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Issue 219

PS

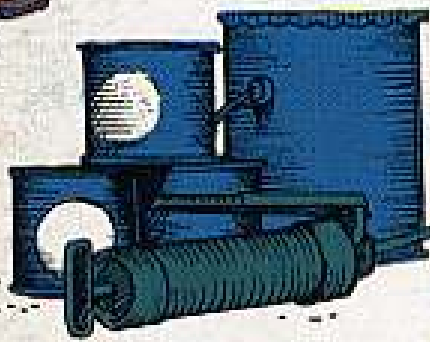
1971 Series  
February

THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY

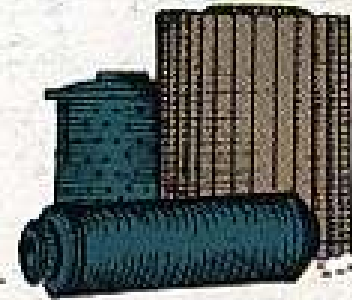


SPRING

SUMMER



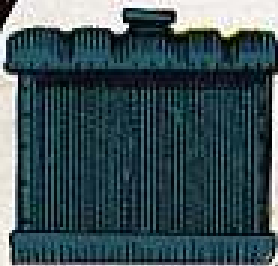
**USE THE RIGHT  
LUBE FOR THE  
SEASON!**



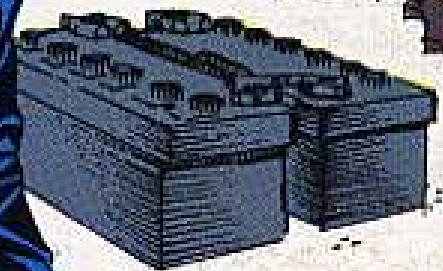
**TAKE CARE OF  
FILTERS —**  
• FUEL  
• AIR  
• OIL

FALL

WINTER



**ANTIFREEZE  
IN? DON'T  
WAIT FOR  
FREEZE!**



**BATTERIES  
UP TO PAR?  
IF NOT,  
YOU'LL  
KNOW SOON!**











A gasoline engine that "lopes, runs rough," and won't make rated speed or horsepower could need a compression gage checkout—and that's as easy as downing a bottle of BaMeba "33".

Check the crankcase oil level and the over-all cleanliness of your engine, and use the gage this way:

1. Check the compression tester itself (your particular automotive common tool kit may have FSN 4910-250-2423, FSN 4910-086-6851, or other). Be sure the glass is sound and needle on zero. Hoses and adapters, including rubber-cone types, must be clean and healthy.



3. Turn ignition OFF. This'll keep plugs from sparking. (On engines with ignition switch-operated starting motors, you'll have to remove the coil high-tension lead from the distributor to keep the plugs from sparking.)



2. Get engine up to operating temperature so you'll get a true reading.



4. Blow dirt from around plugs (protect your eyes) with shop air hose. Loosen plugs and air clean again.



5. Take out the plugs.

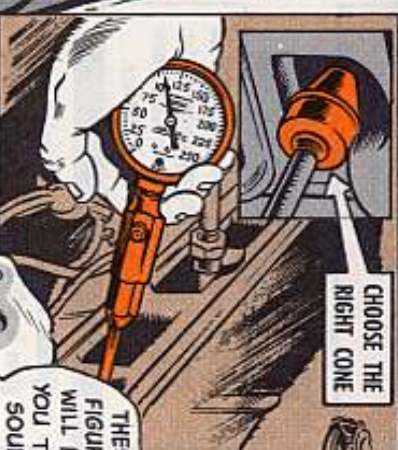
# COMPRESSION

# TEST

6. Clean grease from holes with fresh rags.



8. Choose the right rubber-rip cone or adapter, and get a reading from cylinder No. 1. Write it down. To do this, you need a helper to turn the engine over with the starter about 10 times.



CHOOSE THE RIGHT CONE

THESE FIGURES WILL LEAD YOU TO THE SOURCE OF YOUR TROUBLE...

7. Open throttle wide, and leave it so, that let's your engine breathe all it can.



9. Repeat Step 8 on all other cylinders. Crank the engine over about the same number of times for each test.



10. Now check the figures. If you got too much difference between any 2 cylinders, try a re-run (your engine TM should tell what "too much" is). If you still get a big difference of PSI readings between cylinders, something is probably wrong. If 2 cylinders next to each other show low pressure about equally, it's probably a head gasket gone kaput.



## SOMETHING ELSE

Besides your instrument, use a gadget you were born with—your ears. Put your spark plugs back in the ports, but leave the electrical end disconnected. Then starter-crank the engine over (things have to be quiet in the shop) to maximum compression and lend an ear to the wispy whispers —

Air pressure bubbling back thru the carburetor can mean a bad intake valve.



Air sizzling out the muffler indicates an exhaust valve is burnt.



Then take the next step —



- 11 In any cylinder which showed low figures, squirt a teaspoon or so of oil (fresh, clean crankcase lube). Let it set 2 or 3 minutes, then get another reading.

If it now shows about the same as other cylinders, you can believe it's likely bad rings. If compression doesn't come up, it could be valves. Try valve adjustment, then another compression check. But know this:

Any time readings go below minimum tolerance in the TM, and any time there's consistent compression loss, you're a customer for DS.



## TIPS:

1. While your plugs are out, check and clean 'em on your spark plug cleaner-tester. Might be fouled plugs that caused bum engine performance in the first place.
2. Cylinder compression test on diesel engines is a DSU chore so leave 'em alone. Your compression gage won't dig it.

# DIESEL ENGINE SAVER


It's hot poop for you if your tracked vehicle is powered by a 6V53 or 6V53T or 8V71T Detroit Diesel engine —

TB 750-652 (Jun 70), Maintenance of Supplies And Equipment Operation of Tank-Automotive Materiel Powered With Detroit Diesel Engines 6V53, 6V53T and 8V71T.

It's got a lot of good info on both operation and maintenance of those engines.

Why a special TB on this?

Like the TB says, most of the "high failure rate" of these engines comes from:

- 
- Overheating —
  - Dirt allowed to get inside the engine —
  - Fuel fouled with dirt and water —
  - Poor lubrication —
  - Bum operation —
  - Shortcutting PM services —
  - Sloppy diagnosis of trouble —
  - Failure to handle engines with tender loving care when returning 'em for rebuild.



BELOW IS A LIST OF THE VEHICLES EQUIPPED WITH THESE ENGINES.

M113A1 Carrier, Personnel FT Armd  
M577A1 Carrier, Command Post LT Tracked  
M106A1 Carrier, Mortar, 107MM, SP  
M125A1 Carrier, Mortar, 81MM, SP  
M132A1 Carrier, Flame Thrower, SP  
M548 Carrier, Cargo, Tracked, 6 Ton  
M551 Armored Recon Airborne Assault Vehicle  
M107 Gun, FA SP 175MM

M108 Howitzer, Light, SP, 105MM  
M109 Howitzer, Medium, SP, 155MM  
M110 Howitzer, Heavy, SP, 8 inch  
M578 Recovery Vehicle FT, LT, Armored  
XM727 Carrier, GM Equip SP  
XM730 Carrier, GM Equip SP  
XM667 Carrier, GM, Equip SP  
XM741 Chassis, Gun, AA Arty, 20MM, SP  
XM806E1 Recovery Vehicle FT Armored

This TB really puts it on the line, all the way from the greenhorn driver up to his commander:

"Commanders also will include special instructions in driver training programs of their respective commands," the TB says.



# STORAGE BATTERY SAVER

## EVEN SIMPLER THAN A-B-C

Square peg in the square hole, round peg in the round hole. Simple enough.

So how come some guys hook up their batteries wrong? The right way is just as simple as pegs 'n' holes.

Negative (-) goes to negative (-).

Positive (+) goes to positive (+).

Goof up on this and the least of your troubles will be a rundown battery. And you may even ruin some of your equipment's electrical components.

Like the AC-DC generator (called "alternator") on newer model tactical trucks — you'll blow the guts out of it with the wrong battery hookup. This if I mistake can cost Uncle a couple hundred smackers!

So, remember — when you've had the cables off your batteries, put 'em back right. (Remember: negative goes on last.) Same goes when you're hookin' up a charger or jumper cables to your batteries. (Watch, the cable that hooks your batteries together goes negative (-) to positive (+). This's what gives you a 24-volt system with 2 12-volt batteries.

Think you might forget?

Then get this decal, FSN 7690-912-3504, and stick it inside the battery box cover. Slap a coat of clear varnish over the decal to keep it from weatherin' away. No battery box cover? Then stick the decal close by where anyone working on the batteries can spot it easy.

This's the same decal required on M151-series 1/4-ton trucks — by TB 750-981-1 (Jan 67), para 47.

Check with your maintenance officer. Your command probably will be tickled pink to authorize this decal for all your tactical trucks, tracked vehicles, generators, compressors, etc.



PLACE THE DECAL IN, ON OR NEAR YOUR BATTERY BOX.

**CAUTION**  
BOOSTER-BATTERY NEGATIVE CABLE MUST GO TO NEGATIVE POSITIVE TO POSITIVE, DISCONNECT BATTERY CABLES BEFORE USING CHARGER



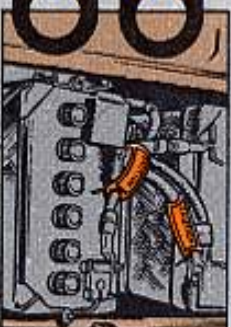
## LABEL YOUR CABLES

Plain as a wart on the end of a girl's nose. New battery cable labels make it plain just which cable is negative (-) and which is positive (+).

These're the labels you'll find on the new M151A2 1/4-ton truck. They're listed in Ch 2 (Jan 70) to TM 9-2320-218-20P —

Label, battery cable lead, negative, FSN 7690-477-3715

Label, battery cable lead, positive, FSN 7690-477-3714



Ask your command about authorizing these labels for all your equipment with lead-acid storage batteries.

In most cases, you just take off the battery cable clamp, slip on the label and put the clamp back on. If the clamp doesn't come off, maybe you can get the label on from the other end.

These labels are not designed for the big, fat battery cables you find on some equipment. But you can use 'em on these cables, anyway. Just lay the label lengthwise on the cable and wrap several turns of electrical tape around at each end. Or, maybe better yet, punch holes near the edges of the label so you

can fasten it onto the cable with Strap, Line Supporting, FSN 5340-985-6630 — the same strap you use to keep battery cables from flopping around.

Get the label down within a few inches of the clamp where it'll show up. Sure, a good, experienced mechanic can tell which cable is which, but it's pretty hard for anybody to make a mistake when the cables are labeled.



## WARNING DECAL

Dear Half-Mast, Some of our trucks have it and some don't — a decal that says:

**WARNING**  
Disconnected battery leads before working on generator or regulator installations. Disconnect ground lead first.

Can you tell me where to get this stick-on decal?

Dear Sergeant B. E. M.,

It's FSN 7690-851-0172 in SC 7660/90-1L (Jun 67).

SFC B. E. M.

Half-Mast



# NO MYSTERY

BROKEN FRAMES

OF

DUMP TRUCKS --

TANK TRUCKS --

CARGO TRUCKS --

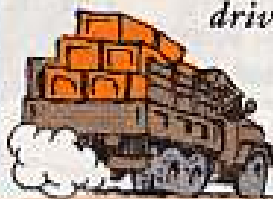
WHO DUNNIT ?

EASY...

The guy who over-loaded his truck or semi — over and above payload limits.

... THE GUY WHO DROVE TOO FAST OVER ROUGH GROUND (INCLUDING RUTTED AND POT-HOLED ROADS) IGNORING THE POOP ON HIS VEHICLE DATA PLATE ... ESPECIALLY THE GUY WHO DID BOTH!

If your mission calls for heavier loads, drive slower.



If you're in a hurry on rough roads, load lighter.



CASE CLOSED.



# YOUR No. 1 COMMON SHOP EQUIPMENT



Getting the tools you need and knowing how to use 'em is the secret to good maintenance and keeping your equipment on the go.

The best way to make sure you have the tools you need is to check your latest supply catalog or supply manual for your kit or set, and make sure you get all of the changes to those pubs.

If you have—

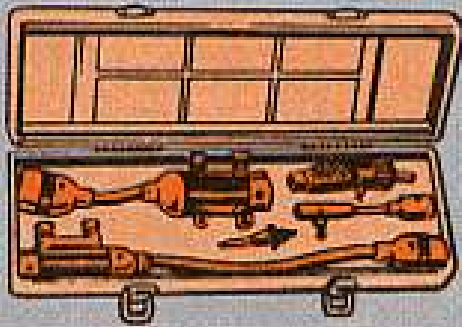
**NO. 1 COMMON ORGANIZATIONAL MAINTENANCE  
AUTOMOTIVE MAINTENANCE AND REPAIR SHOP EQUIPMENT  
FSN 4910-754-0654 (LIN W32593)**

then you should have SC 4910-95-CL-A74 (Mar 70), Ch 1 (Sep 70).

Here're the tools you should have in that shop equipment set. There are different manufacturers, so the tool you have may not look exactly like the one pictured here, but it should still do the same job. You get one each unless noted.

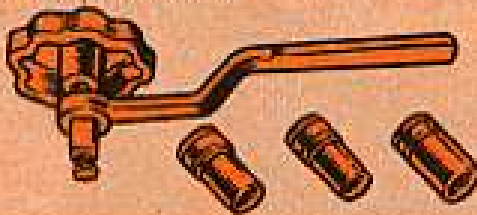


ADAPTER SET, ENGINE ELECTRICAL TEST: 24v sealed elec sys for wheeled tactical vehicles



FSN 4910-348-7600

ADJUSTING TOOL, VALVE TAPPET: replaceable wrench socket type, 1/2 in. sq-drive, 1/2 in., 3/8 in., and 5/8 in. sockets.



FSN 5120-293-0595

BAR, WRECKING: 3/4 in. dia stk, 30 in. lg o/a



FSN 5120-293-0665

BATTERY FILLER, GRAVITY: jug type w/pitcher type handle, natural or syn rubber cntr, 4 qt plus 2 pt or minus 1 pt, 18 in. lg x 1/4 in. dia hose, 8 in. lg x 8 in. w x 12 in. h



FSN 6140-635-3824

BATTERY FILLER, SYRINGE: 6 fluid oz ru bulb type, rigid bent nozzle, 10 3/4 in. lg o/a



FSN 6140-643-4490

BIT, SCREWDRIVER:



FSN 5120-243-7338

BLADE, HAND HACKSAW: HSS, all hard type, 24 teeth per in., 0.025 in. thk, 10 in. lg o/a (10 blades per bundle)



FSN 5110-237-8107

BRUSH, STENCIL: lg hdl, 1 3/16 in. dia of bristles at ferrule, 9 1/2 in. lg o/a



FSN 7520-223-8000



BRUSH, WIRE, SCRATCH: S wire, curved hdl, rocker rect face, 1 1/8 in. to 1 1/4 in. lg clear of block, 4 rows w, 18 rows lg, 5 1/2 in. to 6 1/4 in. lg brush part, 13 1/8 min, 14 1/4 max lg



FSN 7920-291-5915

4 in set

CABINET, STORAGE: vehicle repair parts and tools, steel body w/wooden top, w/11 drawers, 35 1/2 in. h x 25 in. w x 27 in. deep overall



FSN 7125-330-0130



CABLE ASSEMBLY, SPECIAL PURPOSE, ELEC: 2 cond stranded no. 1 AWG, ru insulated, ru jacket, 20 ft lg o/a,  $\frac{3}{8}$  in. x  $1\frac{1}{2}$  in. cross sec, 2 plug type term. fittings



FSN 4910-474-9135

CAN, RADIATOR FILLING: glvd S, 3 gal cap



FSN 7240-254-4173

CAPS, VISE JAW: br face, 4 in. w jaws



FSN 5120-221-1506

CARRIER, STORAGE BATTERY: quick adj, serrated ru gripper pads



FSN 5120-570-4316

COUPLING HALF, QUICK-DISCONNECT: glvd S, stght flow, exter male  $\frac{1}{4}$ -18NPT fluid end, push-pull coupling



FSN 4730-142-1958

3 in set

COUPLING HALF, SELF-SEALING: steel, stght flow,  $\frac{1}{4}$ -18NPT, swivel type



FSN 4730-595-1813

3 in set

CRIMPING TOOL, TERMINAL, HAND: manual compression type, no. 26 thru no. 10 AWG wire accommodated



FSN 5120-596-9313

CROWBAR:  $1\frac{1}{4}$  in. stk dia, 59 to 62 in. lg o/a



FSN 5120-224-1390

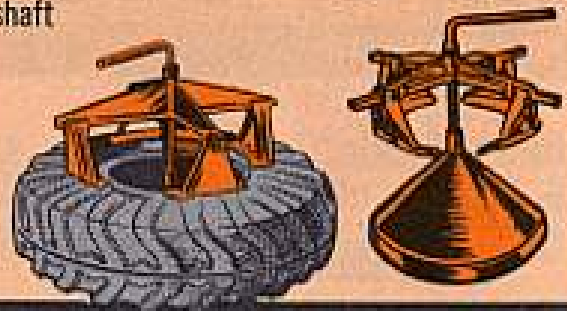


CUTTER, TUBE: for close flare cutoff, inclosed feed mach type, w/deburring tool,  $\frac{1}{8}$  in. to  $1\frac{1}{8}$  in. od tube cutting range



FSN 5110-288-6520

DEMOUNTER, PNEUMATIC TIRE: 7.00 x 16 to 14.00 x 24 automotive tire size, manually drvn, pressure supplied to working mech by screw shaft



FSN 4910-683-9362



DISPENSING PUMP, HAND DRIVEN: when exhausted use 4930-811-6857

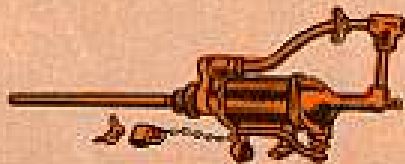


FSN 4930-263-9886

DISPENSING PUMP, HAND DRIVEN: for gasoline or kerosene, continuous flow type, pump head body flange mounted for 1½ in. or 2-in. bung opng, discharge fitting, ¾ in. thd nozzle hose, 8 ft lg o/a, 42 in. lg nonadj intake pipe, 12 gal per 100 revolutions

FSN 4930-811-6857

DISPENSING PUMP, HAND DRIVEN: piston self-measuring type, flgd mtg pump hd body, 1½-in and 2-in bung opngs, ½-in thd nozzle discharge fitting, adj intake pipe, 1qt per stroke



FSN 4930-287-8293

DRESSER, ABRASIVE WHEEL, HAND: revolving cutter whl type, 1¼ in. dia cutter, w/the following replaceable components



FSN 5120-223-9952

CUTTERS, ABRASIVE WHEEL DRESSER:



FSN 5120-278-6641

DRESSER, CONTACT POINT: w/sq-ends, ¾ in. w x 0.025 in. thk x 4¼ in lg o/a



FSN 5345-250-1345

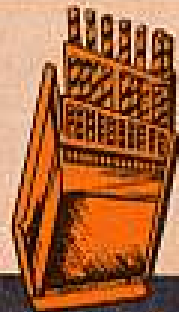
12 in set

DRILL, PNEUMATIC, PORTABLE: ½ in. size, non-reversible, 1000 rpm no load speed stght drive, keyed jaw check, pistol grip hdl.



FSN 5130-640-6343

DRILL SET, TWIST: HSS, strght rd shank, frac series, rh w/case, consisting of 1 each of the following:

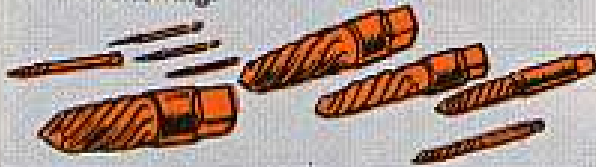


FSN 5133-293-0983

FSN	drill dia		lg, in.
	in.	fluted lg in.	
5133-227-9646	¼	⅜	1⅞
5133-227-9647	⅝ <sub>16</sub>	1	2
5133-227-9648	⅜ <sub>16</sub>	1¼	2¼
5133-227-9649	⅜ <sub>16</sub>	1½	2⅝
5133-227-9650	⅞	1⅝	2¾
5133-227-9651	⅝ <sub>16</sub>	1¾	2⅞
5133-227-9652	⅝ <sub>16</sub>	2	3⅞
5133-227-9653	1¼	2⅞	3¼
5133-227-9654	¾	2⅝ <sub>16</sub>	3½
5133-243-9612	1⅝ <sub>16</sub>	2⅝ <sub>16</sub>	3⅝
5133-227-9656	⅜ <sub>16</sub>	2½	3¾
5133-243-9611	1⅝ <sub>16</sub>	2⅝ <sub>16</sub>	3⅞
5133-227-9658	¼	2¾	4
5133-227-9659	1⅞ <sub>16</sub>	2⅞	4⅞
5133-227-9660	⅝ <sub>16</sub>	2⅝ <sub>16</sub>	4¼
5133-240-8443	1⅝ <sub>16</sub>	3¼	4⅝
5133-227-9662	⅝ <sub>16</sub>	3⅝ <sub>16</sub>	4½
5133-243-9613	2⅝ <sub>16</sub>	3⅝ <sub>16</sub>	4⅝
5133-227-9664	1¼ <sub>16</sub>	3⅝ <sub>16</sub>	4¾
5133-227-9665	2⅝ <sub>16</sub>	3½	4⅞
5133-227-9666	¾	3⅝	5
5133-227-9667	2⅝ <sub>16</sub>	3¾	5⅞
5133-227-9668	1⅝ <sub>16</sub>	3⅞	5¼
5133-227-9669	2⅞ <sub>16</sub>	3⅝ <sub>16</sub>	5⅝
5133-227-9670	⅞ <sub>16</sub>	4¼ <sub>16</sub>	5½
5133-227-9671	2⅞ <sub>16</sub>	4⅝ <sub>16</sub>	5⅝
5133-227-9673	1⅝ <sub>16</sub>	4⅝ <sub>16</sub>	5¾
5133-227-9674	3⅝ <sub>16</sub>	4⅝ <sub>16</sub>	5⅞
5133-227-9672	½	4½	6



EXTRACTOR SET, SCREW: taper type, spiral fluted drill style, carb tool steel, c/o 1 each of the following:



**FSN 5120-610-1888**

FSN	screw size in.
5120-240-5223	$\frac{3}{16}$ to $\frac{1}{4}$
5120-580-2359	$\frac{1}{4}$ to $\frac{5}{16}$
5120-240-5221	$\frac{3}{8}$ to $\frac{7}{16}$
5120-240-5222	$\frac{7}{16}$ to $\frac{9}{16}$
5120-240-5219	$\frac{9}{16}$ to $\frac{3}{4}$
5120-240-5220	$\frac{3}{4}$ to 1
5120-240-5217	1 to $1\frac{1}{8}$
5120-242-1118	$1\frac{3}{8}$ to $1\frac{3}{4}$
5120-240-5215	$1\frac{3}{4}$ to $2\frac{1}{8}$

FILE, HAND: American patt, flat type, dble-cut bastard faces, sgl-cut bastard edges, 12 in. heel to pt



**FSN 5110-234-6539**

FILE, HAND: American patt, half-rd type, dble-cut bastard faces, 10 in. heel to pt



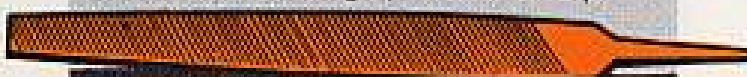
**FSN 5110-241-9153**

FILE, HAND: American patt, half-rd type, sm-cut, fl side dble-cut, back side sgle or dble-cut, 8 in. heel to pt



**FSN 5110-241-9152**

FILE, HAND: American patt, mill type, sgle-cut sm faces and edges, 12 in. heel to pt



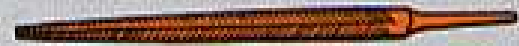
**FSN 5110-203-4645**

FILE, HAND: American patt, rd type,  $\frac{1}{2}$  in. dia of largest sec, dble-cut bastard faces, 12 in. heel to pt

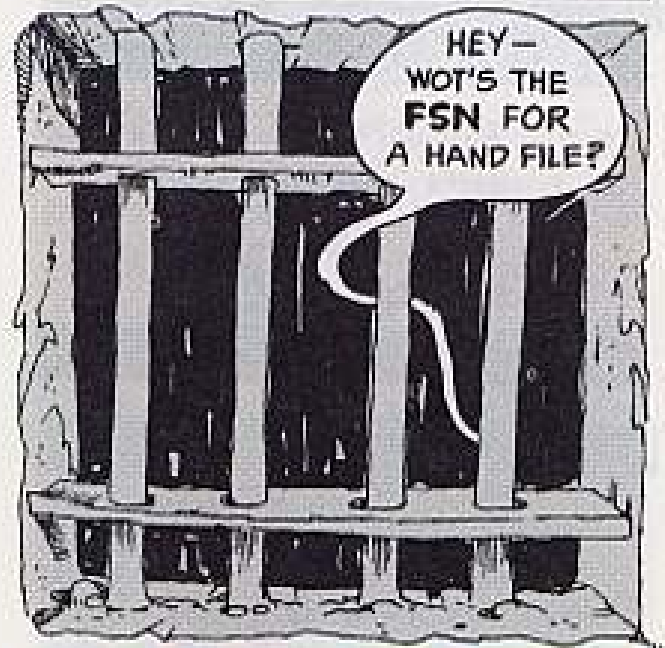


**FSN 5110-234-6557**

FILE, HAND: American patt, three sq type, dble-cut sec-cut faces, 8 in. heel to pt



**FSN 5110-239-7556**



FILE, THREAD RESTORER: 11, 12, 13, 14, 16, 18, 20, and 24 threads per inch



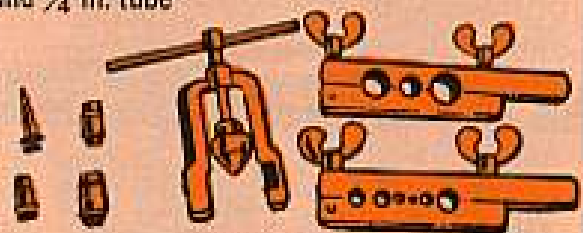
**FSN 5110-373-1691**

FISHING TOOL, PNEUMATIC TIRE VALVE: w/ valve core for tire inflation



**FSN 5120-516-4220**

FLARING TOOL, TUBE, HAND: swv cone, hinged dies type, for  $\frac{1}{8}$  in.,  $\frac{3}{16}$  in.,  $\frac{1}{4}$  in.,  $\frac{5}{16}$  in.,  $\frac{3}{8}$  in.,  $\frac{7}{16}$  in.,  $\frac{1}{2}$  in.,  $\frac{5}{8}$  in., and  $\frac{3}{4}$  in. tu, 90 deg incl angle of flare produced, w/4 swedging adapter for  $\frac{3}{16}$  in.,  $\frac{1}{4}$  in.,  $\frac{3}{8}$  in.,  $\frac{1}{2}$  in.,  $\frac{5}{8}$  in., and  $\frac{3}{4}$  in. tube



**FSN 5120-251-2267**

FRAME, HAND HACKSAW: adj, open pistol grip hdl, 3 in. to 3 $\frac{7}{8}$  in. deep throat, 10 in. and 12 in. lg blades accommodated



FSN 5110-289-9657

FUNNEL: steel, glvd finish, 1 qt cap, 8 in. lg flex. tu spout w/removable strainer



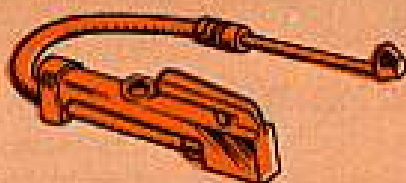
FSN 7240-559-7364

FUNNEL: steel, glvd fin., 2 qt cap, 2 $\frac{7}{8}$  in. lg rigid spout w/o strainer



FSN 7240-230-2397

GAGE, TIRE PRESSURE, SELF-CONTAINED: inclosed self-contained cartridge indicator, operated by a separate lever, w/deflating position, 10 lb to 120 lb range, 2 lb smallest grad div 10 lb to 40 lb, dual ft chuck including the following replaceable components: (Use this gage until it's no longer economically repairable. Will be replaced by Inflator-Gage, Pneumatic Tire, FSN 4910-204-2547)



FSN 4910-522-3778

CARTRIDGE, REPLACEMENT, TIRE GAGE, GAGE UNIT



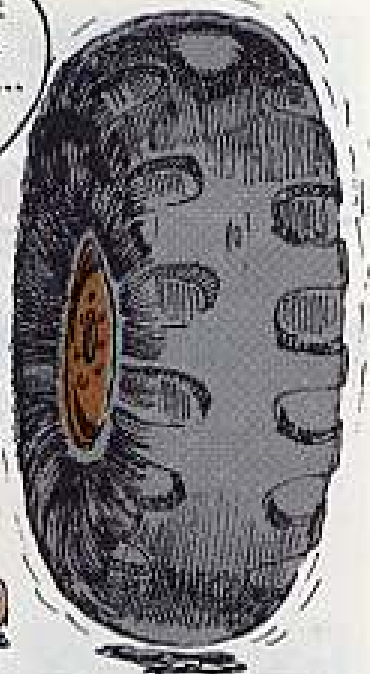
FSN 4910-895-6176

CARTRIDGE, REPLACEMENT, TIRE GAGE, VALVE UNIT



FSN 4910-895-6175

HMMMM ... THE  
PRESSURE GAGE  
READS 28 LBS...  
BUT I DON'T  
BELIEVE IT!



GAGE, TIRE PRESSURE, SELF-CONTAINED: for general testing, used to check air inflated tires, calibrated 10 to 160 lb, calibrated in 1 lb div from 10 to 60 lb and 5 lb div from 60 to 160 lb, stem calibrated on 2 sides, dual ft chuck, 30 deg mtd angle, 6 in. stght extn, 12 $\frac{1}{2}$  in. lg o/a, w/hang-up ring (The issue of additional gages is authorized at the ratio of one per group of eight wheeled vehicles, including trailers, and/or fractional quantities thereof, as authorized by your TOE)



FSN 4910-204-3170

GAGE, WHEEL ALIGNMENT: toe-in and toe-out type, rod style clamped between wheels, w/2 level vials, w/h measuring chains, Mil-G-19629, Class I



FSN 5210-529-1205

GOGGLES, INDUSTRIAL: plastic, w/eye cups, ventilated, adj nose bridge, 1 lens ea aperture, clear glass lens, not polarized, rd, hardened, 50mm dia, headband supported, to be worn over personal spectacles, w/o carrying case



FSN 4240-269-7912



**GRINDING MACHINE, BENCH, HAND OPERATED:** heavy duty utility type, 6 in. dia x 1 1/4 in thick wheel



**FSN 3415-241-3116**

**GUN, AIR BLOW:** stright design, finger grip hdl, button operated, w/hang-up hook, removable tip, 1/4-18NPSH male thd coupling



**FSN 4940-241-3075**

**HAMMER, HAND:** engineer's cross peen, 3 lb hd wt, fiberglass hdl



**FSN 5120-900-6103**

**HAMMER, HAND:** style 22 carpenter's, nailing, curved claw, 16 oz nom hd wt fibreglass hdl



**FSN 5120-892-5485**

**HAMMER, HAND:** sledge, blacksmith's, cross peen, 12 lb hd wt



**FSN 5120-224-4130**

**HANDLE, FILE, WOOD:** 1 1/4 in. dia x 4 1/2 in. lg overall, med size



**FSN 5110-263-0349**

6 in set

**HANDLE, SOCKET WRENCH:** hinged type, 1/2 in. drive end, 12 15/16 in. lg o/a



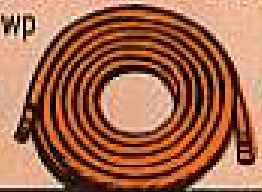
**FSN 5120-221-7958**

**HOLDING TOOL, VALVE TIRE REPAIR:** (A. Schrader's Son Div, No. 7799)



**FSN 5120-223-9346**

**HOSE ASSEMBLY, RUBBER:** air, sm bore, natural or syn-ru inner conveying surface, 2 cot-brd, black molded ru cover, 1/4 in. id, 2 1/2 in. od, 25 ft lg excl fittings, 1/4-18NPSH br female fitting on ea end, 150 psi wp



**FSN 4720-356-8557**

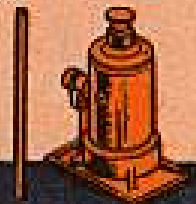
3 in set

**INFLATOR-GAGE, PNEUMATIC TIRE:** exposed bar indicator, w/deflating position calibrated 10 to 120 lb range, 2 lb smallest grad div 10 to 40 lb, dual ft chuck



**FSN 4910-204-2547**

**JACK, HYDRAULIC, HAND:** self-contained, 12 ton cap, 11 1/4 in. closed h, 16 1/4 in. extended h, sgle pump, w/screw extn



**FSN 5120-224-7330**



KEY SET, SOCKET HEAD SCREW: hex drive, L-type hdl, w/case or ro, c/o 1 each of the following:



**FSN 5120-595-9245**

FSN	w across flats	lg arm, in.
5120-198-5400	0.035 in.	1 $\frac{3}{8}$
5120-198-5401	0.050	1 $\frac{21}{32}$
5120-198-5398	$\frac{1}{16}$	1 $\frac{3}{4}$
5120-224-2504	$\frac{5}{64}$	1 $\frac{7}{8}$
5120-242-7410	$\frac{3}{32}$	2
5120-240-5292	$\frac{1}{8}$	2 $\frac{1}{4}$
5120-198-5392	$\frac{5}{32}$	2 $\frac{1}{2}$
5120-240-5300	$\frac{3}{16}$	2 $\frac{3}{4}$
5120-242-7411	$\frac{3}{32}$	3
5120-224-4659	$\frac{1}{4}$	3 $\frac{1}{4}$
5120-240-5274	$\frac{5}{16}$	3 $\frac{3}{4}$
5120-198-5390	$\frac{3}{8}$	4 $\frac{1}{4}$
5120-198-5391	$\frac{1}{2}$	5 $\frac{1}{4}$
5120-240-5268	$\frac{5}{8}$	5 $\frac{3}{4}$
5120-224-2510	$\frac{3}{4}$	6 $\frac{1}{4}$

KNIFE, CRAFTSMAN'S: taper pt, 4 in. blade lg clear of handle



**FSN 5110-268-3882**



LIFTER-SCRAPER, BATTERY TERMINAL: 10 $\frac{1}{2}$  lg o/a



**FSN 5120-293-1039**

LIGHT, EXTENSION: 15 ft lg, 2 cond, type SJ cable, w/btry clips 1 end, lampholder, guard hook, reflector, ru hdl and sw other end, 25 w med screw base lamp accommodated, to be u/w the following screw base lamps: (2 in set) (when exhausted use FSN 6230-268-9436)



**FSN 6230-299-5680**

LAMP, INCANDESCENT: 12 v 25 w, med screw base, frosted fin, white light, no. 25A-12

**FSN 6240-222-0276**

LAMP, INCANDESCENT: 25 v 25 w, med screw base, frosted fin, white light, no. 25A25V

**FSN 6240-153-8494**

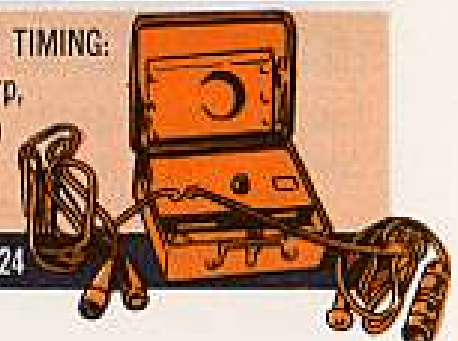


LIGHT, EXTENSION: 25 ft lg, 2 cond type SO 16 AWG cable, w/2 parallel blade plug connector 1 end, lampholder, guard, hook, reflector, ru hdl, and sw other end, 100 w med screw base lamp accommodated



**FSN 6230-239-3518**

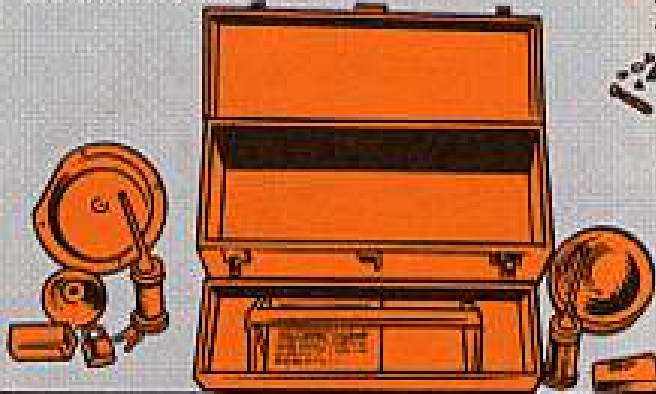
LIGHT, IGNITION TIMING: (Sun-Electric Corp, no. X47, or equal)



**FSN 4910-937-5721**



**LUBRICATING KIT:**



**FSN 4930-357-6301**

consisting of:

Tool Box, portable, steel

**FSN 5140-498-8772**

Padlock, 1 3/4 in. pin tumbler mechanism

**FSN 5340-582-2741**

Oiler, hand pump w/o hdl, 1/2 pt nominal sz

**FSN 4930-274-5713** 2 each

Gun, grease, hand, lever operated

**FSN 4930-223-3391** 2 each

Adapter, grease gun coupling, flexible extn, straight coupler

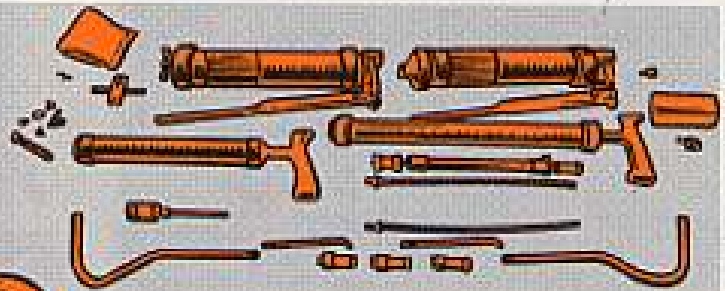
**FSN 4930-288-1511**

Lubricator, bearing, portable

**FSN 4930-704-1852**

Lubricating Fitting Tool, for removing and replacing standard sz fittings, rethreading fitting holes, Snap-On-Tools Corp Part No. GA-22, or equal

**FSN 5120-246-2311**



Coupler, hydraulic, straight, 1/8-27 NPT, female

**FSN 4930-387-9491**

Adapter, grease gun coupling, rigid extn, strght hydraulic type fitting Lincoln Mfr Code 36251, Part No. 5855 (this is for your M151)

**FSN 4930-204-2550**

Gun, fluid, 6 oz.

**FSN 4930-223-3390**

Gun, fluid, 11 oz, cap, w/2 extensions: (1) flexible metallic hose, and (2) rigid goose-neck tube

**FSN 4930-223-3392**

Fitting, lubrication, hydraulic, surface check, 1/8-27NPT(M) threads, steel, strght, single

**FSN 4730-050-4208** 100 each

Elbow (body), lubrication fitting, 45 degree angle 1/8-27NPT male x 1/8-27NPT female

**FSN 4730-278-4216** 25 each

Elbow (body), lubrication fitting, 90 degree angle 1/8-27NPT male x 1/8-27NPT female

**FSN 4730-278-4814** 25 each

**LUBRICATING UNIT, POWER OPERATED:** air operated, grease pressure dev 40 times air pressure applied, 80 to 150 psi air pressure, 6 ft lg lubr hose w/control valve and hyd lubr fitting coupler, 60 lb cap lubr tank, dolly or chassis mtd

**FSN 4930-720-4849**



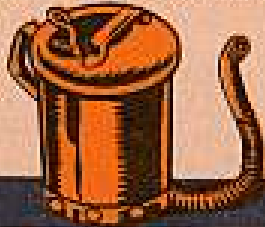
MEASURE, LIQUID: steel, 2 qt cap, w/flex spout and flow control valve



FSN 7240-255-8113

2

MEASURE, LIQUID: steel, 8 qt cap, w/flex spout and flow control valve



FSN 7240-255-5996

MULTIMETER: 0 to 5000v ac/dc in 10 steps, 0 to 3 meg in 1 step, 0 to 3 percent accuracy dc range, 5 percent accuracy ac range, 300,000 ohms in 2 steps 1000 ohms per v sensitivity, 0 to 1 amp dc in 1 step, 15 v, dc operating power, 1½ v int btry source, 2¾ in. x 3¼ in. x 5⅞ in. o/a plastic case w/carrying case (when exhausted use FSN 6625-553-0142)

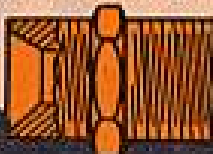


FSN 6625-975-4482

MULTIMETER: type TS-352 B/U, 0 to 5000 v dc in 7 steps, 0 to 1000 v ac in 6 steps, 0 to 10 amp dc in 8 steps, 0 to 10 meg in 5 steps, 50 ua sensitivity, 1.5, 13.5 v dc operating power, int btry source, 6.156 in. x 8.313 in. x 11.313 in. o/a, enmld fin. mtl case, w/accessories

FSN 6625-553-0142

NIPPLE, PIPE: br, cd-plt fin. u/w ¼ in. pipe size, ¼-18NPSM rh, class 2 fit, 1⅜ in. lg o/a, ⅞ in. distance across flats, ¼ in. lg hex, ⅜ in. distance hex from end, 30 deg angle of seat



FSN 4730-287-1589

3 in set

OIL GUN, PNEUMATIC: curved rigid neck, 32 oz cap



FSN 4930-222-2975

PLIERS, BRAKE REPAIR: comb tool, hyd and mech brake springs, replaceable steel hook, w/socket and guide end handles, 12-in nom lg (Snap-On Tools Corp, No. 131A, or equal)



FSN 5120-690-8044

PLIERS: slip joint, w/2 positions, ⅜ in. jaw thk, 7⅝ in. nom size lg o/a (Snap-On-Tools Corp, No. 48A, or equal)



FSN 5120-537-3375

PLIERS, RETAINING RING: snap ring, formed tips

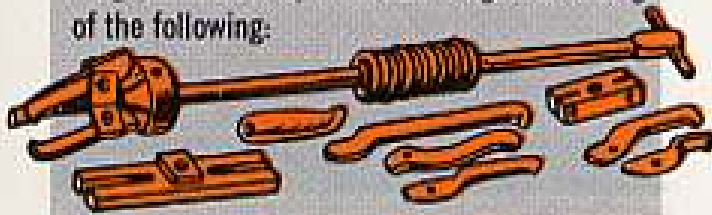


FSN 5120-595-9551





**PULLER KIT, MECHANICAL:** univ type, rvrs slide hammer type, 2 and 3 jaw, 0 to 8<sup>3</sup>/<sub>4</sub> in. outside range, 1 in. to 6<sup>3</sup>/<sub>4</sub> in. inside range consisting of the following:



**FSN 5120-313-9496**

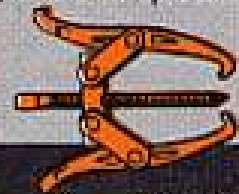
	in. lg
1 crossarm puller FSN 5120-313-9502	6
3 jaws, inside FSN 5120-313-9504	3 <sup>1</sup> / <sub>4</sub>
3 jaws, inside FSN 5120-313-9505	4 <sup>3</sup> / <sub>8</sub>
3 jaws, outside FSN 5120-313-9506	4 <sup>1</sup> / <sub>2</sub>
3 jaws, outside FSN 5120-313-9507	7 <sup>2</sup> / <sub>32</sub>
1 jaw, single FSN 5120-313-9508	2 <sup>1</sup> / <sub>8</sub>
3 jaws, single FSN 5120-340-2010	4 <sup>4</sup> / <sub>8</sub>
3 jaws, puller FSN 5120-357-6278	3 <sup>1</sup> / <sub>2</sub>
1 nut, knurled FSN 5120-313-9499	2 <sup>1</sup> / <sub>2</sub>
3 pins FSN 5120-313-9501	
1 slide hammer FSN 5120-313-9498	4
1 rod FSN 5120-313-9497	24
1 yoke FSN 5120-313-9500	2 <sup>1</sup> / <sub>2</sub> in. dia
1 yoke FSN 5120-357-9244	2 <sup>1</sup> / <sub>2</sub> in. w

**PULLER KIT, MECHANICAL:** wheel, w/short jaws stud nut set, axle protector and mtl box



**FSN 5120-587-4151**

**PULLER, MECHANICAL:** gear and brg, dble-end grip, 2 exter jaws, 0 to 8 in. spread range, 5<sup>1</sup>/<sub>2</sub> in. reach



**FSN 5120-595-9305**



**PUMP, BUCKET, LUBRICATING:** hand operated, 25 to 50 lb cap, 1500 psi pressure, w/5 ft lg hose and gooseneck nozzle, w/leakproof cover and loader fitting for grease gun



**FSN 4930-244-4860**

**PUMP, BUCKET, LUBRICATING:** hand oper, 25 to 50 lb cap, 7000 psi pressure, <sup>1</sup>/<sub>3</sub> oz per stroke, w/10 ft lg hose, hyd coupler, w/leak-proof cover and follower plate



**FSN 4930-244-4859**

**REPAIR KIT, TUBELESS TIRE:** (Adams PSP No. M100 or equal) (As Required)



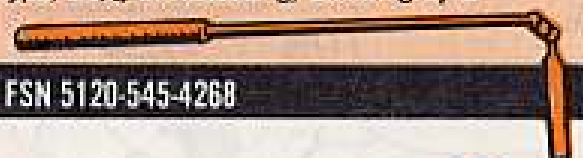
**FSN 4910-922-6921**

**REPAIR TOOL, PNEUMATIC TIRE VALVE:** for std tire valve



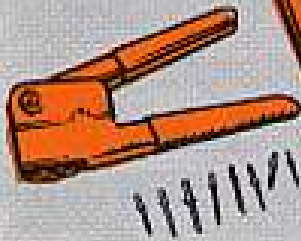
**FSN 5120-308-3809**

**RETRIEVING TOOL, MAGNETIC:** telescoping type, 16<sup>1</sup>/<sub>4</sub> in. closed lg, 26 in. lg o/a



**FSN 5120-545-4268**

**RIVET KIT:**



**FSN 4940-251-8617**

Consisting of Tool Box and following:  
Dome head rivets

Dia.	Part No.	Rivets in Box
1/8	125D	100



**FSN 5320-479-2975**

3/32	156D	75
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**FSN 5320-479-2974**

3/16	187DS	60
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**FSN 5320-479-2973**

3/16	187DL	50
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**FSN 5320-479-2971**

120° Countersunk head rivets

1/8	125C	100
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**FSN 5320-479-2965**

3/32	156C	75
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**FSN 5320-479-2966**

3/16	187CS	60
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**FSN 5320-479-2960**

3/16	187CL	50
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**FSN 5320-479-2959**

Rivet Gun

**FSN 5120-492-8179**

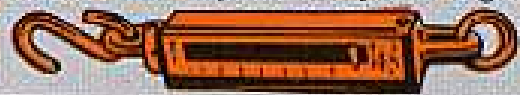


**SAW, HAND, CROSSCUT:** 24 in. lg blade, 6 in. w at butt, 1 1/4 in. w at pt, 10 pts per in., stght back



**FSN 5110-142-4999**

**SCALE, DIAL INDICATING:** weighing, hanging type, 1 hook type load receiver, stght face type dial grad 0 to 50 lb in 1 lb intervals, advp sys, spg type mech, w/o counterpoise weight



**FSN 6670-254-4634**

**SCREWDRIVER, FLAT TIP:** plastic hdl w/wrench grip, 3/8 in. w/flared tip, 8 in. lg blade



**FSN 5120-278-1279**

2 each

**SCREWDRIVER, FLAT TIP:** plastic hdl, w/wrench grip, bolster forged, hv-duty 5/16 in. w/flared tip, 6 in. lg blade



**FSN 5120-278-1283**

2 each

**SCREWDRIVER SET, CROSS TIP STRAIGHT AND OFFSET:** Phillips No. 1, 2, 3, and 4 size tips, plastic hdl, c/o 1 ea of the following:



**FSN 5120-580-0334**

FSN	tip no.	blade lg. in.	type
5120-240-8716	1	3	cross tip
5120-234-8913	2	4	cross tip
5120-234-8912	3	6	cross tip
5120-224-7375	4	8	cross tip
5120-256-9014	1 and 2	4 3/4	offset
5120-242-3268	3 and 4	6	offset

**SHEARS, BENT TRIMMER'S:** steel blade and hdl, w/1 sharp pointed blade ends, 12 in lg o/a

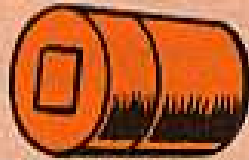


**FSN 5110-203-9642**





SOCKET, SOCKET WRENCH: 1/2 in. sq-drive, 1 1/4 in. 6 pt opng, deep style



FSN 5120-945-4704

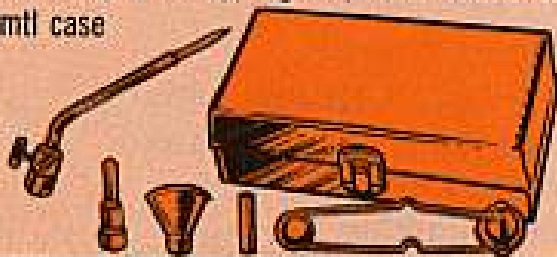
SOCKET SET, SOCKET WRENCH: 1/2 in. sq-drive, 12 pt opng, deep style, w/case, c/o 1 ea of the following:



FSN 5120-596-8622

FSN	opng. in.
5120-243-7351	1/2
5120-243-7348	5/16
5120-235-5898	3/8
5120-243-7346	1 1/16
5120-242-3349	3/4
5120-243-7345	1 3/16
5120-243-7342	7/8
5120-243-7343	1 3/16
5120-243-7340	1
5120-243-7341	1 1/16
5120-243-7339	1 1/8

SOLDERING TORCH KIT: c/o disposable fuel cyl, flame spreader, lt and med flame tips, soldering iron tip, lighter, instructions and mtl case



FSN 3439-542-0531

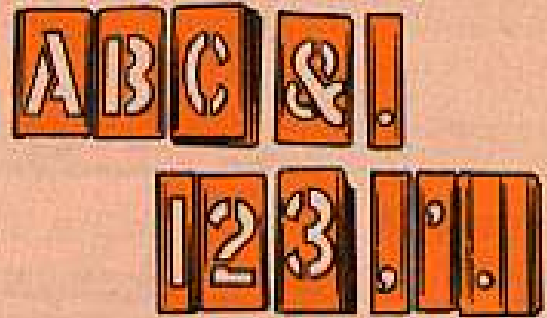
PROPANE GAS: refill cyl, 2 3/4 in. dia, 10 in. lg, 26.7 fluid oz fuel



FSN 6630-584-3041

STENCIL SET, MARKING: 45 adj mtl stencils, letters A thru Z, numerals 0 thru 9, 1 ampersand, apostrophe, comma, period, spacer, and 4 end pc

FSN	height of characters (in.)
7520-298-7043	1
7520-298-7044	2
7520-272-9683	3
7520-269-9012	4



STONE, SHARPENING: comb. type, syn, al-oxide or silicon carbide, oil treated, coarse and fine grit, 6 in. lg x 2 in. w x 1 in. thk o/a



FSN 5345-198-8050

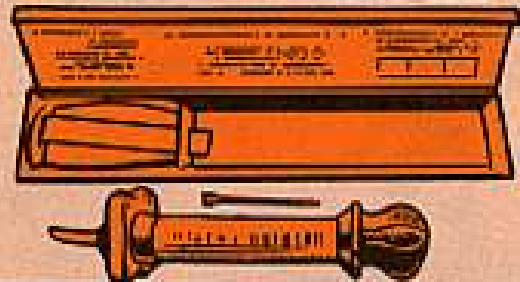
TESTER, ANTIFREEZE SOLUTIONS:



FSN 6630-449-6609

2 each

TESTER, BATTERY ELECTROLYTE SOLUTION:



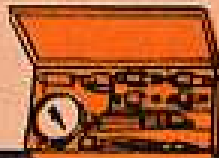
FSN 6630-171-5126

2 each



THESE TESTERS ARE BEING REPLACED ON AN EXHAUST BASIS BY TESTER, ANTIFREEZE AND BATTERY FSN 6630-105-1418.

TESTER, CYLINDER  
COMPRESSION:  
direct type



FSN 4910-250-2423

TESTER, INTERNAL COMBUSTION ENGINE:  
unmounted, for testing manifold vacuum and  
fuel pump pressure 0 to 8 lb pressure and 0 to  
27 in. vacuum ga scale  
ranges, w/carrying case



FSN 4910-255-8673

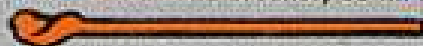
2 each

TIRE IRON: 18 in. lg o/a (Herbrand Corp, 1127  
or equal)



FSN 5120-422-8558

TIRE IRON: curved bead breaker, 33 in. lg o/a



FSN 5120-580-8924

TIRE IRON: curved flat type, 24 in. lg o/a  
(Ken-Tool Mfg Co, T-20, or equal)



FSN 5120-277-4071

2 each



TIRE IRON: hooked spoon-drop center type, 18  
in. lg o/a (Herbrand Corp, No. 1134, or equal)



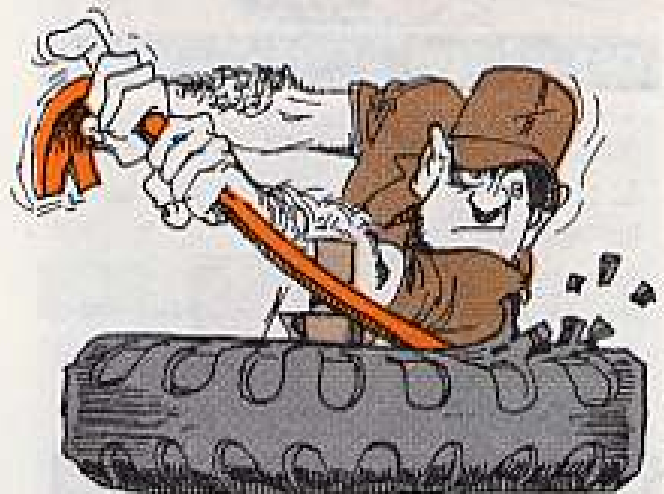
FSN 5120-449-7073

2 each

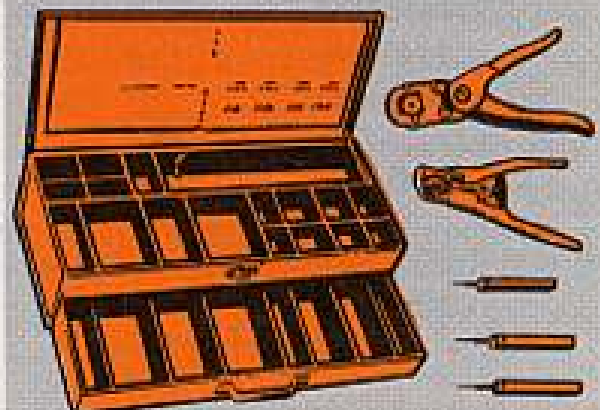
TIRE IRON: lock ring, 40 in. lg o/a



FSN 5120-765-8536



TOOL KIT, ELECTRICAL CONNECTOR REPAIR:  
c/o 1 each of the following:



FSN 5180-876-9336

CASE, METAL: 15-13/16 in. lg

FSN 5140-772-9655

CRIMPING TOOL, TERMINAL, HAND:

20 thru 10 AWG wires accommodated

FSN 5120-251-3990

REMOVER: 0.063 in. dia

FSN 5120-797-8495

REMOVER: 0.120 in. dia

FSN 5120-797-8494

REMOVER: 0.187 in. dia

FSN 5120-391-1710

STRIPPER, WIRE, HAND: 22 to 8 AWG  
stripping cap

FSN 5110-268-4224



TOOL KIT, AUTOMOTIVE ELECTRICAL:  
c/o 1 each of the following:



**FSN 5180-422-8594**

**FSN 5120-540-2464** PLIERS, SLIP JOINT: 5 in.

**FSN 5120-293-3183** SCREWDRIVER, FLAT TIP:  
flared tip, plastic hdl, w/external screw  
grippers, nom tip with  $\frac{5}{32}$ -in, nom blade lg  
2-in

WRENCH, OPEN END FIXED:

opngs, in.	thk hd, in.	deg of angle, sm hd	deg of angle, lg hd	lg in.
$\frac{13}{64}$ & $\frac{15}{64}$	$\frac{3}{64}$	15	60	3

**FSN 5120-277-3414**

$\frac{13}{64}$ & $\frac{15}{64}$	$\frac{3}{64}$	60	15	3
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**FSN 5120-277-8310**

$\frac{7}{32}$ & $\frac{1}{4}$	$\frac{3}{64}$	15	60	3
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**FSN 5120-277-8308**

$\frac{7}{32}$ & $\frac{1}{4}$	$\frac{3}{64}$	60	15	3
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**FSN 5120-277-8309**

$\frac{5}{32}$ & $\frac{5}{64}$	$\frac{5}{32}$	15	60	$3\frac{1}{2}$
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**FSN 5120-277-8311**

$\frac{5}{32}$ & $\frac{5}{64}$	$\frac{5}{32}$	60	15	$3\frac{1}{2}$
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**FSN 5120-277-8312**

$\frac{11}{32}$ & $\frac{3}{8}$	$\frac{5}{32}$	15	60	$3\frac{3}{4}$
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**FSN 5120-277-8313**

$\frac{11}{32}$ & $\frac{3}{8}$	$\frac{5}{32}$	60	15	$3\frac{3}{4}$
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**FSN 5120-277-8314**

$\frac{7}{64}$ & $\frac{1}{2}$	$\frac{11}{64}$	15	60	$4\frac{3}{64}$
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**FSN 5120-293-1349**

ROLL

**FSN 5140-708-3431**

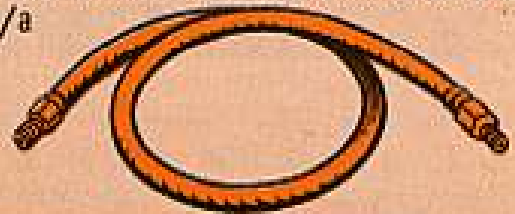
TRESTLE, MOTOR VEHICLE MAINTENANCE: 5  
Ton cap (As Required)



**FSN 4910-262-0392**

6 each

TUBE, BLEEDER, HYDRAULIC BRAKE: 2 connec-  
tions  $\frac{1}{4}$ -28 thd 1 end, 10-32 other end, 18 in  
lg o/a



**FSN 4910-255-8219**

2 each

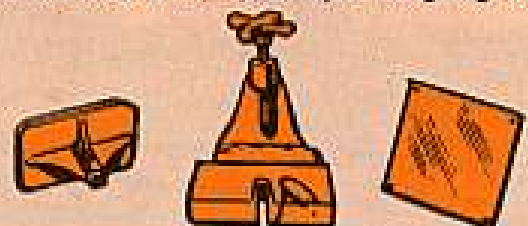


VICE, MACHINIST'S: swv-base, 4 in. w jaw, 6 in.  
jaw opng, replaceable jaw faces



**FSN 5120-293-1439**

VULCANIZER, HOT PATCH: bench or wall mtd,  
quick acting clamp type, w/tu roughing tool



**FSN 4910-243-3130**

WRENCH, AUTO, ADJUSTABLE: 0 to 3 $\frac{3}{8}$  in. jaw opng, 15 in. lg o/a



FSN 5120-264-3793 2 each

WRENCH, BOX: angular offset dble-hd type, 1 $\frac{1}{8}$  in and 1 $\frac{1}{2}$  in 12 pt opngs, min o/a lg 15 $\frac{1}{2}$ , max lg 18 o/a



FSN 5120-228-9521 2 each

WRENCH, BOX: angular offset dble-hd type, 1 $\frac{1}{4}$  in. and 1 $\frac{3}{8}$  in. 12 pt opngs, min o/a lg 18 $\frac{1}{2}$ , max lg 20 $\frac{1}{2}$  o/a



FSN 5120-184-8677

WRENCH, BOX: dble-offset dble-hd type, 1 $\frac{1}{4}$  in. and 1 $\frac{3}{8}$  in. 12 pt opngs 17 $\frac{3}{8}$  in. lg o/a

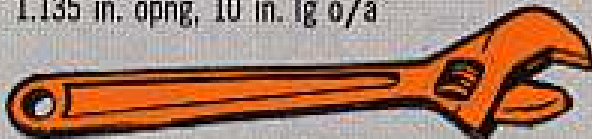


FSN 5120-264-5212

WRONG  
WRENCH  
IS WORSE  
THAN  
NO  
WRENCH  
A'TALL!

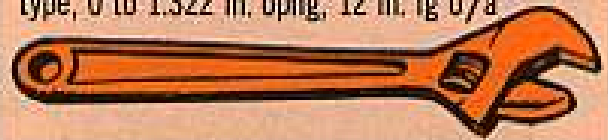


WRENCH, OPEN, ADJUSTABLE: sgl-hd type, 0 to 1.135 in. opng, 10 in. lg o/a



FSN 5120-449-8083 2 each

WRENCH, OPEN END, ADJUSTABLE: sgle-hd type, 0 to 1.322 in. opng, 12 in. lg o/a



FSN 5120-264-3796 2 each

WRENCH, OPEN END, FIXED: dble-hd type, 15 deg angle,  $\frac{3}{16}$  in. and  $\frac{1}{2}$  in. opngs,  $\frac{3}{16}$  in. thk hd, 7 in. lg o/a



FSN 5120-184-8620 2 each

WRENCH, OPEN END, FIXED: dble-hd type, 15 deg angle,  $\frac{3}{16}$  in. and  $\frac{5}{8}$  in. opngs,  $\frac{3}{16}$  in. thk hd, 7 $\frac{3}{4}$  in. lg o/a



FSN 5120-184-8621 2 each

WRENCH, OPEN END, FIXED: dble-hd type, 15 deg angle, 1 $\frac{1}{16}$  in. and 1 $\frac{5}{8}$  in. opngs,  $\frac{1}{4}$  in. thk hd, 15 $\frac{1}{2}$  in. lg o/a



FSN 5120-277-2326

WRENCH, PIPE: adj jaw style,  $\frac{1}{4}$  in. to 1 in. ips, 10 in. lg o/a



FSN 5120-277-1485 2 each

WRENCH, PIPE: adj jaw style, 1 in. to 2 in. ips, 18 in. lg o/a



FSN 5120-277-1461

WRENCH, TORQUE: rigid frame end drive style, w/rtc adpt, w/visual dial indicating tor mech,  $\frac{1}{2}$  in. male sq-drive, 175 ft-lb cap, w/case



FSN 5120-640-6364



WRENCH, TORQUE: rigid frame end drive style, w/visual dial indicating tor mech, 3/4 in. male sq-drive, 0 to 600 ft-lb cap, w/case



FSN 5120-221-7983

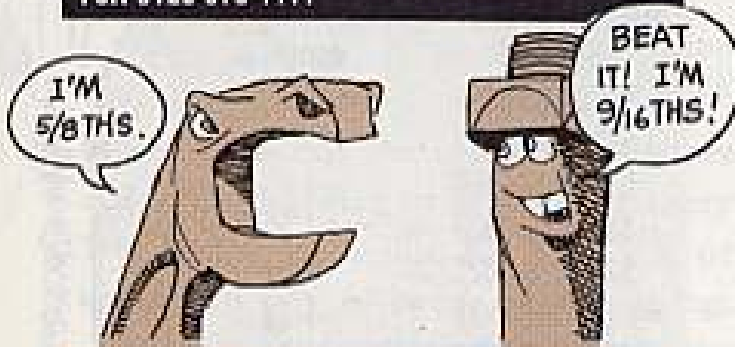
WRENCH, TORQUE:

FSN 5120-853-4538

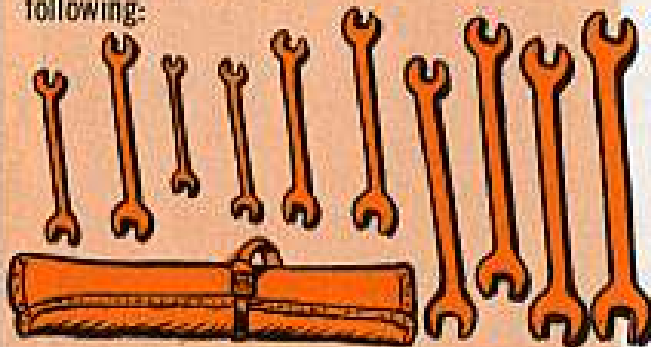
WRENCH, WHEEL STUD NUT, GEARED SOCKET:  
36 in. tubr hdl, 20 in. bar hdl



FSN 5120-378-4411



WRENCH SET, OPEN END, FIXED: dble-hd type, 15 deg angle, w/ro, c/o 1 each of the following:



FSN 5120-317-8068

2 each

FSN	opngs, in.	o/a lg, in.
5120-277-2342	3/8 & 7/16	4 1/8
5120-187-7123	7/16 & 1/2	5
5120-187-7124	1/2 & 9/16	5 3/8
5120-187-7126	9/16 & 5/8	6
5120-277-8301	5/8 & 11/16	7
5120-224-3102	5/8 & 3/4	7
5120-240-5609	3/4 & 7/8	8
5120-187-7131	7/8 & 15/16	9
5120-277-2693	15/16 & 1 1/16	10
5120-187-7133	1 & 1 1/8	10 3/4

WRENCH SET, SOCKET: 1/4 in. sq-drive, hex and 8 pt opngs, w/case, c/o 1 each of the following:



FSN 5120-203-9573

SOCKET, SOCKET WRENCH:

FSN	opng, in.	shape
5120-236-2262	3/16	hex
5120-236-2263	3/32	hex
5120-236-2264	1/4	hex
5120-189-7906	1/4	8 pt
5120-242-3345	5/32	hex
5120-232-5703	3/16	hex
5120-189-7907	3/16	8 pt
5120-232-5704	1 1/32	hex
5120-241-3186	3/8	hex
5120-189-7908	3/8	8 pt
5120-239-0016	7/16	hex

EXTENSION, SOCKET WRENCH:

5120-227-8105	2 in. lg
5120-243-7325	6 in. lg

HANDLE, SOCKET WRENCH:

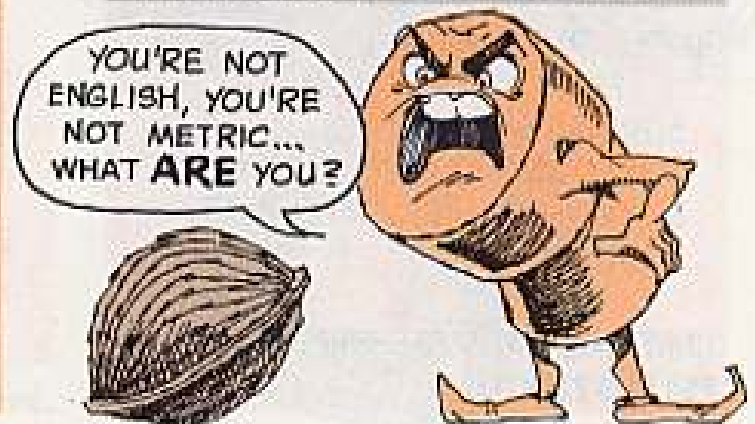
5120-221-7957	4 in. lg
5120-221-7960	5 3/4 in. lg

UNIVERSAL JOINT, SOCKET WRENCH:

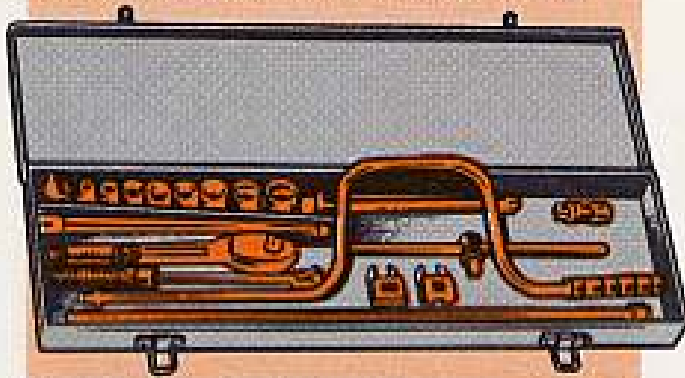
1 3/8 in. lg  
FSN 5120-243-1686

CASE, SOCKET WRENCH SET

FSN 5140-357-5468



WRENCH SET, SOCKET:  $\frac{3}{8}$  in. sq-drive, 12 pt opngs, w/case, c/o 1 each of the following



FSN 5120-449-8200

2 each

SOCKET, SOCKET WRENCH:

FSN	opngs, in.
5120-232-5711	$\frac{5}{16}$
5120-227-6702	$\frac{3}{8}$
5120-227-6703	$\frac{7}{16}$
5120-237-0977	$\frac{1}{2}$
5120-227-6704	$\frac{9}{16}$
5120-237-4973	$\frac{5}{8}$
5120-232-5706	$1\frac{1}{16}$
5120-227-6705	$\frac{3}{4}$

BIT, SCREWDRIVER:  $1\frac{1}{4}$  in. lg

FSN 5120-243-7332

CROWFOOT ATTACHMENT, SOCKET WRENCH

FSN 5120-184-8384

CROWFOOT ATTACHMENT, SOCKET WRENCH

FSN 5120-184-8397

EXTENSION, SOCKET WRENCH

FSN	lg, in.
5120-227-8107	6
5120-243-1693	9
5120-273-9205	18

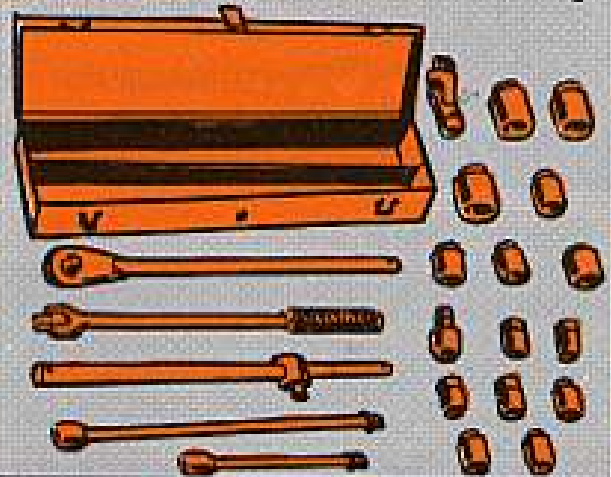
HANDLE, SOCKET WRENCH

FSN	lg, in.
5120-240-5364	6
5120-241-3143	7
5120-240-5396	$8\frac{1}{2}$
5120-237-4969	16

UNIVERSAL JOINT SOCKET WRENCH

FSN 5120-224-9215

WRENCH SET, SOCKET:  $\frac{3}{4}$  in. sq-drive, 12 pt opngs, w/case, c/o 1 each of the following:



FSN 5120-204-1999

SOCKET, SOCKET WRENCH

FSN	opngs, in.
5120-181-6816	$\frac{7}{8}$
5120-181-6813	$1\frac{5}{16}$
5120-237-0989	1
5120-189-7928	$1\frac{1}{16}$
5120-239-0021	$1\frac{1}{8}$
5120-235-5871	$1\frac{1}{4}$
5120-232-5681	$1\frac{3}{16}$
5120-189-7931	$1\frac{7}{16}$
5120-293-0094	$1\frac{1}{2}$
5120-189-7910	$1\frac{9}{16}$
5120-199-7765	$1\frac{5}{8}$
5120-199-7768	$1\frac{3}{4}$
5120-199-7769	$1\frac{7}{8}$
5120-199-7770	2

EXTENSION, SOCKET WRENCH

FSN	lg, in.
5120-273-9208	3
5120-243-7328	8
5120-227-8079	16

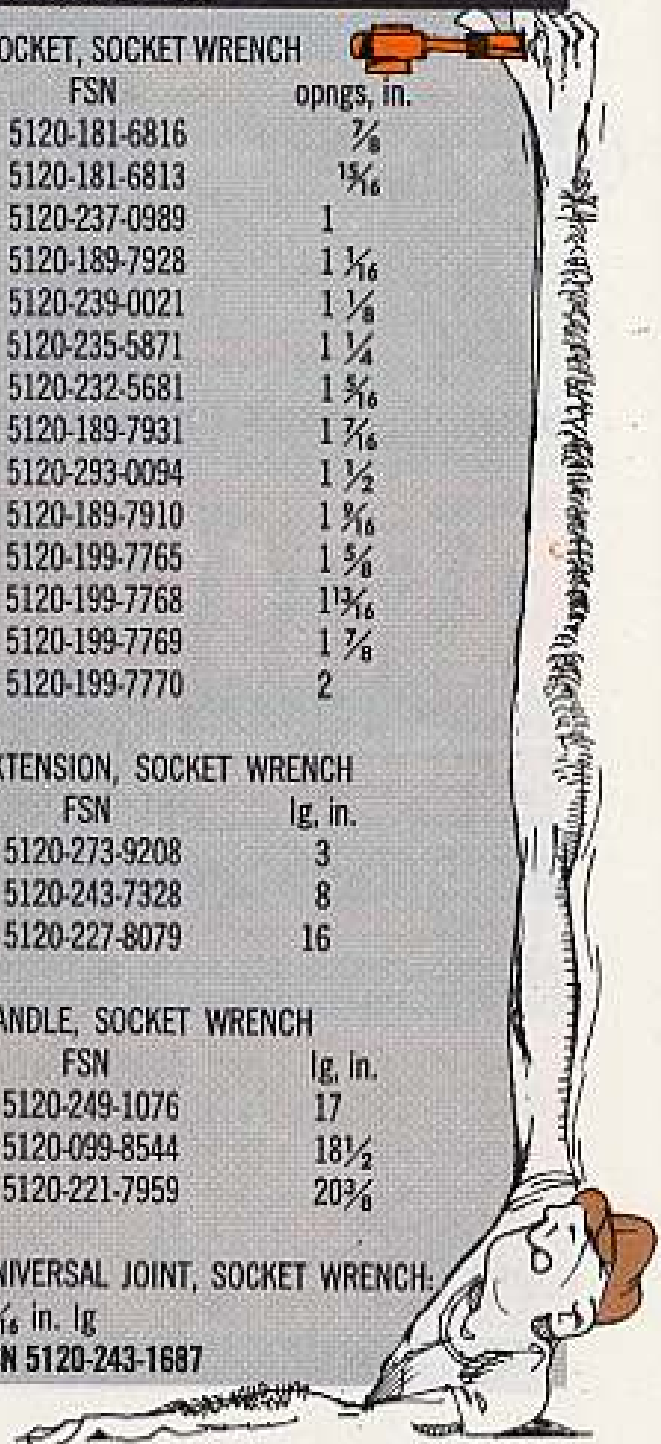
HANDLE, SOCKET WRENCH

FSN	lg, in.
5120-249-1076	17
5120-099-8544	$18\frac{1}{2}$
5120-221-7959	$20\frac{3}{8}$

UNIVERSAL JOINT, SOCKET WRENCH:

$4\frac{3}{16}$  in. lg

FSN 5120-243-1687





# 290M TRACTOR SLICK-UP ... COUPLER LUBE PICK-UP

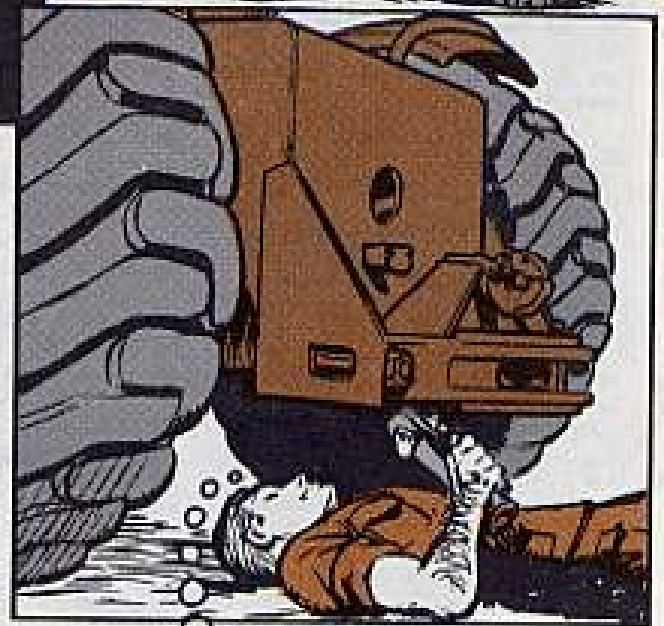
OUTTA  
SIGHT, MAN!

Out of sight, out of mind — that's the lube fitting on your 290M tractor.

Back in the little hole under the coupler support, it sorta gets neglected and left dry until that big ball joint just freezes up.

The cure is lube enough, often enough. Lube enough means until fresh grease runs out the cracks and drives out dirt. And often enough can be every 100 hours work like the LO says, or every 3rd day in heavy, gritty going.

Lower your scraper bowl to the ground to take off the strain while you shoot in the grease.

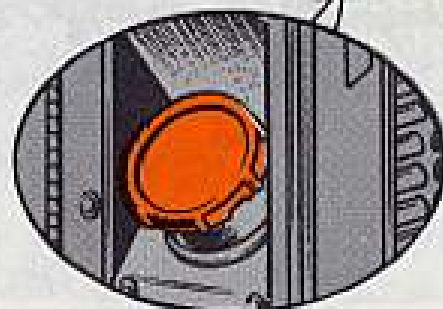
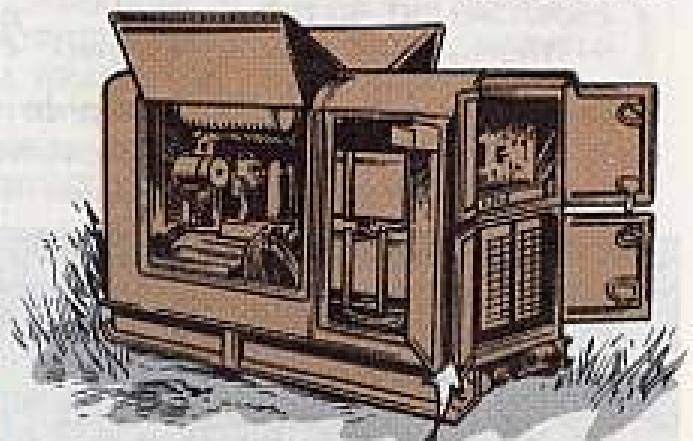


## NEW 45-KW FUEL TANK CAP FSN's

Stew no more over stock numbers for fuel-tank cap and strainer on your "Stew and Steve" 45-KW generator set, Model 26200, FSN 6115-557-8744. And forget other numbers you may have heard or seen, 'cause here's the latest word:

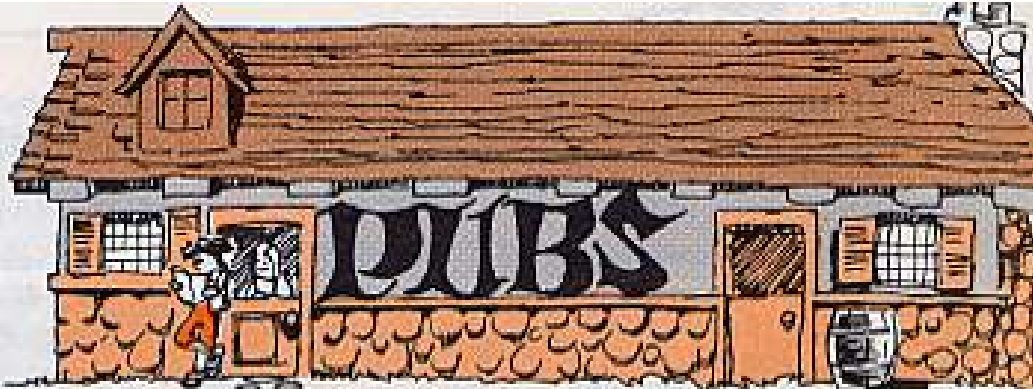
Cap-Strainer assembly, with chain, FSN 2910-708-8125.

Cap, Fuel Tank, w/chain, without strainer, FSN 2910-529-8580



So that oughta be any flavor you need.

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 (Jun 69), and Ch 5 (Apr 70), TM's, TB's, etc.; DA Pam 310-5 (Jul 70), and Ch 1 (Oct 70), SC's and SM's; DA Pam 310-7 (Jul 70), MWO's; and DA Pam 310-9 (May 69), COMSEC Pubs.



#### TECHNICAL MANUALS

TM 3-1040-263-12, Sep, Compressor Flammethrower 3½ CFM, AN-M4D.  
 TM 3-4240-219-14, Sep, Aircraft, ABC-M24 All Fixed and Rotor Wing.  
 TM 5-2410-206-20P, Oct, Tracked Tractor Cat D8.  
 TM 5-2410-214-12, C1, Oct, D7E Tractor.  
 TM 5-2420-219-20P, Oct, Tractor Ind DED MOD 100.  
 TM 5-3655-215-15, Sep, Gas Generating Equip.  
 TM 5-3805-240-20P, Sep, Ditching Machines.  
 TM 5-3820-233-12/2, Sep, Rock Drilling Equip.  
 TM 5-3820-238-20P, Sep, Earth Boring Equip.  
 TM 9-2350-233-20, C4, Sep, M728 Combat Engr Vehicle.  
 TM 10-3510-208-20P, Sep, Trlr Mid M532 Laundry Unit.  
 TM 10-3900-223-20P, Sep, Truck, Fork Lift RT.

TM 11-1520-228-20, Sep, OH-58A.  
 TM 11-5820-520-ESC, Sep, For Radio Sets AN/GRC-106 and AN/GRC-106A.  
 TM 11-6625-028-12, Sep, Test Set, Radio AN/ARM-5A.  
 TM 11-6625-1830-12, Sep, Test Set Groups, Radar OO-64(V)1/APS-94D, OO-94(V)2/APS-94D Operator, OV-1A-1B-1C.  
 TM 55-1510-204-10/4, Oct, OV-1.  
 TM 55-1510-209-20, Oct, U-21.  
 TM 55-1510-204-10/3, Oct, OV-1.  
 TM 55-1520-210-20, Nov, UH-1D.  
 TM 55-1520-217-20/2, Sep, CH-54.  
 TM 55-1520-228-10, Oct, OH-58.  
 TM 55-2840-231-20P, Oct, All Rotor Wing.

#### MODIFICATION WORK ORDERS

MWO 10-3610-215-30/1, Feb, Reproduction Set (Free Issue until 24 Apr 71).  
 MWO 55-1500-219-30/1, Oct, Installation of Provisions for Bleed Air Line Particle Separator UH-1D, B, C/M.

MWO 55-1520-221-30/34, Oct, AH-1G.  
 MWO 55-1520-221-40/3, Oct, AH-1G.  
 MWO 55-1520-221-40/4, Oct, AH-1G.

#### MISCELLANEOUS

LO 10-3930-623-12-1, Oct, Truck, Lift, Fork, G.E.D., 4,000 lb.  
 LO 10-3930-623-12-2, Oct, Fork Lift Truck, 4,000 lb.  
 LO 10-4930-206-12, Sep, Equip, Lubricating & Servicing.  
 LO 5-6115-375-12, Oct, 100 KW 60 Cycle Gen Sets.  
 SB 740-2530-98-105, Oct, 2530 Compressor, Recip.  
 SC 5180-91-CL-852, Sep, Tool Kit, Telephone Repair, TK-168/GT.  
 TB 750-951-4, Sep, EIR Digest Weapons Command (4th Qtr FY 70).  
 TB 750-2800-200-30/1, Oct, UH-1A-1B-1-C-1D, AH-1G, OV-1.

## Get Copies of PS

Get a note off to PS Magazine at Fort Knox, Ky. 40121 if you need any back issues. Here are the ones still available:

PS Magazines 186, 190, 192, 194, 195, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218.

## Urgent MWO's

Keeping your Urgent MWO records up to date can be a job if you can't latch on to the latest DA Pam 310-7. Also, some MWO's get lopped off the list, and others get added. Here's an up-to-the-minute list you can use:


MED 16 (Sep 58), C1 (Feb 59), Universal Clamp Bed Light  
 9-1450-500-30/8 (Jul 68), Boom Installation Kit  
 11-5810-221-45/13 (Sep 70) (C)  
 11-5810-245-35/5 (Sep 70) (C)  
 11-5810-247-45/1 (Oct 70) COMSEC Equip  
 HYL-3/TSEC  
 55-1510-209-20/8 (2 Jul 70), C1 (24 Jul 70), U-21  
 55-1510-209-40/2 (Jul 68), U-21A  
 55-1500-206-20/2 (13 Dec 68), C1 (20 Dec 68), UH-1B, UH-1C, UH-1D, UH-1H, UH-1M  
 55-1520-206-30/9 (Dec 69), OH-23D, OH-23E, OH-23G  
 55-1520-214-20/8 (Oct 68), OH-6A  
 55-1520-214-30/23 (Jun 68), C1 (Nov 68), OH-6A  
 55-1520-221-20/13 (Jun 70), C1 (Oct 70), AH-1G, TH-1G  
 55-1520-224-20/1 (Feb 70), OH-13E, OH-13G  
 55-1520-228-30/2 (Jan 70), OH-58A  
 55-1520-228-30/3 (Mar 70), OH-58A, C1 (Sep 70)  
 55-1520-228-30/4 (May 70), OH-58A  
 55-2840-231-30/1 (Aug 69), OH-6A, OH-58A





**JOE'S  
DOPE**

**ENGINE  
HEALTH  
HINTS**



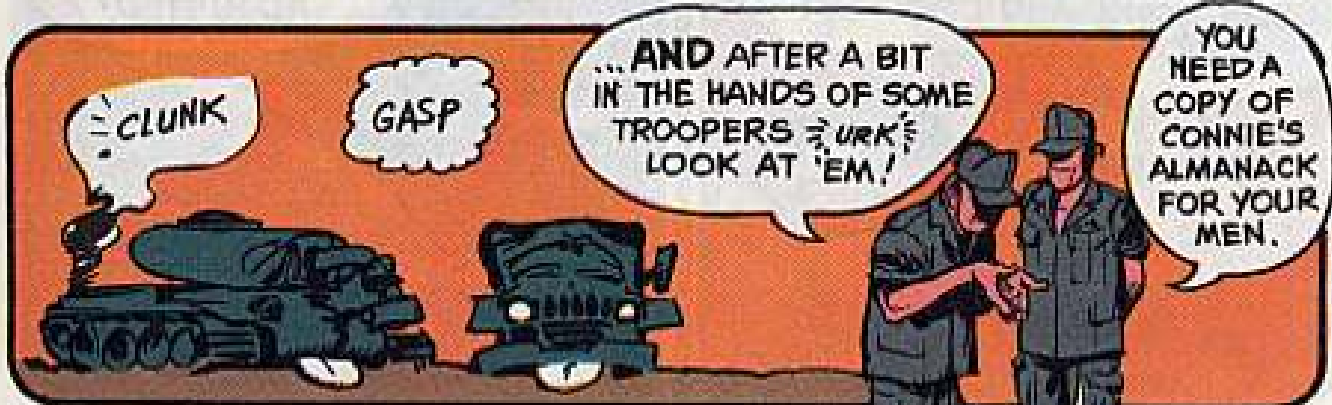
BEING A TRIED AND  
TRUE REMEDIE FOR COMMON ILLS THAT  
BESET TRUCKS, TANKS, SELF-PROPELLED  
ARTILLERY, TRACTORS, GENERATORS  
AND SUCH.



*Ye olde OPERATOR & MECHANIC'S Almanack*



CONNIE RODD



# OVERHEATING

THERE ARE THREE COMMON CAUSES OF ENGINE FAILURE. THIS IS ONE.

HERE'S WHAT THE OPERATOR AND MECHANIC CAN DO TO PREVENT OVERHEATING TROUBLES

## OPERATOR

WARM UP YOUR ENGINE, BEFORE YOU PUT IT UNDER LOAD!

KNOW JUST HOW HOT YOUR ENGINE SHOULD GET... AND KEEP IT RIGHT BY FAST IDLING!

KNOW ITS TM... IT'LL GIVE YOU THE **RIGHT** RANGE SELECTIONS AND COOL-OFF PERIOD.



## MECHANIC

IF THE ENGINE'S RUNNING TOO HOT, COOL OR SLOW, FIND OUT WHY AND CORRECT IT.

MOST LIKELY IT'S THE COOLING SYSTEM WHEN YOU'VE GOT AN OVERHEATED ENGINE -- REPLACE THERMOSTATS... CHECK RADIATOR CAPS 'N' SPRINGS... FLUSH COOLING SYSTEM... REPLACE FAN BELTS OR ADJUST THEM!



KEEP THOSE VEHICLE BRAKES ADJUSTED!





## OPERATOR

CHECK THE COOLANT LEVEL\* OFTEN... AND ON TRACTORS (WHICH RUN HOTTER) BE SURE THE PRESSURE CAP SPRING IS WORKING!



\*TB 750-651 (NOV '68) TELLS YOU HOW TO CARE FOR YOUR COOLING SYSTEM.

KEEP TRACKS ADJUSTED TO CUT STRAIN ON THE ENGINE.



GOING DOWN HILL? USE YOUR BRAKES AND DOWN-SHIFT TO CONTROL THE ENGINE'S RPM... AND WATCH YOUR TACH SO'S YOU DON'T OVER-REV!



## MECHANIC

BLEED THE COOLING SYSTEM IF YOU THINK THERE'S AIR IN IT!



ADJUST OR REPLACE COOLING FAN DRIVE BELTS. REPLACE MULTIPLE BELTS IN SETS.



MAKE SURE SURGE TANK RELIEF VALVE AND CROSS-OVER TUBES ARE NOT PLUGGED!

...AND POST THIS PIN-UP









# LUBE NOT RIGHT

THE SECOND MOST COMMON CAUSE OF ENGINE TROUBLE IS FAULTY LUBRICATION.



## OPERATOR

KEEP YOUR CRANKCASE OIL AT THE PROPER LEVEL.



WATCH FOR LOW OIL PRESSURE READINGS AND REPORT THEM TO YOUR MECHANIC!



MAKE SURE YOUR OIL IS RIGHT FOR THE LOWEST TEMPERATURES YOU'LL ENCOUNTER.



## MECHANIC

IF LOW PRESSURE READINGS ARE REPORTED—CHECK FOR PROPER-WEIGHT LUBRICANT—COULD BE SUFFERING FUEL DILUTION.



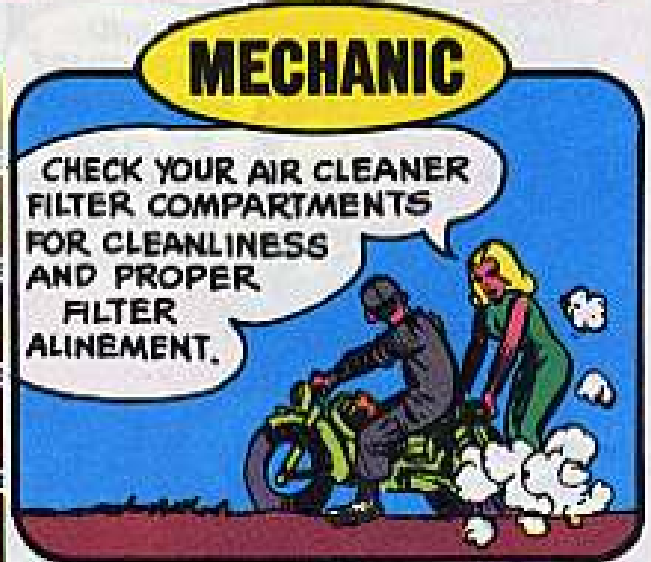
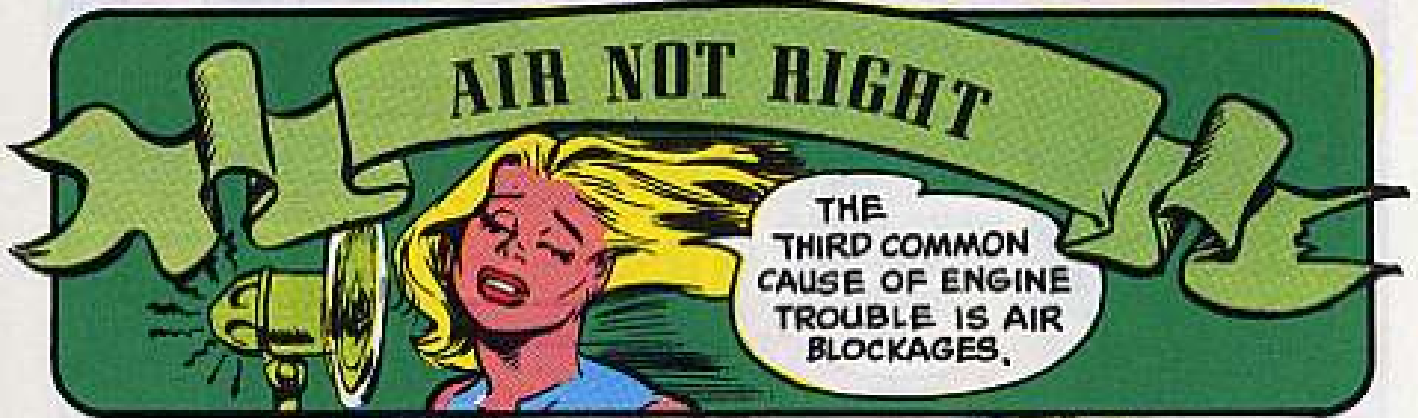
ANYTIME LUBE SYSTEM GETS CLOGGED WITH SLUDGE, GET IT OUT! DRAIN AND REPLACE OIL, AND NEW FILTERS AS NEEDED!



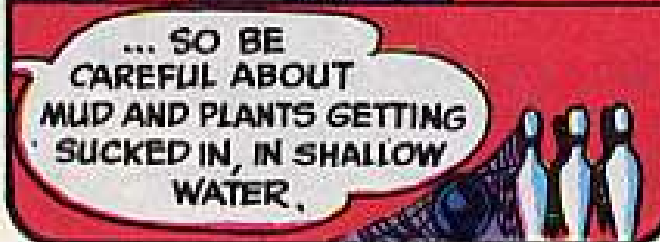
AND, I'M NOT JUST REFERRING TO VEHICLES... THIS APPLIES TO ALL ENGINE POWERED EQUIPMENT.







# OPERATOR



# MECHANIC



**AIR**  
**LUBES**  
**OVERHEATING**





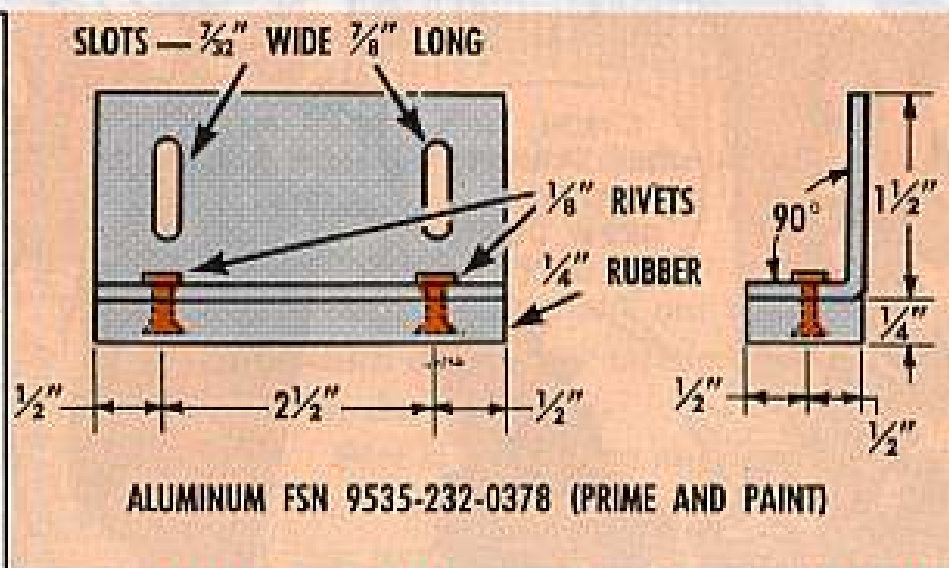
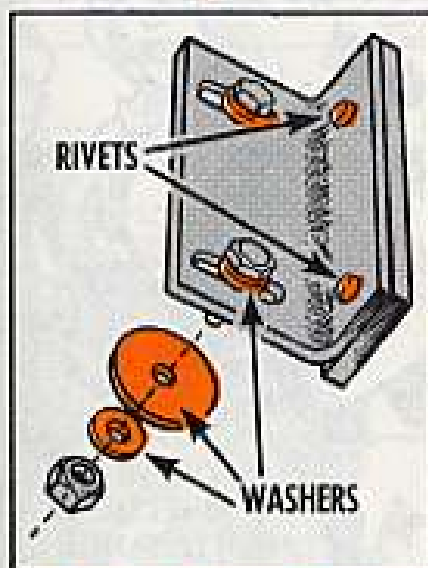
## DOOR STOPPER

*Dear Windy,*

When the main landing gear doors on our Seminole (U-8) are closed the rear ends seat against the rear edge of the nacelle.

During flight this metal-to-metal contact chafes the bottom of the engine nacelle, causing a lot of wear and extra sheet metal work. The door hinge also takes a beating.

To stop door chattering and save some moola we came up with this little door stop which is easy to make.



Put the door stops (one per wheel well) on the U-channels at the rear end of the landing gear wells so that the rubber bumper strip on the stop contacts the landing gear doors equally when the doors are closed.

Drill 0.187-in holes and fasten the door stops to the U-channels using 3/16-in diameter bolts, washers and nuts.

Make a vertical adjustment of the door stops to give slight pressure of the doors against the rubber strip when the doors are closed . . . works like a charm.

**Hardell L. Shipp**  
Ft. Eustis, Va.

*(Ed Note—Good show! Your door stop is similar to one published in TB 750-991-2 (Apr 69). Either one will work just fine.)*



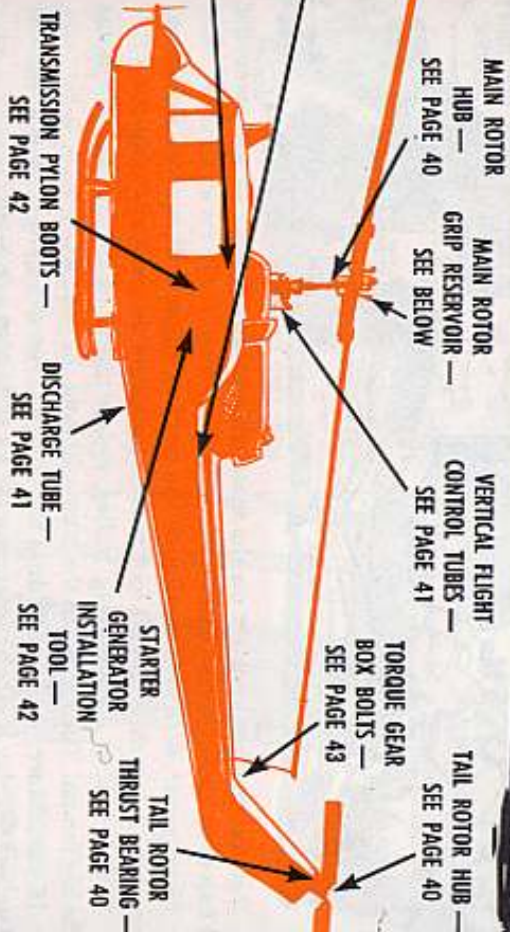
# NO SHORTCUTS, PLEASE!

HOLY ROTATING ROTOR BLADES, YA CAN'T TAKE PM SHORTCUTS, OR YOUR WHOLE UNIT WILL BE UP TO THEIR ASTEROIDS IN EXTRA MAINTENANCE!

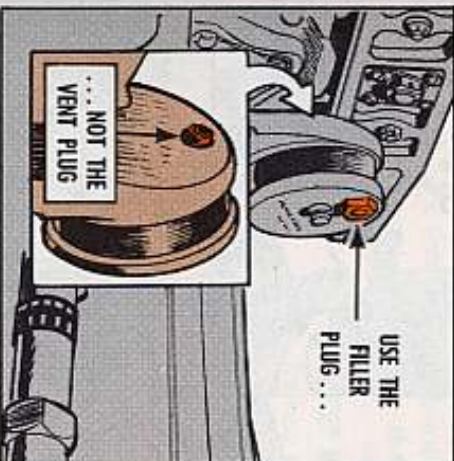
C'MON, JOE! YA WANT THAT COOL BREW, DON'T YA??

SHORTCUTS IN SCHEDULED MAINTENANCE CAN CAUSE UNSCHEDULED MAINTENANCE!

- OIL COOLER FAN — SEE PAGE 43
- SHORT SHAFT GREASE REMOVAL TOOL — SEE PAGE 42



Take the main rotor blade grip reservoir, for example. The place to add oil is thru the filler



hole, just like the lube chart in the organizational maintenance pub shows. Would you believe some types don't

take the time to cut the safety, remove the filler plug, add oil and re-safety the plug?

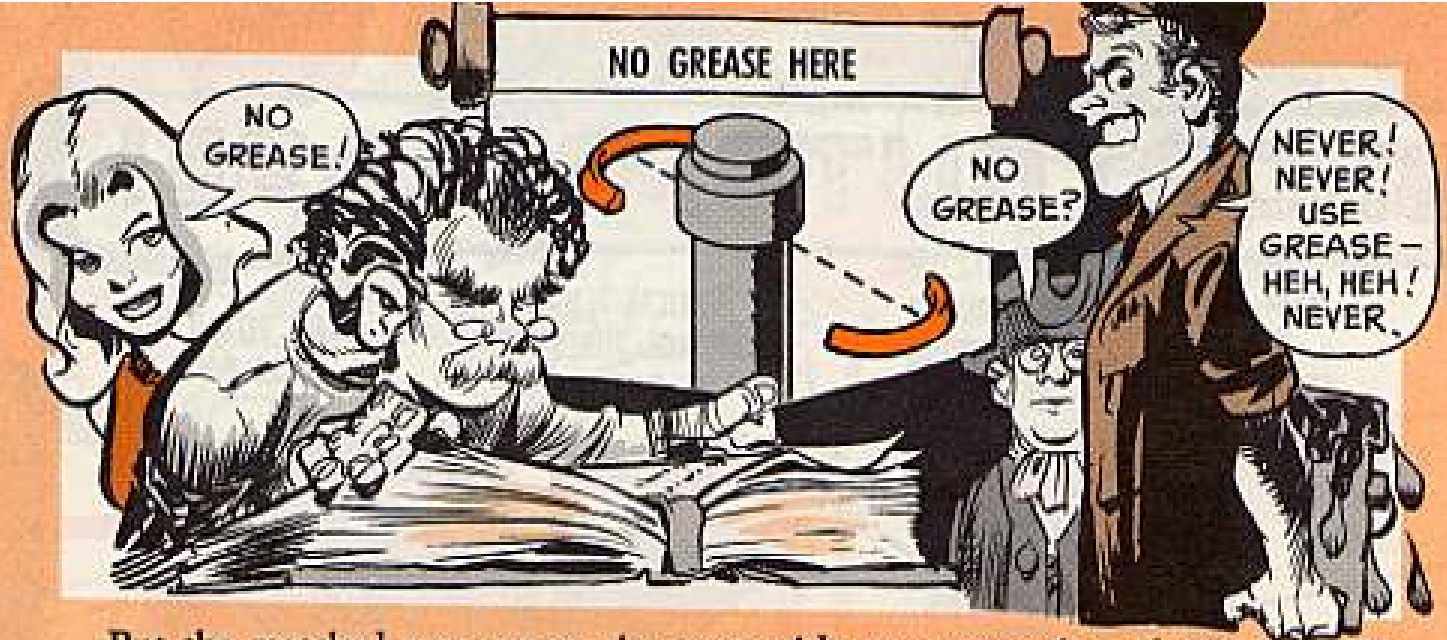
Instead, they take out the vent plug which doesn't get safetied, add oil and put the plug back.

Sure it works. But an over-torque on the vent plug will strip it out. When that happens the whole main rotor hub has to come off the bird to replace the plate that forms the inner oil cover of the reservoir. That means 40 hours or so of extra work for DS and the loss of the bird to your unit.

Should the filler plug get stripped you can replace the outer oil cover of the reservoir all by yourself in 10 minutes flat.

Never touch the vent plug. Always fill the reservoir thru the filler hole.





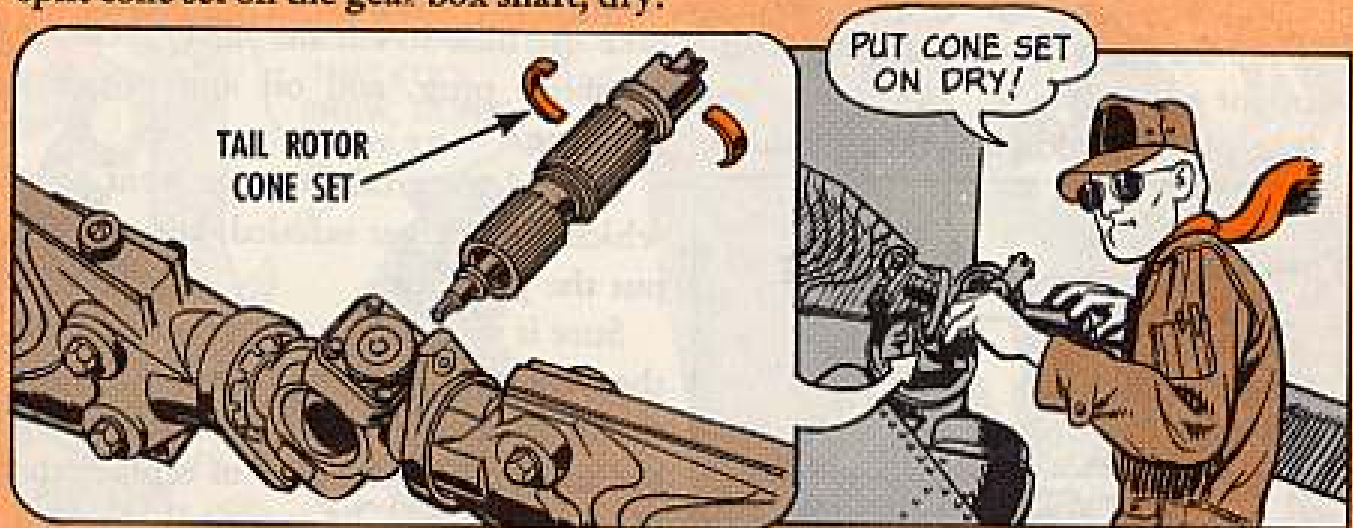
Put the matched cone set on the mast without any coating of grease on the 2 halves to "hold 'em in place."

How come? Well, the motion of the head in flight will squeeze the grease out. You'll lose the 520-780 foot-pounds torque on the mast retaining nut.

'Tain't exactly a comforting feeling to lose torque on the "J" nut that holds the big fan on! The groove in the mast will hold the cone set.

If, per chance, you should drop the cone set, you can't tell if there's internal damage. So, play it safe by scrapping the set and using a new one.

The same deal goes for the tail rotor cone set, for the same reasons. Put the split cone set on the gear box shaft, dry.



**HAND PRESSURE ONLY**

When you put the tail rotor back on your bird, easy does it with the new one-piece thrust bearing, P/N 204-011-769-3.

Some mechs use heavy pressure on the outer race. Then the inner race stays put while the outer race goes forward and the ball bearings fly all over the place!!



Save the bearing by using hand pressure on the inner race to seat the bearing on the pitch change rod. Then add the washer and nut.



COAT HANGER, TYPE A-1

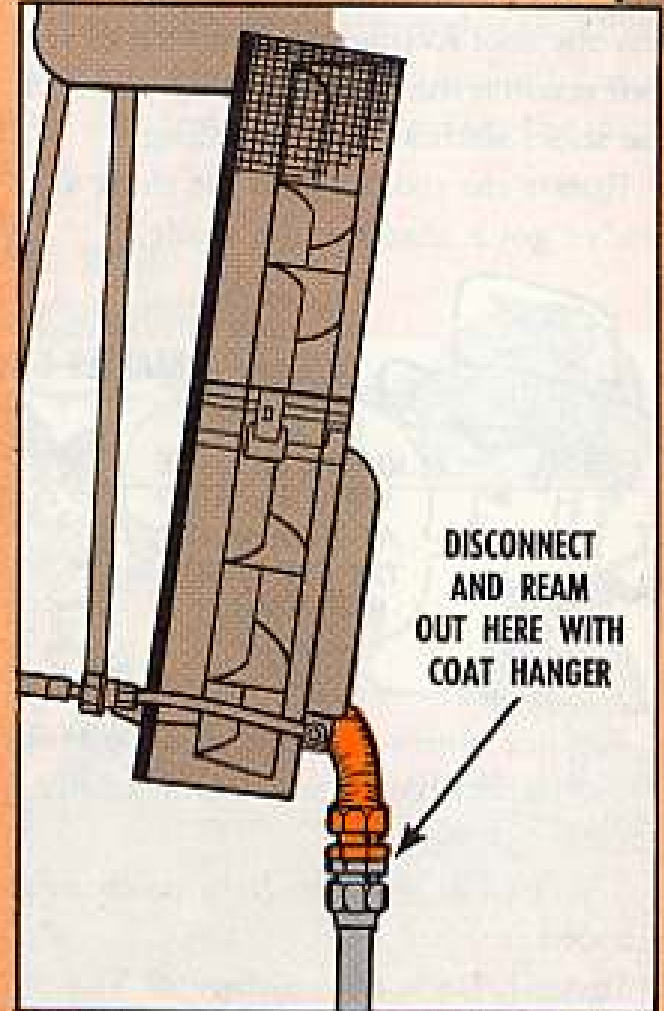
By-the-book maintenance, backed up by OJT knowhow, will keep your baby on the available list.

Take the self-purging sand and dust separator that protects the T-53 engine inlet. It does a sweet job of ejecting dirt overboard.

The discharge tube may block up, tho, if you're operating in a really dusty area. It's a good idea to put your hand under the discharge tube when the engine is running to feel for the flow of air.

If you don't feel air which carries the dirt overboard, try this for size:

Latch onto a metal coat hanger. Disconnect the separator and insert the wire into the tube from the top, down. That'll unplug any jam-up in the works.



### KEEP WATER OUT

Pulling maintenance in the wet season, like in the dry season, calls for a little extra PM.

Focus on the vertical flight control tubes during a Periodic, for one.

Water can enter those tubes where the rod-end bearing threads into the upper end of the tube. Water leads to corrosion.

To head off this sort of revoltin' development make sure the inside of the tube is dry and free of corrosion. Then, use sealing compound, MIL-S-8802, FSN 8030-723-2746, on the upper rod threads during your inspection and when you make a rod adjustment.





## MAKE GREASE REMOVAL TOOL

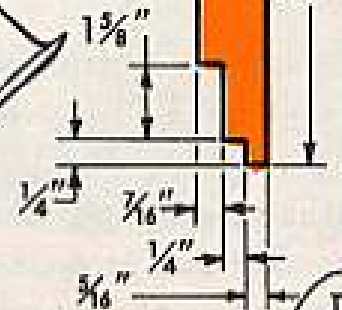
While you go about your maintenance chores, here's a dandy little tool you can make for taking off the excess grease when packing the short shaft.

To get the 0.020-0.030-in wall of grease above the top of the splines, insert the tool so that the first step of the tool rests on the smooth wall portion of the short shaft's inner coupling.

Rotate the tool around the shaft and you've got it made in the shade.



MAKE FROM  
0.054-IN  
ALUMINUM OR  
EQUIVALENT

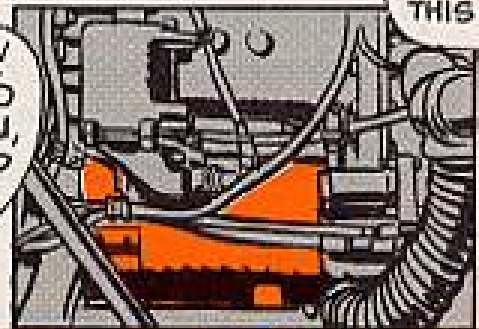


I THINK  
NOT—  
TRY MAKING  
THIS ONE!

## STARTER-GENERATOR TOOL

IF YOU'RE  
HAVING TROUBLE  
WITH THE STUD  
AT HIGH NOON,  
TRY FSN 5120-  
878-6153.

GREAT!  
BUT WHO  
ARE YOU,  
MASKED  
MAN?



Anyone who's been around the Huey any amount of time will clue you it's about impossible to put on the starter-generator mounting nut at the 12 o'clock position.

The stud is so difficult to reach some mechs even leave it off. Tain't recommended.

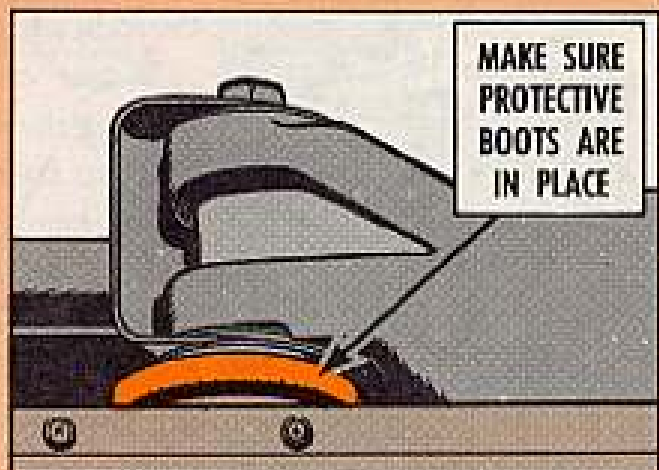
Instead, latch onto a copy of TM 55-2840-229-20P (Jun 70) on T-53 repair parts and tools. You're authorized special box wrench, LTCT T3938, FSN 5120-878-6153, that'll fit those close quarters.

## KEEP YOUR BOOTS ON

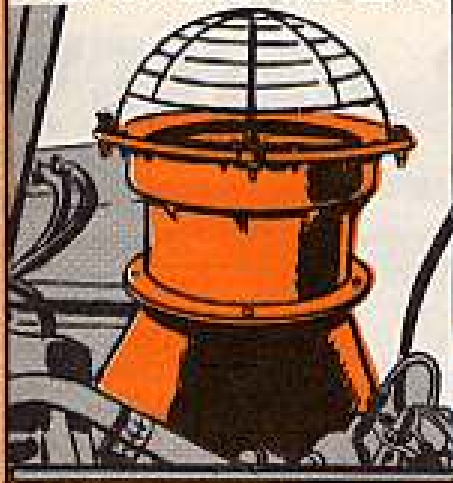
When you inspect your baby be sure you button 'er up again.

Especially the transmission pylon rubber mounts.

When you lift the boot covers to eye the mounts for deterioration, put the covers back. 'Course, if that synthetic-base transmission oil gets on the mounts, goodbye mounts — eats 'em something fierce!



### KEEP OIL COOLER FAN CLEAN



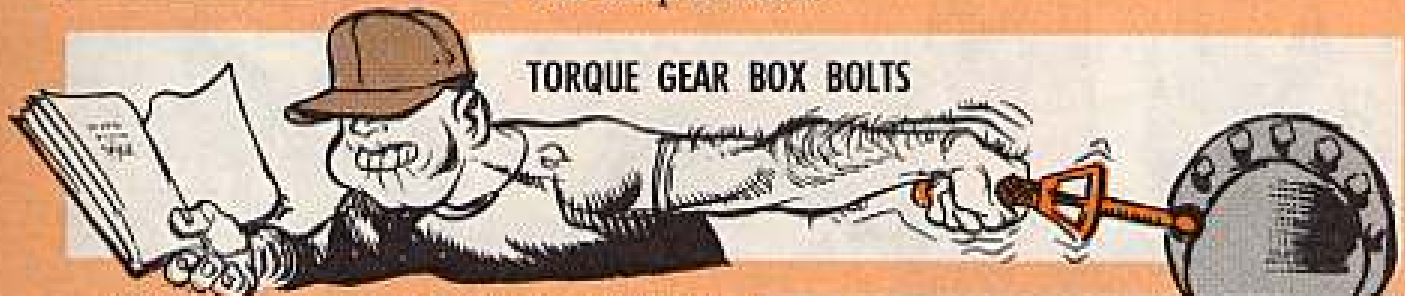
### DIRTY HIGH FREQ?

Ever spend days and days looking for the source of an airframe high frequency vibration? Sure you have.

A short-timer can clue you on the cause of most of them—the oil cooler fan.

Dirt hits the fan and settles to one side, throwing the blades out of balance. With the high fan RPM it's easy to see how you can get an airframe high freq.

You can't stop dirt from hitting the fan, but you can keep it clean.



### TORQUE GEAR BOX BOLTS

Anytime you take a part off your bird and put it back, eye Table 2-5 in TM 55-1500-204-25/1 (Apr 70) on general maintenance. It'll give you the torque to use on most of the nuts and bolts for your baby.

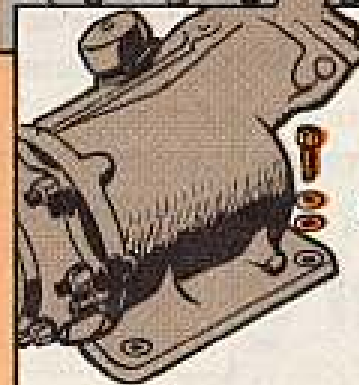
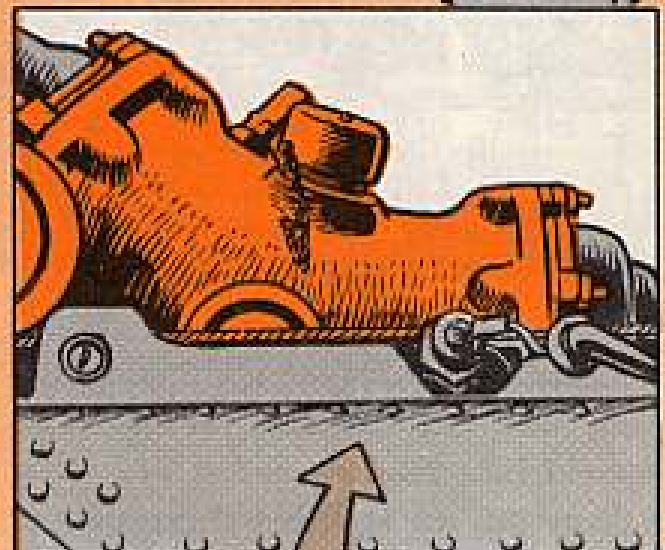
Any special torque values are right in the bird pub.

Take the intermediate (42-degree) gear box, for example.

The 4 gear box retaining bolts that go into the nut plate to hold the whole shebang in place have to be torqued to 50-70 inch-pounds and safetied. 'Course, a steel washer goes under the head of each bolt and an aluminum washer between the steel washer and flange, in the first place.

Any loss of bolt torque can give you a loose gear box, elongation of the mounting flange holes—and maybe an autorotation in the bargain.

So, stick with the torque limits and the maximum allowable wear limits for the holes in the flange.



CHECK THAT PUB FOR SPECIAL TORQUE VALUES, LIKE THE 50-70 IN-LBS ON THE 42° GEAR BOX RETAINING BOLTS

Yessir-e-e-e, run your fingers thru the white pages of the pubs when you pull maintenance. They're revised all the time just to keep you "in the know."



YOU BETTER SIT DOWN, PETER PILOT... THIS ISN'T GOING TO BE EASY. YOUR BIRD'S GOT A BAD CASE OF DOWNTIMEITUS CAUSED BY PLUG FUZZ!

# KIOWA CREW CHIEFS... BE A CHIP DETECTOR DOCTOR

C-A-R-E-F-U-L HANDLING IS THE ONLY SOLUTION TO CHIP DETECTOR PLUG CARE!



GEE... I WONDER WHERE SHE PICKED IT UP?

IT LOOKS LIKE LOOSE WIRING TO ME... WHATTAYA THINK, BEN?

I THINK YOU'RE HOLDING THE X-RAY UPSIDE DOWN!

WORST CASE OF ROUGH HANDLING I'VE EVER SEEN— LOOKS LIKE SOMEONE USED IT TO CRACK WALNUTS!

YUP! I SEE WALNUT MARKS

Every electric magnetic chip detector plug on your OH-58A needs TLC, Knucklebusters. Dot on 'em and they'll respond to the treatment with Code 6 service. Otherwise, your bird will have a terminal case of downtimeitus.

It's the itty-bitty gremlins — fuzz on plugs, broken or loose wires and terminals, rough handling — that make chip detector doctoring nitty-gritty stuff.

For instance, a Kiowa crew spent 600 hours diagnosing the symptoms causing the T/R CHIP DET caution light to blink ala haywire.

Naturally the blinking light was reason enough for Peter Pilot to set his bird down PDQ. He thought there were foreign particles in the tail-rotor-gear box.

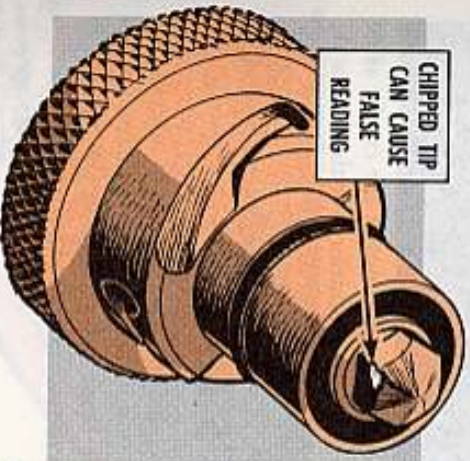
The crew chief cleaned the plug. Run-up... take off... another blinking light... set down. This time the plug was replaced. Another run-up,



PLUG NEEDS CAREFUL, CLOSE EXAMINATION

takeoff. No sweat... complete recovery. Final diagnosis: Mishandled plug. Somewhere, some time the magnetic chip detector plug had been dropped, maybe stepped on, and the point nicked.

CHIPPED TIP CAN CAUSE FALSE READING



Careful reading of Chaps 5, 7, and 12 of your PM doctor's manual, TM 55-1520-228-20 (Oct 70) is prescribed. Use correct tools for surgery, i.e., to remove and replace plugs.

**Rx**  
PLUG PM



BACK OFF LEAD WIRE NUT

Be sure to back off the nut on electrical lead before pressing the detector in, turning counterclockwise, removing. This'll save breaking wires, terminals.

Inspect plugs for stripped or damaged threads, bayonet pins. Clean T/R plugs with P-D 680; transmission plugs with lint-free cloth.

Eyeball terminals c-a-r-e-f-u-l-l-y. Make sure they're not bent or grounded out.

Any time you're examining your bird in a chip detector plug area and accidentally bump one, or drop a tool on it, check it out from A to Z before sign-off on the worksheet.



# DATE — DONE AT — DATA

Dear Half-Mast,

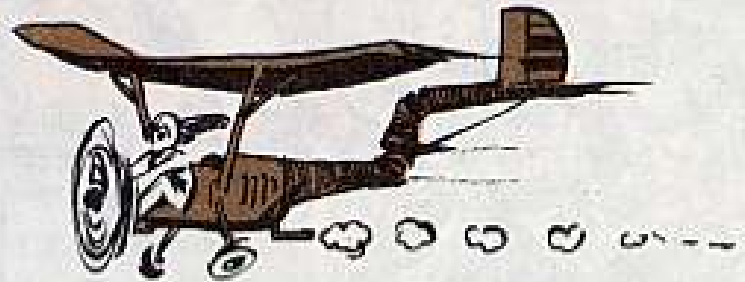
For aircraft historical entries on DA 2408-15, para 4-14c of TM 38-750 says enter date, historical data and name and location of activity that makes the entry. Fig. 4-25 has these entries in 1-3-2 order. What's right?  
F. W. T., DAC

U-80	59-6374
15 APR 69 - ENTERED BY HQ AVN CMD, FT KNOX, KY.	
A/C FLOWN THRU CONTAMINATED AREA VIC WHITE SANDS, NM. 11 APR 69. DECONTAMINATED BY 7A DECON TEAM 12 APR 69.	
DA FORM 2408-15, 1 JAN 64	

Dear Mr. F. W. T.,

With 2 "right" answers, you could take your pick. But the 1-3-2 answer in Fig 4-25 of the TM is preferred.

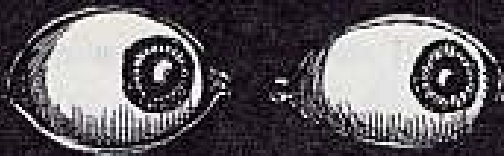
*Half-Mast*



## SCRAP 'EM LOCALLY

Before you air types pack chopper rotor blades into a container for shipment to overhaul, eyeball the repair limits in all bird organizational maintenance pubs. What with shipping co\$t\$, it's cheaper if you scrap a blade with a shot-up spar (one that is obviously junk) than for the manufacturer or depot to dump it!

## A 5X POWER LOOK

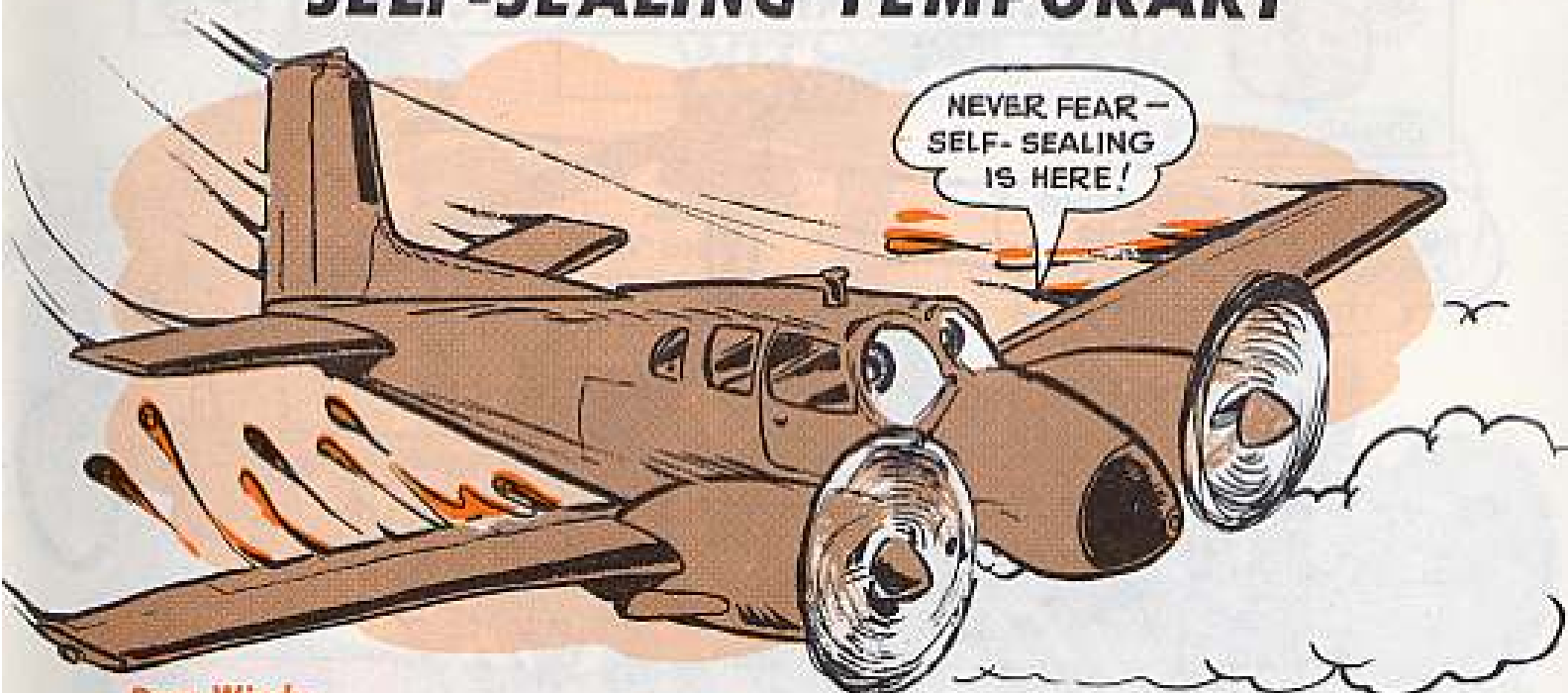


When you Mohawk (OV-1) mechs eyeball the engine mount for cracks after an engine removal, the magnifier in your aircraft organizational maintenance A, B, and C tool sets will do the trick. Dye penetrant inspect any suspect area, tho.

## A SNAKE'S LO!

Unusual operating conditions call for stepped up lube jobs. Like maybe you AH-1G jocks have monsoon-type missions or dust and sand sorties. That Snake's tail-rotor grip assembly gets extra abuse—needs extra TLC. So, GAP purge it every PMI 'stead of every 100 hours and save your tail-rotor bearings.

# SELF-SEALING TEMPORARY



Dear Windy,

One of the self-sealing tanks on our Ute (U-21A) was punctured, but after a few minutes it worked as advertised and the leak stopped.

Does the tank now need repair, or do we continue to use it as long as it's not leaking?

SSG R. H.

Dear Sergeant R. H.,

The tank has to be repaired as soon as possible because the self-sealing feature is a temporary fix.

The MAC in TM 55-1510-209-20 (Mar 69) says field maintenance can repair it.

The repair info's in para 5A-186 of TM 55-1510-209-35 (Mar 69) backed up by para 3-254 of TM 55-1500-204-25/1 (Apr 70) on general maintenance info.

*Windy*



## MORE FREQUENT LOOK

Sure, you Huey (UH-1C/M) mechs dye penetrant check the stabilizer bar tubes for cracks every Periodic inspection. Play it safe by eyeballing 'em during the Daily and Intermediate, also. Dye check any suspect tubes.



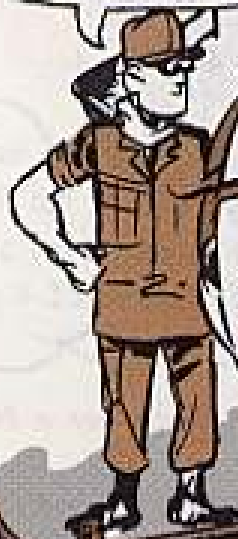




COMMUNICATIONS

# AIRCRAFT ANTENNA TIPS

INTERESTED IN PROTECTING THE ANTENNAS ON YOUR AIRCRAFT? THEN HEED THESE TIPS!



The FM antenna is not a handrest. It breaks with a good grab. Besides, it may be hot . . . and grab you back.

The sensing, or UHF, antenna under the aircraft has a fragile connector and can't take kicks, bangs or snags.

The homing antenna is not a footrest, nor is it a handhold for a tow job. You just might end up carrying it home to the repair shop.

IF YA CAN'T GET A NEW FILTER, AT LEAST TURN THE OLD ONE AROUND.

## REVERSE FILTER



Like, turn the filter around . . . so's the new foam rubber insert is closest to the blower frame. That keeps FOD from slipping through the filter or the crack next to it, where it would jam the blower motor and cause the set to over-heat.

If sand and grit are getting to the blower motor of your AN/ARC-102 radio set's transmitter, and you don't have a new filter you may need a turn-around.

What's more, the filter is secure enough so that it cannot slide to one side . . . and that helps keep out crud.

Remember: There's no substitute for a new, clean filter. Use a new one when you can get it . . . and need it.

# THE OLD, THE NEW WITH PM, TOO



YOUR KINDLIN'S WET... AND LOOK AT TH' SHAPE OF THAT BLANKET!

I THINK WE DID IT AGAIN, SEYMOUR!

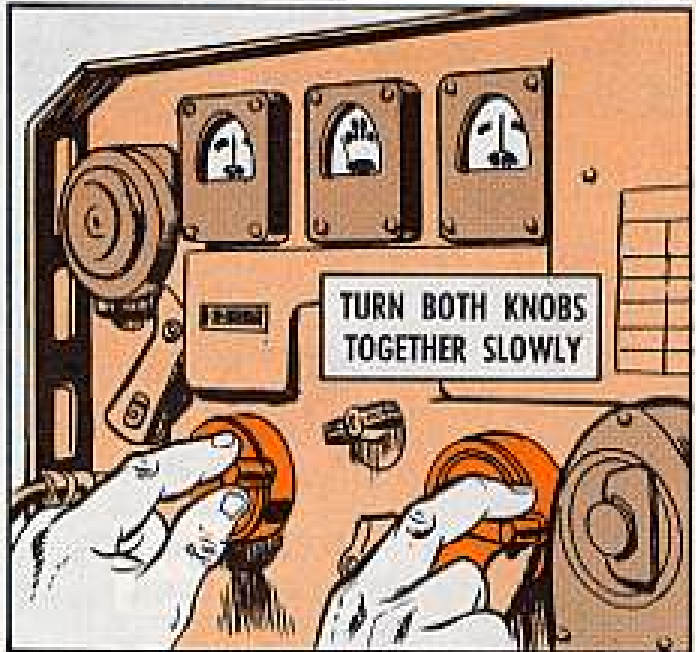
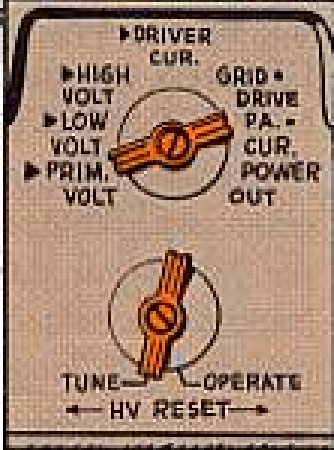
Whether you're movin' along with the AN/GRC-106 radio set or one of the new A models, you've got mighty dependable communications.

In handling your AN/GRC-106( ) radio set, make sure you don't put the HV RESET switch on TUNE until you have primary voltage. A cold set can be jolted with high voltage and go out of commission with a cracked neutralizing capacitor.

If you're adjusting the ANTENNA TUNE and ANTENNA LOAD of the AM-3349 amplifier and can't get the meter indicators to center at the same time, try this:

Turn both knobs together. If the meter needles are left of center, turn the knobs right... slow... until the needles center. If the needles are to the right, turn the knobs left.

Any time you change frequencies on the RT-662 receiver-transmitter, you'll need to center the LOAD and TUNE meter pointers.





And if you relocate your set, check the **LOAD** and **TUNE** meters and re-center the pointers, if necessary. This'll make that tuning capacitor last longer.

Some real togetherness with your radio set can head off a blower motor burnout.

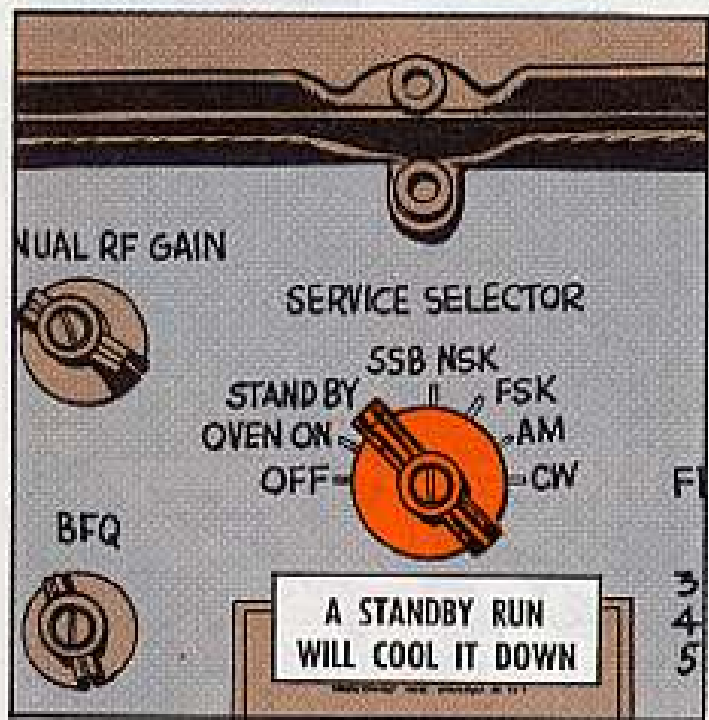


F'instance, what you do — after you turn on the primary power switch of the AM-3349 — is to put your hand over the blower to make sure the blower is working. If it's not, waste no time. Shut your set off. Right now. A stuck blower motor can zap your set fast.



Incidentally once you turn on the primary power, *leave it on*. Remember: turning the RT-662 **SERVICE SELECTOR** switch to **OFF**, turns off the entire AN/GRC-106. So unless you plan to remove one of the major components, leave the **SERVICE SELECTOR** switch at **STANDBY**.

Always check to see if the right antenna (whip or doublet) is connected to the RF output. And it's a fine idea to inspect the antenna connections for broken leads, loose connector, etc.



Before you close down your radio set every day, set the **SERVICE SELECTOR** of the RT-662 receiver-transmitter to **STANDBY** and let it run for a couple of minutes.

This'll draw off the heat in the final amplifier and save the transistors.

The AN/GRC-142 radio teletypewriter set, of which the Angry-106( ) is a component, requires a single-phase 120-volt input when it's connected to an AC source.

In fact, single phase should be used for connections to any source.

The 3rd wire in the AC power cable (CX-10951/G) is a common ground which you should connect to the frame ground of the generator.

If you're using generator PU-619 with the -142, for example, the 4-position switch should be placed in the 120 1 PH position. The AC power cable from the AN/GRC-142 (or AN/GRC-122) should be connected like this:

The black lead, 115VAC, attaches to L2 or L3 of the generator. The white lead, Return, goes with L2 or L3. The green lead, AC common, connects with the frame ground of the generator.

If the connection isn't made to a single-phase source, there can be damage to components of the -142 or -122.

It's mighty easy to break the primary power switch on the AM-3349 amplifier. If you give it any hard turns, the switch snaps.

So, better recognize its delicate constitution and render it all possible cooperation.

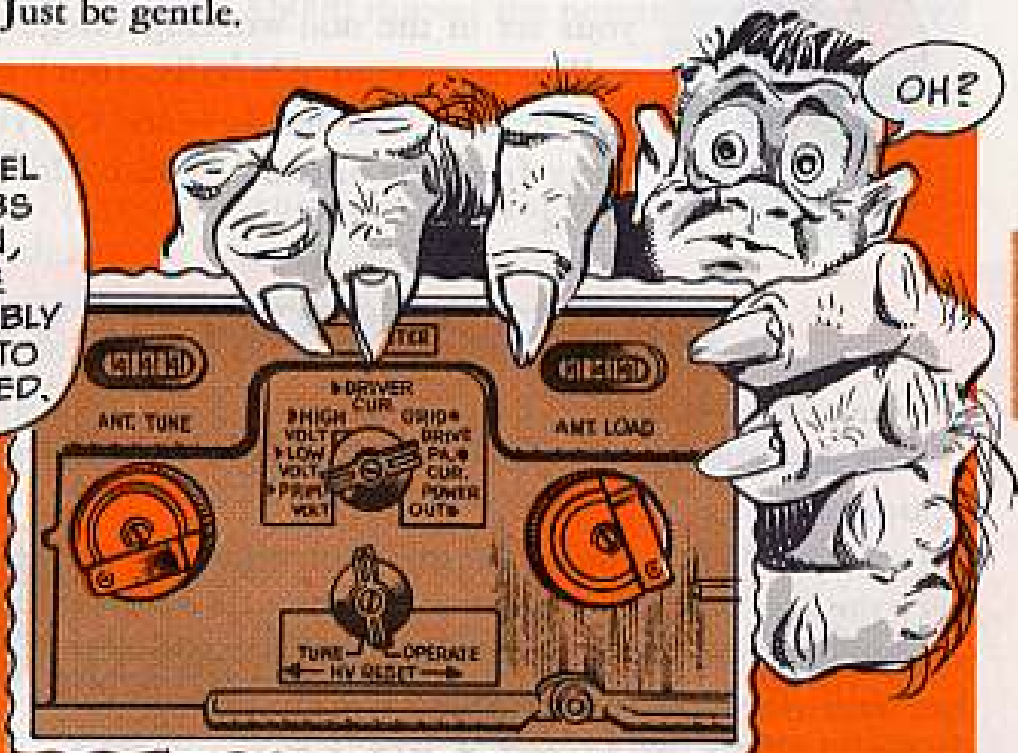
That easy touch'll work wonders at keepin' your AN/GRC-106( ) alive and hummin'.

It's the same situation with the ANTENNA TUNE and ANTENNA LOAD knobs on the AM-3349, whether it's used with the -106( ) or with the AN/GRC-122 or AN/GRC-142. Just be gentle.



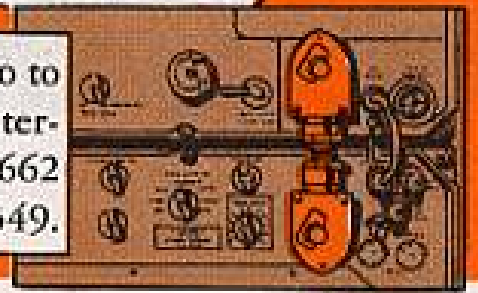
POP!

IF THESE CONTROL PANEL TUNING KNOBS ARE BROKEN, THE ENTIRE KNOB ASSEMBLY WILL HAVE TO BE REPLACED.



OH?

And a little gentleness applies also to the CX-10099 special purpose interconnecting cable between the RT-662 receiver-transmitter and the AM-3349.





In handling this cable, you could break the flexible portion and a short could be the result.

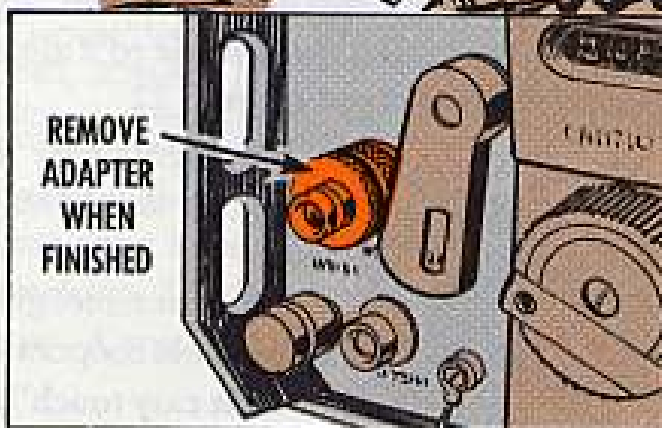
Here's how to do it:

Screw in both connectors at the same time, that way you make the pressure on both connectors even.

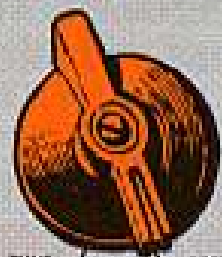
If ever you leave the UG-201A/U adapter on the 50-ohm line after you're through with it, man, you're nowhere.

The adapter connector holds the antenna switch open, which knocks the whip antenna out of operation.

The solution to this is not to leave the adapter on the 50-ohm line when you're finished.



#### HV RESET SWITCH



Better make sure the HV RESET switch is on OPERATE before you turn off the set. If you leave the switch on TUNE, the high-voltage reset relay won't energize—and that puts your set in the non-working category.

Whenever your AN/GRC-106() is operating, it's a good idea to keep your hands—and everything else about you—away from the antenna. You could come up with some RF burns.

## NIGHT VISION SAVERS

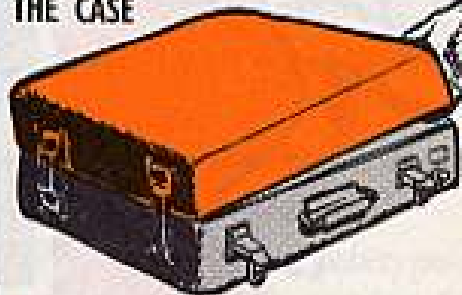
Every little bit helps.

And that goes for PM possibilities on night vision equipment.

**One bit:** When you're storing your night sight, keep the case cracked open for a few minutes before you snap it shut. Helps cut moisture build up on the lens and electrical connectors.

**Two bits:** If your sight or case does get moist, don't dry it in the sun or in a hot bunker. Pick a shaded area and let it dry natural. Sunlight hurts; bunkers are moist hot.

HOLD ONE — BEFORE YOU SNAP THE CASE



TIDBIT FOR MIDNIGHT COWBOYS — TREAT YOUR SIGHTS LIKE THE FINE OPTICS THEY ARE.



# CAUTION: MODULE HANDS OFF!

Paint it in big red letters: HANDS OFF!  
Paint it on the forehead of any goof-off you spot messing with a module.  
Like a drunk behind the wheel, you best serve your buddies when you get him off the road.

Cases in point: The A1000 and A6000 module boards in AN/VRC-12 series radio sets.

Jokers by the dozen remove the covers of those dudes . . . and foul 'em up.

Chief targets are the A1400 and A1500 capacitor tuning slugs in the A1000 assembly. Fiddling with the tuning slugs throws your equipment off frequency.

Messing with the tuning slugs in the A6000 throws the power amplifier driver and grid voltage off.

And you've got a job for support . . . which should have been the only people adjusting the slugs in the first place.

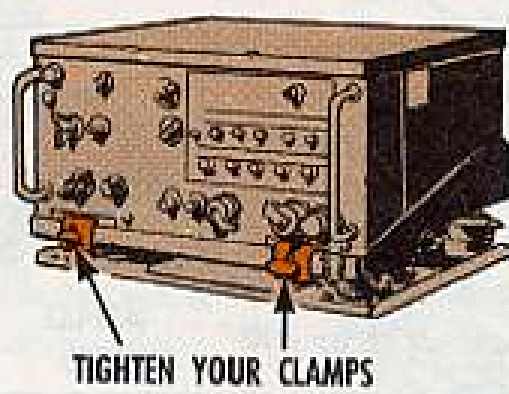
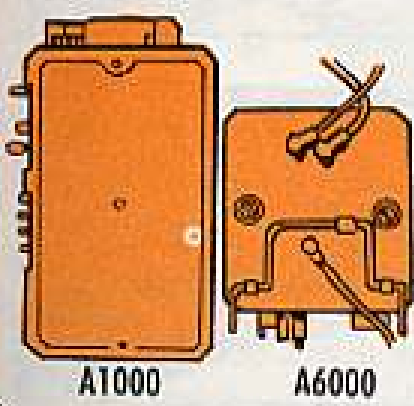
Like, who's kidding who? If you're not qualified to make the adjustment, *don't!* Besides, the odds say no adjustment was necessary, or helpful.

Coupla' longstanding reminders on radio sets:

Remember to tighten the clamp when you put a component in a mount.  
Reason — obvious!

Turn off your radio before you start or stop your vehicle. Otherwise, you'll damage the set!

## HANDS OFF MODULE BOARDS





CARELESS HANDLING  
OF 81-MM MORTAR ROUNDS  
CAN GET YOU KILLED...



81-MM MORTAR ROUNDS ...

# FUZZY FUZEHANDLING'S HAZARDOUS



... 'N' THERE'S A  
LOT OF MUTE  
TESTIMONY TO  
THAT!

... So take a minute to learn how these fuzes operate. It is better to read about box scores than to be part of them.

And speaking of reading, be sure to hone up on that fuze news in TM 9-1300-203 w/changes.

## THE MS24A5 FUZE

The MS24A5 is designed for super-quick impact action with greater sensitivity and speed than fuzes formerly used with 81-MM cartridges. It'll work on either point impact or graze contact.

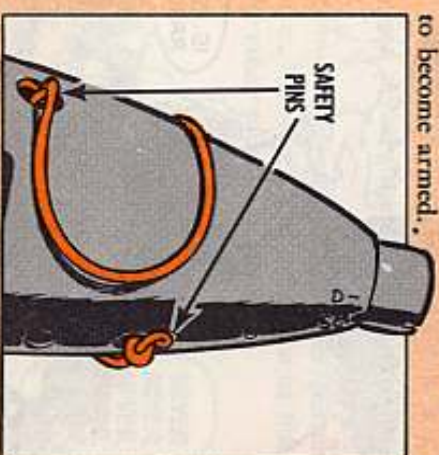
In addition to being bore safe, it's designed not to go off closer than 200 feet from the end of the tube.



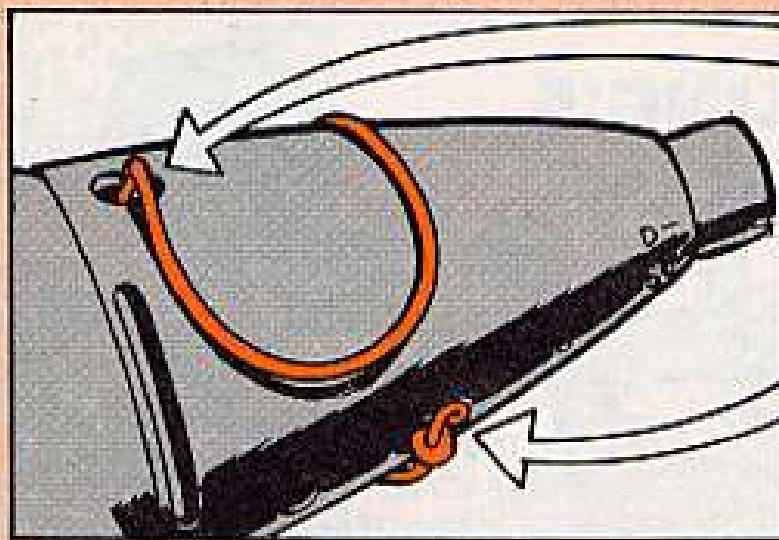
The 2 safety pins, when assembled right, make it impossible for the fuze to become armed.



—action when the round lands while the D position sets it off after a delay of 5/100th of a second.)







The lower pin (setback safety pin) holds a setback so it can't operate. You remove this safety pin first.

The upper pin (plunger safety pin) meshes with the plunger. You remove it last.

Never remove either pin until just before firing.

If you can't get the upper safety pin out (like, say, the securing eye of the pin breaks away) the round will not arm. It will be a dud so don't bother to fire it. On 'tuther hand, it's not dangerous to dispose of.

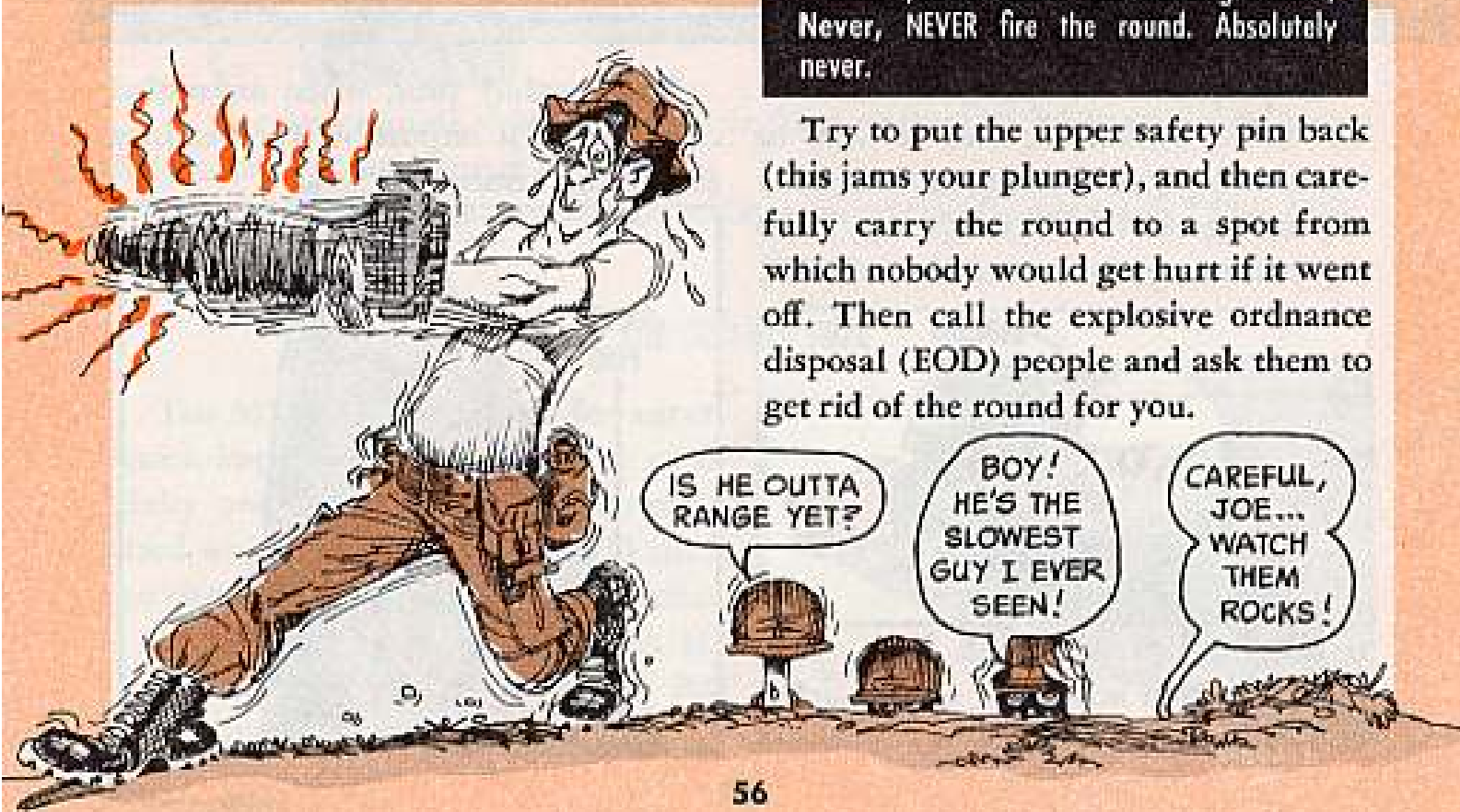
But if you hear a buzzing sound when you remove the pull wire on the upper pin think of it as a rattlesnake-type warning because that's exactly what it is.

This buzzing means that the plunger has moved toward the armed position even though it has to get all the way there before the fuze is armed.



After you've heard the warning buzzer, Never, NEVER fire the round. Absolutely never.

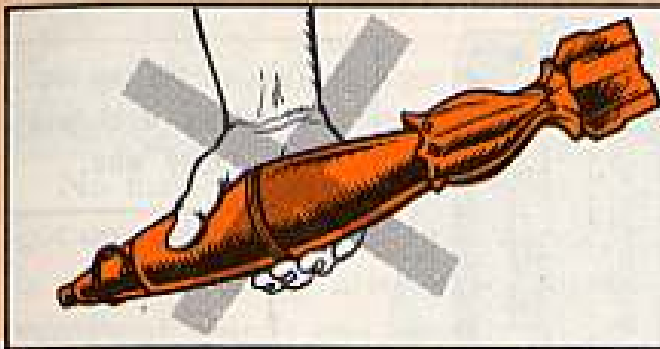
Try to put the upper safety pin back (this jams your plunger), and then carefully carry the round to a spot from which nobody would get hurt if it went off. Then call the explosive ordnance disposal (EOD) people and ask them to get rid of the round for you.





But suppose you can't get the upper safety pin back in?

In this case the fuze may already be armed, so you have to be even more careful with it.



When holding a fuzed round you never hold the point down or put the round through any movement that could cause the plunger to move forward against the creep spring. Either of these motions could cause the detonators to move forward against the firing pins and blow the round.

If you even suspect that the fuze is armed, you don't fire the round. You don't repack it. You don't even handle it except to put it aside under guard until the EOD people come. When you handle it you hold the round vertically with the fuze striker assembly (nose) up.



Sure, it's handy to have a big pile of rounds with all safety pins drawn ready for firing. But that's a big cause of accidents, because with the pins pulled the rounds become armed if they get a little rough handling. Once they're armed, it just takes one more wrong move to set them off.

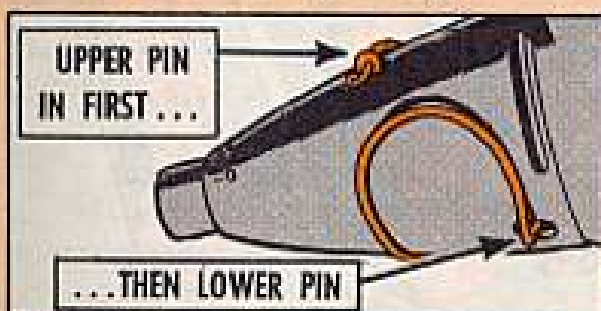


So pull the pins just before you fire. Pull out the lower safety pin first and then the upper.

If there's a change in plan and you don't fire the round, put the pins back in before you move the round.

Do this just the opposite from the way you pulled them originally—put the upper pin in first and then the lower.

If you can't get both the upper and the lower safety pins back in place, put the round aside for the EOD people. You never, but never, put it back in its fiber container or other packing unless both the safety pins are in place.



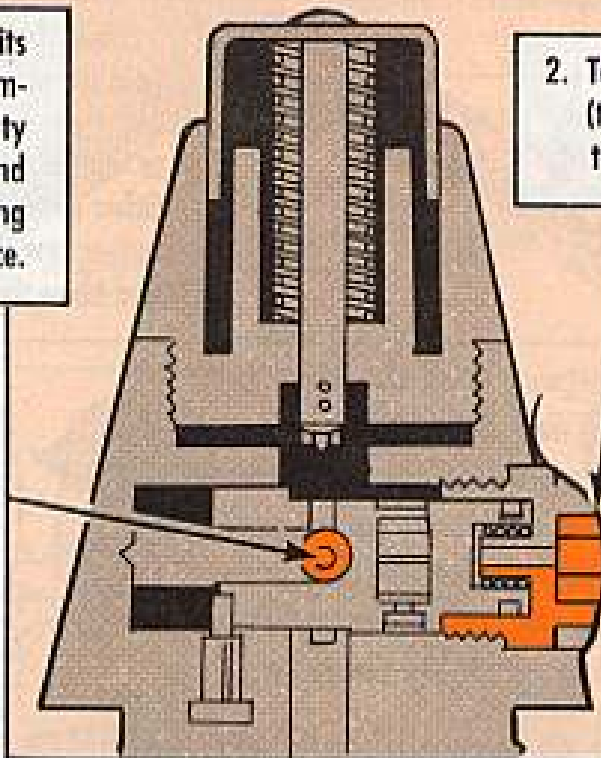
## XM716 POINT DETONATING FUZE

But suppose the 81-MM rounds you have are equipped with the XM716 fuze. Here's what you look for by the numbers:

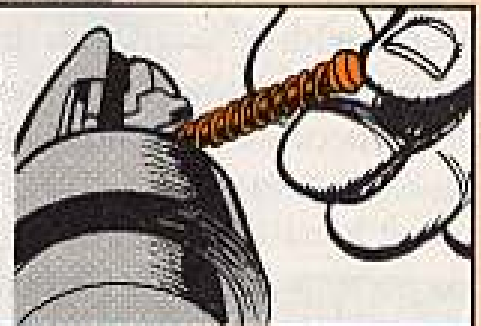
1. Take the round out of its packing to check it for damage. Make sure the safety wire, the cap seal (tape and disk) and the bore-riding safety pin are all in place.

3. With the safety wire out, press and release the bore-riding safety pin to see if it moves freely. (If there is no movement, the fuze is bad and the round would probably be a dud if fired. However, instead of firing it you put the round aside for the EOD gang.)

4. **Important:** If the bore-riding safety pin is missing when you unpack the round or if it becomes unseated or ejects when you pull the safety wire or when you push on the safety pin to test for movement . . . if **any one** of these things happen, the fuze is now armed and dangerous. Put it aside, under guard, for the EOD. If the striker is hit, the round will go off.



2. Take off the cap seal (tape and disk) and the safety wire.



On rounds prepared for use but not used, replace the safety wire and tape and disk, and return the round to its original packing. Rounds prepared for use but not used should be marked so you can fire them first next time.

## M301 ILLUMINATING ROUNDS


Speaking of packing . . . on all 81-MM M301-series illuminating rounds, this is something you need to know:

Leave the seals on the metal container (or jungle wrapped fiber container) until just before you fire the round. This will keep the round dry and cut down on the number of duds, short rounds and misfires. (The same thing goes for the M83-series illuminating rounds for the 60-MM mortar.)





# M551 DETENT SERVICING



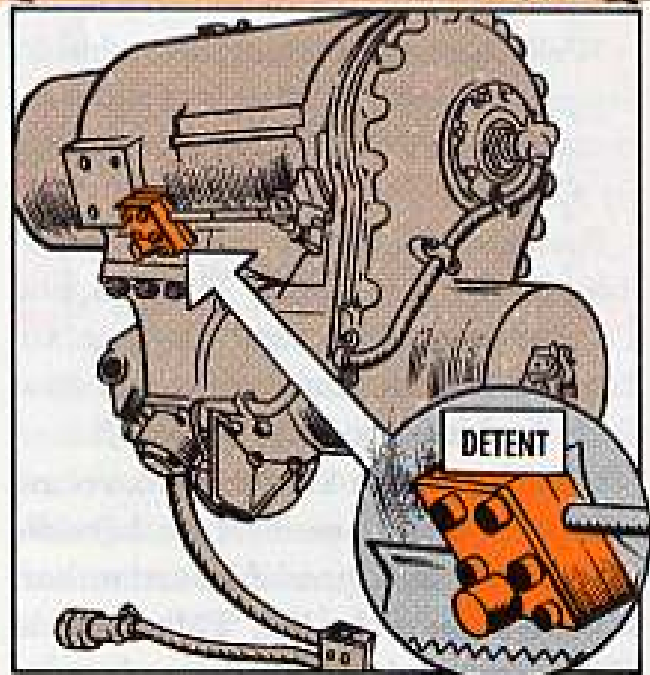
OK - THAT'S 100 -  
NOW BACK TO THE  
SHOP FOR DETENT  
SERVICE.

No matter what kind of detent you got on the gun launcher of your M551 it needs servicing after every 40 conventional rounds you fire.

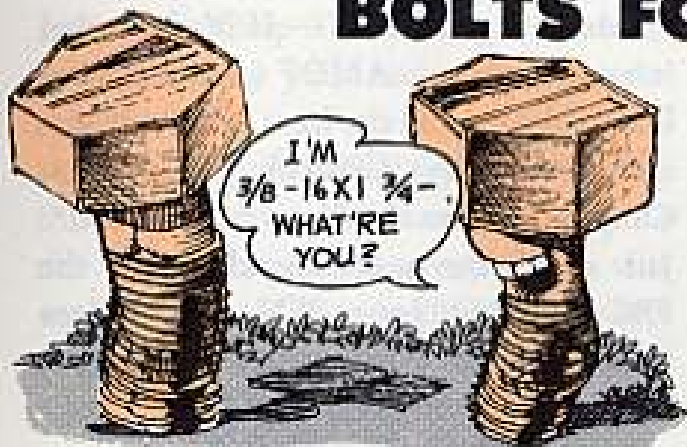
Change 9 to TM 9-2350-230-12 (Jun 66) brings this out.

Your cheerful company mechanic replaces preformed packing every time the detent is serviced.

Use DA Form 2804-4 (Record of Rounds Fired) to help clue you in on when the detent needs to be serviced next.



## BOLTS FOR BASES

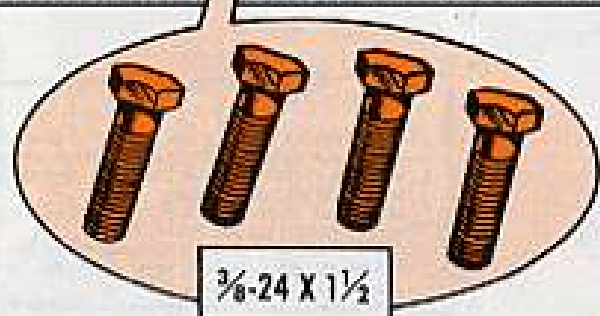
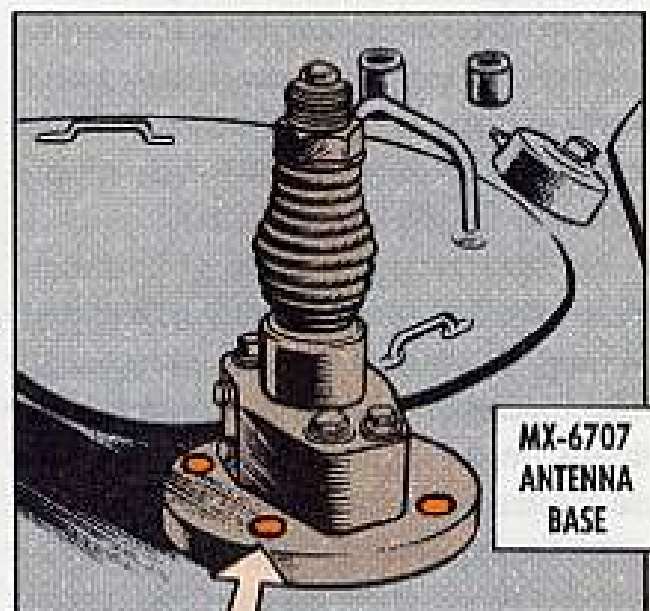


Bolts can be B—A—A—D for your M551 recon scouts—if they're the wrong size.

If you got the 3/8-16 x 1-3/4-in variety with your AT-912 antennas, then you've got the wrong bolts for installing the AB-719/VRC antenna support base.

Latch onto the 3/8-24 x 1-1/2-in size, under FSN 5305-269-2807.

You need the 3/8-16 x 1-3/4-in bolts to mount the MX-6707 base of the AS-1729 antenna.







**SUPPLY MEN,  
TAKE A CLOSE  
LOOK AT...**

What can SB 700-50 do for you? Well, just take a look at that chubby bugger. It covers thousands of different items and some 600 FSC's (Federal Supply Classes).

Specifically—if an item's expendable, doesn't cost more'n 25 bucks, and it's not reportable, controlled, or authorized by some other pub, you'll most likely find it authorized by the SB.

Hold one—the SB doesn't cover repair parts, ammo, medical, or heraldic supplies. Those expendables are authorized by other pubs like TM's, CTA's, SB's covering the items themselves, or the equipment concerned.

Before you order anything from the SB, though, be sure to check your local supply SOP on expendables. If there's a self-service supply-center handy, your outfit can use its charge account at the store instead of going through supply channels for SB 700-50 items.

Be sure to read the SB's "introduction" section carefully so you'll not go wrong on your request. Same goes for the footnotes in Chap 2, which OK's items on an "as required" basis. The footnotes will clue you on whether you use Chap 2, Chap 3, or go elsewhere for expendables in the various supply classes.

**SB  
FOR**

**700-50  
EXPENDABLE  
SUPPLIES**



Chap 2 lists only the FSC's. But, if you have a good FSN—if it's included in your support's AMDF (Army Master Data File)—and the item is not authorized in the SB's Chap 3, you can use Chap 2 to order the item "as required". Just check the note-code alongside the FSC covering your FSN, and follow through like it says in the footnotes.

And, your authorized allowance for an item in Chap 2 is whatever quantity is required by your unit when the demand occurs.

In Chap 3 you'll find separate sections for each commodity command (that's the Army commands responsible for supplying the different FSC's). Each section lists the supplies alphabetically, and the section's column headings square off like this: Item's Nomenclature, FSN, Unit of Issue, Quantity authorized in PT (Peacetime) and Mob (Mobilization), and Application (usage factor).

Some items are OK'd for specific outfits only. That info's in the "Application" column. So, always check there before you make up your request.

NOB	APPLICATION
0002	PER DETROIT & PICHLEN FSN 49 20-758-1376
0002	PER AUTO PLT AM/ASM-23 FSN 44 15-207-1192
0015	PER TIEBOW KIT ACFT FSN 1730 -088-7806
0002	PER AUTO PLT AM/ASM-23 FSN 44 15-207-1202
0005	PER TIEBOW KIT ACFT FSN 1730 -088-7806

To find your initial allowance for an item listed in Chap 3, you need your outfit's head-count and the info in the SB's Quantity column and its Application column. You just multiply your head-count by the info in the Quantity column.

When you're backed-up by usage records or expected demand info for an item, you can increase your stockage allowance up to 10 percent above the initial allowance listed for an item in the SB.

Like with other expendable supplies, you use AR 735-35 SOP for requesting, maintaining, and using supplies OK'd by the SB. The SB gets updated each year, and changes are published as needed. So, for the latest dope on the SB keep an eye on DA Pam 310-4. Better yet, get SB 700-50 and its changes by pinpoint on DA Form 12-9 (Block 608).

**NOTES:**

1. SOME ITEMS IN THIS PIG ARE LISTED IN CHAPTER 3.
2. GO THERE IN THIS PIG AND LISTED IN CHAPTER 2.
3. EXEMPTED ITEMS IN THIS PIG ARE AUTHORIZED BY ACCORDANCE WITH DA REGULS, EXCEPT THOSE ITEMS LISTED IN SECTION XI, CHAPTER 3.
4. EXEMPTED ITEMS IN THIS PIG ARE AUTHORIZED BY ACCORDANCE WITH DA FORM 12-9, AS EXPLAINED IN DA FORM 12-9, SECTION III, PARAGRAPH 3.1.
5. EXEMPTED ITEMS IN THIS PIG ARE AUTHORIZED BY ACCORDANCE WITH DA FORM 12-9, AS EXPLAINED IN DA FORM 12-9, SECTION III, PARAGRAPH 3.1.



**SORRY...  
SB 700-50  
DON'T COVER  
HERALDIC  
SUPPLIES.**

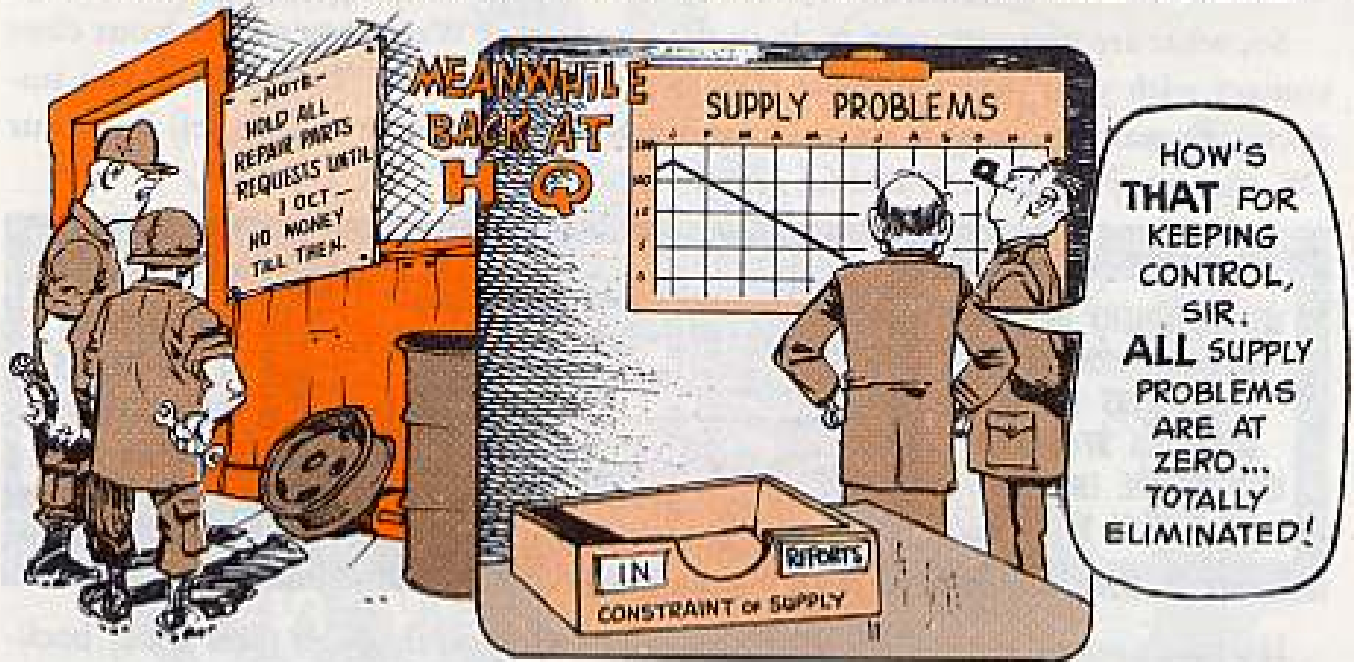








# CONSTRAINT OF SUPPLY REPORT



Are your demands for repair parts stacking up for some reason or other, like:

1. You're told your command is out of money.
2. Support (or higher supply) has put a hold on all requests except those which rate top priority IPD's.
3. Your shop doesn't have a PLL man, and no one else can be spared to bird-dog the supply paperwork, or to pick up supplies, to store, maintain, and issue the PLL stocks.
4. Or, may be your outfit doesn't have a safe place to store the items you need.

Well, what have you done about this situation?

How about a constraint of supply report, as called out in para 2-9, AR 735-35? The AR calls for a constraint of supply report when your outfit has any problem that keeps it from submitting routine requests for supplies. And, the report is due 2 work days after a problem shows up. The report (from your CO) goes to your next higher headquarters. Then it's up to headquarters to rustle up help to break the bottleneck.

The AR tells you the action you can look for.

The report is due on No-Go requests for repair parts and other supplies.

HERE'S AN EXAMPLE OF WHAT TO PUT IN YOUR CONSTRAINT OF SUPPLY REPORT!



SUBJECT: Constraint of Supply Report (RCS AMC 175)

1. Reference AR 735-35, para 2-9, Constraint of Supply Report.
  - a. Funds are not available and are required for replacing shortages in the basic issue items list for 2 (two) M52, 5-ton wreckers (FSN 2320-835-8325, LIN 261299, MTOE 6-6516X).
  - b. Requests for replacement items have been returned marked "re-submit on 1 October 1970."
  - c. Funds will not be available from 28 July 1970 to 1 October 1970.
2. The 49th Direct Support Company has notified all units in the command to suspend requests except those authorized IPD 5 until 1 October 1970.
  - a. Request funds be authorized for replacement items for at least 1 (one) of the wreckers as soon as possible.
  - b. Transfer or loan of items from another unit, until funds restriction is lifted, will be acceptable and will alleviate current difficulties in recovery operations of this unit.



## Connie's Mini Mini's



### *Wrecker Light*

If you want to know how to mount a rotating warning light on your M543 5-ton wrecker, check the detailed instructions and drawings in Article 3-22, TB 750-981-3 (Jul 70). This poop covers wreckers with either soft-top or hard-top cabs.

### *Those Mounts Go Fast*

If you have a Model 2380 Rough Terrain Crane, American H&D, and if you're in hot, wet country — start looking. The engine mounts on your carrier vehicle are probably rotting out from under you. If not now, look again in 30 days — and every month afterward. Call support if they need replacing.

### *PCV Valve For M151*

Need one? Order it . . . positive crankcase ventilation valve, FSN 2805-624-5300, for your M151-series vehicle. The old type was a non-stock item. This new type is on the shelf and waiting.

### *M35A2 Mud Flap*

Here's what you need for mud flap replacement on your M35A2 2½-ton cargo truck: Guard, splash wheel (complete assy), FSN 2540-993-4787; Rubber flap and strip, FSN 2540-993-4786; shield only, FSN 2540-993-4788; screw, FSN 5305-269-2803; nut, FSN 5310-982-4908.

### *Special NMP EIR Call*

Like it says in PS 211 and in TM 38-750, EIR exhibits are held "till the NMP calls for 'em." But the NMP can call for specific types of items by way of supply letters. So, review your supply letters and keep those called for EIR exhibits coming in.

### *Need PU-618/M Cover?*

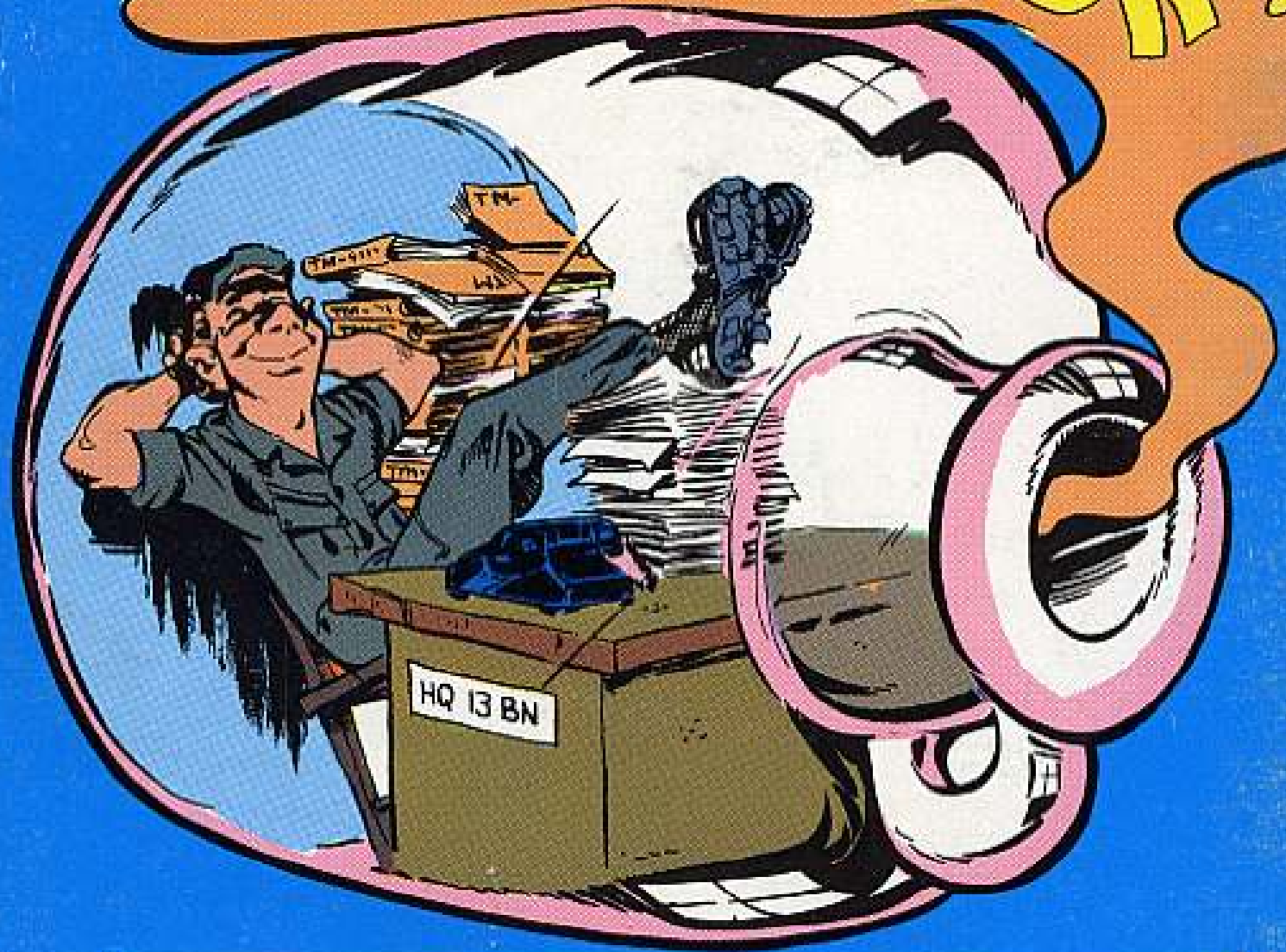
Can't find a canvas cover for your PU-618/M generator outfit? Don't waste your time in the 5-KW TM's or the -213-14P manual for the trailer. Turn to TM 5-6115-365-15, page 3-16; request Tarpaulin, FSN 2540-914-2558. Slip it on your outfit, and it'll never know it's not coverin' a PU-619/M (they're the same size as -618/M's).

### *Up Periscope!*

The poop from the group is that some gigs are being handed out because the M32, M32C, or M35 periscope on your tracks is missing an ID plate. The fact is, some periscope modules never had — or ever will have — an ID plate. Periscopes without plates will be identified by a stenciled-on P/N when it goes back for overhaul. Meanwhile, no need for a gig.

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

# ARE YOU YOUR OUTFIT'S "PUBLICATIONS BOTTLENECK"?



- ★DIDN'T send in Form 12 to get pubs accounts set up with pubs center (both Baltimore and St. Louis).
- ★DIDN'T send pinpoint order forms into centers.
- ★DIDN'T send in updated pinpoint forms as unit and equipment changed.

- ★DIDN'T order enough pubs for number of people who need 'em.
- ★DIDN'T allow lower level units to have pubs accounts.
- ★DIDN'T notify centers of changes of address.
- ★DIDN'T order extra copies on DA Form 17 as needed.