pump- other lubing he did wouldn't help a bit. ing slow 'n' easy so's not to blow any seals. Right?

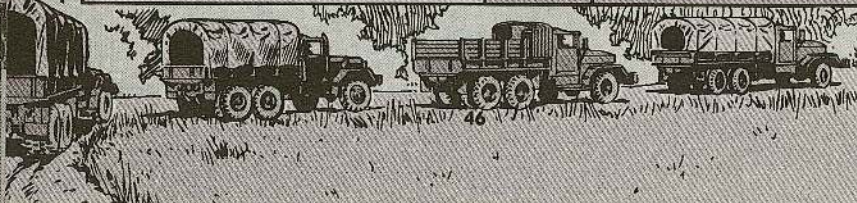




IN CASE YOU DIDN'T KNOW IT, HERE'RE SOME LUBE POINTS YOUR "FRIEND" HAS BEEN MISSING-- BECAUSE HE HASN'T BEEN GOING BY LO 9-2320-211-12 (JUN 72).

★ — Clutch cross-shaft. There're 2 grease cups, one on each side of the transmission clutch housing where the clutch release shaft goes through. Both cups should be filled with GAA. And then the cup should be given one complete turn.

FILL WITH GAA... THEN GIVE IT ONE COMPLETE TURN



★ — Brake and clutch pedals. Maybe your "friend" doesn't know that brake pedal lubing is mighty important for the clutch. Yep, clutch! If he misses the clutch and brake pedal lube fittings, the brake pedal can seize on the pivot tube. This'll force the tube lock in the bracket to break loose. Then the clutch shaft — which has probably frozen in the tube bushings because of no lube — will turn when the brakes are applied. This causes the clutch to slip. Pretty soon, burned out clutch!

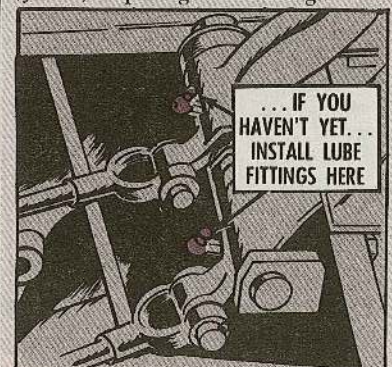
If the clutch pedal moves when you push down on the brake pedal, you know the brake pedal's stuck on the pivot tube. So tell your "friend" to hit that brake pedal lube fitting with GAA.



AND GIVE THE CLUTCH PEDAL SHAFT BRACKET LUBE FITTING A SHOT, TOO!

★ — Power takeoff and transfer hand control levers. What? Your "friend" says he can't get GAA in there because there're no grease fittings? Then your outfit must've missed the word back in TB 750-981-1 (Jan 70) on putting in lube fittings.

- All you do is:
1. Take off the 2-lever assembly and spot for drilling — on the back side of each bushing boss.
 2. Use the 11/32-in drill bit. Then thread with the 1/4-in pipe tap. The drill bit's in both the No. 1 and No. 2 Common Shop Equipment. The tap is in only the No. 2 set.
 3. Screw in 90-degree lube fittings, NSN 4730-00-050-4207.



YOUR "FRIEND" WILL BE GLAD YOU TOLD HIM ABOUT ALL OF THIS.



TM-260-SERIES
5-TON TRUCK ...

SHARPEN YOUR TURN

Noticed something funny about the steering in your M813 or other TM-260-series 5-ton truck? Like it won't turn as sharp in one direction as it does in the other?

It's not funny — it could give you gray hair before your time. Like you've got to make a sharp turn — but the truck won't turn as sharp as it should.

Could be you've got one of those jobs that doesn't have the pitman arm installed right. It's not aligned right.

TM-244-SERIES ¼-TON TRUCK...

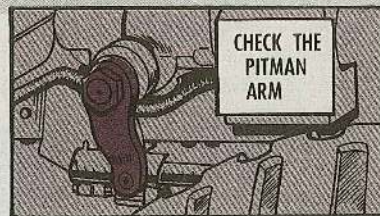
ONE, TWO... TAKE OFF YOUR SHOE



Dear Editor,
Hand-brake shoe removal on the M715 ½-ton cargo truck can take too long and damage the J-bolt.
But here's a way to shave the time and avoid damage to the J-bolt:
Take off the cotter pin and nut which hold the brake drum on, then remove the drum. This'll give you plenty of room to take off the J-bolt.
This method is a little faster and easier than the instructions in TM 9-2320-244-20 (Aug 71), page 109. This way you don't have to loosen the crossmember bolts like it says in para 2-103b(4).
SGT Donald F. Kennedy
APO New York 09169

GOOD GOING, SARGE. THIS KIND OF THINKING IS WORTH A LOT.

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Get it checked.

TM 9-2320-260-20 (Jul 72), page 2-272, para 2-164b, tells how the pitman arm should be aligned according to the index marks.

FOR AN EASY START...

PLAY IT SMART



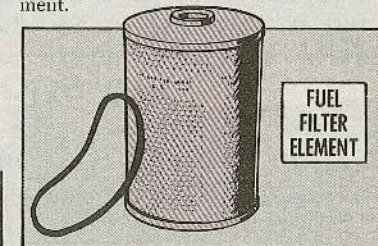
Grinding the starter on your TM-260-series 5-ton trucks? Right after replacing the fuel filter element?

That kind of action'll just wear out your starter and run down your battery.

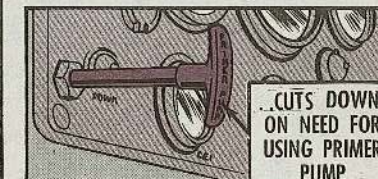
Get smart and happy. All you've gotta do for easy starting is fill the filter housing with clean fuel after the element is in place.



Work this operation just after para 2-50a(5), TM 9-2320-260-20 (Jul 72), which tells you how to replace the element.



If you fail to fill the housing, you could be in for using that hand-operated primer to draw fuel into the fuel filter and purge the lines of air.



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AIR MOBILITY

KEEP IT TOGETHER

I'M SO EMBARRASSED!... I FEEL LIKE I'M COMING UNGLUED!



HERMAN, FINALLY DID IT... HE PUNCHED A HOLE IN ME!

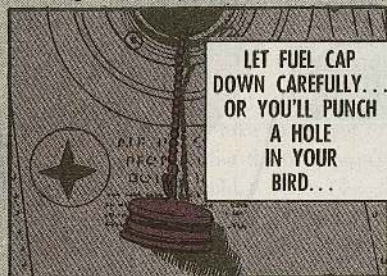
When you're ready to fuel your Huey, Cobra or Kiowa, be sure to let your fuel tank cap down easy after you unscrew it.

get punched in your bird. That hole will let water and spilled JP-4 into the honeycomb panels.

Those bonded honeycomb panels can come unglued. Result: plenty o' downtime and a bunch o' bucks.

Any time you spot a hole in your bird, do a temporary repair right away—anything to keep out the water. Pressure-sensitive tape will turn the trick. O' course, a permanent repair will be necessary later.

LET FUEL CAP DOWN CAREFULLY... OR YOU'LL PUNCH A HOLE IN YOUR BIRD...



Letting it flop down to bang against the aircraft skin too often can mean a hole'll



REPAIR ALL HOLES

ALL SHOOK UP?

Dear Windy,
If our chopper encounters severe turbulence and we do not have an over-temperature, over-speed or an over-torque, is there a manual to go to and find what the special inspection requirements are, if any?

SSG J. M. C.



ZOWEE! HOPE I GET A GOOD POST-FLIGHT CHECK!

Dear Sergeant J. M. C.,

There is no specific inspection required for choppers after flight into severe turbulence. For fixed wing birds you do pull the special inspection listed in the aircraft organizational maintenance pubs.

However, professionalism and safety should come into play here. Pull a good post-flight check.

Eyeball the fuselage skin and accessible internal structures for cracks, fractures, tears and buckles.

ALSO, LOOK FOR LOOSE, TILTED OR SHEARED RIVETS, BOLTS AND NUTS.



M28/M28A1 ARMAMENT SUBSYSTEMS...

DELINKING FEEDER UNJAMMED



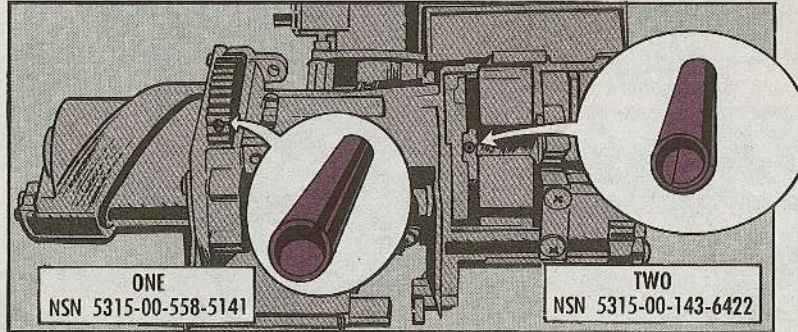
HEY, MAISIE... IT SAYS HERE THAT NSN 5315-00-143-6422 GETS A STRIPPER SLEEVE PIN—WITHOUT SUPPORT.



TERRIF. I'M ALMOST DOWN TO MY LAST PIN-- BUT I'VE NEVER NEEDED SUPPORT ANYHOW!

Used to be a jammed delinking feeder on your AH-1G's M134 Minigun meant a trip to support to replace the stripper pin.

Not now. O-level types can replace this pin, NSN 5315-00-143-6422, as well as the sprocket pin—same NSN—and the gear pin NSN 5315-00-558-5141.



Either or all pins could have out-of-sight damage when the gun jams. So, never take a chance with a half-way fix. Replace all 3 pins and get Miss Mini gunning again—like f-a-s-t!

Change 3 (Apr 73) to TM 9-1090-203-20P (Apr 70) has the latest word on this pin poop, Minimechs.

DECALS GONE WITH THE WIND?

NO! NO! DON'T
COME NEAR ME!

...I FEEL SO
NAKED WITHOUT
MY DECALS...

AIN'T THOSE WORDS OF WISDOM

Dear Windy,
Some of the decals on our OH-58A came off, and we tried to replace them. We couldn't get decals reproduced locally. How do we get decals for exterior lettering on our chopper, Windy?
SP5 R. O. W.

Dear Specialist R. O. W.,

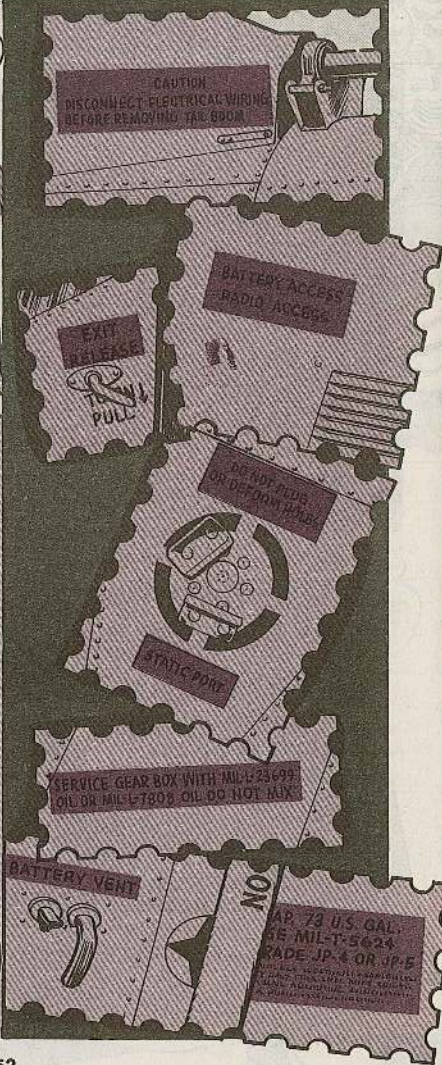
Manufacturers put a lot of decals on aircraft, and they do come off. Don't sweat it, tho.

Decals won't hold up well in storage, and they're hard to apply over rivets and curved surfaces. So, off they come. For those reasons the head shed (AVSCOM) has not authorized them for stockage in the supply system.

There're rare exceptions, such as use of the American flag decal, authorized during relief work. That poop is in Chap 7 of TB 746-93-2 (Jan 71) on painting and marking of aircraft.

Para 7-2(b) of the pub also says to use decals only if approved by AVSCOM.

SO, USE
LACQUER OR
ENAMEL TO
LETTER YOUR
BIRD.



RIGHT ON, CONNIE... ANY AREA
WHERE MY BIRD IS ON JACKS, IS...
**NO PLACE FOR
TURBULENCE**

Dear Windy,

There's a difference of opinion in our unit on how to make signs for posting around aircraft. What are the requirements and specifications for painting an "aircraft on jacks" sign, Windy?

SP5 J. W. P.

Dear Specialist J. W. P.,

TM 55-1500-204-25/1 (Apr 70) on aircraft general practices has the poop. Para 1-71a (7) says that an aircraft on jacks must be restricted by proper signs and barriers to prevent entry into the area. Para 1-71c(2) also says aircraft on jacks shall be so labeled and access restricted.

So, caution signs are needed to warn against hazards and unsafe practices. The area is easily restricted by tying the signs together with rope or white tape.

To construct and paint the caution signs, eyeball AR 385-30 (Nov 71) on safety color code markings and signs.

YOU'LL
FIND ALL THE
DETAILS IN
PARA 2-8.

AR 385-30
(NOV 71)

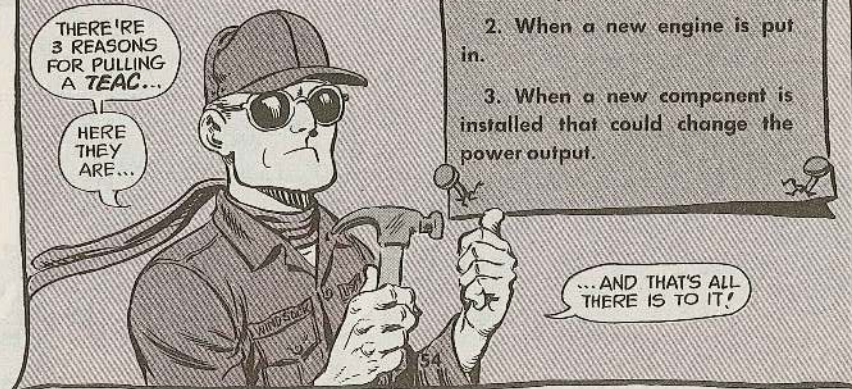
A QUESTION OF CIRCUMSTANCES

Dear Windy,
There's been a bit of confusion around our shop concerning The Turbine Engine Analysis Check (TEAC).
Just what is the time or circumstance when we should pull the topping check, Windy?
SP6 D. M.



Dear Specialist D. M.,

Pulling the TEAC depends entirely on circumstances. There're no hour limits in the organizational maintenance pubs for your turbine-powered birds.

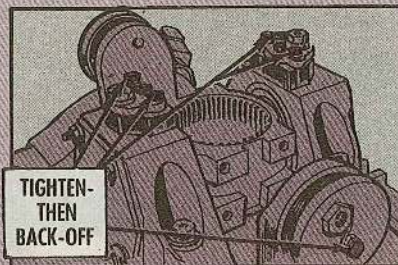


SAVE THE RESERVOIRS

Replacing the Huey (UH-1B, D/H) pillow block reservoirs regularly has become a way of life for mechs. The retaining bolts get over-torqued, and the plastic reservoirs crack.

No more! Now there's a special tightening procedure for both the pillow block and blade grip reservoirs.

With a 7/16-in box wrench, tighten the 1/4-28 bolts until the spring washers are completely compressed. Then, back off on

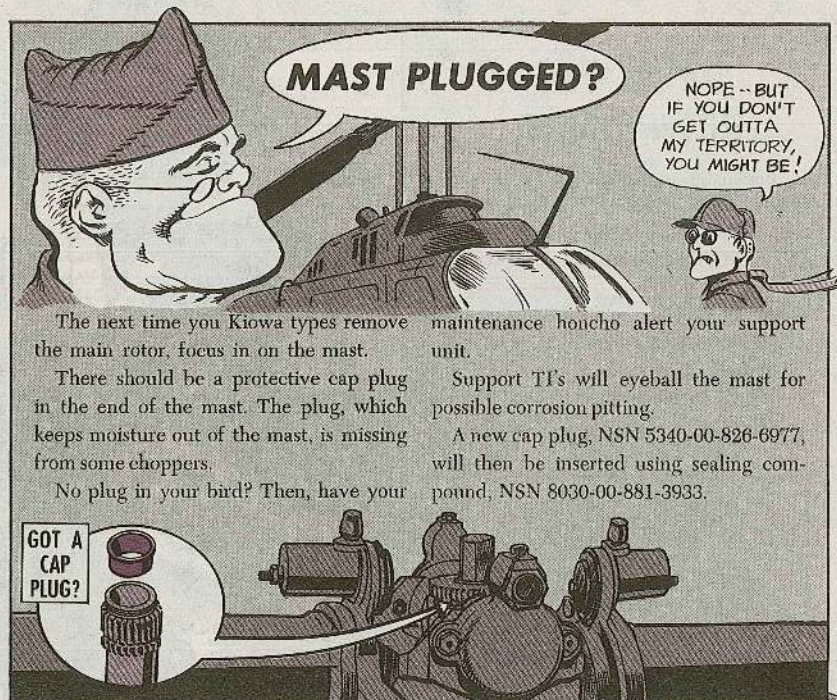


the bolt 6 plus or minus 1/2 wrench flats (one full turn.)

That'll save you some time and elbow grease!



Contrary to what you Kiowa and Cayuse throttle jockeys might have heard there is no coast down time limit for the T-63 engine compressor (N1). No write-up and maintenance action needed.



The next time you Kiowa types remove the main rotor, focus in on the mast.

There should be a protective cap plug in the end of the mast. The plug, which keeps moisture out of the mast, is missing from some choppers.

No plug in your bird? Then, have your

maintenance honcho alert your support unit.

Support TF's will eyeball the mast for possible corrosion pitting.

A new cap plug, NSN 5340-00-826-6977, will then be inserted using sealing compound, NSN 8030-00-881-3933.



Surgical soap is out, Kiowa mechs, when it comes to coating the tail rotor drive shaft before installation. Para 7-26 of TM 55-1520-228-20 will be updated.

Clean the shaft and coat it, along with the inside of the collars, with lubricant, KY Jelley, NSN 6505-00-153-8809.



With frost on the pumpkin and ice on the windshield of their Chinook (CH-47), pilots just naturally turn on the de-icer switch.

Never reach for the switch if your old type plastic windshield is covered with dew, tho. A few revolutions of the forward rotor will give you a clear view.

What happens when you turn on the de-icer switch in warm weather?

Plenty--all bad!

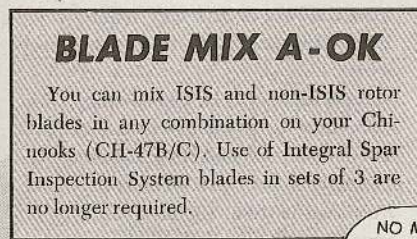
The heat may separate the transparent plastic. If so, you'll get cracks, especially around the frame. Pretty soon the wind-

shield has to be replaced because it won't pass inspection. Your bird is sidelined.

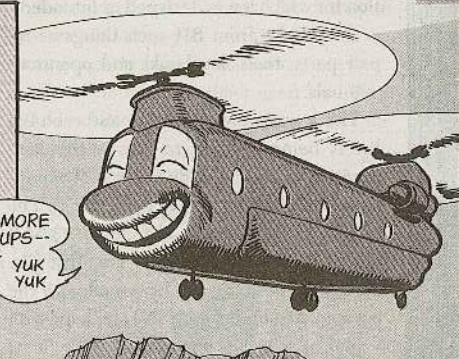


So, use the de-icer switch only in cold weather, if the windshield is plastic.

The new glass-covered windshield solves this problem.



You can mix ISIS and non-ISIS rotor blades in any combination on your Chinooks (CH-47B/C). Use of Integral Spar Inspection System blades in sets of 3 are no longer required.





BII OR

NOT?

Section II. BASIC ISSUE ITEMS LIST				
Federal stock number	Description	U/M	Qty turn with equip	File A-1 Item no.
4835-435-7750	ACTUATOR, ELECTRO-MECHANICAL LINEAR: (fixing pulse tester 11043755 (19207)	EA	1	1
2540-070-2459	BAG ASSEMBLY: pamphlet 1961712 (19207)	EA	1	2
1240-950-1605	BORESIGHT AID ASSEMBLY: u/o XM44 series periscope 10810830 (19200)	EA	1	
4933-852-6310	BORESIGHT ASSEMBLY: 11577285 (19200)	EA	1	

Section III. ITEMS TROOP INSTALLED OR AUTHORIZED LIST				
Federal stock number	Description	U/M	Qty auth	LED
4930-288-1511	ADAPTER, GREASE GUN COUPLING: 10,000 psi wpt, flex, stl, 12 to 14 lg MIL-L-4387 (61349)	EA	1	
5110-283-2330	AX, SINGLE BIT: 4 lb wt of hd, 4-3/4 wd of rlg edge, 34-1/2 lg of hdl GGG-A-926 (61346)	EA	1	
8105-981-5821	BAG, ORDNANCE WEAPONS SPARE PAIRTS 1160430 (19204)	EA	1	
5120-526-6044	BAIL, PINCH, 9/16 dia, 11-7/8 lg 5200344 (19204)	EA	1	



A RULE OF THUMB FOR ITEMS THAT'RE NO LONGER A PART OF YOUR BII LISTS--KEEP 'EM IF YOU NEED 'EM ... TURN 'EM IN IF YOU DON'T!



Equipment operator's manuals are hitting the field with Basic Issue Item (BII) lists set up under a new policy.

These BII lists are in the -10 TM's and fit new items coming into the Army to a T. But they probably won't fit the BII with equipment you now have on hand with your current end items. So, what do you do?

First, you zero in on the problem.

Ch 6 (14 Dec 71) to AR 310-3, para 9-2a(5), defines BII as "ancillary items required to operate the equipment and to enable it to perform the mission and function for which it was designed or intended."

It excludes from BII such things as repair parts, tools, log books and operators' manuals.

That's quite a mouthful ... and each BII list is being tailored to the mission and function of the individual piece of equipment. But you don't have to decide it. The revised -10 TM (or a change to it) will tell you what the BII now are. Just like before, these items will be issued with the equipment (under its NSN), be kept with

it and accounted for as a part of it on your property book. They'll be turned in with it when you turn in the item.

The big question is what to do about items that once were a part of the BII but have now been split off from it.

First, until the revised -10 TM (or change to it)—based on the new BII policy—appears, don't do anything.

But when you do get a revised BII list, start following it immediately. Here's what you do ...

ITEMS SPLIT OFF

Former BII that have been dropped from the revised BII may require some action—depending on which way they went.

Some former BII have been dropped because they are already in the repair parts TM and will be handled and accounted for under the repair parts rules in AR 710-2. Keep 'em or turn 'em in—depending on your current need.

Others were dropped because they are expendable supplies and material, and are authorized by SB 700-50. Keep 'em or turn

'em in—depending on your current need (no accounting necessary unless they're on the expendable-reportable list).

Others were overpacked publications and log books. Even tho they are no longer called BII, they are still required with the equipment, so keep 'em. Pubs will be handled under general publication rules. Log books will be kept as authorized by TM 38-750.

Still others were dropped from BII since they are actually components of the end item and are necessary to make up the end item or system. In some cases they were attached or placed in it at the time of manufacture, retrofit or modification.

These are covered by the end item or system NSN and are not separately accounted for as long as they're not removed. (Upon removal they'll be handled like other components or assemblies, under AR 710-2 and TM 38-750 rules.)

"TROOP INSTALLED" ITEMS

But the new policy creates a new group of items—separate from the BII—called "Items Troop Installed or Authorized."

Normally they'll be made up of common tools, troubleshooting equipment—all of which are not provided in the unit TOE, MTOE, TDA or MTD.

In the future, these will not be issued with the equipment. Instead, you'll have to requisition them separately. You account for 'em on the property book if they're non-expendable.

What do you do with items now on hand (received with the equipment) which are now classified as "troop installed or authorized" or are authorized by the parts manual or TOE?

Keep 'em if you need 'em (but if they're non-expendable, you account for 'em on your property book as separate items).

Turn 'em in if you don't need 'em. That avoids cluttering up your shop and your property book.

AND, WHETHER YOU TURN 'EM IN NOW OR LATER, THEY'RE NOW SEPARATE ITEMS--NOT A PART OF THE EQUIPMENT.



THE HOT WATER

FIRING
UP YOUR
IMMERSION
HEATERS...

NUTZ--
ANOTHER
BOOK
OF
MATCHES,
AND STILL
NOT
STARTED!

DID YOU
CHECK THE
IGNITER
CUP WICK
?

There's a lot going for you in the new Model 447-2EX immersion heater, NSN 4540-00-453-9146, but never take it for granted. It's no push-button miracle.



Even with the handy lighter cup to pre-heat and ignite it, you still gotta get the knack of it.

FOLLOW
THESE
STEPS
FOR FIRING
UP THE
NEW
IMMERSION
HEATER.

TRICK

PREHEATING THE FLUE

First off, open up the fuel tank vent plug and swing out the igniter cup under the fuel valve. Here, you want to see if there's a wick in the cup and the retainer spring is working.

OPEN FUEL TANK
VENT PLUG...

Next, open the fuel valve till the cup is $\frac{1}{4}$ full of gasoline. You could need more gasoline in cold climates. In any case, be sure the cup doesn't run over.

SWING OUT
IGNITER CUP
UNDER FUEL
VALVE... ADD
 $\frac{1}{4}$ CUP OF
GASOLINE

Ignite the fuel in the cup. Then, swing the cup back into the flue and let it burn there for about a minute. This'll preheat it.

IGNITE AND SWING
CUP BACK-INTO
FLUE TO
PREHEAT

STARTING 'ER UP

When the time's up, swing the cup out under the fuel valve again. Open drip valve, making the stream ignite from the

RETURN CUP TO
FUEL VALVE AND
OPEN DRIP VALVE

burning cup. At this point, never let your curiosity get the best of you. Keep your face away from the burner chamber. There could be a flash in the pan.

WHO
SAID
LIGHTING
UP
WAS
NO
SINGE?

HAVE
I GOT
NEWS
FER
THAT
GUY!

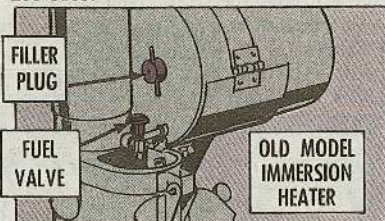
Swing lighter cup back into the flue.

It should be going great now. Just adjust the fuel drip to below the smoke point. A white haze coming out of the stack will tell you everything's A-OK for hot H₂O.

ADJUST FUEL
DRIP TO BELOW
SMOKE POINT

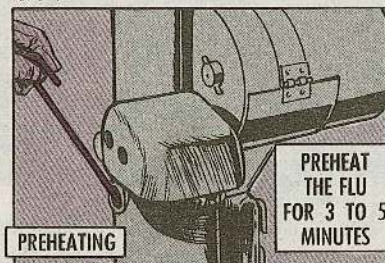
FIRING UP THE OLD

It takes a few more tricks of the trade to light up the older model, NSN 4540-00-266-6835.



The secret of success is in pre-heating it the right way.

Right off the bat, stick one lighted torch into the draft gate to heat up the flue. This gets the whole draft system working. It'll also prevent a blastback when you're igniting the burner chamber with another torch.



Let the flue warm up for 3 to 5 minutes

or till the bottom section of the second stack is warm to the touch. Feel it where one stack is inserted into the other. Here, you won't get burned.

After the flue is preheated, slip the other torch into the burner compartment. If you hear a puff and then a roaring sound, you're in business.



Take out both torches adjust drip valve and stand by for hot water.



FOR MAINTENANCE ON ALL MAKES AND MODELS OF IMMERSION HEATERS, SEE TM 10-4500-200-13 (JAN 10).

Happy TABLE TALK



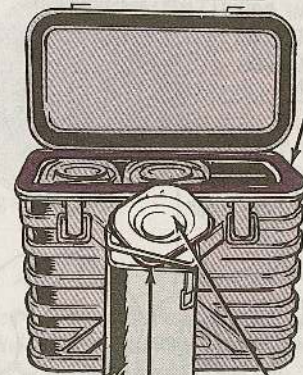
Serve hot food hot and cold food cold. That's the secret of success for any restaurant, home kitchen or Army field mess.

You, too, can enjoy this success by taking care of the gaskets on your 5-gal insulated food container, NSN 7330-00-238-2411. They gotta be kept clean.

Wash the gaskets with soap and water every time you clean the container. Let 'em dry in place so they don't warp or lose their shape.

Here're all the repair parts:

GASKET, OUTER (COVER)
NSN 5530-00-032-2722



INSERT
NSN 7330-00-243-3253

COVER, INSERT
NSN 7330-00-243-3254

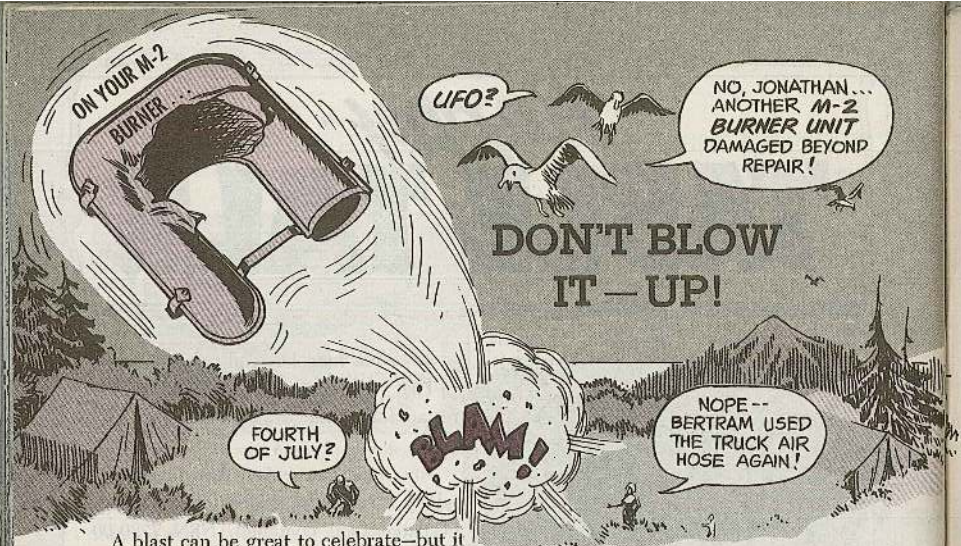
GASKET, INSERT
NSN 5330-00-032-2721

PHOOEY!!
COLD EGGS!

UGH..
LIQUID JELLO!

THEY NEED NEW COVER GASKETS FOR THEIR FOOD CONTAINERS!

GAK!
LUKEWARM COFFEE!

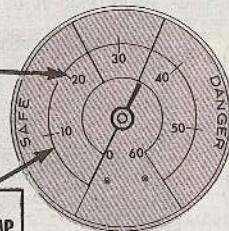


A blast can be great to celebrate—but it can be bad news for you and the M-2 burner unit of your Field Range outfit.

Here are a couple of tricks to protect your burner unit's health—and your own.

First, keep down tank pressure. Before fire up, hand-pump to a hair less than 8 PSI. Never use your truck air hose.

TURN FLAME DOWN WHEN PRESSURE GETS TO THIS POINT.

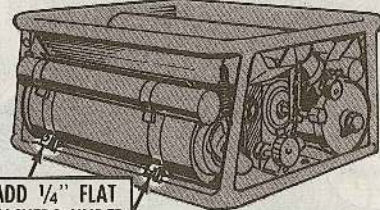


BEFORE YOU FIRE UP... HAND PUMP TO THIS POINT.

NEVER USE AN M-2 BURNER WITHOUT A GOOD PRESSURE GAGE. IF THE GAGE GOES BAD -- REPLACE IT IMMEDIATELY.

ANY SUBSTITUTE IS A NO-NO!

ADD 1/4" FLAT WASHERS UNDER BRACKET... ALSO OTHER SIDE.



The second wise-up is: shim up the U-shaped tank on your burner. The tank will drag the ground or the base bar unless you do. Add 1/4-in washers (as many as needed) to the four corner tank mounting brackets.



Tamms Changeover Date

1 Oct 74! That's the date you implement Change 1 (Apr 74) to TM 38-750. Change 1 (Mar 74) to TM 38-750-1 also becomes effective that date. PS issue 264 will have a big article on the changes.

Tanker Trailer

TM 9-2330-272-14 (Jun 72) is no help when you need new compartment doors or attaching hardware for your M131A5C 5,000-gal fuel tanker semi-trailer. So you get 'em fabricated, using Cabinet Installation Dwg. No. 11597385 ordered from Commander, US Army Tank-Automotive Command, ATTN: AMSTA-RS, Warren, MI 48090.

NSN For MX-6707 Gasket

To get the rubber gasket (SC-B-160382) for your MX-6707 antenna base you need NSN 5330-00-078-4184. The number, FSN 5820-088-4184, listed on Page D-5 to Change 3 of TM 11-5985-262-15 (Mar 69) is wrong.

☆U.S. GOVERNMENT PRINTING OFFICE: 1974 - 657-025/2

Need Panel Light Packing?

It's pretty common on trucks, combat vehicles and engineer equipment — Packing, preformed, NSN 5330-00-297-6329, for the instrument panel lights. One parts manual you'll find it in is TM 9-2320-218-20P (Jan 72) — listed on page 75 and shown as Item 13 in Fig 6-7.

Lockout Knockout

Turn your mind 180 degrees when reading that Vulcan lockout control paragraph on page 21 of PS 259. What it should've said was: "The lockout control must be in **EXTEND** position for firing or simulated firing."

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

DOTS MEAN DITTO

BOTH SIDES!

LUBRICATION ORDER

Lubricate points indicated by dotted arrow
shafts on both sides of equipment.

BROKEN
(OR DOTTED)
ARROW
MEANS END
OF TROUBLE...
IF YOU LUBE
LIKE IT
SAYS!

THIS GOES FOR
ALL LUBE ORDERS
FOR ALL ARMY
EQUIPMENT!

Reference: TM 9-2320-211-10, 26 April 1968

through use wear on metal surfaces and wear on
gears and bearings. Lubrication must be performed for
operation. Lubrication after working in landing
operation. Lubrication is a continuous process.
A correct lubrication is a good lubrication.
See TM 9-2320-211-10 for explanation of military symbols for lubrication.

NOTE: A REFERENCE TO THE APPROPRIATE
LUBRICATION ORDER (LUBO) IS REQUIRED
FOR LUBRICATION POINTS LISTED.

PAGE 1 OF 1

87 34000

LUBE BOTH SIDES