
Issue 181
PS
1967 Series
THE PREVENTIVE MAINTENA MON
YOU REALIZE OF COURSE, SIR, THAT UNNECESSARY IMMERSION OF YOUR VEHICLE PROMOTES SEEPAGE OF WATER INTO SEALS, JOINTS AND BRAKES!!... A VERY DESTRUCTIVE PRACTICE WHICH WILL RESULT IN BRAKE OR BEARING FAILURE.
OFF LIMITS
VEHICLE WASH POINT
Will Eisner

ON SUPPLY AND MAINTENANCE . . .

GET HELP!

It's almost as easy as a

Magiclamp

If supply and maintenance operating problems have got you bogged lately, you may need a little help to get your outfit rolling smoothly.

You can get help, and it may come from one or more sources, like so—

Specialists from your own direct support unit (DSU).

OR . . .

Civilian equipment maintenance technicians provided by the Army's commodity commands are available to all commanders worldwide. They specialize in Tank-Automotive, Aircraft, Electronics, Weapons, Missiles and Mobility Support Equipment.

OR . . .

Civilian specialists on maintenance management and supply procedures. These guys work out of five AMC Customer Assistance Offices—one for each Army Area. They operate mostly within CONUS and are called customer assistance representatives. In addition, there are Customer Assistance Offices at the Army headquarters in USAREUR, USARPAC, Vietnam and Okinawa.

OK, so you need help. To get it, ask your own CO (or your maintenance officer) to call your direct support unit. DS will give your outfit a hand.

HERE ARE SOME OF THE KINDS OF HELP YOU CAN GET—

- Classes and on-the-job training in supply and maintenance policies and procedures.
- How to get the right kind and amount of publications.
- How to prepare equipment records (TAERS) forms.
- How you interpret and apply supply and maintenance policies, procedures and regulations.
- Classes and on-the-job training on operation and organizational maintenance of your equipment, especially new gear.

If they can't, they'll figure out the kind of help you need and make arrangements for it through your installation and Army.

- How to set up and update PLL's.
- How your unit can get enough and the right kind of men, equipment, tools and repair parts.
- How you get your ESC done right.

PS

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THE PREVENTIVE MAINTENANCE MONTHLY

Issue No. 181 1967 Series

IN THIS ISSUE

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

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

GROUND MOBILITY

YOUR MULTIFUEL-ENGINE TRUCK AND . . . YOU

You might get by with just driving a gasoline-engine truck, but you have to operate your multifuel-engine truck!

So what's the difference? Puh-lenty!

Why, a gasoline-engine truck and a multifuel-engine truck are about as much alike as a cowpony and a racehorse. You don't see much difference from a distance. And even up close, you'll find a lot of the parts are the same. But when you climb into the saddle—or into the cab—you've got to handle the beast a special way or you won't get the most out of it. You can even ruin it!

So, if you jockey a multifuel-engine truck, forget everything you know about gasoline engines. Scrub it out of your brain. Rap yourself in the head. Take a cold shower. Turn over a new leaf.

You're gonna be a multifuel-engine truck operator!

Look at yourself like an airplane pilot moving from prop-jobs to jets. You've got to learn a new way of operating or you'll never get off the ground. Operating your multifuel-engine truck is no where near as complicated as flying a jet plane—but if you don't operate your truck right, you can take off with a brand-new vehicle and come back with a pile of junk.

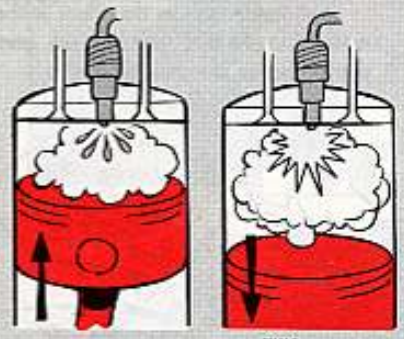
DRIVER OR OPERATOR?

So let's start fresh. Soak up this info—make like a sponge. Then do right by your multifuel-engine truck—make like an operator.

Here's How it Works-

Your multifuel engine is a diesel (compression ignition) engine. It's got no sparkplugs like the gasoline job. Fuel is ignited by compression. A piston coming up on its compression stroke squeezes the air in the cylinder until it gets hot—real hot. About that time, fuel is "injected" into the cylinder under terrific pressure. The fuel's ignited and burns—giving the power that drives the piston back down on its power stroke.

You can get the fine details on compression ignition in TM 9-8000 (Jan 56), Chap 6, Principles of Automotive Vehicles.



FUEL IS INJECTED INTO COMPRESSED, HOT AIR . . .

THIS FUEL-AIR MIXTURE IGNITES AND DRIVES THE PISTON DOWN.

MORE

YOUR MULTI-FUEL ENGINE HAS A MORE FLEXIBLE APPETITE THAN A "STRAIGHT DIESEL" ENGINE BECAUSE IT'LL RUN ON **SEVERAL FUELS** BESIDES DIESEL FUEL.

Here's the latest rundown on different fuels you can use in your multifuel engine:

FIRST CHOICE — GREAT

VV-F-800 diesel fuel
MIL-F-16884 marine fuel oil
CITE MIL-F-46005 compression ignition fuel

SECOND CHOICE — GOOD

Jet Fuel SPEC MIL-J-5624
Commercial aviation kerosenes Jet A and Jet A-1
Fuels assigned NATA Symbols F-34 or F-35

LAST CHOICE — SO-SO

MIL-G-3056 combat gasoline. Considered "emergency fuel," because it doesn't give as good performance as the others in the multifuel engine and, over long use, may shorten the life of a multifuel engine.

4 MULTIFUEL ENGINES — SO FAR

You've got 1 of 4 different multifuel engines in your 2½-ton or 5-ton truck. There may be others in the future, but here're the only ones for now:

— 2½-ton G742-series trucks (M35A1 cargo truck and others in this multifuel family called M44A1-series).

— 2½-ton G742-series trucks (M35A2 cargo truck etc, called M44A2-series).

— 5-ton G744-series trucks (M54A2 cargo truck etc, known as M39A2-series).

— 5-ton G744-series (also in M39A2-series family).

SAME OPERATOR'S MANUAL

One operator's manual covers both the gasoline-engine and multifuel-engine 2½-ton G742-series trucks. That's TM 9-2320-209-10 with Ch 1 (May 65) Ch 2 (Oct 66) and Ch 3 (June 67).

And there's only 1 operator's manual for all 3 engine-type 5-ton G744-series trucks — gasoline, multifuel and straight diesel. It's TM 9-2320-211-10 with Ch 2 (Jun 64), Ch 3 (Jan 65), Ch 4 (Feb 66, Ch 5 (Oct 66) and Ch 6 (May 67). Forget Ch 1 — it was rescinded.

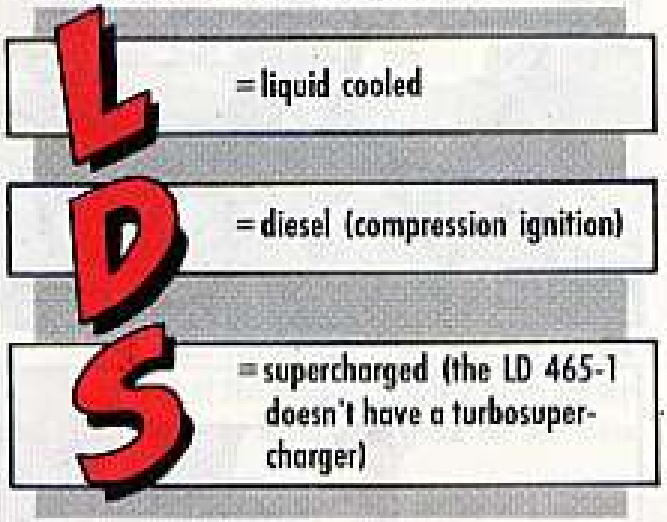
Engine Scoop

If you want to know more of the "how" and "why" of your engine, borrow a copy of:

TM 9-2815-204-35 (Feb 64)—LDS 427-2 engine

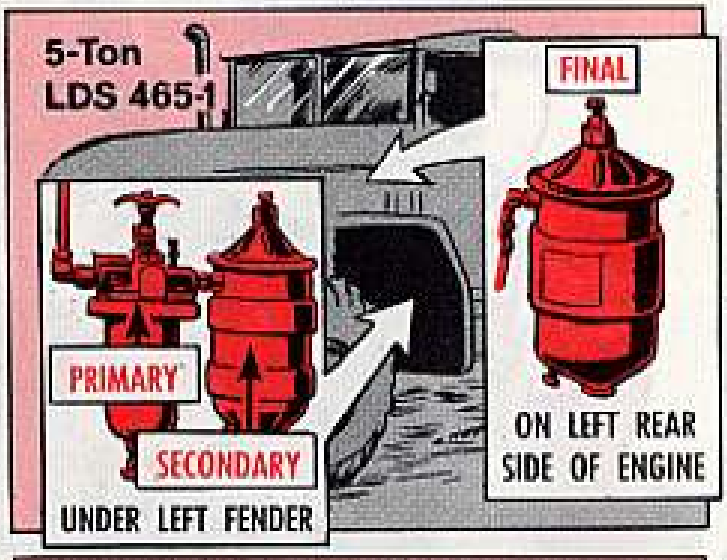
TM 9-2815-210-35 with Ch 1 (May 65), Ch 2 (Jun 66) and Ch 3 (Nov 66)—LDS 465-1, LD 465-1 and LDS 465-1A engines.

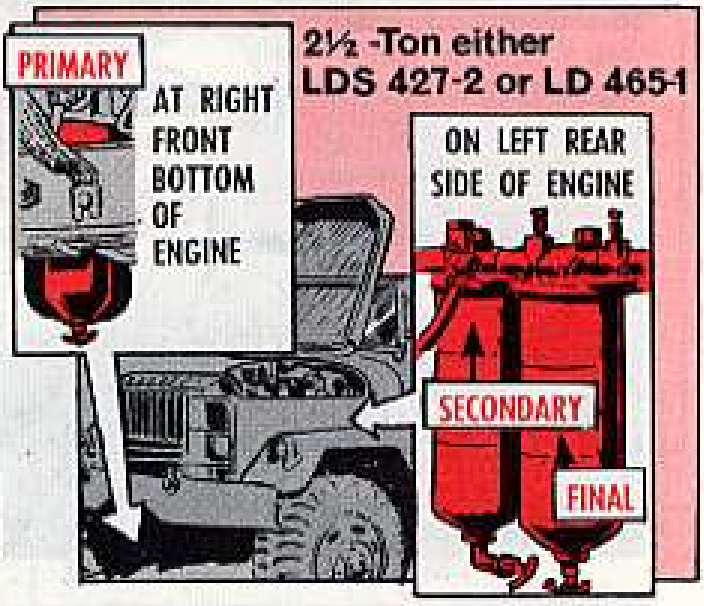
By now, if you don't already know, you're askin' what this "LDS" and "LD" stand for. Here it is:

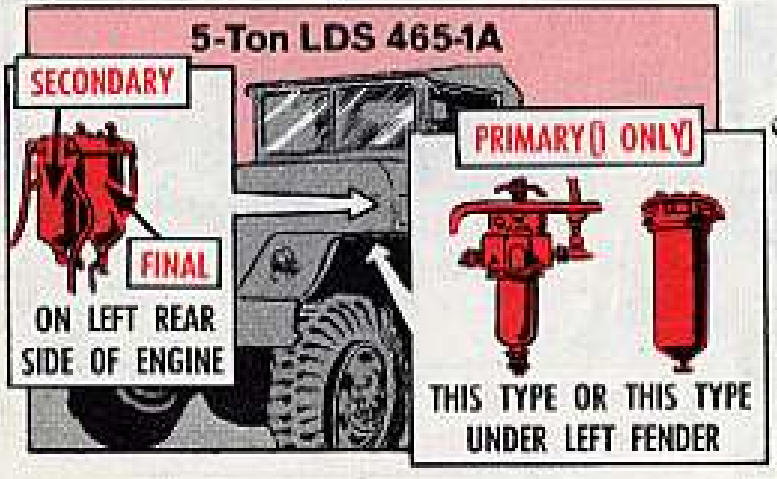


Filter Facts

All 4 engines are pretty much alike as far as operating's concerned. But one important difference is the fuel filter setup. All 4 multifuel engines have 3 fuel filters—primary, secondary and final—but the type of filter and the location is different in a couple of cases.







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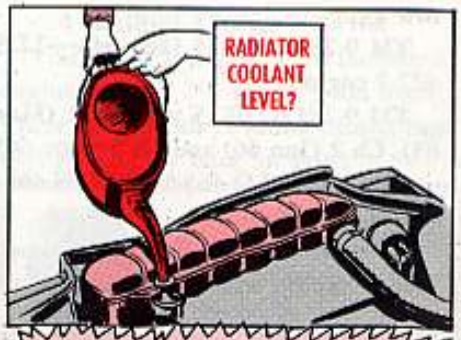
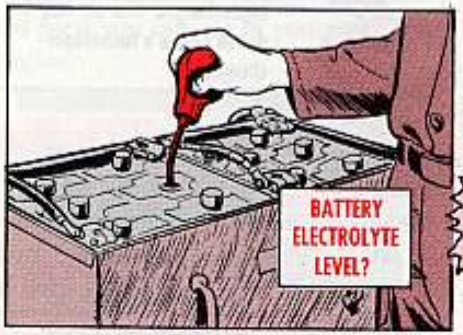
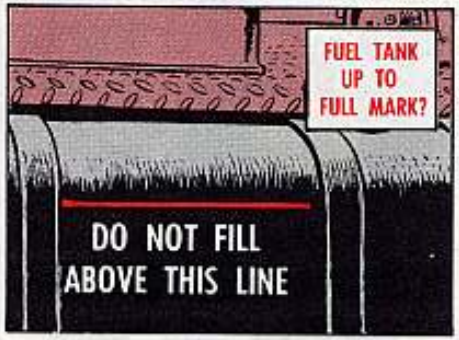
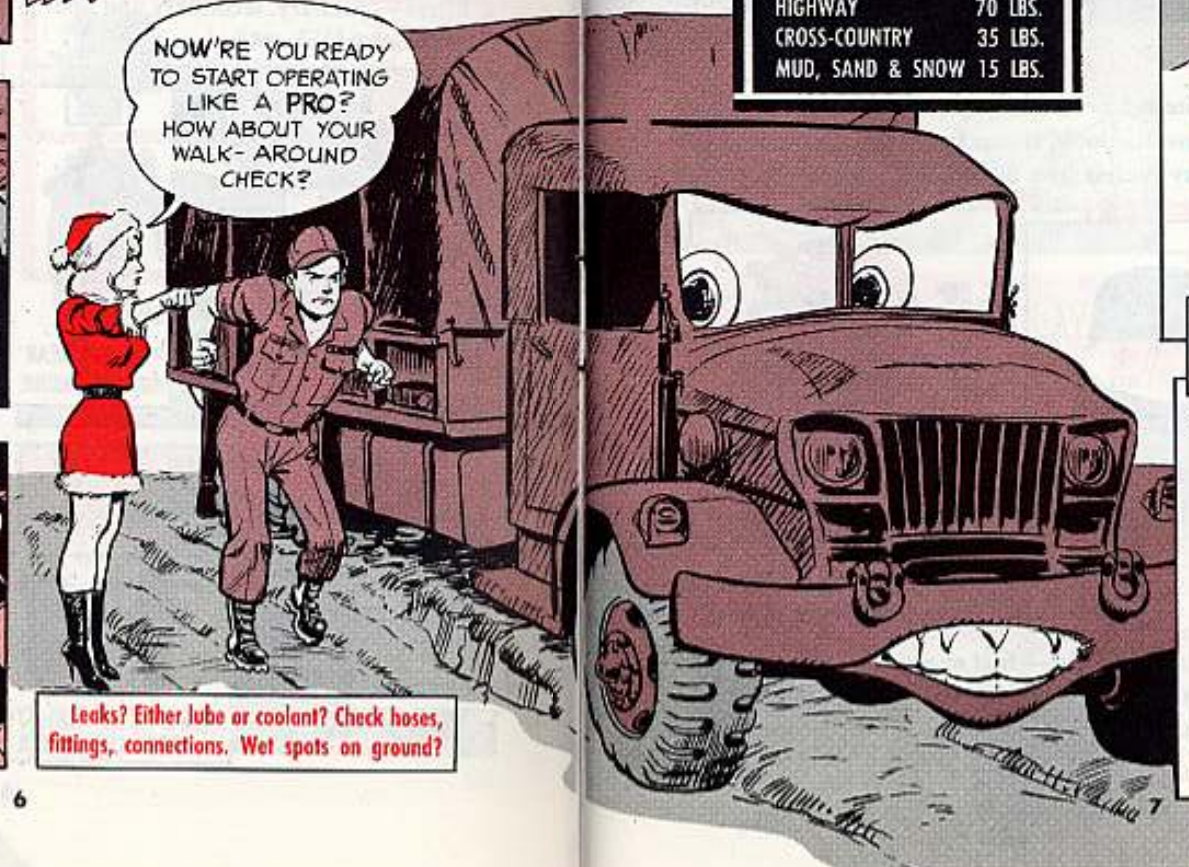
GETTING READY...



Hot flash, especially for 5-tonners! Check your radiator coolant every time before starting up — even if it's several times a day. Keep that coolant level up!







Leaks? Either lube or coolant? Check hoses, fittings, connections. Wet spots on ground?

Hold it! Before you settle down behind your steering wheel—drain your primary fuel filter.

This's where you start separating the ordinary drivers from real **operators.** Your multifuel engine's not too fussy about what **kind** of fuel you feed it, but it's mighty touchy about **quality**—no dirt or water or, like you find in the tropics, fungus.

TIRE INFLATION PRESSURES	
HIGHWAY	70 LBS.
CROSS-COUNTRY	35 LBS.
MUD, SAND & SNOW	15 LBS.

So this's an absolute **must** before you fire up:

1. Turn on your accessory switch so the in-tank fuel pump will run.

Now open the drain cock on the bottom of your primary fuel filter (on scraper-type, give the handle on top of the filter 2 complete turns before draining to loosen any junk on the filter element).

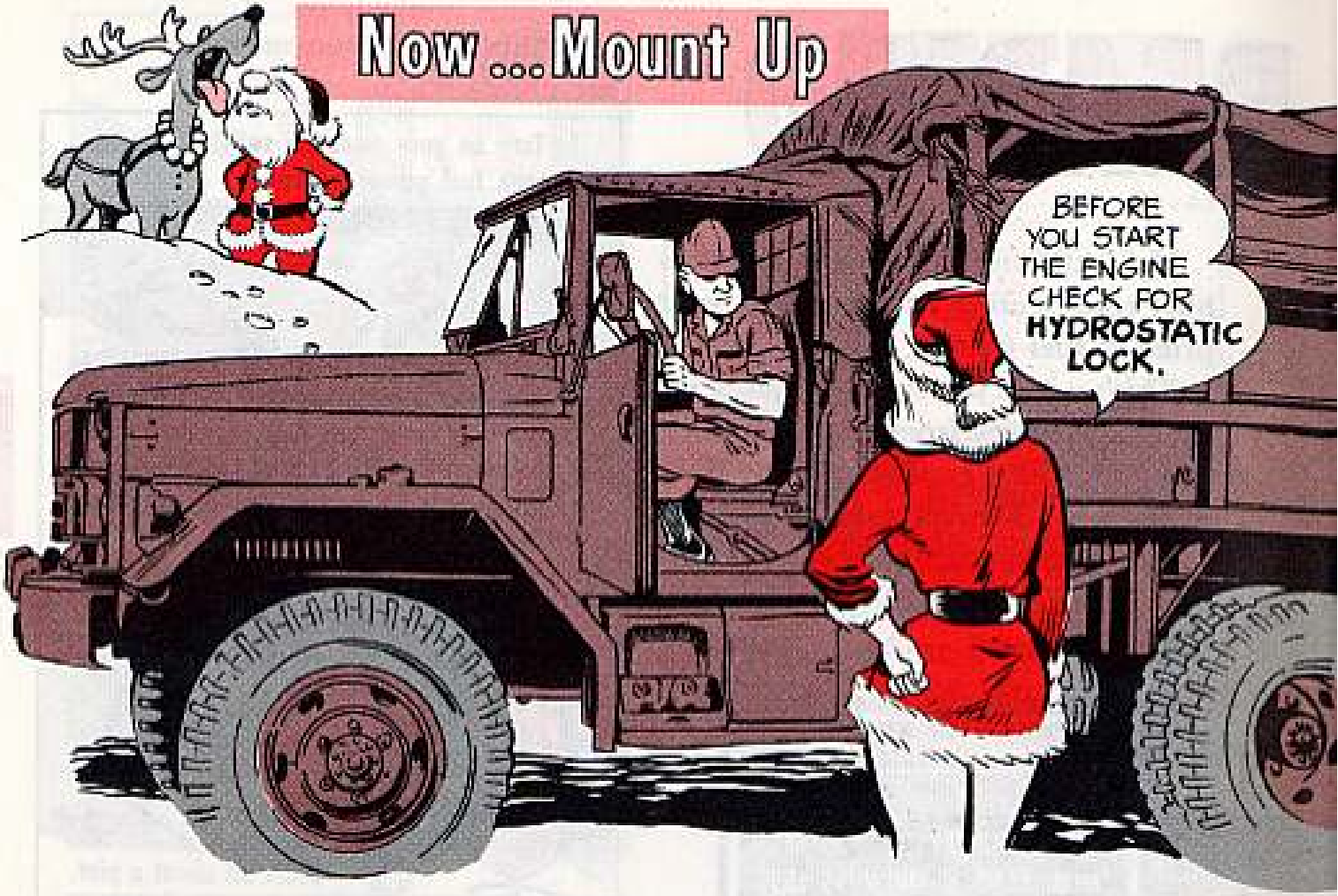
Drain off about a pint. Catch the stuff in a clean jar or can. Look at it real close to see if there's dirt or water in it (water'll be like little blobs in the fuel). If you've got foul fuel, then —

2. Drain your secondary filter. Check this carefully too. If it's got water or junk in it, go on and —

3. Drain your final filter. This's where things get hot—any foreign stuff getting through your final filter can ruin a mighty fancy little piece of machinery called the "fuel injector pump."

So you've got a bad case of contaminated fuel if there's water or dirt in your final filter. Get a mechanic to service all 3 fuel filters — cleaning and replacing filter elements.

MORE



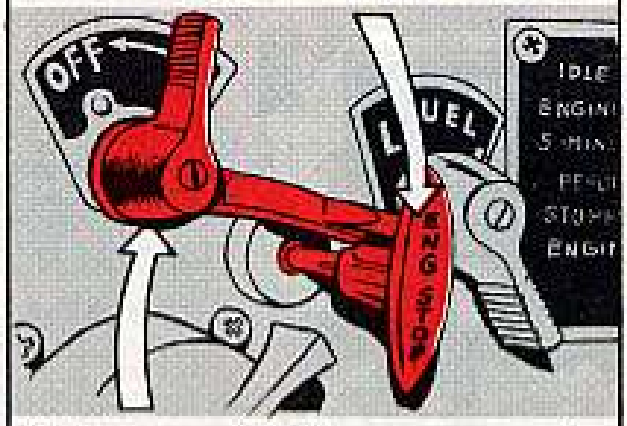
Climb aboard. But you're not quite ready to start up your engine yet—not till you've checked 'er out for **hydrostatic lock**. If you forget this just once, you could wind up with a hunk of pretty useless iron in your engine compartment.

Hydrostatic lock happens when there's liquid—fuel or water—sittin' on top of one or more of the pistons. This's like rock when your piston rams it up against the cylinder head. It can ruin an engine—or at least bust a connecting rod.

Here's How To Check For Hydrostatic Lock

1. Gearshift in NEUTRAL and handbrake ON (they're supposed to be that way anyhow from when you parked your truck).

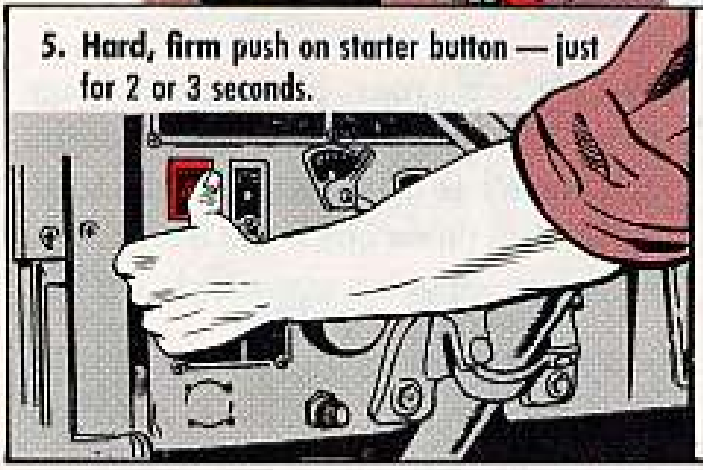
2. Fuel OFF so you won't get fuel ignition.



3. Accessory switch ON so you can operate the starter.

4. Push clutch pedal to floor.

5. Hard, firm push on starter button — just for 2 or 3 seconds.



Listen close and feel for a hard thud in the engine as you turn 'er over. Or maybe it starts turning over and quits with a thunk. Or maybe it won't turn over at all.

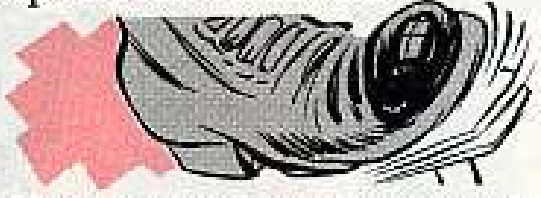
Take your finger off that starter button **right now** if you get any one of those signs of hydrostatic lock. Your mechanic will check it out. He may have to drain fuel or water from the cylinders and find out how it got in there.

Now, Start Up!

This time you turn 'er over with fuel ON. Clutch pedal down again. No more than 30 seconds on the starter button — 10 seconds is usually enough.

Wait at least 2 minutes if she doesn't take off — then try again. If your multi-fuel engine won't start in 3 tries, give it up and call a mechanic.

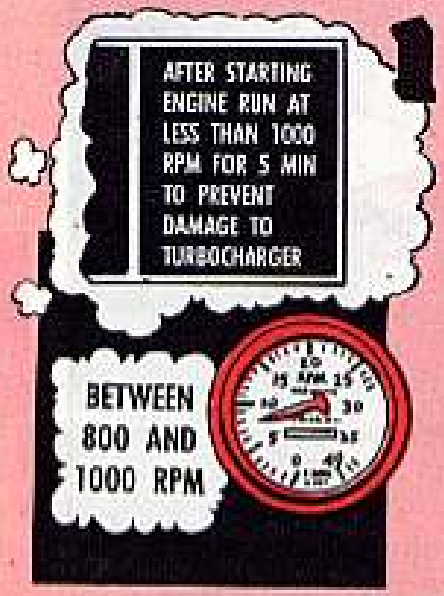
. . . so you don't burn out the switch and maybe cause trouble in the starter to boot.



Never pump the accelerator pedal on a multifuel-engine truck. It doesn't do any good and it can do a lot of harm.

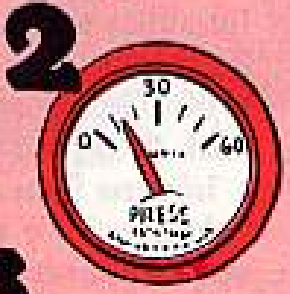
MORE

Also taboo is trying to start a multi-engine truck by towing or pushing. You might have missed some sign of hydrostatic lock. Towing would force your engine and could bust it. So use jumper cables if your engine needs a boost.



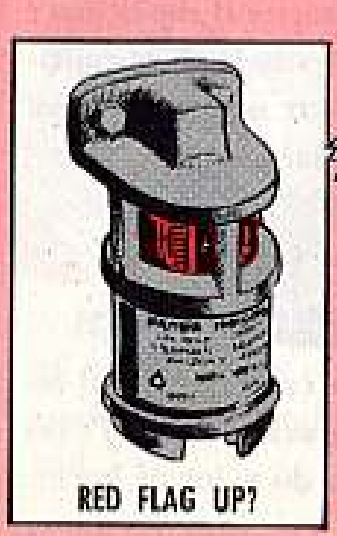
'N Warm 'Er Up

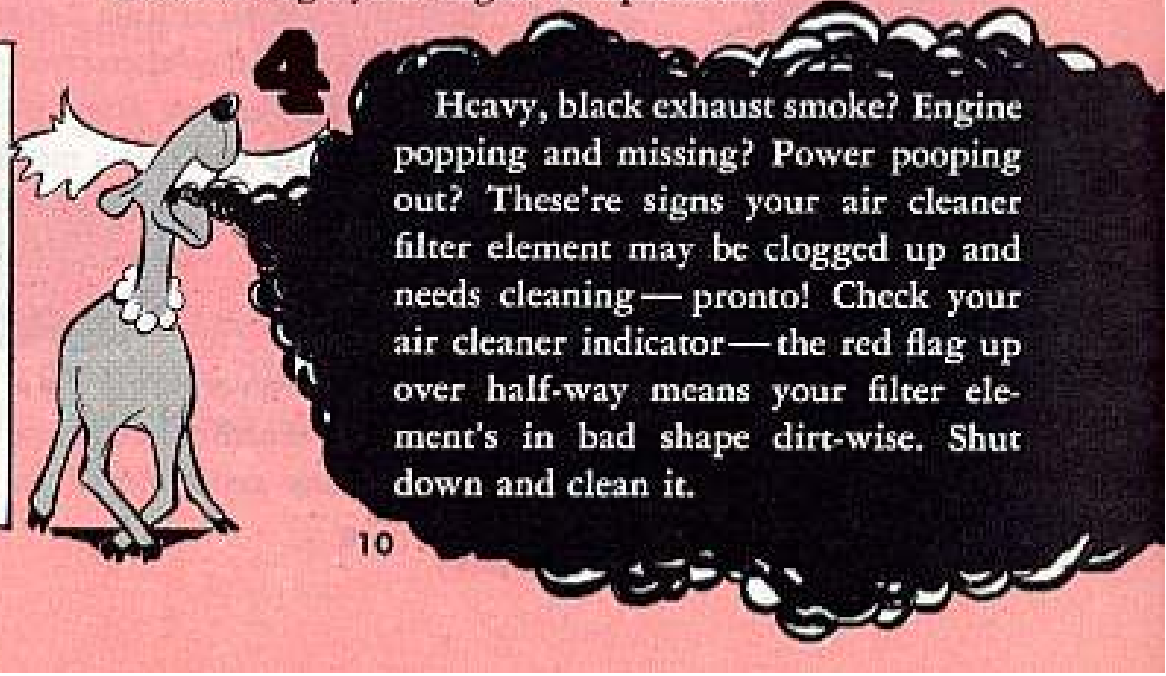
Idle for 3 to 5 minutes or until engine heat reaches 120°. Engine speed should be above 800 RPM but under 1000 RPM. Idling too slow sets up vibrations that'll loosen some parts and even break others. This warmup helps the whole engine, but it's especially important for your "turbocharger" (turbosupercharger). Exhaust gas spins your turbocharger at about 30,000 RPM at idle speed and up to 60,000 RPM at operating speed. Idling gives oil a chance to get to it at low speed. Never stomp on pedal or overspeed engine.



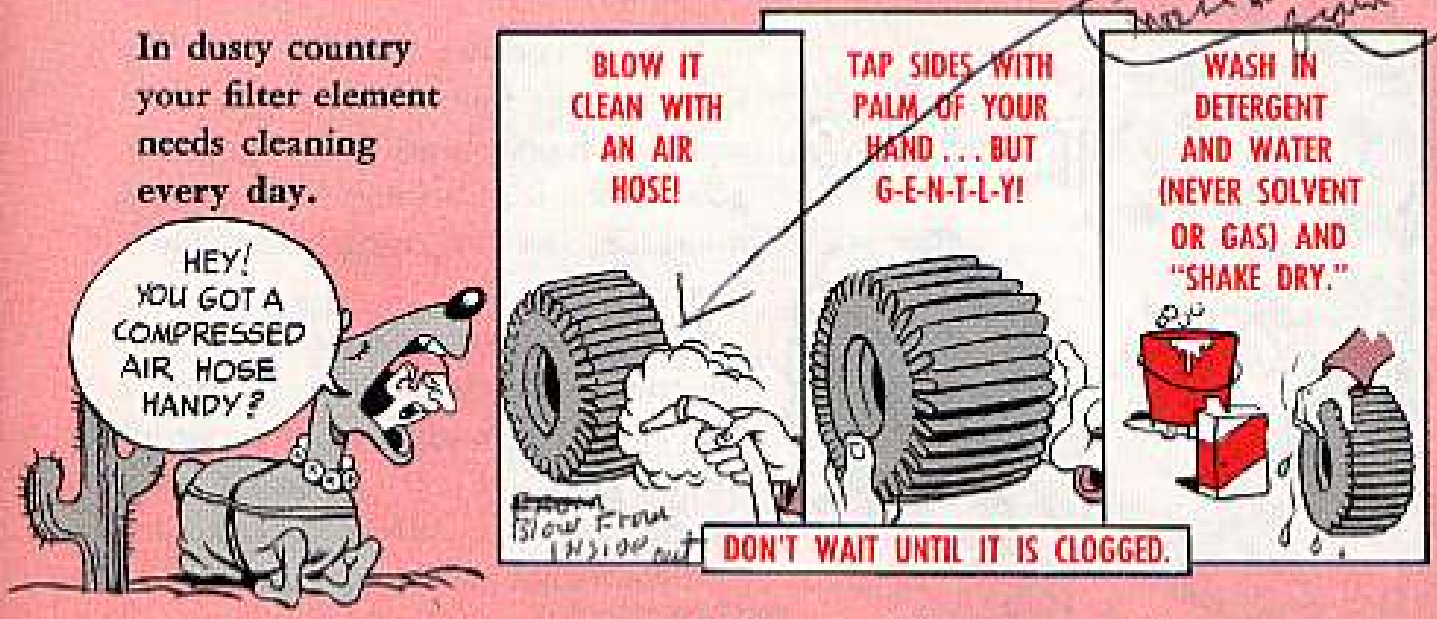
Watch your oil pressure gage close for the first 20 seconds of idling. If it doesn't go up to 15 PSI at 800-1000 RPM, shut down quick and holler for a mechanic—you've got a sick engine.

Engine coolant temperature should be up to 120°F before you think about hittin' the road. It'll move up faster when you get rolling. But take it easy even then, until your engine temp works up to between 170° and 200° before giving 'er full throttle and full load. And never operate with your hood side panels open—you'll just goof up the way cooling air is supposed to be channeled through your engine compartment.



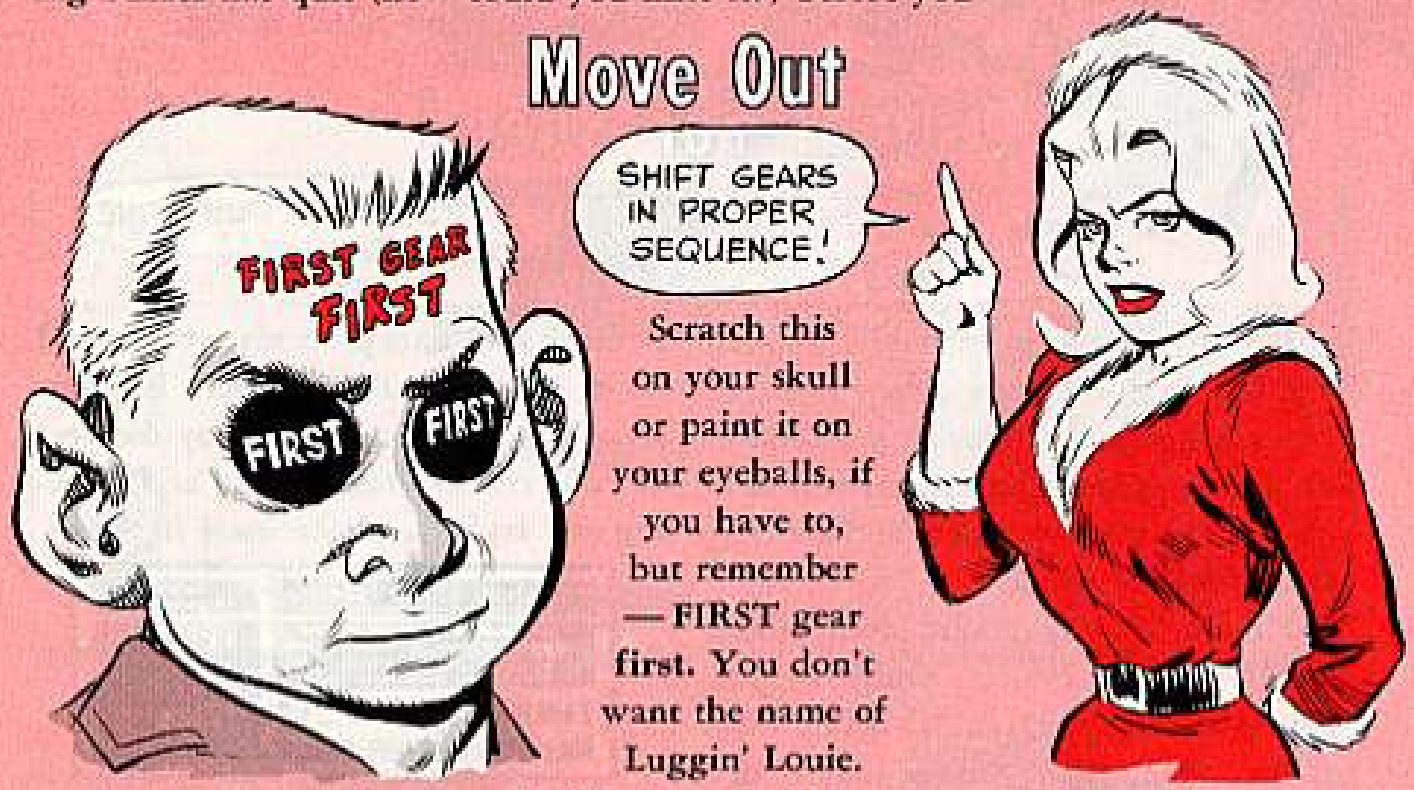


In dusty country your filter element needs cleaning every day.



Eyeball your other gages and indicators. Make sure your air pressure warning buzzer has quit (how could you miss it?) before you—

Move Out



Scratch this on your skull or paint it on your eyeballs, if you have to, but remember—FIRST gear first. You don't want the name of Luggin' Louie.

Lugging is that vibration, shuddering and shaking you get when you're operating your vehicle in too high a gear for the speed you're traveling. Lugging—in any gear at any speed—is about the worst thing you can do to that beautiful piece of machinery under your hood. (Comin' up, under Tach Talks, is a special chart on RPM limits.)

Remember, when you take off from a standstill, there's no other choice for a forward gear but FIRST.

Now engage your clutch smooth and easy while you feed 'er fuel. This's no hotrod, dragster or sports car. You've got anywhere from 10 to 20 tons or more to move out—depending on whether your truck's loaded or light.

So no clutch-popping—in any gear.

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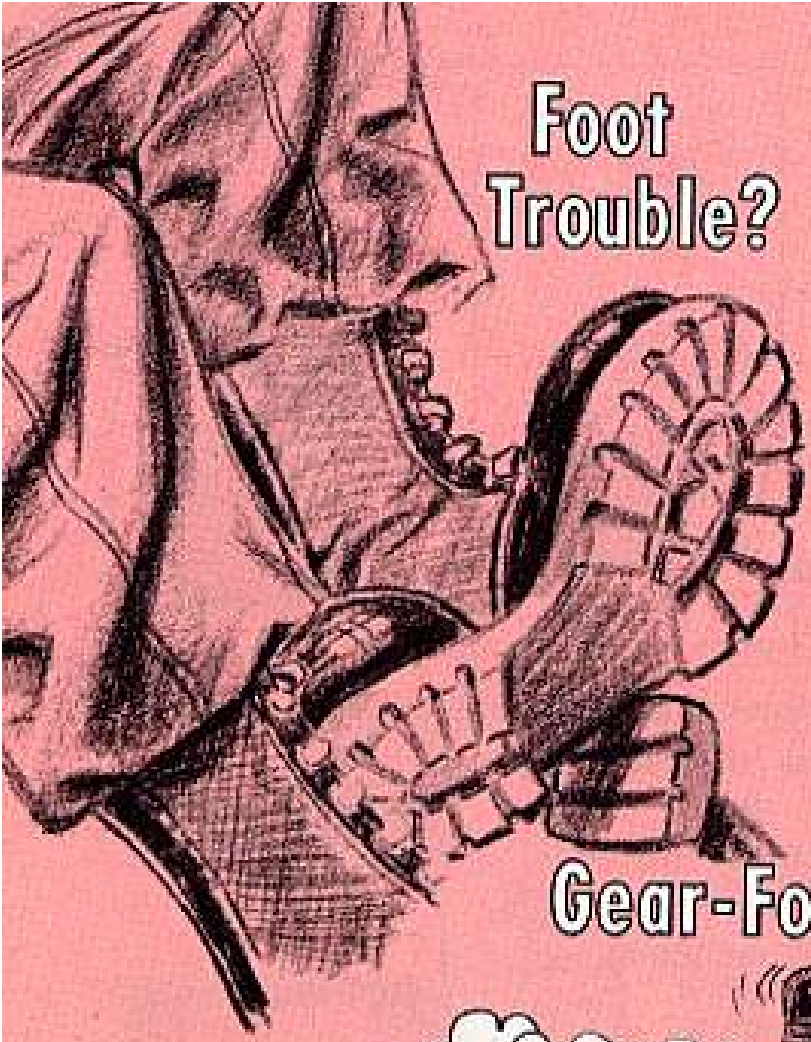


Foot Trouble?

Now, f'rgoshsakes, get your big apple-mashin' foot off that clutch pedal and leave it off—until you've got some good reason for working the clutch. No operator uses the clutch pedal for a footrest.

Clutch-riding is the same as not having enough clutch free-travel. Parts of the clutch that're supposed to be sittin' still are goin' like crazy all the time and wearing out long before they should. And you're not getting good, solid contact between your clutch and engine—a fast butchering job on your clutch facing. So—no clutch-riding.

Gear-For-Speed

If you've got a tin ear and a wooden leg, so you don't know when your engine's lugging, then pay close attention to your speedometer and your data plate on transmission gear and transfer case range for speed.

F'rinstance, say you're doin' about 25 MPH in a 2½-ton multifuel job. And you've got 'er in 4th gear, high range. Man, then you're goofin' up! Because your data plate says you should be in 3rd gear at that speed. But you should be able to tell just by the feel of your truck—shuddering and bucking and tryin' to shake itself to pieces.

You can go too far the other way too—driving at high speed in low gear. This makes the engine turn over a lot faster than it has to. Your engine wasn't built to purr like a kitten—or even a tiger—but you can tell the difference between a nice, steady rumble and a howlin' roar.

Poor power on a hard pull could mean your fuel injector pump's on the fritz, your support will have to straighten 'er out.

Tach Talks

TOP RPM LIMIT UNDER-LOAD FOR BOTH 2½-TON AND 5-TON MULTIFUELS IS NOW 2600. THIS'S OPERATOR-CONTROLLED. MAKE SURE YOUR DANGER ARROW DECAL HAS ITS TAIL AT 2600 RPM.

There's a new no-load RPM limit for 5-ton multifuels. Maximum no-load RPM is 2900. Check yours—with transmission in NEUTRAL. Bring 'er up slowly to full throttle. If your tach goes over 2900 RPM, get your support to readjust your fuel injector pump so top RPM is between 2800 and 2900 RPM.

Here's the "what" and "when" on RPM limits under-load (operator-controlled) for 2 ½-ton and 5-ton multifuels:

MULTIFUEL ENGINE RPM'S CONTROLLED BY OPERATOR

	2½-TON	5-TON
A	1200	1400
B	1400-to-1800	1600-to-1800
C	1400-to-2200	1800-to-2400
D	2600	2600

A = Lowest engine RPM for operation "under load"—that's when your engine's pulling steady to make your truck travel.

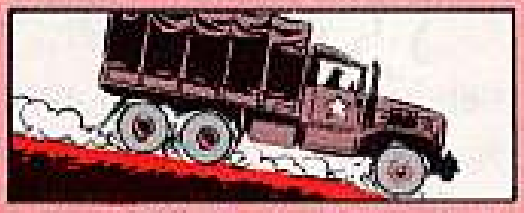
B = Lower RPM figure is best for downshifting. Never downshift when your engine RPM is over the higher figure.

C = For normal cruising operation. Between these 2 RPM figures will give you the most miles per gallon of fuel.

D = Absolute top RPM for operating under load. This's about what you'll rev your engine up to when you're hauling a heavy load up a steep hill. There should be a red DANGER arrow on your tachometer face glass with the tail right at this RPM mark. You're askin' for trouble if you let your tach needle slip past the arrow's tail. (FSN 7690-999-7807).

DOWN, BOY, DOWN

You shift to a lower gear for an uphill pull to get more power, natch. Your engine turns over faster (higher RPM) and you don't get lugging—if you shift down soon enough. Get the feel of your truck so you shift down before she starts lugging. And watch that RPM limit (Column B in the chart) for downshifting.



Downshifting for downhill travel helps put a drag on your speed. Here's where a real operator shows his fine tuning. Here's where your RPM can get away from you if you're not hot on the ball. Keep one eye glued to your tachometer. Drop 'er into the right gear range and control RPM by using your brakes.

MORE

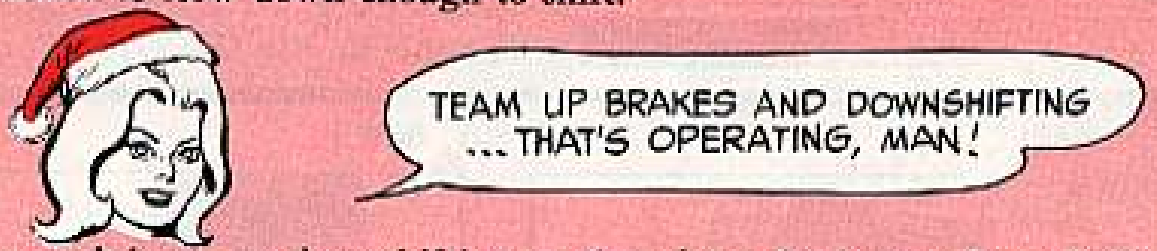
But Give 'Er A Break

Use your foot brake to hold back your downhill speed—downshifting isn't enough. Brake lining is a heckuva lot cheaper and easier to replace than your engine and other parts that can be wrecked by overspeeding. Turning over at too high an RPM can make your engine just fly apart inside. Those finely machined parts in your fuel injector pump will go to pieces. Your heavy flywheel could blow up like it was blasted with TNT.

But pump your brakes when you use 'em going downhill so you don't overheat the brake linings and brake drums. Smoke 'n' fire pourin' out of a wheel is kind of a hint that you went to sleep on your brake pedal.

PUMP IT! RIDING THE BRAKE WILL BURN UP YOUR LININGS BUT FAST!

Braking is real important, too, when you go to your transfer low range to get more gear ratios. Shifting your transfer case from HIGH to LOW range doubles your engine RPM without changing your truck's speed. This means you've got to make sure your engine RPM is down to 1200-1300 when you shift from HIGH range to LOW range. So you've got to get your foot brake into action to slow down enough to shift.



But, puh-leeze, no downshifting to slow down for a stop. Even if you don't happen to over-rev your engine with this kid stuff, you throw your 10 or 20 tons of truck and cargo weight on your engine and clutch. No good!

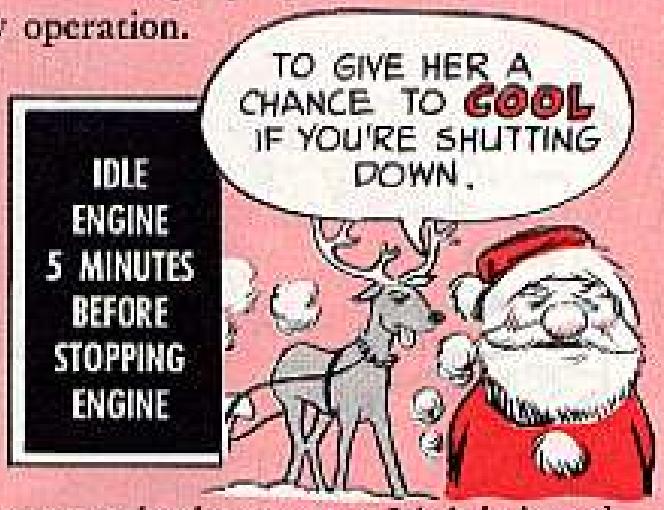
Let up on the gas when you see you're going to have to stop. Then use steady pressure on your brakes to come to a stop. No brake pumping here, though—you won't have to worry about overheating your brakes if you let the truck slow itself down some before you go to the brakes.

Lay off slipping the clutch when you're stopped on an uphill grade. It's even worse than riding the clutch. Some truck-butchers keep 'er in gear and then hold the clutch pedal part way down so the engine will keep the truck from rolling back. Clutch slipping—no good.

Idling And Shut Down

Keep your engine running—idle between 800 and 1000 RPM—for short stops. Figure a short stop is anything up to 30 minutes. You don't do your multi-fuel engine any favors by shutting down and starting up again all the time. It works better and lasts longer under steady operation.

Before you do shut down, always run your engine at the same idle speed for 5 minutes. Shutting down too soon doesn't give your cooling system a chance to take the top off that terrific engine heat. Fact is, a quick shutdown will make your cooling system's normal operating heat and pressure shoot up like a rocket!



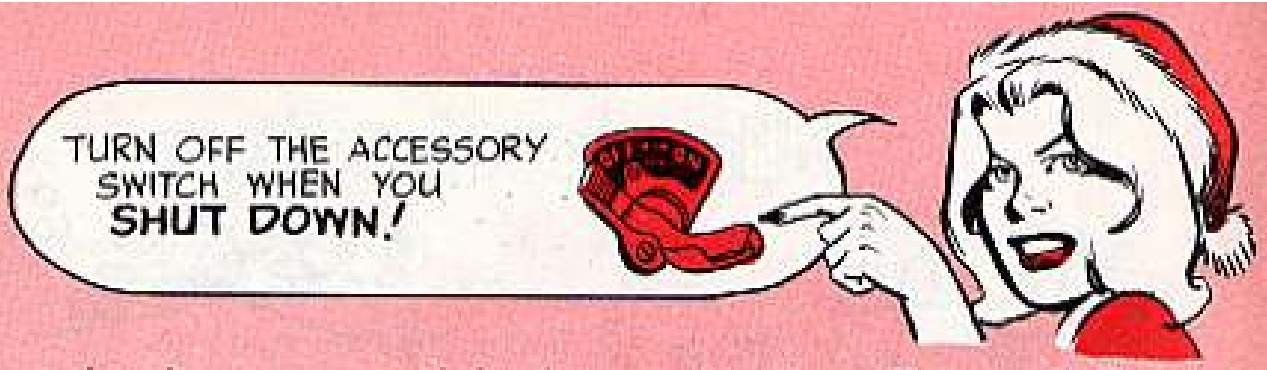
Idling before shutdown is important for your turbocharger too. It's lubricated by your engine's oil system. A quick shutdown cuts off this oil supply while the turbocharger's still spinning at about 60,000 RPM—it could burn up at that speed without lube. Idling gives it a chance to slow down.

Remember The Switch!

No, that's right, there's no ignition switch on your multifuel-engine truck. Your engine STOP cuts off the flow of fuel to your engine—with no fuel, there's nothing to burn. If your STOP control fizzles out on you and won't cut off the engine, here's an emergency way to stop your engine:

With brakes ON and transmission in highest gear, let out the clutch and stall the engine.

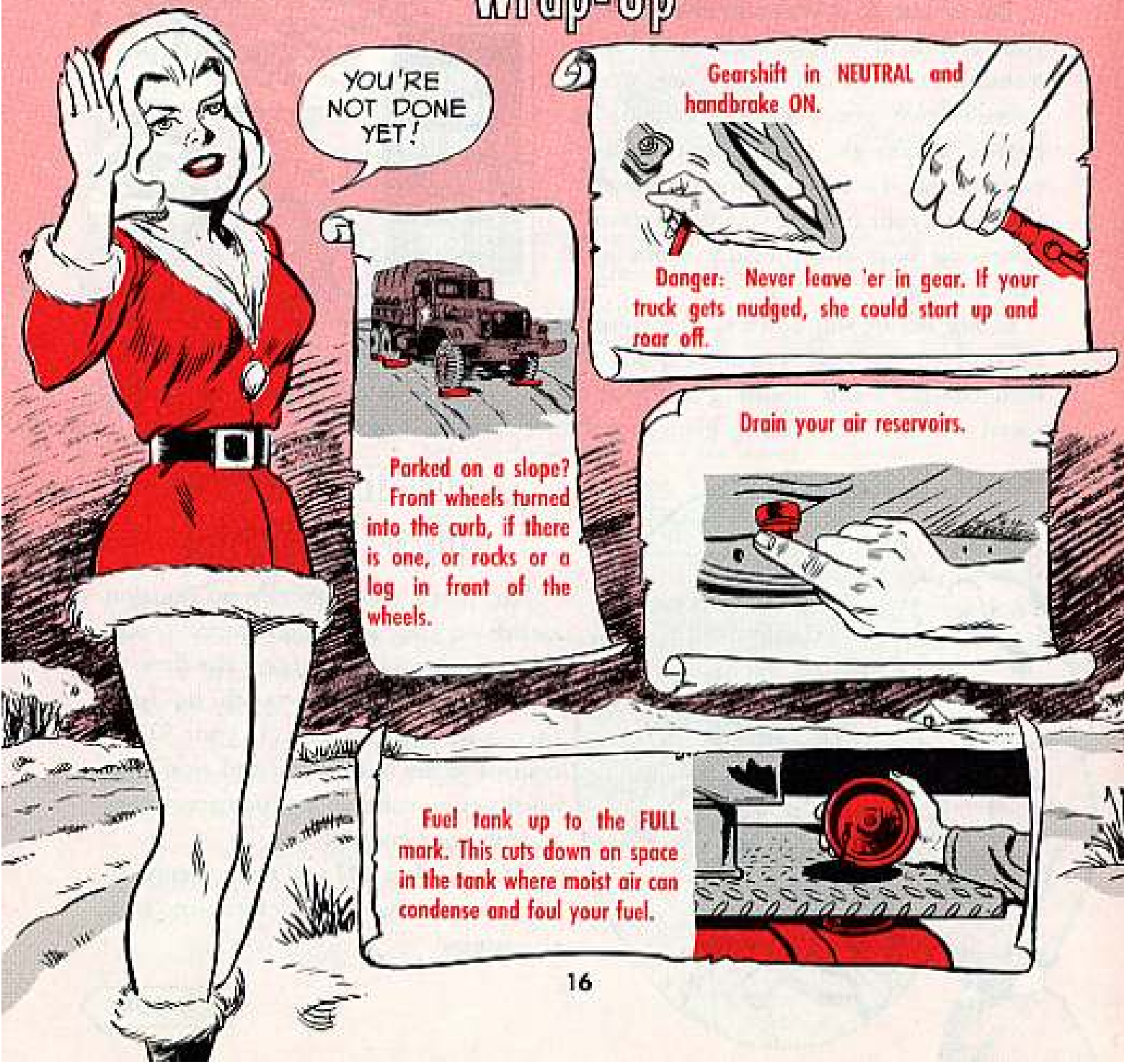
MORE



But remember that accessory switch when you shut down. Turn it off. Forgetting to turn off the accessory switch is one of the main causes of hydrostatic lock. Your in-tank fuel pump keeps running and pushing against fuel in the lines. This can push fuel past your manifold heater valves and on into your cylinders—a perfect setup for hydrostatic lock.

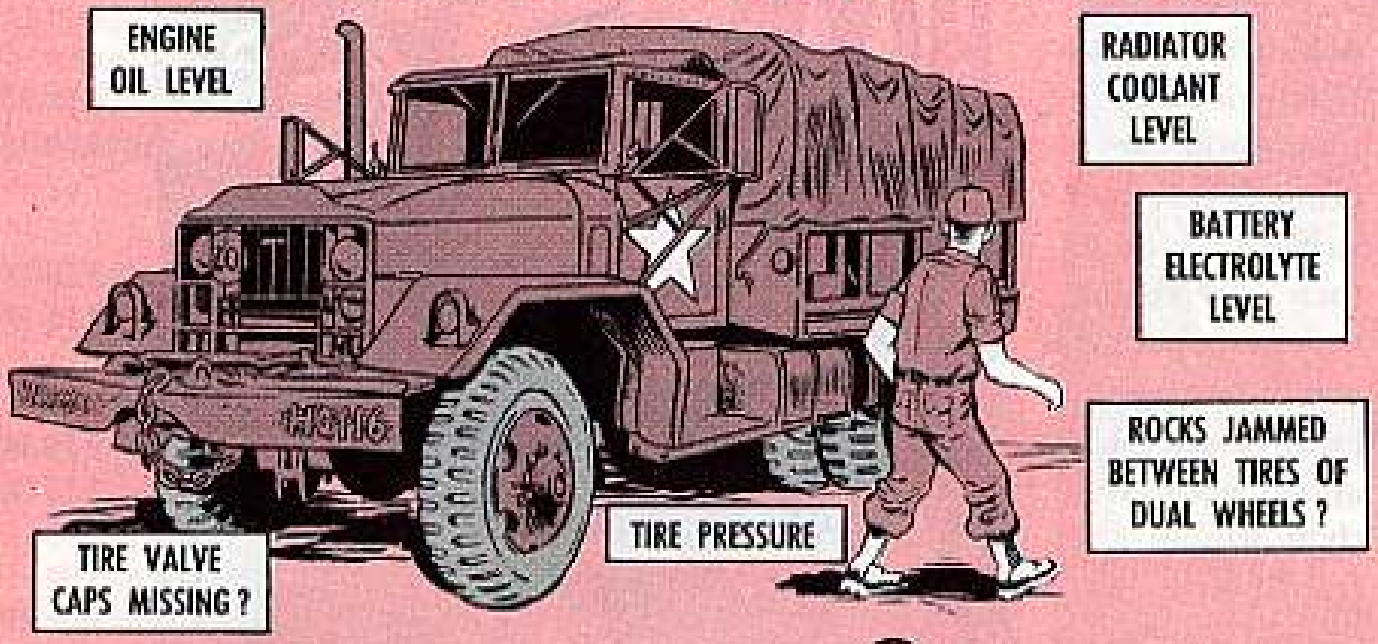
Besides, if you forget to shut down your electrical system, you'll likely find your batteries pooped out when you're ready to go again.

Wrap-Up



This's a good time to check your clutch free-travel. Do it at least once a week—it's easy and takes only a second if you've got your clutch pedal shaft marked. Free-travel has got to be at least 1½ inches but no more than 2 inches. Just a fraction off these limits can mean a sure and early death for your clutch. If your clutch free-travel's off, get a mechanic on it quick.

Last Minute Walk-Around Check



Make this last minute walk-around check a habit. It could be a life-saving habit—not just for your truck's life but for your own. You may have to roll out in a hurry and move out fast. When you're 'way out in the middle of nowhere and things are hot is a bad time to find out your vehicle needs something you should have given it before you took off.

Now, man, are you just a truck driver or are you a real pro—a

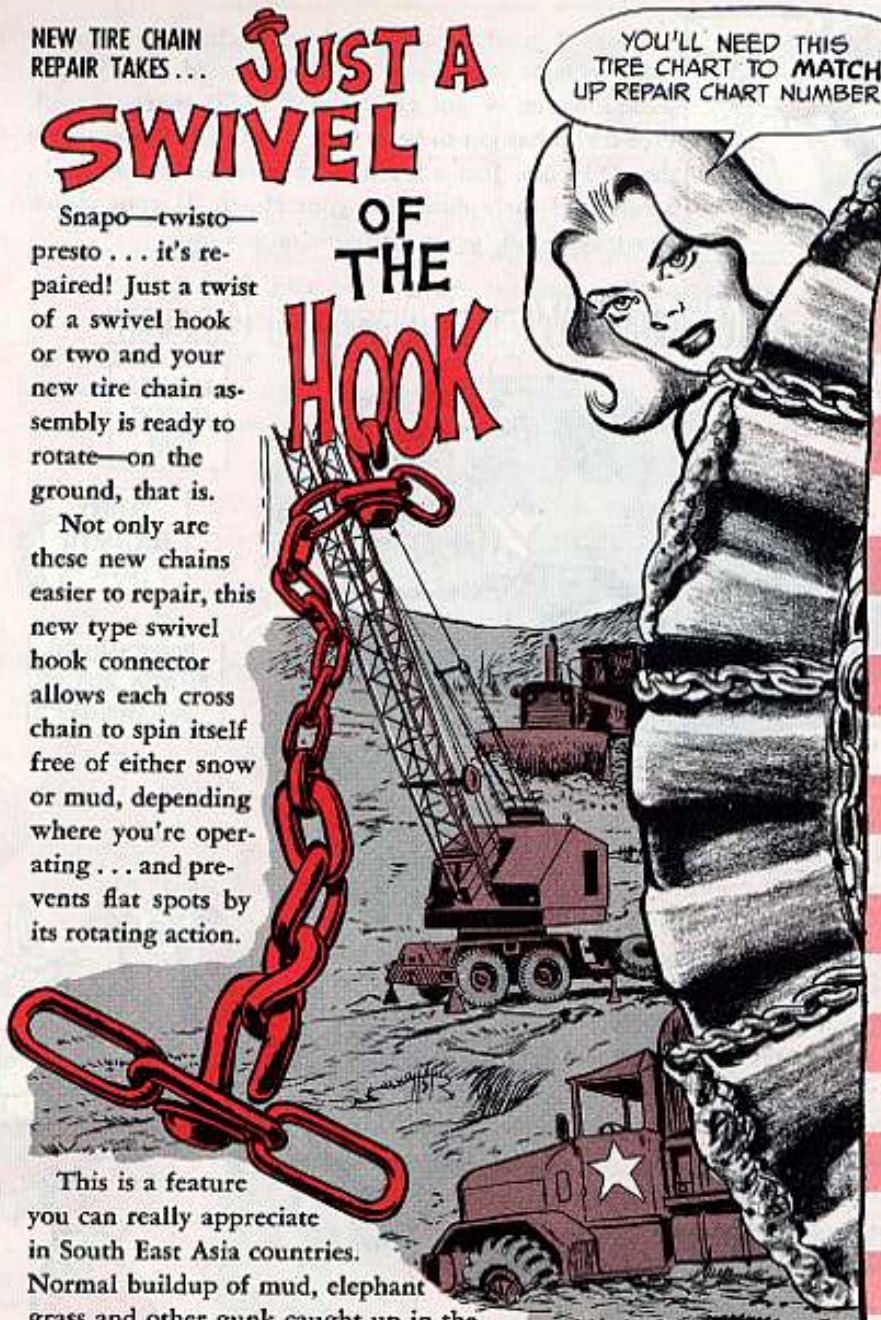
MULTIFUEL ENGINE TRUCK OPERATOR?

NEW TIRE CHAIN REPAIR TAKES...

JUST A SWIVEL OF THE HOOK

Snapo—twisto—presto . . . it's repaired! Just a twist of a swivel hook or two and your new tire chain assembly is ready to rotate—on the ground, that is.

Not only are these new chains easier to repair, this new type swivel hook connector allows each cross chain to spin itself free of either snow or mud, depending where you're operating . . . and prevents flat spots by its rotating action.



This is a feature you can really appreciate in South East Asia countries. Normal buildup of mud, elephant grass and other gunk caught up in the cross chains can be rolled off during driving. It's this self-cleaning operation of the cross chains that gives you continuous grouser, or traction, action in cross country use.

TIRE CHAIN REPAIR GUIDE

(s = single)
(d = dual)

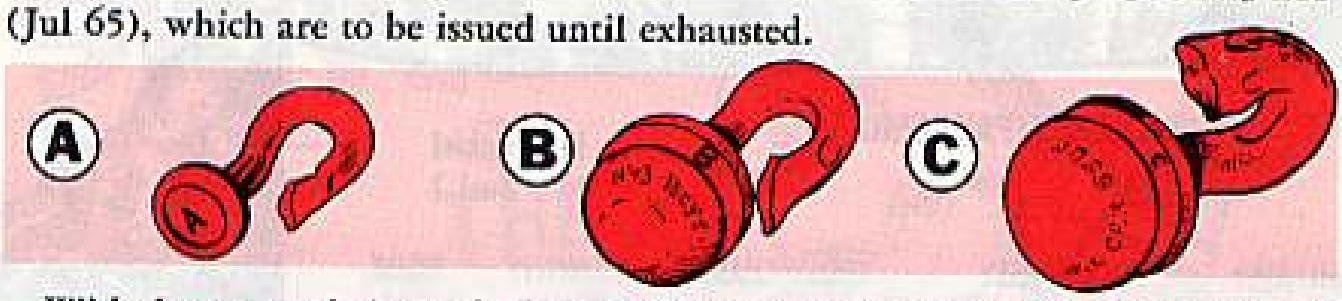
TIRE SIZE	CHAIN ASSY (SINGLE)	CHAIN ASSY (DUAL)	CROSS CHAIN	QUANTITY PER ASSY	HOOK
6.00-16	2540-933-9027	—	2540-933-6961	12 s	A
6.50-16	-9590	—	-6961	13 s	A
6.50-20	—	2540-933-9035	-6962	32 d	A
7.00-16	-6924	—	-6961	13 s	A
7.00-20	-9596	-9597	-6991	11 s - 22 d	B
7.50-15	-6923	—	-6960	13 s	A
7.50-16	-9031	-9029	-6960	14 s - 28 d	A
7.50-17	-9593	—	-6960	15 s	A
7.50-20	-9028	-9592	-6991	12 s - 24 d	B
8.25-15	-6930	—	-6959	10 s	B
8.25-16	-9032	—	-6961	14 s	A
8.25-20	-9025	-9594	-6959	12 s - 24 d	B
9.00-15	-6931	—	-6916	11 s	B
9.00-16	-9026	—	-6916	11 s	B
9.00-20	-9024	-9030	-6916	13 s - 26 d	B
10.00-15	-6932	—	-6916	12 s	B
10.00-20	-9034	-9020	-6916	14 s - 28 d	B
10.00-22	-9021	-9595	-6916	15 s - 30 d	B
10.00-24	-9036	-9598	-6916	16 s - 32 d	B
10.50-18	-6963	—	-6915	12 s	B
11.00-18	-6933	—	-6915	11 s	B
11.00-19	-6934	—	-6915	13 s	B
11.00-20	-9022	-9599	-6915	13 s - 26 d	B
11.00-24	-6935	-6927	-6915	14 s - 30 d	B
12.00-20	-6922	-6917	-6915	14 s - 28 d	B
12.00-24	-9591	-6918	-6915	16 s - 32 d	B
13.00-24	-6936	-6919	-6992	16 s - 32 d	B
14.00-20	-9033	-6928	-6992	15 s - 30 d	B
14.00-24	-9023	-6929	-6992	17 s - 34 d	B
16.00-20	-9037	—	-6913	14 s	C
16.00-20 (low pressure)	-6937	—	-6914	9 s	C
16.00-24	-6926	-6920	-6913	15 s - 30 d	C
16.00-25	-6925	-6921	-6913	16 s - 32 d	C

A = 2540-937-0405 B = 2540-937-0404 C = 2540-937-0403

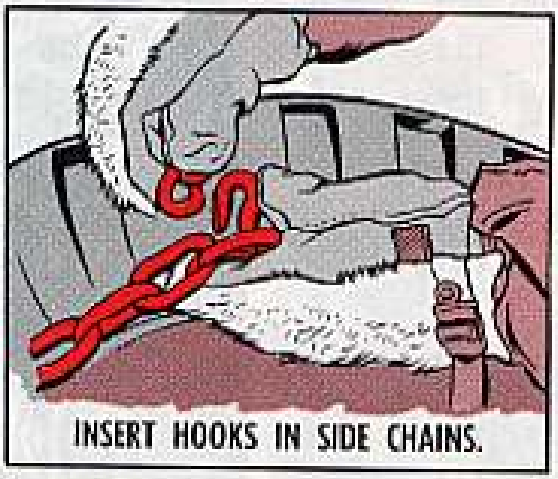
MORE

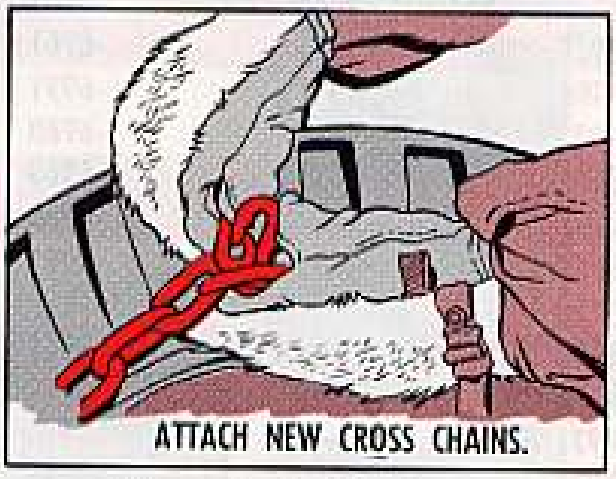
You can recognize each of the three different hooks by the letter (A, B or C) stamped on their heads.

The chains in this chart are newer than those listed in TM 9-2300-223-20P (Jul 65), which are to be issued until exhausted.



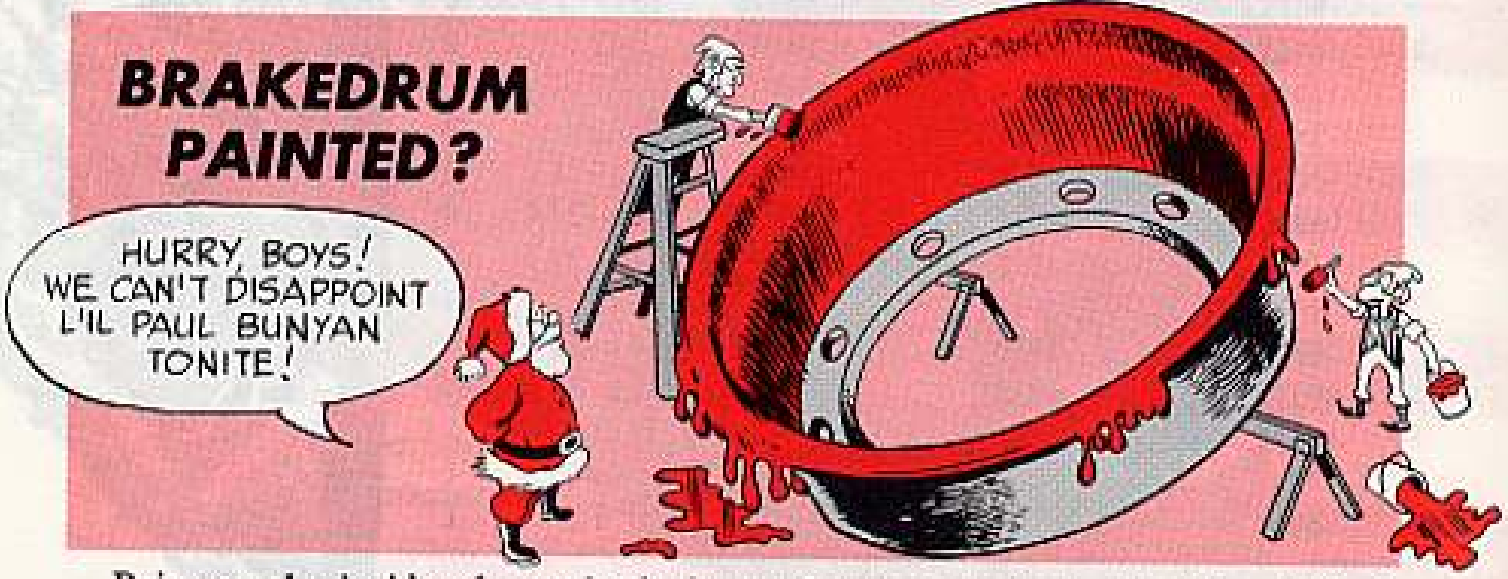
With these new chains, a driver wearing arctic type mittens can repair a busted or worn cross chain in less than 5 minutes. Just unfasten the outside chain to allow enough slack in the worn cross chain for you to insert swivel hooks in





both side chains. Now fasten the new cross chain to both side chains by reaching across the tire—drawing the chain tight—and hooking up the outside end of the cross chain. Then relock the outside chain fastener and you're ready to roll.

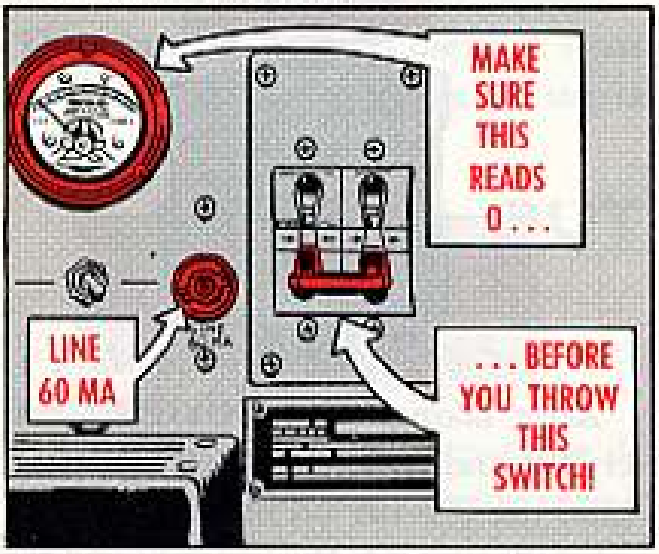
So long, tiger! Give 'em your No. 1 traction action.



Paint on the inside of new brakedrums for your tactical wheeled vehicle is nothing to worry about. It's a primer-type paint put on to protect the metal during vehicle storage. Wirebrush it off, if you get a chance. Otherwise, forget it —it'll wear off in operation.

TAKE CARE OF IT

Before you throw the J-668 interconnecting box's main power switch to ON be sure the line 60-ma knob's turned to 0 reading.



Otherwise, the current surge when the switch is turned on can add extra age to the CR1 selenium rectifier in your TT-98 teletypewriter.

These current blasts will have that teletype in for repairs long before its time.

And remember when you're working around the J-668 with the TT-76 reperforator-transmitter teletypewriter shelf pulled out, eye those cables for cuts and frays.

To keep from scraping or pinching 'em while you're pushing the shelf back, grab a handful of cabling and gently lift up . . . and don't turn loose until the shelf lock has clicked in place.

Traipsing through ponds, puddles and rice paddies in Boonieland paves the way for needed PM on that AN/PRC-25 or -77 radio set.

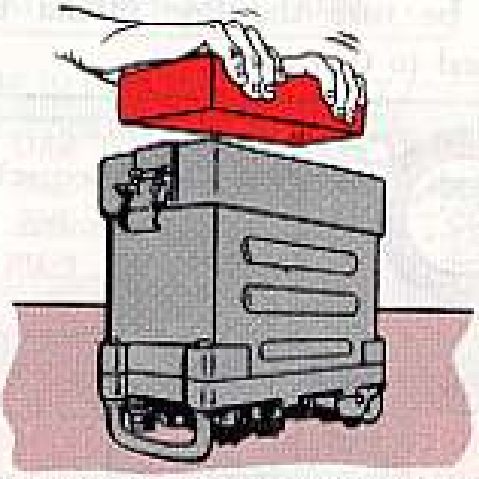
Like, f'rinstance, when one of the audio connectors on the RT-505 receiver-transmitter is gettin' all the use, be sure the cover is over the other one, or temporarily cover it with waterproof tape if cover is missing.

Another thing . . . never carry the RT-505 by its AT-892 antenna. The strain can pull the base of the antenna apart and put a big dent in your communications.

Your best bet's to pick it up by the case, or better yet keep it in the harness.

Incidentally, don't panic when you find that portable Perk you have winds up to be an AN/PRC-77. (See TM 11-5820-667-12 (Jun 67). It's still the Perk-25 but with a transistorized amplifier — which means much more life for that BA-386 dry battery.

Speaking of the battery, there're a couple or three steps to follow when you install it so the battery plug won't get bent or the battery connector doesn't get cracked or broken, making the power pack worthless.



After taking off the CY-2562 battery box and tossing out the bad battery, stand the RT-505 on its handles.

Set the new BA-386 connector on the J4 plug, keeping the battery level until it's seated.

Trying to team up the connector and plug at an angle will damage one or the other just about every time.

Replace the CY-2562, lock the case clamps, and you're back in business.

LOOSE LOOP FOR A LUG

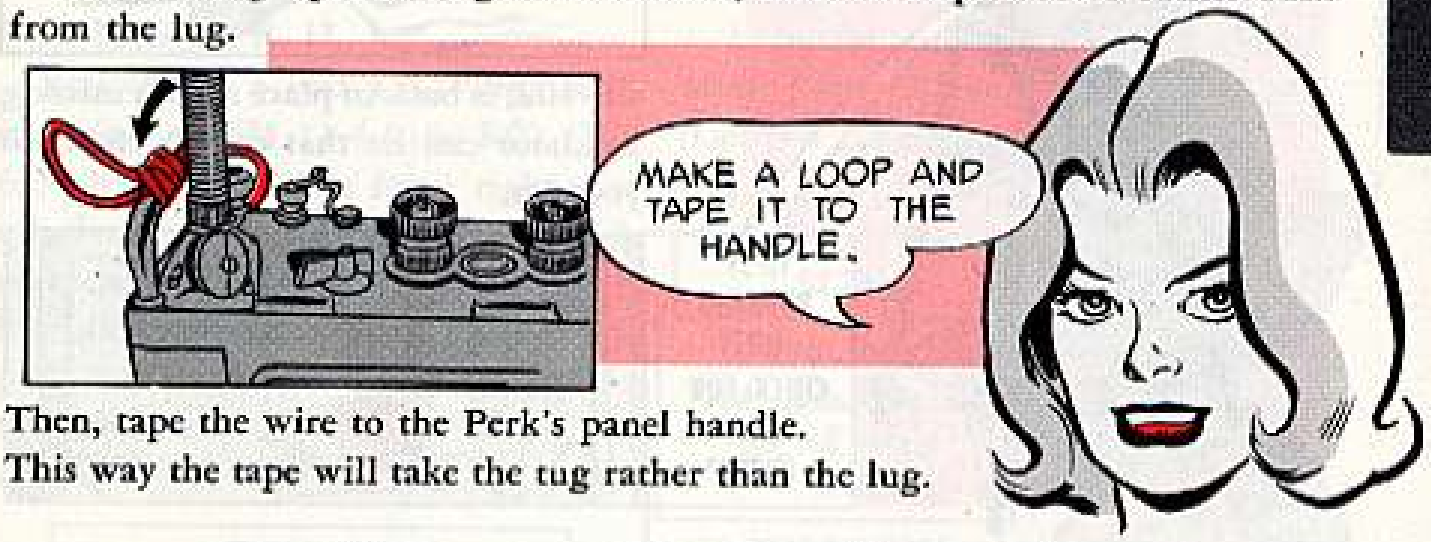
When that No. 1 signal on your AN/PRC-25 radio set suddenly fades to No. 10, don't be Perk-plexed . . . it could be in the AT-984A (FSN 5820-926-0201) antenna.

Like, f'rinstance, when an unintentional tug pulls the terminal lug from under the AB-591 antenna support, or the natural strain forces the lug and the antenna wire to part company.

A little slack in the wire will keep the words on a higher plane . . .

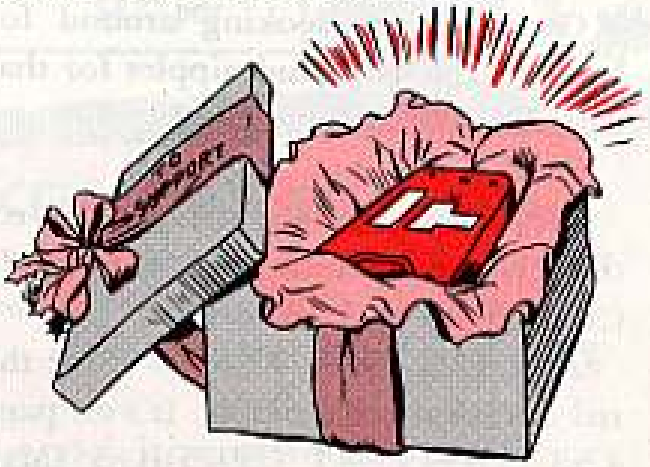
. . . And, here's how:

After setting up the long-wire antenna, make a loop about 6 inches back from the lug.



Then, tape the wire to the Perk's panel handle.
This way the tape will take the tug rather than the lug.

MOVING OUT ON MODULES

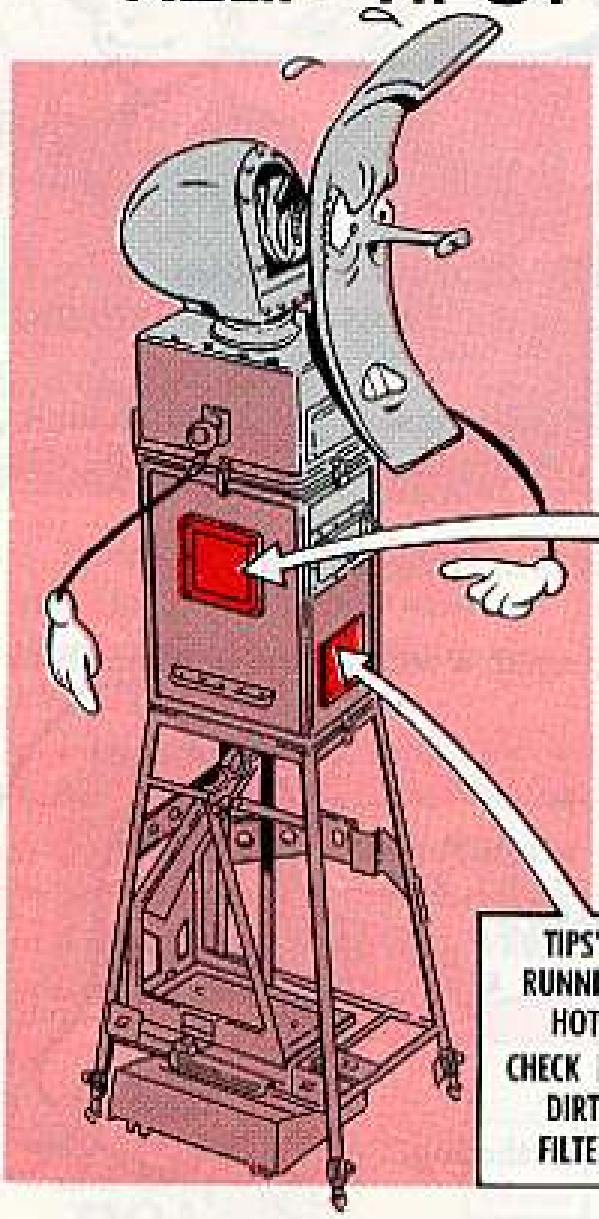


Just a cotton-pickin', chicken-pluckin' minute, friend. . . .

Take care when you're packing defective FM radio modules for turn-in to your support. When they get back to depot for evaluation and repair they could be just so much junk jiggling around.

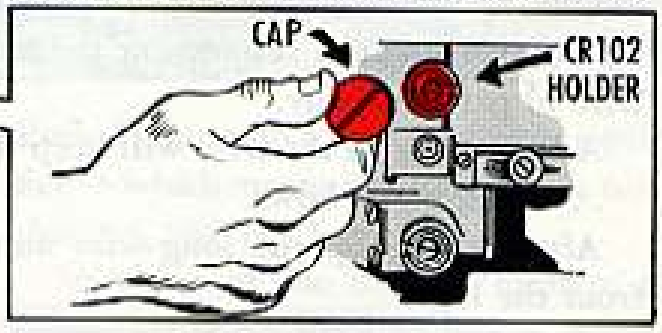
As a reminder on the modules you are supposed to turn in for repair, take a look at Pages 7 and 8 in Change 5 to TM 11-5820-401-20 (Dec 61) for AN/VRC-12 series radio sets and pages AIV-8 and -9 in Change 1 to TM 11-5820-398-12 (Nov 65) for the AN/PRC-25 and -77.

KEEP TIPSY FROM FLUBBIN'



You say your AN/TPS-21 or -33 radar set grounded out after you had a look-see at the crystals in the CV-644 TPS-21 or CV-937 TPS-33 frequency converter-transmitter?

Better make sure the insulators, especially the outer one in the CR-101 or



CR-102, is back in place since a missing insulator can let that cap short-circuit your set.

FSN'S FOR REEL ITEMS

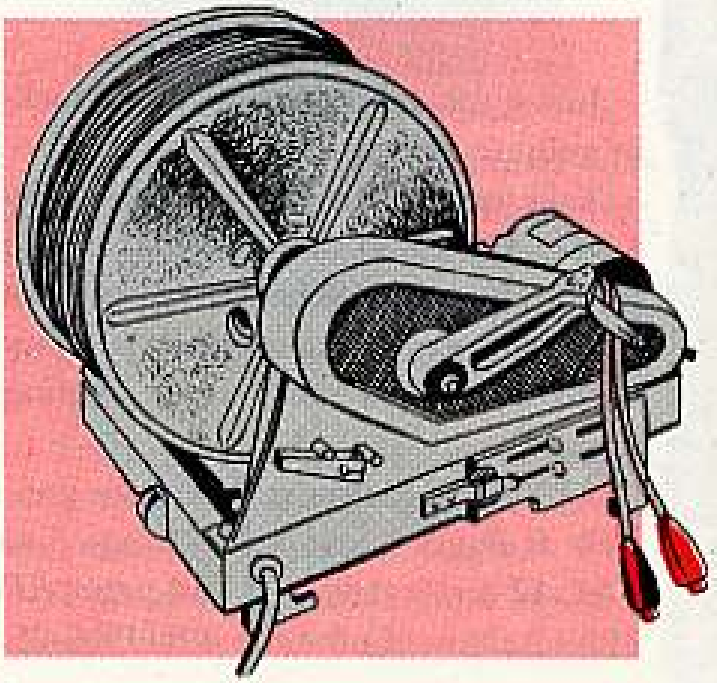
Getting dizzy looking around for battery cable clips and nipples for that RL-172( )/G reel machine?

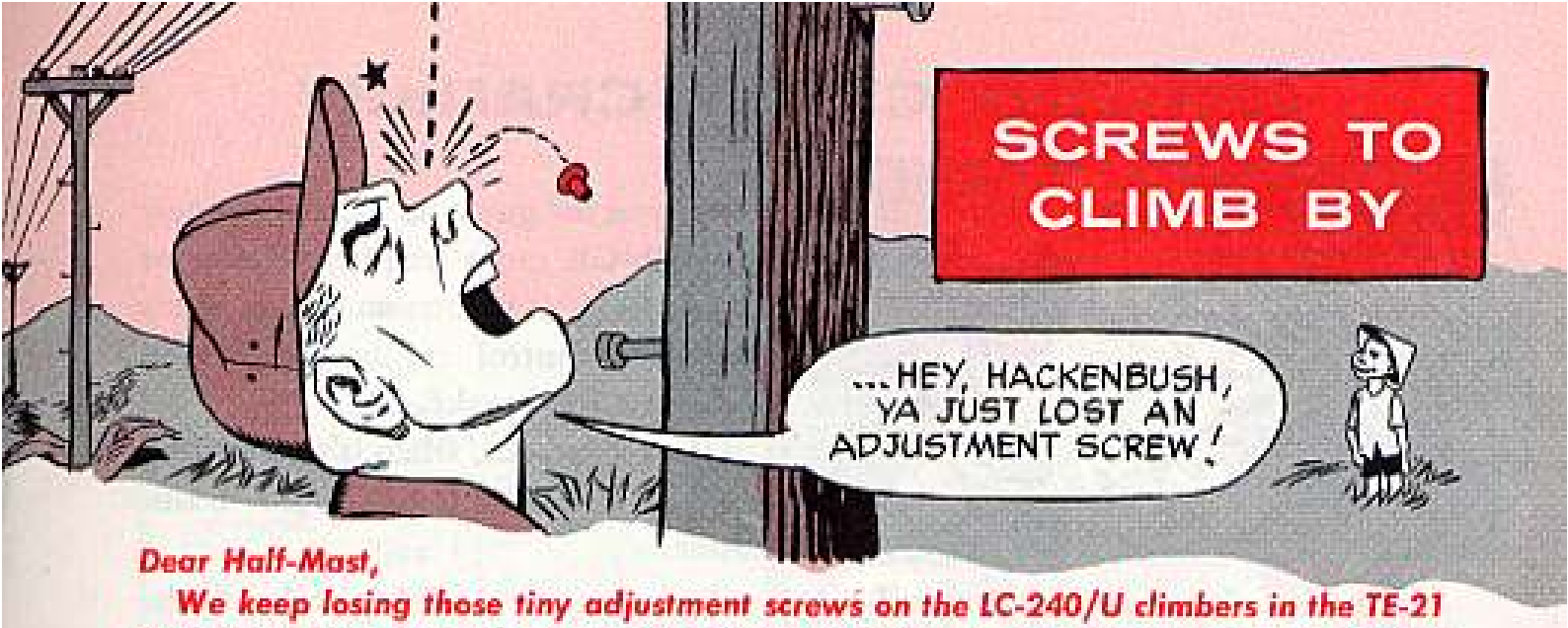
Don't sweat it . . .

FSN 5940-501-8369 will get an electrical clip as listed on page 4.9 in FED CAT C5940-IL-A (Aug 66).

And, FSN 5975-727-6098 is for the red electrical cable nipple. It's on page 4.38 in FED CAT C5975-IL-A (May 67).

FSN 5975-727-6099 for the black electrical cable nipple is in the same catalog on page 4.39.





SCREWS TO CLIMB BY

Dear Half-Mast,

We keep losing those tiny adjustment screws on the LC-240/U climbers in the TE-21 lineman's equipment kit. That means we have to turn-in and order a complete climber each time. We need a separate stock number for this screw.

There should be a way to order leg pads and straps separately, too.

MSG W. R. H.

Dear MSG W. R. H.,

You've got a real DA Form 2028 condition on SM 11-4-5180-R02 (Jun 63) there, Sarge. But for a right-now solution, your supply support can pick up those two leg-iron adjusting-screws by following AR 725-50, Change 11, para 3-20.1. The screws come under manufacturer's part number 9215 and can be procured from:

Buckingham Manufacturing Company
7-9 Travis Avenue
Binghamton, N. Y. 13904

As for the pads and straps, SC 4230/40-IL (May 66) and SC 4230/40-ML (Dec 66) list them as—

FSN 4240-273-9654
Strap, Climbers, Upper
$2.70 pair

FSN 4240-591-1240
Pad, Climbers Strap
(for calf straps)
$2.30 pair

FSN 4240-844-8036
Strap, Climbers, Ankle
$4.32 pair

GOTTA BAD XENON BULB?

Yeah, a burned out Xenon-type searchlight lamp's about as useful as a headlight at high noon on a cloudless day. But, don't throw it away. 'Cause the engineers want to take a gander at the defective 2.2-KW Xenon lamp. (FSN 6230-012-1957).

If the container assembly's missing, pack 'er in plastic or paper to prevent scratching the quartz envelope and use a shock-absorbing material with a sturdy shipping box or container. Send 'em to: Commanding General, Granite City Army Depot, ATTN: AMXGCM-P (KINNEY), Granite City, Illinois 62040.

CUT OUT CRAZY CRANKIN'

Are you the guy who jockeys the new TN-339/GR radio frequency tuner or the old BC-939-B antenna tuning unit's frequency control cranks like you're heck-bent for breakfast?

Like f'rinstance, when it's teamed up with a T-368( )/URT radio transmitter?

When you've cranked near to the up or down megacycle (Mc) limits on the frequency dial go easy with the turning.

Unseen by you, there are rider wheels riding the ridges of the L44 or L6 inductor or frequency loading coil that'll get buggered up when you bang 'em against the stops.

Next think you know, the banged up rider wheels will jump the track and throw the tuning unit off freq . . . or worse.

ENERGY FOR AN EMERGENCY

Are you high-flying types needin' dry battery K308A replacement for that nifty little ACR RT-10 emergency radio set?

Don't sweat it.

You'll find the battery, FSN 6135-930-0810, for the set's RT-10 in the BIIL in TM 11-5820-640-15 (May 67).

The battery's a kissin' cousin to the BA-1387, FSN 6135-889-1485, for the AN/URC-10, the fraternal twin of the RT-10.

BLOCK ARCING SPARKS

So you're about to juice up one of those Fancy Dan radio terminal sets, like f'rinstance, the AN/TRC-90( ), -129 or -132.

Well hold one before you flip switches, turn knobs and push buttons to get the set geared up to standby position. You could wind up with arcing or transient voltage in the 240F-4B power amplifier circuitry.

Turn the drive level knob on the klystron panel to reduce input drive to klystron until output drive is below 300 watts.

Then, throw the beam switch to the OFF position.

After doing this, just follow operating info in your TM. This bit of circuit-saving poop is being added to the next revisions or changes to the TM's covering your set.

BURY 'EM DEEP

When it comes to crossing roadways with commo cables, you can go over or under. If your choice is under, be sure to bury that cable beneath several inches of dirt. This keeps vehicles from rolling the cables.

In frozen ground or permafrost, tiny fires can thaw out real estate bit by bit to help you pick and shovel your way through the roadbed.

A selected list of recent publications of interest to Organizational Maintenance Personnel. This is a list compiled from recent Adjutant General's Distribution Center Bulletins. For complete details see DA Pam 310-4 (May 67) and DA Pam 310-6 (Jul 67).

TECHNICAL MANUALS

TM 3-4240-212-25P, Jul, M20 Breathing Apparatus, Oxygen Generating.
TM 3-4240-237-20P, Jul, M5 Protective Outfit, Impermeable, Supplied-Air.
TM 5-3805-200-20P, C1, Sep, Loader, Scoop Type, DED, Clark 175A-M; 175A-M23.
TM 5-3805-204-20P, C1, Aug, Barber-Green 44-C Ditching Machine.
TM 5-3820-200-25P, Jul, Auger, Earth Skd Mtd; GED; Texoma Enterprise, Jaques TJ254.
TM 5-4310-225-20P, C1, Aug, NWE-60 Schramm Air Compressor.
TM 5-4610-200-25P, Aug, Permulit 500, Water Pur Unit, Trailer Mtd.
TM 5-5420-205-25P, Jul, Mobile Floating Assault Bridge/Ferry Components.
TM 9-1005-237-15P, Jun, Bayonet-Knife, Scabbard.
TM 9-1005-249-14, C2, Aug, M16, M16E1 Rifles, XM148 Grenade Launcher.
TM 9-1220-221-10, C1, Sep, Gun Direction Computer.
TM 9-1290-326-12, C1, Sep, Signal Data (MLU) Reproducer.
TM 9-1300-206, C6, Aug, Care and Handling of Ammunition.
TM 9-1400-500-25P, Jul, Hawk.
TM 9-1440-375-15P/2, Jul, Pershing.
TM 9-2300-224-10, C9, Aug, M113, XM474E2, XM577, M132, XM106 Carrier.
TM 9-2300-224-20, C10, Aug, M113 Pers Carrier, XM474E2 Guided Missile Equip Carrier, XM577 Command Post Carrier, M132 Flame Thrower Carrier, XM106 Mortar Carrier.
TM 9-2320-222-20, C1, Aug, M88 Recovery Vehicle.
TM 9-2320-246-20, Jul, Carrier, Light Weapons, M274.
TM 9-4931-204-12/1, C1, Sep, Computer Logic Unit Test Set.
TM 9-4931-204-12/2, C1, Sep, Computer Logic Unit Test Set.
TM 10-277, Jul, Protective Clothing Chem Oper.
TM 10-500-19, Jun, Rigging 105MM Howitzer.
TM 10-500-25, Jun, Rigging Road Graders.
TM 10-500-35, C1, Aug, Rigging 5KW Gen w/Port Floodlight Set.
TM 10-500-49, C1, Aug, Rigging Water Purification Unit Erdiator Trailer Mtd, 600GPH.
TM 10-500-69, Jun, Rigging 210 CFM Davey Trailer-Mtd Air Compressor.
TM 10-500-87, C1, Aug, Rigging M28, M29 Weapons Systems.
TM 10-4520-201-25P, Jul, 250,000 BTU Gasoline Port Heater, Dust-Type, Bastian-Morley PRDT-250, Herman Nelson GT-3077, Hunter PH-25 Portsco, GBH-101 Silent Glow, SG-3077 Silent Glow SG-30778-8, United Stove 1600 TH, Vogt Bros VB-3077 CS, VB-3077 CS 53, VB-3077 CS-57, VB-3077 CS-58, VB-3077 CS-60, VB-3077 CS-61, VB-3077 CS-62.
TM 10-8110-201-14, Aug, 500 Gal Fabric Collapsible Drum, Liquid Fuel, (Nonventer) 4C-135-03562, 5-14-191-1.
TM 11-5805-201-12, Jun, TA-312/PT Telephone Set.
TM 11-5805-352-15, Jul, Pershing.
TM 11-5805-387-20P-1, Aug, MD-522/GRC Modem Radio Teletype.
TM 11-5805-387-20P-2, Aug, MD-522A/GRC Radio Teletypewriter Modem.
TM 11-5805-390-15, Jul, AN/MGC-34 Telegraph Terminal.
TM 11-5805-453-15, Sep, Philco Incoming Call Ind Panel.
TM 11-1510-209-ESC, Aug, Electronic Equip Configurations in U-21A Aircraft.
TM 11-5820-555-15, Jun, KWT-6 Type 8 Transceiver.
TM 11-5820-707-15, Jul, Model 2002 Klystron Amplifier.
TM 11-5820-710-15, Aug, Model 2000B Klystron Ampl.
TM 11-5835-230-15, Jul, RD-242/G Sound Recorder-Reproducer.
TM 11-5840-293-20P, Jul, AN/FPN-40 Radar Set.
TM 11-5915-223-12, Aug, MX-7778/-GRC Electrical Transient Suppressor.
TM 11-5985-263-12, Aug, AB-903/G Mast.
TM 11-6110-243-15P, Aug, J-3317( )/U Distribution Boxes.
TM 11-6625-937-12, Jul, ID-1189/PR Channel Alignment Indicator.
TM 11-6625-1507-15, Aug, A601C, A602C Milliometers.
TM 11-6625-1524-15, Aug, Alfred Electronics, 630 Series, Sweep Signal Gen.
TM 11-6625-1589-15, Aug, Hewlett-Packard Oscillator 204B.
TM 11-6625-1608-15, Jul, Model 6000A Hickok Tube Tester.
TM 11-6625-1612-15, Aug, Distortion Analyzer.

PROCEDURES FOR RAPID DEPLOYMENT

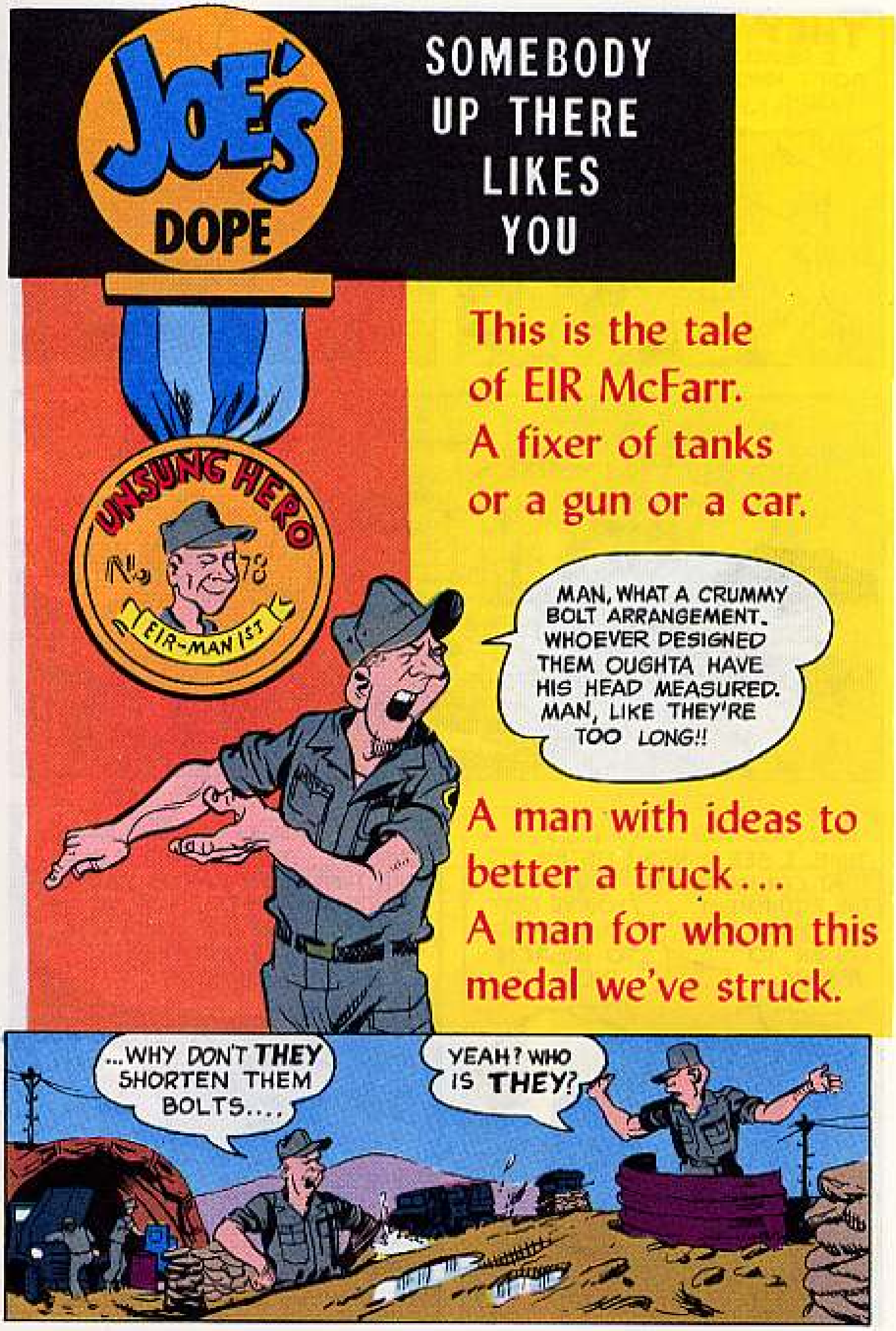
TM 750-136, Sep, Small Arms.
TM 750-147, Sep, Decontaminating App, Port DS2, 1½ Qt ABC-M11.
TM 750-148, Sep, Decon App, Power-Driven, Trk-Mtd, 400 Gal, M9.
TM 750-149, Sep, Decon and Re-impregnating Kit, Ind, M13.
TM 750-150, Sep, Detector Kit, Chem Agent, YGH, AN-M15A1A; Detector Kit, Chem Agent, BGH, AN-M15A2A.
TM 750-151, Sep, Detector Kit, Chem Agent, ABC-M18A1, ABC-M18A2.
TM 750-152, Sep, Food Testing/Screening Kit, Chem Agents, ABC-M3, Water Testing Kit, Chem Agents, AN-M2.
TM 750-153, Sep, Protection/Treatment Set, Chem Agents, M5A1.
TM 750-154, Sep, Filter Unit, Gas-Particulate, Armd Ambulance, Six-Man 12 CFM, M14; Hosp, Six-Man, 12 CFM, ABC-M7A1.

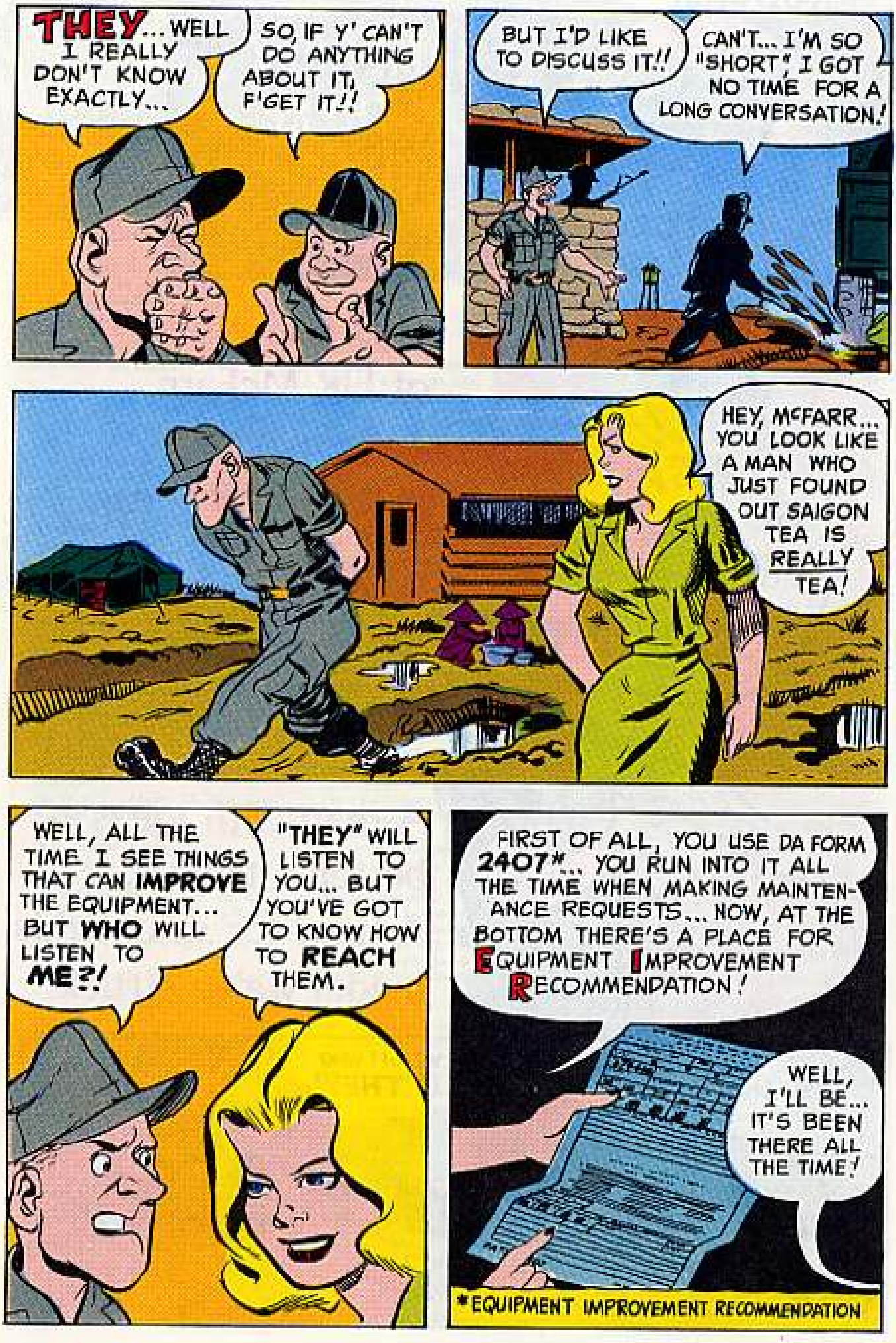
SUPPLY CATALOGS

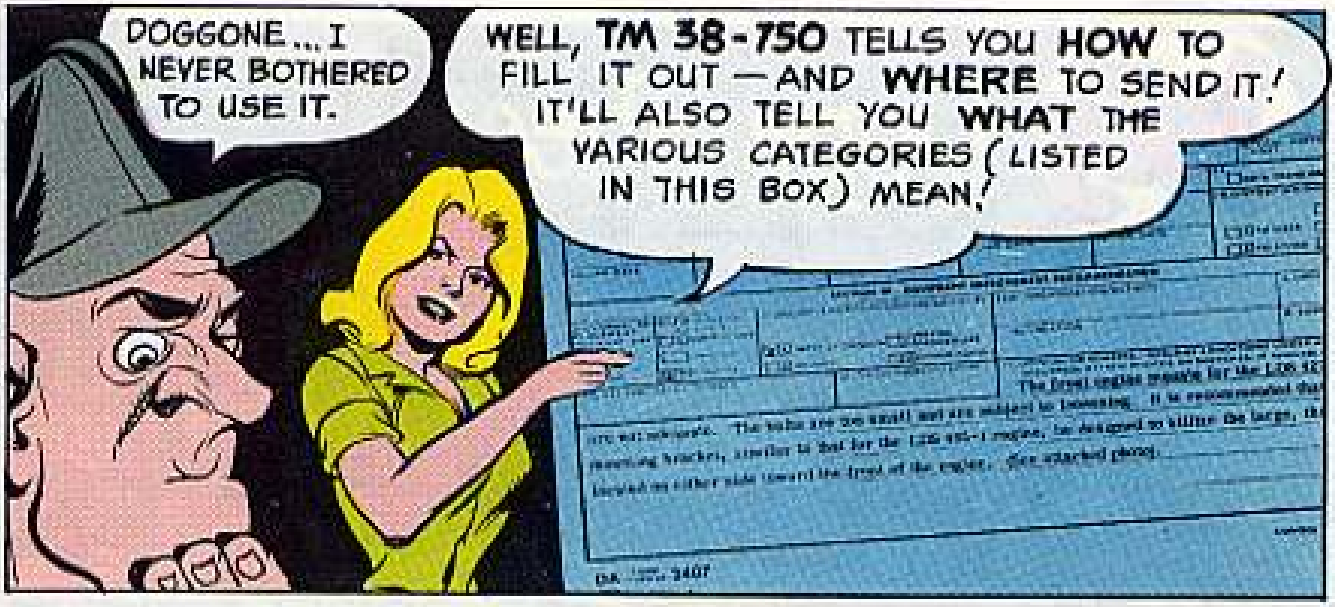
SC 3990-97-CL-E02, Aug, Drum Cargo Set.
SC 3990-97-CL-E07, Aug, Timber Cargo Set.
SC 4910-95-CL-A70, Jul, AA Arty Mech Tool Kit.
SC 4910-95-CL-A71, Jul, Turret Mech Tool Kit.
SC 4910-95-CL-A72, C1 (Corr Copy), Aug, Tool Kit, Auto Maint, No. 2 Common.
SC 5180-97-CL-E10, Aug, Engr Com Pln Pioneer Tool Kit.
SC 5420-97-CL-E14, Aug, Fixed Bridge: Railway: 1-Beam 21 Ft Lg.
SC 5420-97-CL-E39, Aug, Bridge, Fixed: Highway; Port Panel, Bailey Type.
SC 6230-97-CL-E08, Aug, Light Set, General.
SC 6545-8-CL-D24, Jul, 10 Bed Dispensary ZI Med Equip Set.
SC 6605-97-CL-E01, Aug, Navigation Set, Land Veh.
SC 6675-97-CL-E28, Aug, Surveying Set, Triangulation.

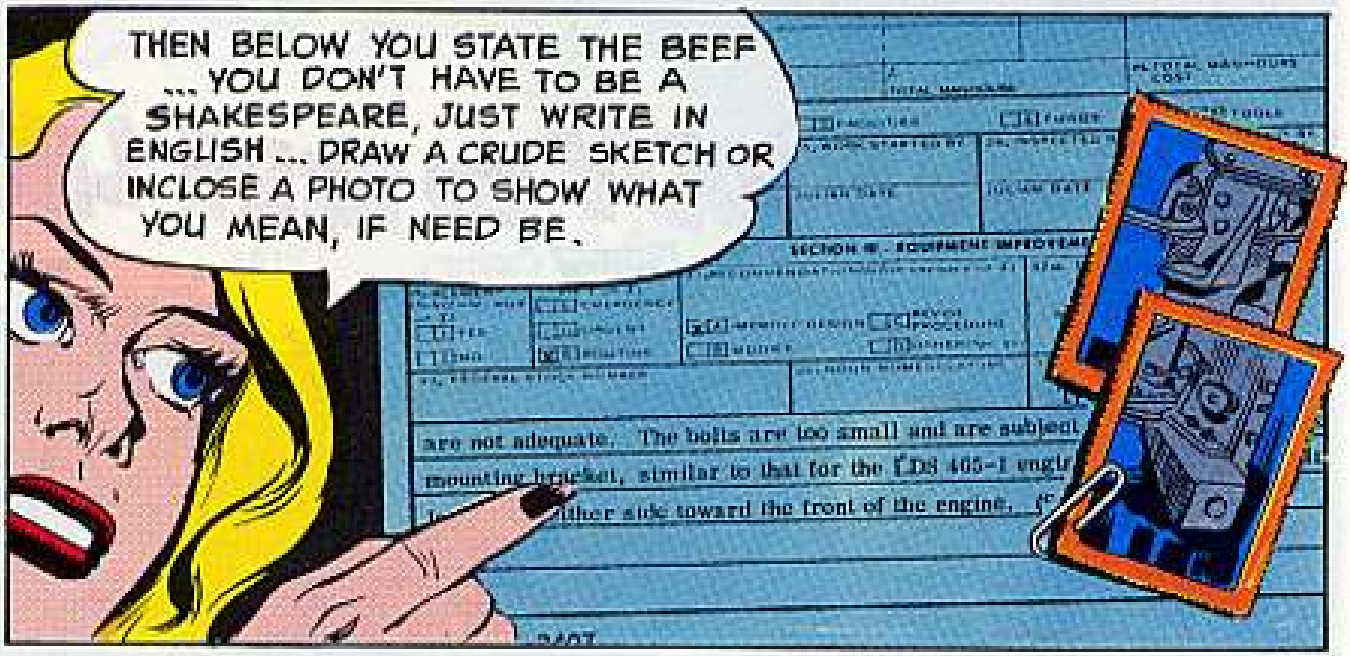
MISCELLANEOUS

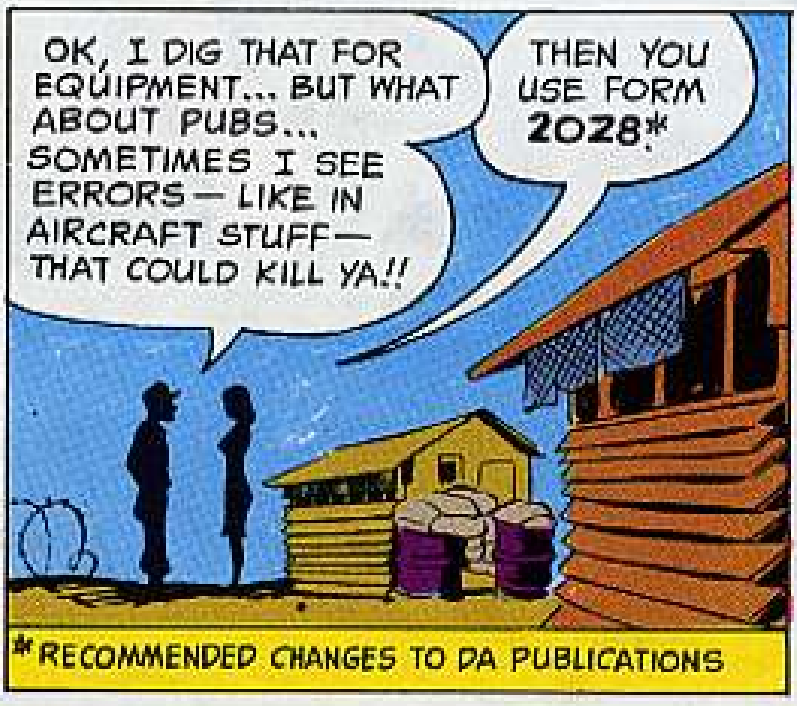
ASubjScd 23-18, Aug, Night Obs Device, Med Range (NODMR).
ASubjScd 23-20, Aug, M16A1 Training Rifle.
ASubjScd 55-43, Jul, Marine, Amphib Maint.
DA Form 1355, Jul, Minefield Record.
LO 5-4930-212-15, Jul, Fueling Systems, Air Trans: Air Logistics Corp 111214-521, 111214-527, 111214-533, 113379, Filter-Separator, Metering Unit, Air Logistics Corp Model.


JOE'S DOPE
SOMEBODY UP THERE LIKES YOU
UNSUNG HERO
No. 1
EIR-MAN 1ST
This is the tale of EIR McFarr. A fixer of tanks or a gun or a car.
MAN, WHAT A CRUMMY BOLT ARRANGEMENT. WHOEVER DESIGNED THEM OUGHTA HAVE HIS HEAD MEASURED. MAN, LIKE THEY'RE TOO LONG!!
A man with ideas to better a truck... A man for whom this medal we've struck.
...WHY DON'T THEY SHORTEN THEM BOLTS....
YEAH? WHO IS THEY?


THEY... WELL I REALLY DON'T KNOW EXACTLY...
SO, IF Y' CAN'T DO ANYTHING ABOUT IT, F'GET IT!!
BUT I'D LIKE TO DISCUSS IT!!
CAN'T... I'M SO "SHORT", I GOT NO TIME FOR A LONG CONVERSATION!
HEY, McFARR... YOU LOOK LIKE A MAN WHO JUST FOUND OUT SAIGON TEA IS REALLY TEA!
WELL, ALL THE TIME I SEE THINGS THAT CAN IMPROVE THE EQUIPMENT... BUT WHO WILL LISTEN TO ME?!
"THEY" WILL LISTEN TO YOU... BUT YOU'VE GOT TO KNOW HOW TO REACH THEM.
FIRST OF ALL, YOU USE DA FORM 2407*... YOU RUN INTO IT ALL THE TIME WHEN MAKING MAINTENANCE REQUESTS... NOW, AT THE BOTTOM THERE'S A PLACE FOR EQUIPMENT IMPROVEMENT RECOMMENDATION!
WELL, I'LL BE... IT'S BEEN THERE ALL THE TIME!
*EQUIPMENT IMPROVEMENT RECOMMENDATION

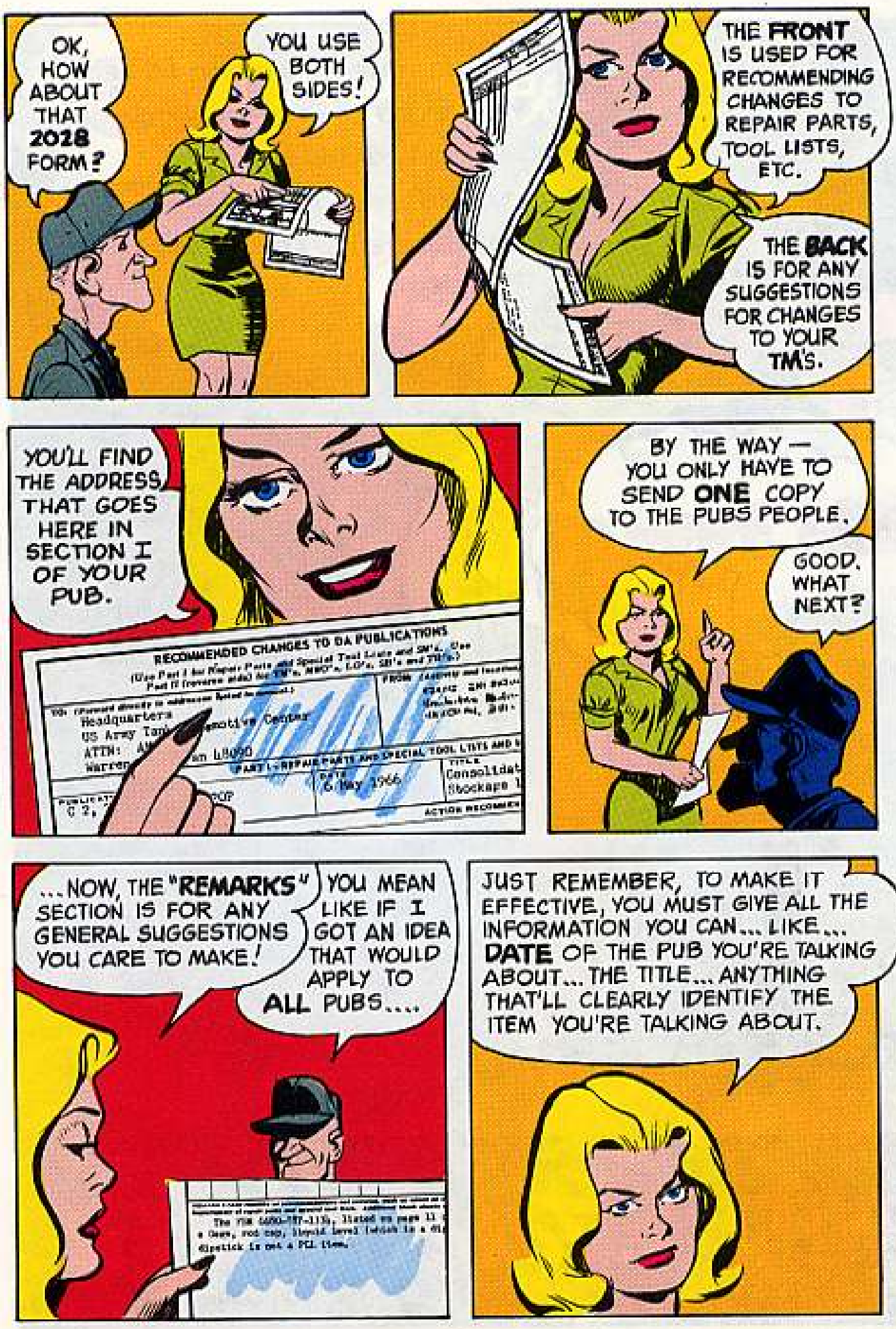

DOGGONE... I NEVER BOTHERED TO USE IT.
WELL, TM 38-750 TELLS YOU HOW TO FILL IT OUT — AND WHERE TO SEND IT! IT'LL ALSO TELL YOU WHAT THE VARIOUS CATEGORIES (LISTED IN THIS BOX) MEAN!

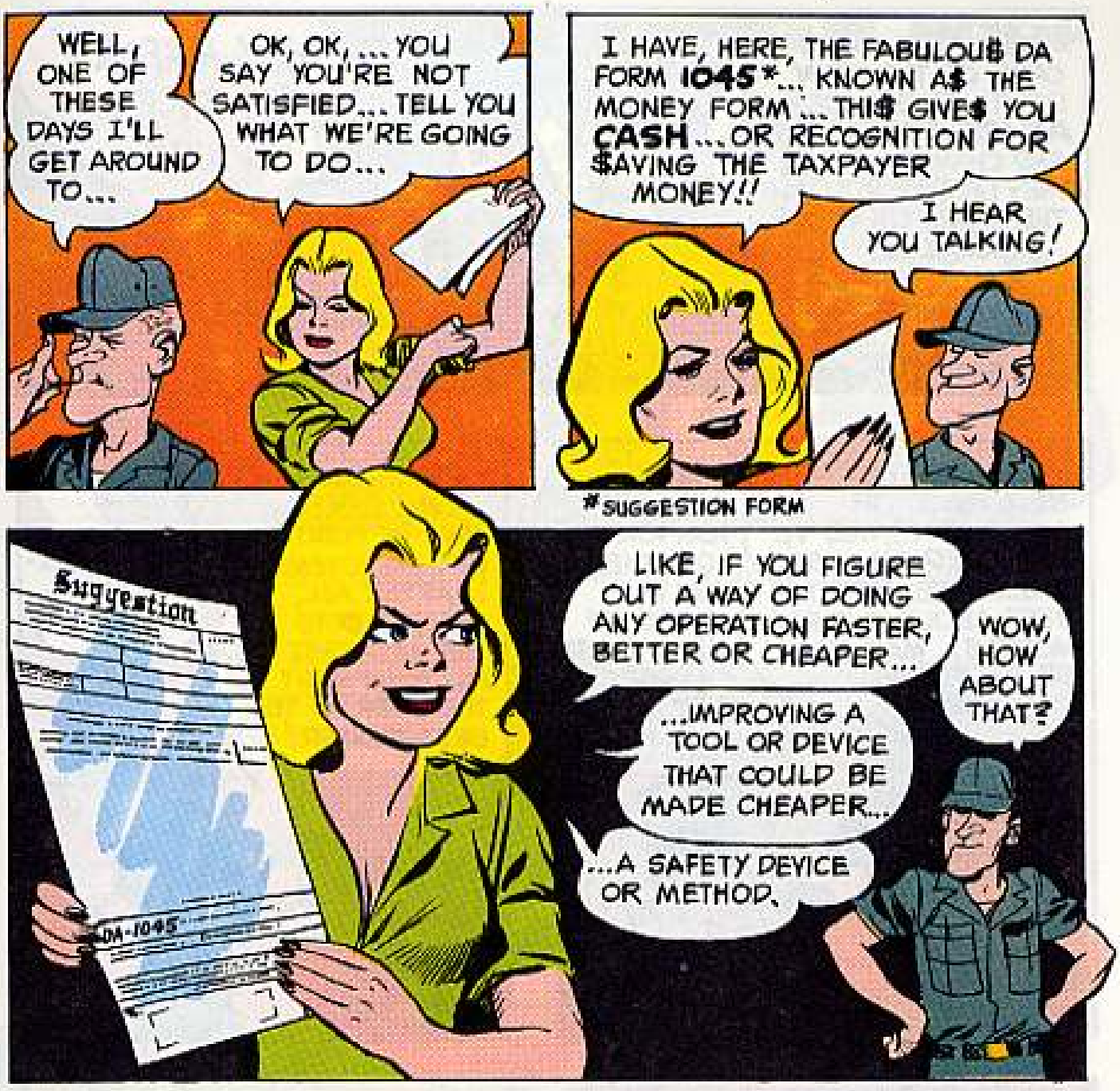

THEN BELOW YOU STATE THE BEEF ... YOU DON'T HAVE TO BE A SHAKESPEARE, JUST WRITE IN ENGLISH ... DRAW A CRUDE SKETCH OR INCLOSE A PHOTO TO SHOW WHAT YOU MEAN, IF NEED BE.


OK, I DIG THAT FOR EQUIPMENT... BUT WHAT ABOUT PUBS... SOMETIMES I SEE ERRORS — LIKE IN AIRCRAFT STUFF— THAT COULD KILL YA!!
THEN YOU USE FORM 2028*
*RECOMMENDED CHANGES TO DA PUBLICATIONS


BUT BEFORE WE GET INTO THAT, LET'S POST THIS PIN-UP...

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


OK, HOW ABOUT THAT 2028 FORM?
YOU USE BOTH SIDES!
THE FRONT IS USED FOR RECOMMENDING CHANGES TO REPAIR PARTS, TOOL LISTS, ETC.
THE BACK IS FOR ANY SUGGESTIONS FOR CHANGES TO YOUR TM's.
YOU'LL FIND THE ADDRESS, THAT GOES HERE IN SECTION I OF YOUR PUB.
RECOMMENDED CHANGES TO DA PUBLICATIONS
BY THE WAY — YOU ONLY HAVE TO SEND ONE COPY TO THE PUBS PEOPLE.
GOOD. WHAT NEXT?
...NOW, THE "REMARKS" SECTION IS FOR ANY GENERAL SUGGESTIONS YOU CARE TO MAKE!
YOU MEAN LIKE IF I GOT AN IDEA THAT WOULD APPLY TO ALL PUBS....
JUST REMEMBER, TO MAKE IT EFFECTIVE, YOU MUST GIVE ALL THE INFORMATION YOU CAN... LIKE... DATE OF THE PUB YOU'RE TALKING ABOUT... THE TITLE... ANYTHING THAT'LL CLEARLY IDENTIFY THE ITEM YOU'RE TALKING ABOUT.

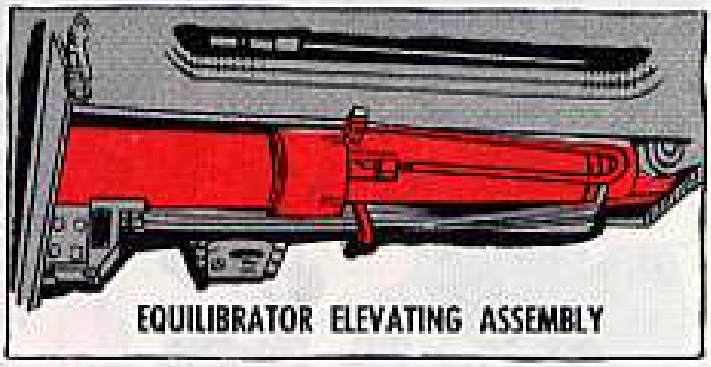

WELL, ONE OF THESE DAYS I'LL GET AROUND TO...
OK, OK, ... YOU SAY YOU'RE NOT SATISFIED... TELL YOU WHAT WE'RE GOING TO DO...
I HAVE, HERE, THE FABULOU$ DA FORM 1045*... KNOWN A$ THE MONEY FORM ... THI$ GIVE$ YOU CASH ... OR RECOGNITION FOR $AVING THE TAXPAYER MONEY!!
I HEAR YOU TALKING!
*SUGGESTION FORM
Suggestion
DA-1045
LIKE, IF YOU FIGURE OUT A WAY OF DOING ANY OPERATION FASTER, BETTER OR CHEAPER...
...IMPROVING A TOOL OR DEVICE THAT COULD BE MADE CHEAPER...
...A SAFETY DEVICE OR METHOD.
WOW, HOW ABOUT THAT?
ANY OF THESE, IF ADOPTED, WILL GET YOU AN AWARD IN GREEN ... WHY, YOU EVEN CAN GET PAID OFF ON AN ADOPTED SUGGESTION THAT CAN'T BE MEASURED IN DOLLARS SAVED!
I SUPPOSE THE AMOUNT OF THE AWARD DEPENDS ON HOW MUCH MONEY IT SAVES!
YES ... BUT EVEN IF YOUR IDEA ONLY SAVES UNDER $50 ... YOU STILL GET SOME RECOGNITION ... A LETTER OF APPRECIATION ... THAT'LL LOOK GOOD ON YOUR RECORD.

So sing out praise
for ol' McFarr,
And all those troopers
near and far,
For the gun you shoot
or the track you wheel
May be the result
of their EIR.

SCOOP ON NEW POOP

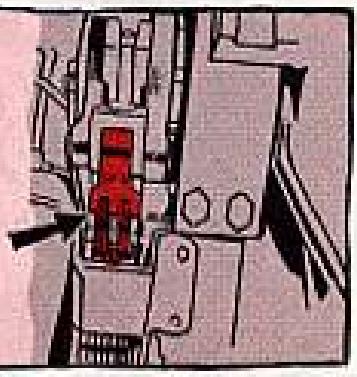
Your 155-MM self-propelled M109 howitzer wearing serial number 1124 or higher? OK, this message is for you.

Your baby takes equilibrator elevating cylinder assembly P/N 10947990—which doesn't show yet in TM 9-2350-217-25P/2 (Nov 64). It needs a coupla maintenance and operating methods that're different from those in your -10 TM.

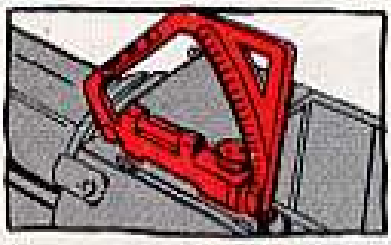

EQUILIBRATOR ELEVATING ASSEMBLY

The nitrogen precharge pressure is 575 PSI at 70° F.

The slope adjustment of the equilibrator chain in Fig 91, page 163 of your -10 TM doesn't apply to your weapon with the P/N 10947990 assembly.



The howitzer with the equilibrated elevating mechanism has to be set at 15 degrees (266 mils) elevation before you adjust the equilibrator pressure for equal elevation hand pump effort—not zero degrees like it says in Fig 92, page 164, of your -10 TM.

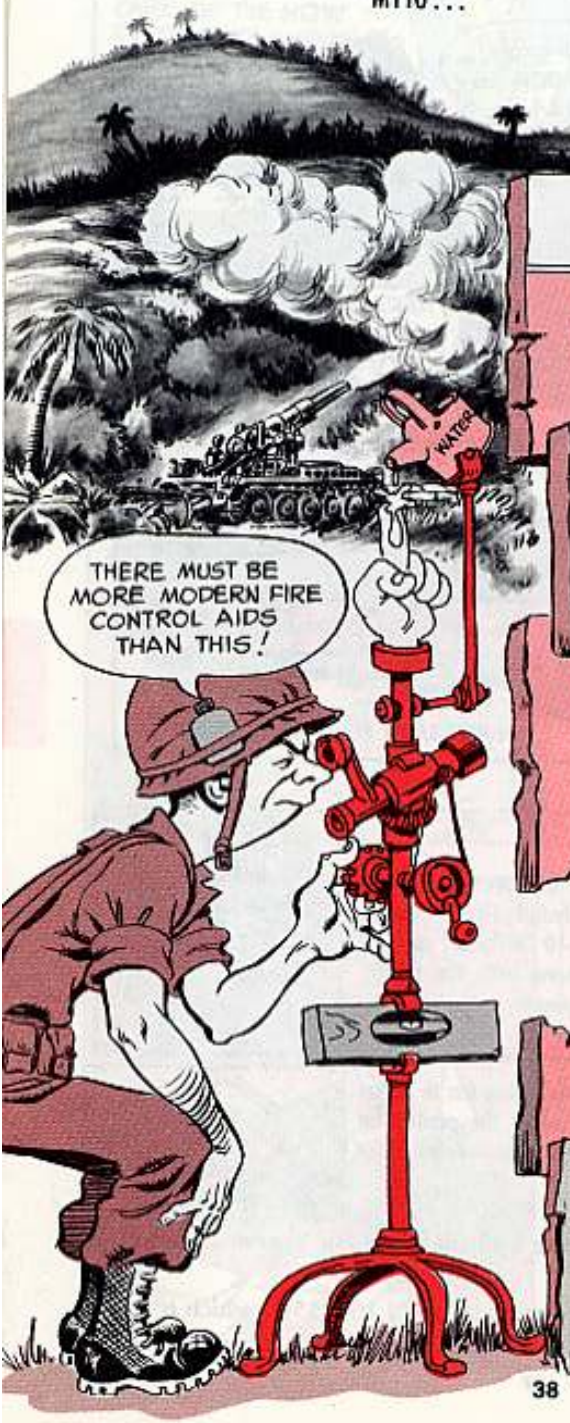


Except for these changes, you operate and maintain the system the same as always.

Vehicles under 1124, o'course, take cylinder P/N 10921569 which is amply covered in the pubs.

M107 THRU M110...

FIRING SCALES



WEAPON	Scale, Graphical Firing	Scale, Graphical Firing Set	Scale, Graphical Firing Site	Protractor, Fan Range Deflection (Mils and Meters)
175-MM M107 Gun	FT 175-A-0 Rev II FSN 1220-937-8285 (10552424)	.....	FT 175-A-0 Rev II FSN 1220-937-9522 (10553164)	1:50,000 meter range FSN 1290-580-4441 (D8483-1-4)
105-MM M108 Howitzer	.....	105AS1ILLM314 FSN 1220-764-5418 (10533321) 105AS1 FSN 1220-764-5419 (10533323)	AS1HEM1 FSN 1220-764-5422 (10533322)	15,000 meter range FSN 1290-266-6890
155-MM M109 Howitzer	155AH1, high angle, green bag FSN 1220-764-5423 (10533326) 155AH1, low angle, green bag FSN 1220-764-5424 (10533327) 155AH1, high angle, white bag FSN 1220-764-5426 (10533329) 155AH1, low angle, white bag FSN 1220-764-5425 (10533328)	155AH1ILLM118 FSN 1220-764-5420 (10533324)	155AH1MEM107 (2 rules) FSN 1220-764-5421 (10533325)	25,000 meter range FSN 1290-266-6891
8-Inch M110 Howitzer	M71 (2 rules) FSN 1220-898-4213 (8213843) M85 (1 rule) FSN 1220-876-8572 (8214015)	.....	M72 (1 rule) FSN 1220-898-6786 (8213844) M86 (1 rule) FSN 1220-876-8573 (8214016)	25,000 meter range FSN 1290-266-6891

A PITCH FOR PM

You just can't measure the value of these little items when the action starts. So take care of 'em . . . meaning, keep them clean and protected against the weather and rough handling. Put 'em in their case or bag when you're not using them . . . and keep the case and bag clean too!

Also, eyeball 'em every time you go to use them to see that they're not warped, or bent, or hard to read, or stick. If they're banged up, get new ones pronto.

You can't operate at a profit without em!

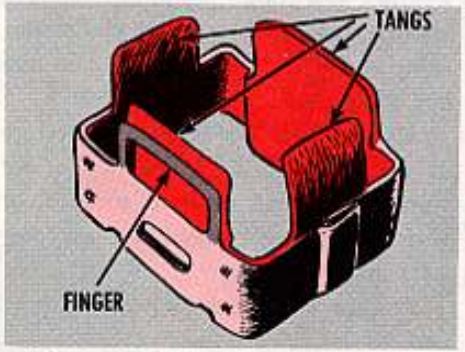
WHERE TO FIND 'EM

Here're the pubs that authorize these items:

Graphical firing scales, sets and sites — TM 9-1220-222-12P (14 Feb 66). The M107 items will be in the next revision.

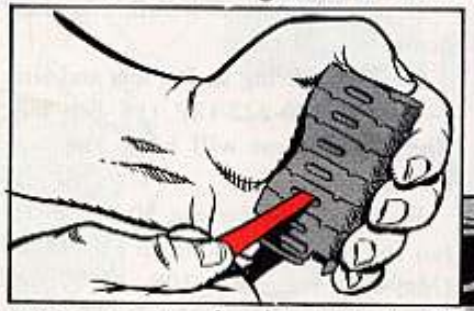
Protractors — For the 50,000 meter fan for the M107, look in SB 700-20 (May 67); for the M108, M109 and M110, refer to Supply Catalog SC 1290-95-CL-EO1 (Jul 65).

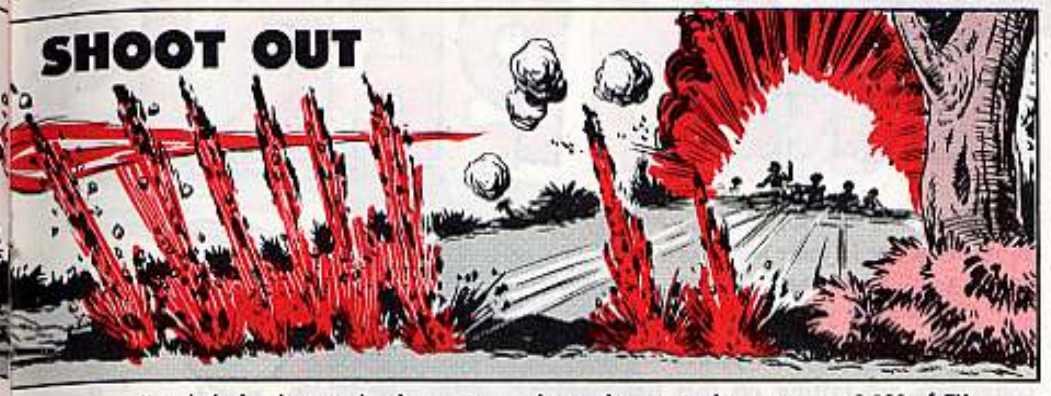
First, flex the chute to make sure the individual segments are mated up OK—with the 4 tangs and 2 fingers of each one seated right.



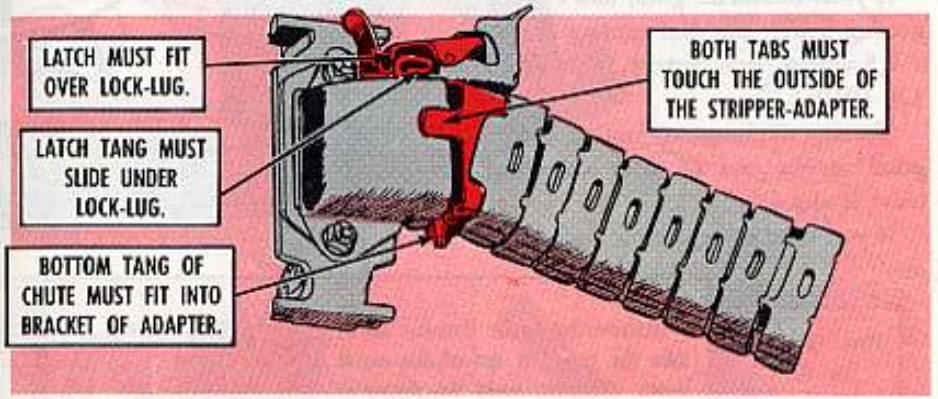
If one of the segments is mated wrong, you may be able to fix it with a nail but you might have to make a tool out of thin shim stock to pull the segments apart.

Check the chute for burrs and carefully file off any you find, finishing up with crocus cloth. Burrs near the latch end of the chute are 'specially likely to cause jamming.





Now lock the chute to the chute stripper adapter the way it shows on page 2-128 of TM 9-2350-224-10 (Jan 66).

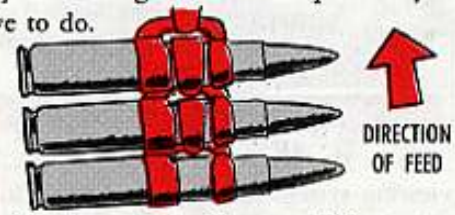


If there's a weld in the way that prevents the latch or the latch tang from fitting securely, get your company mechanic to remove it.

If your chute or chute adapter is too far gone to fix, order FSN 1005-607-2394 (P/N 7027470) which will bring you the whole chute assembly.

Latch the chute to the link stripper adapter before you mount the machine gun. When you move the gun into place make sure the end of the chute is sticking out of its port.

A flashlight might help you see what you're doing on the hookup but if you can't use a light, finger feeling will have to do.



One last thing that will cut down on the chances of a link jam—form your ammo belt so the links feed through the machine gun with the single loop end of each link going through the machine gun first.

To keep the links and brass from forming mounds that could possibly jam the cupola, it's a good idea to traverse when you can, so the mounds don't build up.

TANK PERISCOPE DOPE

If you have an M32, M32C, M35 or M36 periscope in your M60-series tank, M48A3 tank or M728 CEV, listen up . . .

Some of the 1.5-volt power supply converters are failing on this line of periscopes.

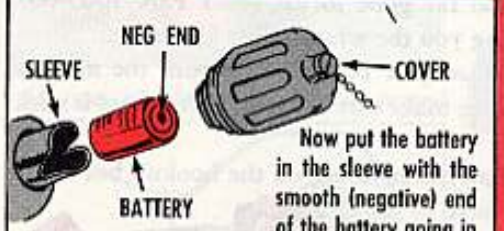
If your converter goes, don't bother getting a new one but replace it with a 1.5-volt C dry battery, FSN 6135-120-1010.

'Course as long as you're getting good service out of your converter, leave it alone.

If you need to replace it with a battery

First turn the IR power switch OFF.

Unscrew the power chamber cover, take the converter out of the metal sleeve. (You can leave the sleeve in position.)



Now put the battery in the sleeve with the smooth (negative) end of the battery going in last.

Put a little electrical tape over the 24-volt contact in the base of the power chamber cover and then screw the cover back on again.

Turn the IR power switch to the 1.5-volt position and check out the IR viewing system the way it tells you in the -10 TM for your particular vehicle. This info is on page 3-79 of the M60/M60A1 manual and page 3-106 of the M728 manual. If you have an M48A3, use either of the other manuals until this info gets printed in a future change to your own -10 TM.

Here're a couple tips to get better service out of your battery:

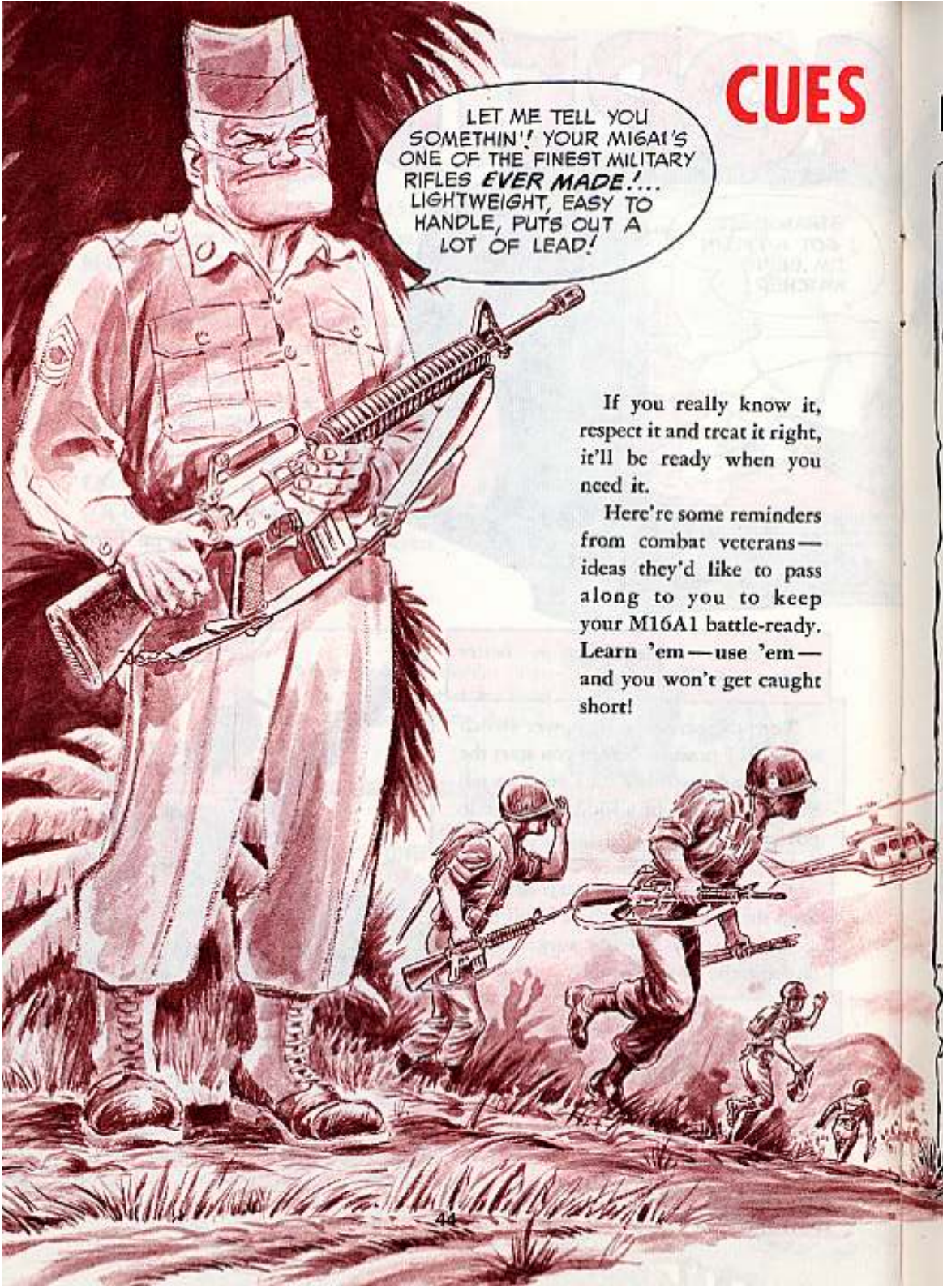
Turn the periscope IR power switch to the OFF position before you start the engine and any other time you can tell there is going to be a sudden change in power charge.

When you have the battery installed, keep the switch out of the 24-volt position because a voltage surge might damage the power supply.

Keep an eye on the battery and replace if it leaks or corrodes.

If the vehicle is not going to be used for an indefinite time, take the battery out of the power chamber.

CUES



If you really know it, respect it and treat it right, it'll be ready when you need it.

Here're some reminders from combat veterans—ideas they'd like to pass along to you to keep your M16A1 battle-ready. **Learn 'em—use 'em**—and you won't get caught short!

FROM GUYS WHO KNOW!

1 Keep your ammo and magazine as clean and dry as possible. The only part of the magazine that gets any lube is the spring — and it gets only a very light touch of LSA. Oil it up and you're headed for trouble.

2 Inspect your ammo when you load the magazines. Never load dented or dirty ammo. Remember, load only 18 or 19 rounds.

3 Clean your rifle every chance you get — 3-5 times a day's not too often in some cases. Cleanliness is a must — and it may save your life!

4 Be sure to clean carbon and dirt from those barrel locking lugs. Pipe cleaners help here and in the gas port.

5 Never be bashful about asking for cleaning materials when you need 'em. They're available. **Get 'em and use' em!**

6 Check your extractor and spring often. If they're worn or burred, get new ones ASAP.

7 Lube your rifle, using LSA only. It's the most. A light coat put on with a rag after cleaning is good. Working parts need generous applications often. The chamber and bare need only a light coat after cleaning.

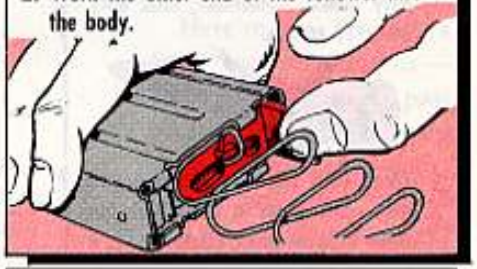
Worry a little more about your rifle . . . like, baby it a bit. F'rinstance, when you're out in the boonies, be careful where you put it down and how you put it down. Never drop it in mud or water or sand. Just keep in mind that you may have to use it before you get a chance to clean it.

PUTTING MAGGIE TOGETHER

Here's the easy way . . . gently:

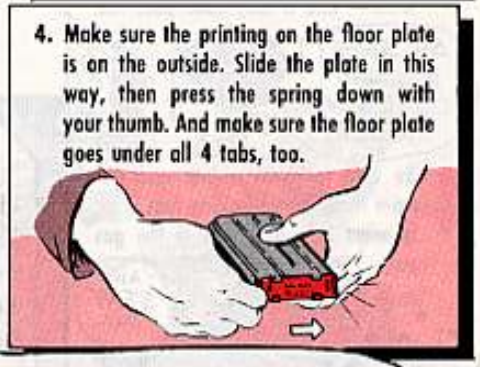
1. Nose the bullet end of the follower into the body at a 45-degree angle till it touches the inside edge of the body.

2. Work the other end of the follower into the body.



3. Just wiggle the spring into the mag as far as it'll go.

4. Make sure the printing on the floor plate is on the outside. Slide the plate in this way, then press the spring down with your thumb. And make sure the floor plate goes under all 4 tabs, too.



HERE'S AN IMPORTANT **TIP:** IF THE SPRING SHOULD ACCIDENTALLY GET SEPARATED FROM THE FOLLOWER, TURN THE MAGAZINE OVER TO YOUR ARMORER! **DON'T** TRY TO FIX IT YOURSELF. LOOKS EASY, SURE, BUT WITHOUT THE RIGHT TOOL YOU'D DAMAGE THE SPRING... AND END UP WITH FEEDING TROUBLE.

PROTECTING YOUR MAG

Not easy, that's for sure, when you're wading streams and rice paddies or in heavy rainfall. Normally clean water itself is not harmful. Brackish water—that's another story. But the real harm comes when you don't do anything about it after your stuff gets wet.

Here're some ideas that might help:

1 When fording, try to keep your mags out of the water. This means holding your rifle 'way up there and, if you can, keep the pouch with the spares above the water line.

2 Soon as you come out of the drink—if Charlie's not interfering, natch—take the mags out and shake 'em good a couple of times to get rid of most of the water.

3 Then at the first breather—when you're sure Charlie's not around—empty each magazine, wipe it dry inside and out with your shirttail or swab and then clean both the ammo and the magazine.

TIP: A lot of guys find a plastic bag—like the kind used for sandwiches—makes a good raincoat for magazines in wet weather. Just don't forget this could lead to condensation, so, even though they're protected, empty 'em every so often and wipe both the ammo and the mag. Right?

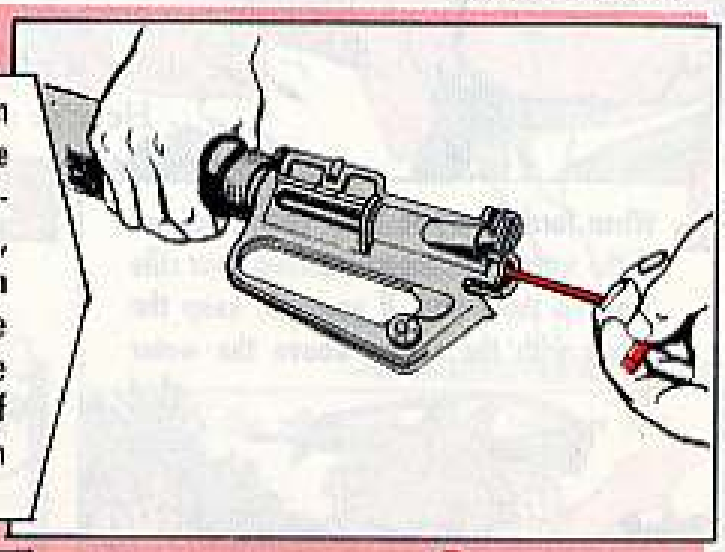
F'goshsakes, never put oil of any kind—including LSA—on the cartridges or inside your magazine! Lube ruins ammo and collects gook—could leave you helpless in a fight! This mag is coated with dry lubricant. It doesn't need any lubing except for the spring—and that only very lightly, with LSA.

Take care of your magazines—and hang on to 'em. Sure, there're plenty of 'em in supply—world-wide—but they could get mighty scarce in your own sector. So, protect 'em from dents (aluminum can't take rough treatment)—and especially, remember to bring those "empties" back. The one you save just might save you some day.

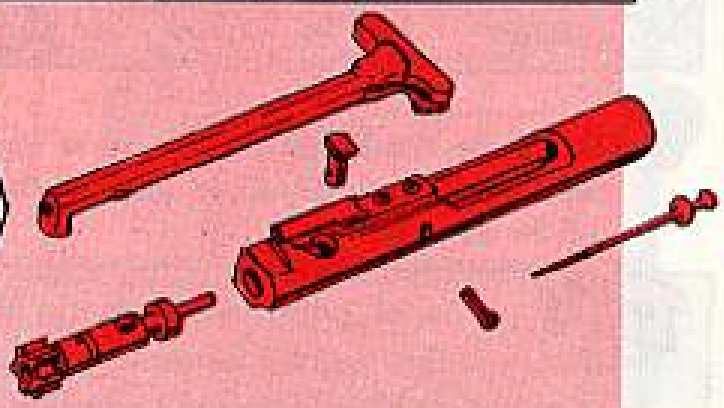
CLEAN . . . INSPECT . . . REPLACE

PARTS AS NEEDED

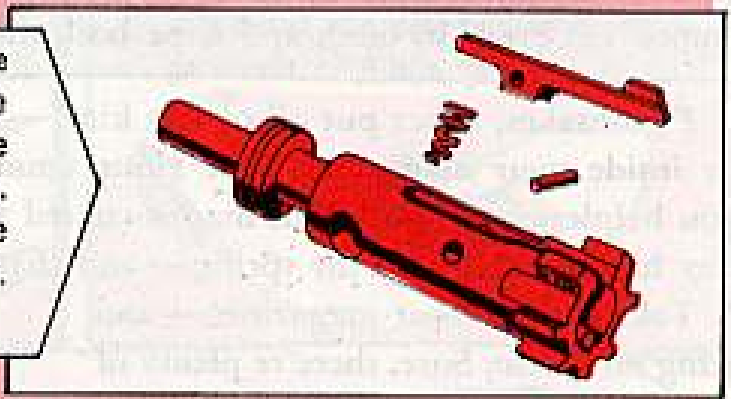
Chamber and Bolt Locking Recess: Clean 'em after every day's firing if you can. Use your chamber cleaning brush FSN 1005-999-1435 or any standard bore brush like the 30-, 45- or 50-cal or 7.62-mm brush. Dip the brush in bore cleaner . . . get all the gook out of the chamber and bolt locking recess. Then dry the areas real good. Last, apply a light coat of LSA by wiping it with a swab dampened with the oil.



Bolt Carrier: Remove it from your weapon and field-strip it at least once a week. Use bore cleaner with any bore brush mentioned above and attack all parts, especially behind the rings and under the lip of the extractor. Clean the carrier key with your bore brush FSN 1005-903-1296 and bore cleaner. Then dry all the parts real good and coat 'em with LSA.



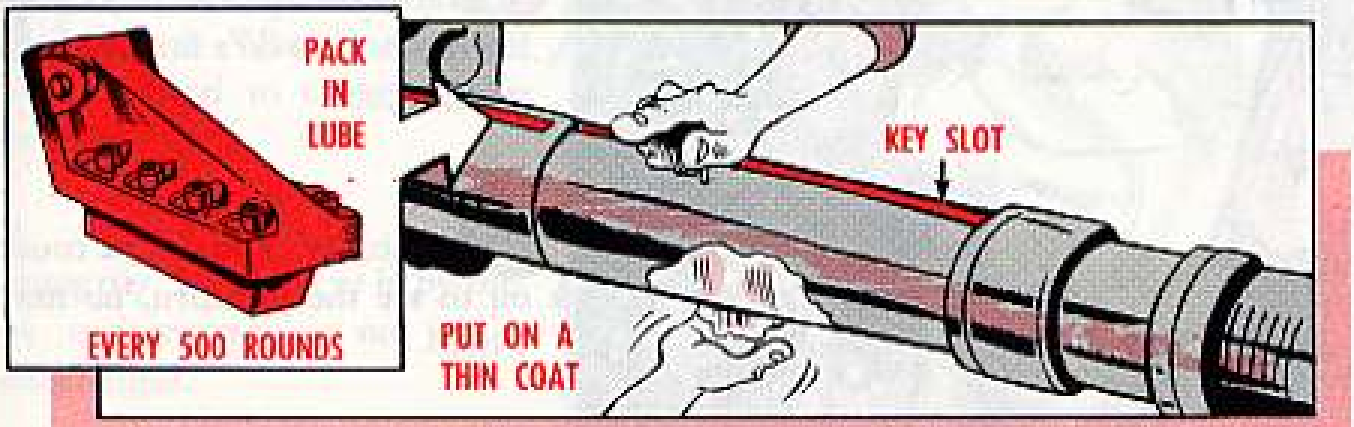
Extractor and Extractor Spring: Double check 'em every day, at least. Eyeball the extractor for chipped or broken edges in the area of the lip that engages the cartridge rim. Replace it if you find it damaged. Test the extractor spring by pressing on the extractor. If the spring's weak, replace it.



REMEMBER—Watch your lubing. Too much lube speeds carbon buildup in the chamber and bolt locking recess. Same thing with the carrier key. A rag or swab or even a pipe cleaner dampened with LSA will do the trick here. Best bet: Follow the guide on pages 18-20.

ADD TO LO

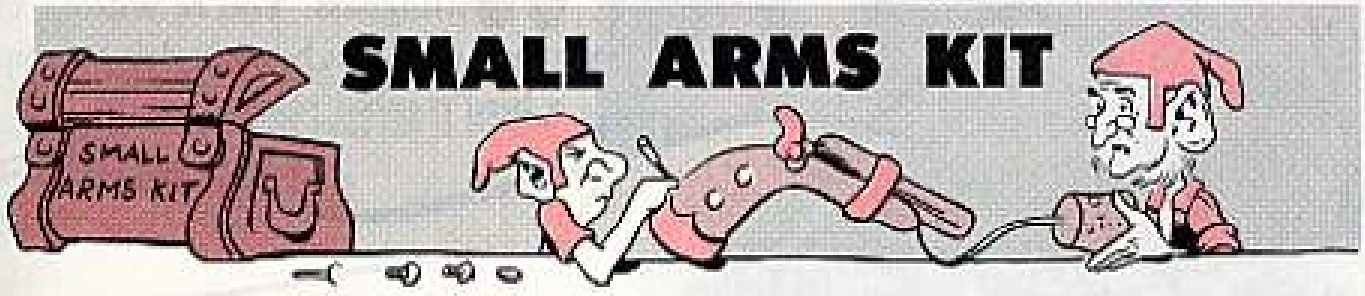
The scoop's not in your LO 9-2350-217-12 yet, but no nevermind. Here're three good points to remember with your M109 SP 155-MM howitzer.



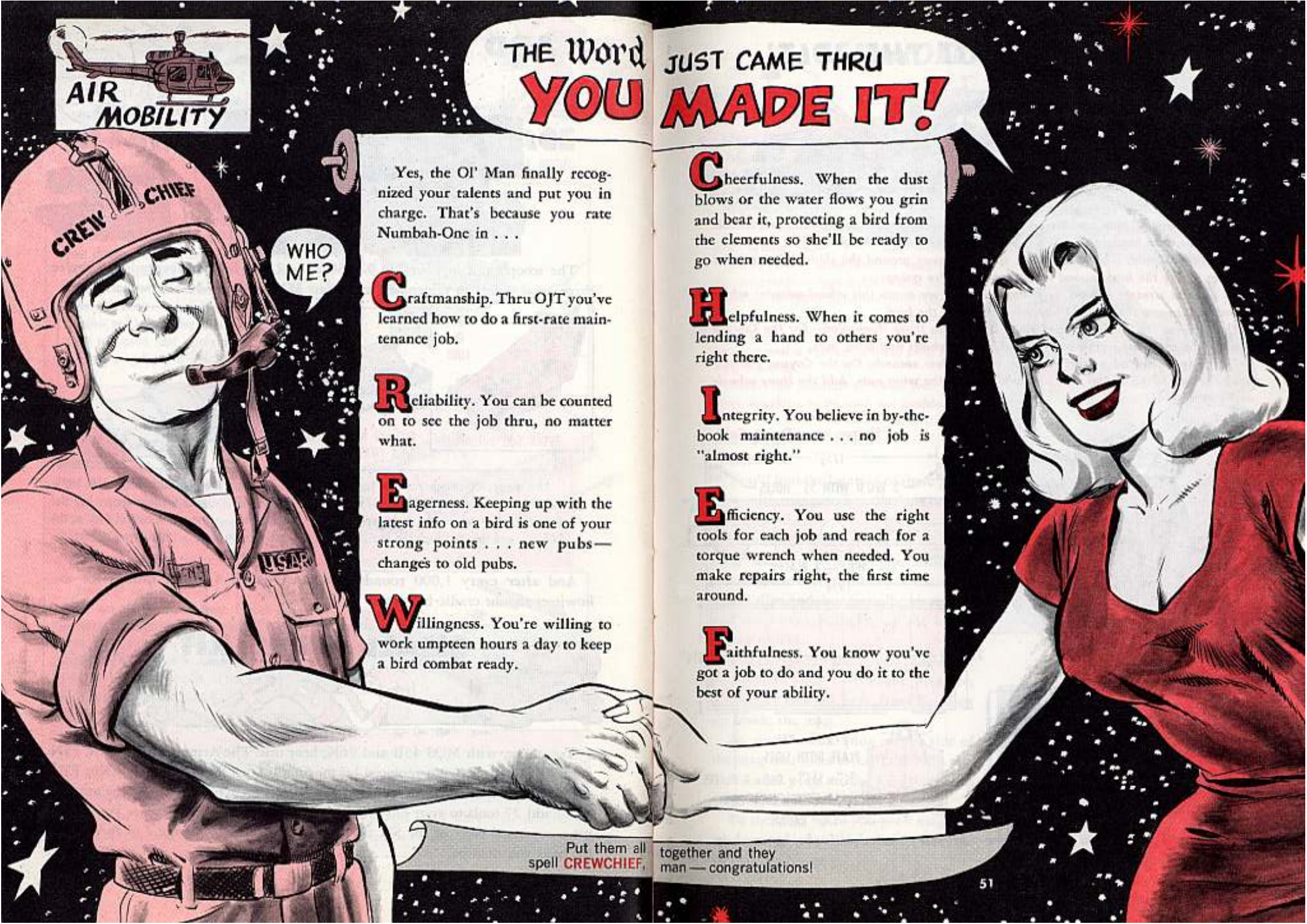
After every 500 rounds you fire, take out the tube torque key, FSN 1025-801-6751 . . . pack the place where the key goes with GAA . . . and then put back the key.

Take off the gun dust shield, FSN 1025-020-5617 . . . pack the tube torque key slot with GAA . . . put a thin coat of GAA on the tube sliding area . . . and then put back the dust shield.

And after every 1,000 rounds, use GAA on all 4 grease fittings for the howitzer mount cradle bearings.



You there, with MOS 45B and 76K, hear this. The Armorer's Tool Kit, FSN 5180-754-0640, is being replaced by the Small Arms Repairman Tool Kit, FSN 4933-357-7770, SC 4933-95-CL-A07. SB 9-196 (4 Apr 67) gives you the authority to add 27 tools to your old tool kit, and turn in 11 tools. In case you didn't get a corrected copy of the SB, the last 11 items listed on page 2 of the SB are the ones you turn in.


AIR MOBILITY
CREW CHIEF
WHO ME?
USAF
THE Word
YOU
JUST CAME THRU
MADE IT!
Yes, the Ol' Man finally recognized your talents and put you in charge. That's because you rate Numbah-One in . . .
Craftmanship. Thru OJT you've learned how to do a first-rate maintenance job.
Reliability. You can be counted on to see the job thru, no matter what.
Eagerness. Keeping up with the latest info on a bird is one of your strong points . . . new pubs—changes to old pubs.
Willingness. You're willing to work umpteen hours a day to keep a bird combat ready.
Cheerfulness. When the dust blows or the water flows you grin and bear it, protecting a bird from the elements so she'll be ready to go when needed.
Helpfulness. When it comes to lending a hand to others you're right there.
Integrity. You believe in by-the-book maintenance . . . no job is "almost right."
Efficiency. You use the right tools for each job and reach for a torque wrench when needed. You make repairs right, the first time around.
Faithfulness. You know you've got a job to do and you do it to the best of your ability.
Put them all spell CREWCHIEF,
together and they
man — congratulations!

TOTE—WITHOUT THE JOLT!

Dear Editor,

Pulling Cayuse, Sioux and Raven Choppers around on their ground-handling wheels may be fine on a hardstand, but out in the boonies it's a different story.

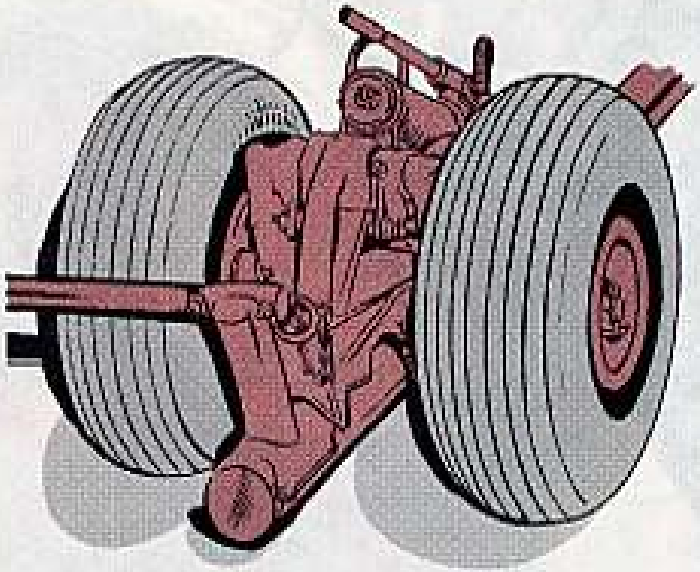
When those small wheels hit a low spot in uneven ground the skids snag and you have to jockey the bird around to get where you're going.

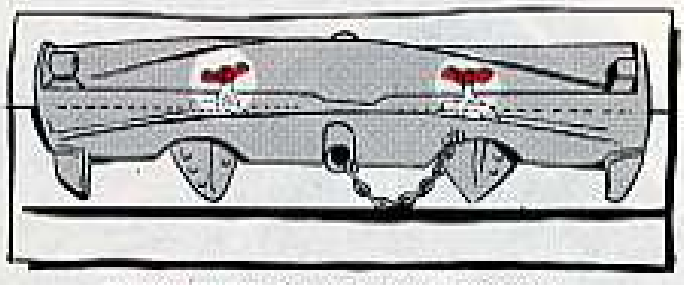
To prevent stresses caused by a hung-up skid we made this wheel adapter which allows you to use the larger Huey wheels to tote the bird.

The adapter for the Raven and Sioux is made to these dimensions. For the Cayuse you use the same measurements and add two eyebolts and wing nuts.

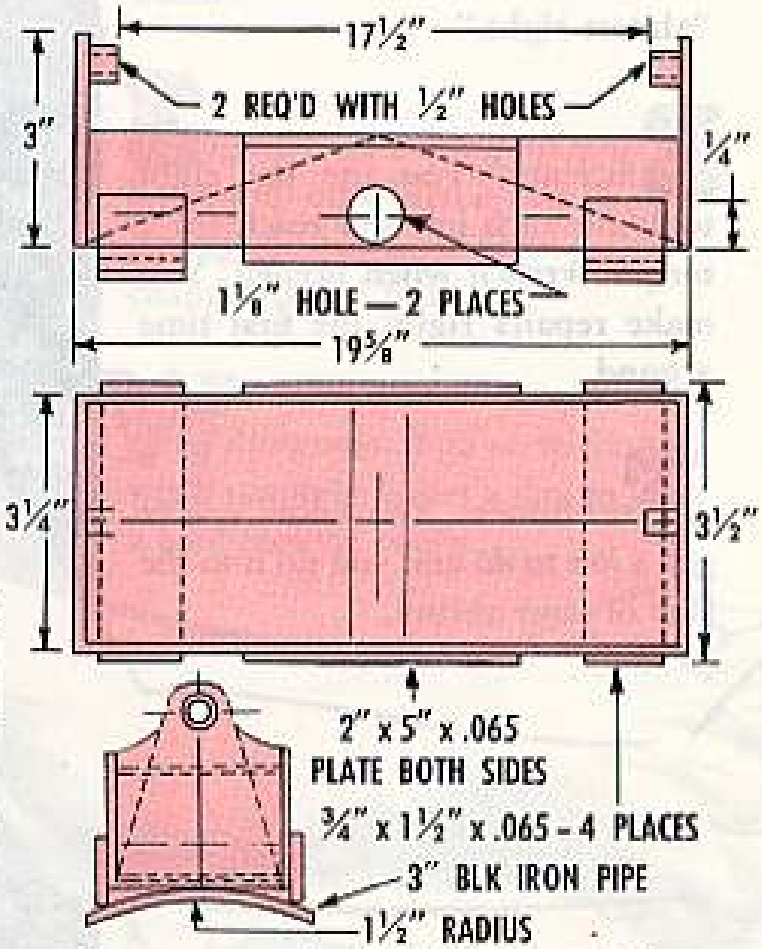
The adapter can be put on or taken off in a few seconds. On the Cayuse you just hook the eyebolts into the skid pins and tighten the wing nuts. Add the Huey wheels and you're ready to roll.

John Lebsock
Sharpe Army Depot, Calif.





WING NUTS ON EYEBOLTS (OH-6A)



(Ed Note—I understand some of your adapters are already being used in USARVN . . . good going.)

SEMINOLE MAG DRAG

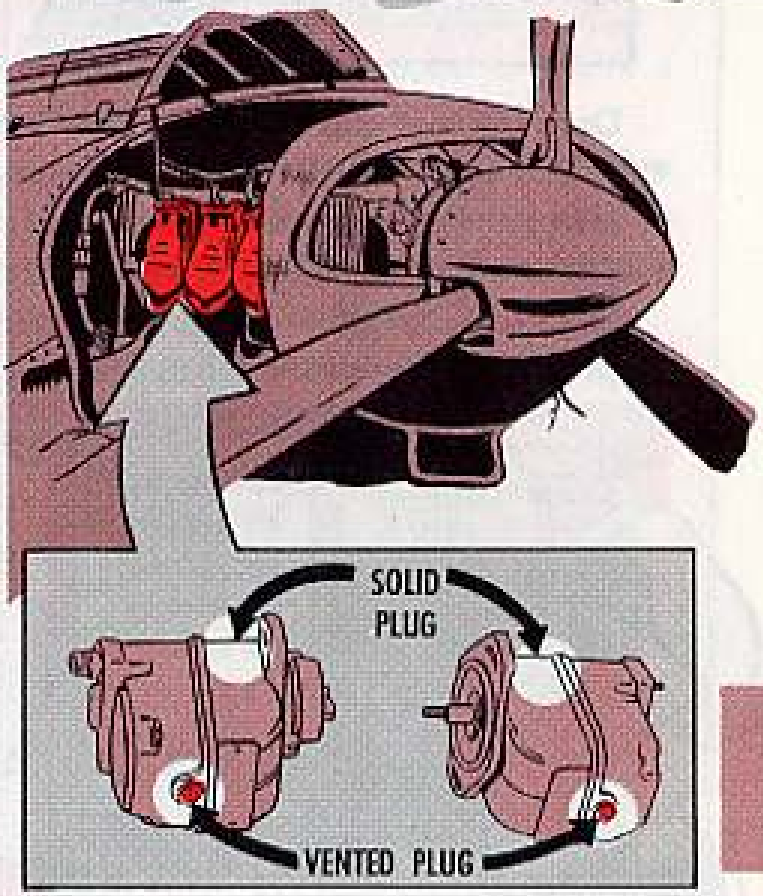
Dear Windy,

We're having some internal trouble with the magnetos — type S6LN22 and S6RN23 — on our O-480-3 Seminole (U-8F) engines.

These mags are mounted horizontally and have a solid plug in the distributor housing and a vented (drilled) plug in the mag housing.

Could the location of these two plugs have anything to do with our problem?

SFC R. F. K.



Dear Sergeant R. F. K.,

Could be!

You'll find the location of these plugs vary with magneto installations on different aircraft.

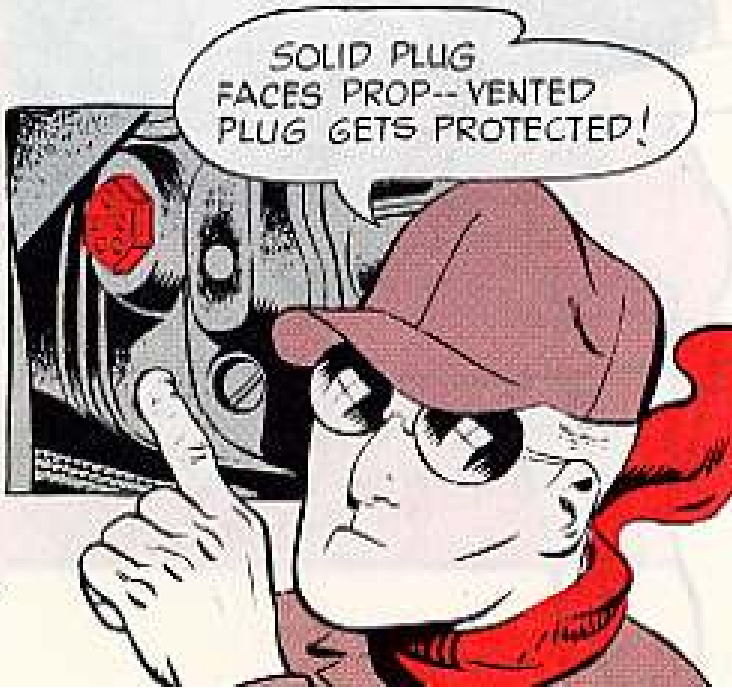
Generally speaking, tho, use the solid plug where it will keep the inside of the magneto clean and dry. Otherwise, water, dirt, and dust from the air stream and prop blast will clog up the works — but quick!

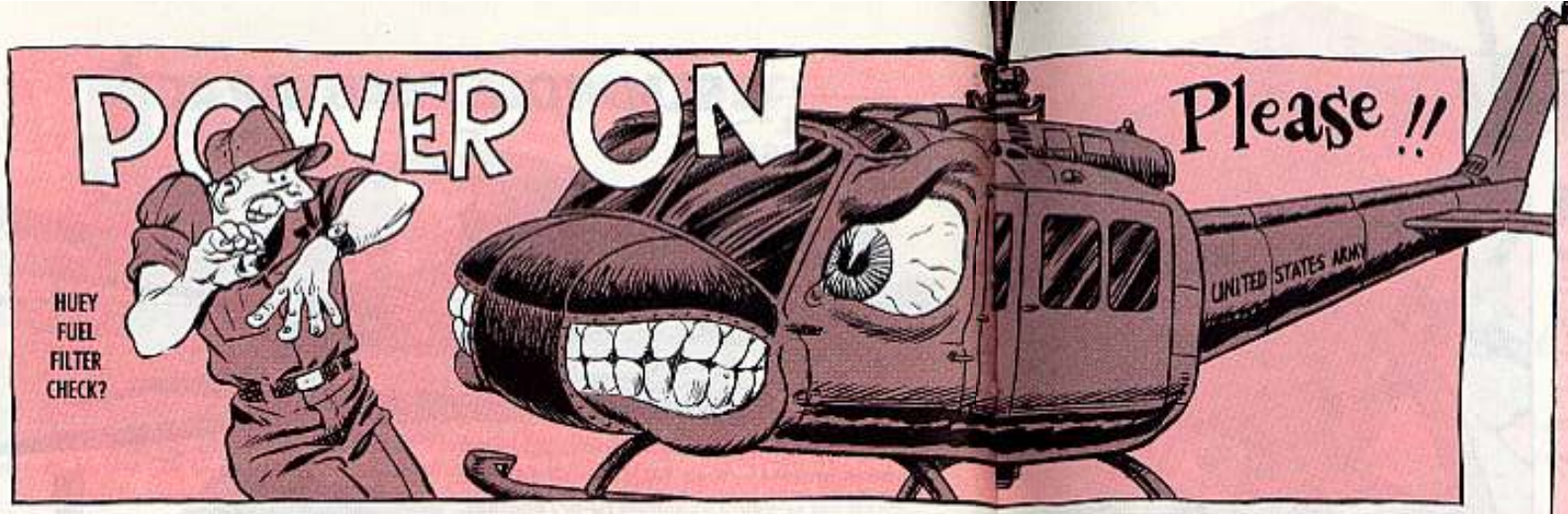
The purpose of the vented plug is not to ventilate but to prevent pressure, created by bearing heat, from building up inside the mag.

So, put the solid plug on the side of the mag that faces toward the prop and the vented plug on the side that faces the accessory housing.

By the way, when you get a magneto from supply you'll probably have to switch the plugs.

Windy

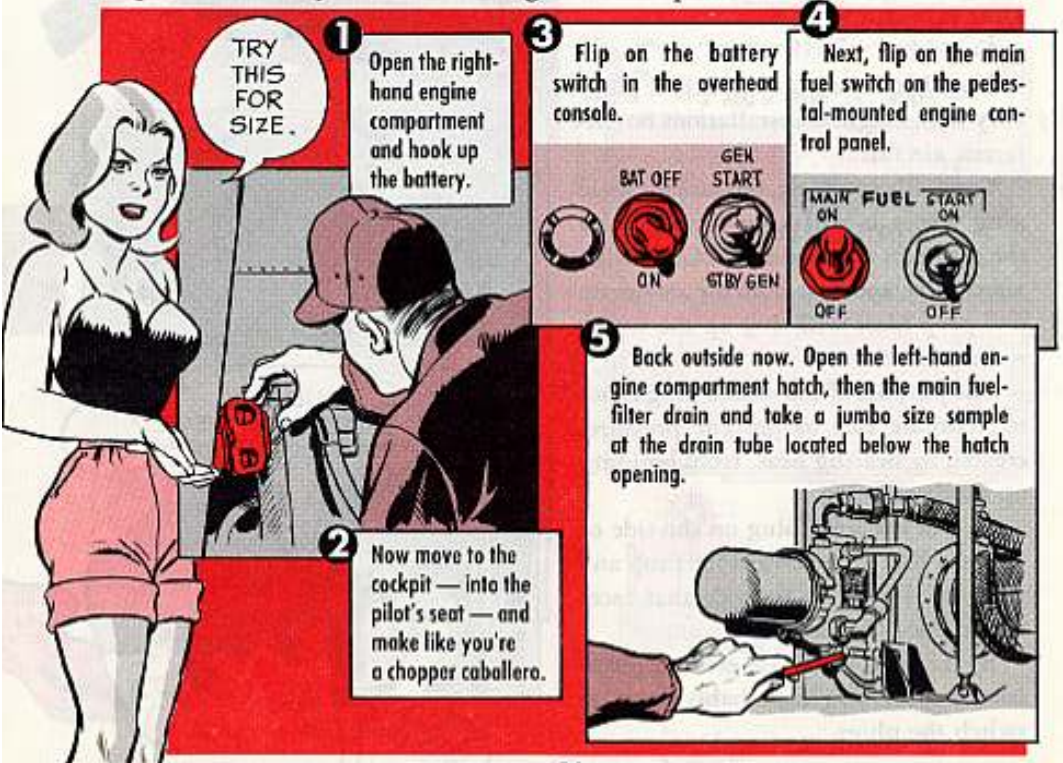




Draining and checking the main fuel filter and tanks on your Delta Darling (UH-1D) takes more than a quick one-two, skip-to-my-Lou routine.

Like maybe you turn on the main fuel filter drain, wiggle under your bird and take a sample from the 4 sump drains plus the main fuel filter drain.

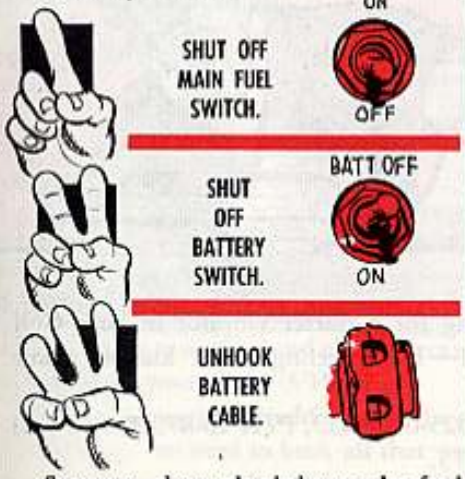
Hold one, Neighbor. That won't hack it. The fuel boost pump has to be ON to pressurize the system when taking a fuel sample.



Shut OFF the drain valve.

Drop down under your Hueybird, locate the 4 sump drains and get a separate fuel sample from each.

Check all samples for contamination using hydrokit, FSN 6640-892-2264. All through? Not on your scarred knuckles you ain't!



So-o-o-o, shoot the juice to the fuel boost pump when you drain and check for fuel contamination. Keep your mixmaster in the pink — not on the blink!

An ounce of prevention is worth a pound of cure.

One way to cut down on corrosion of a Huey (UH-1) main rotor shaft is to keep corrosion preventive compound handy.

Like, when you mount the two stabilizer bar dampers, be sure the splines

on the rotor shaft and on the damper are cleaned with dry-cleaning solvent, Spec P-D-680.

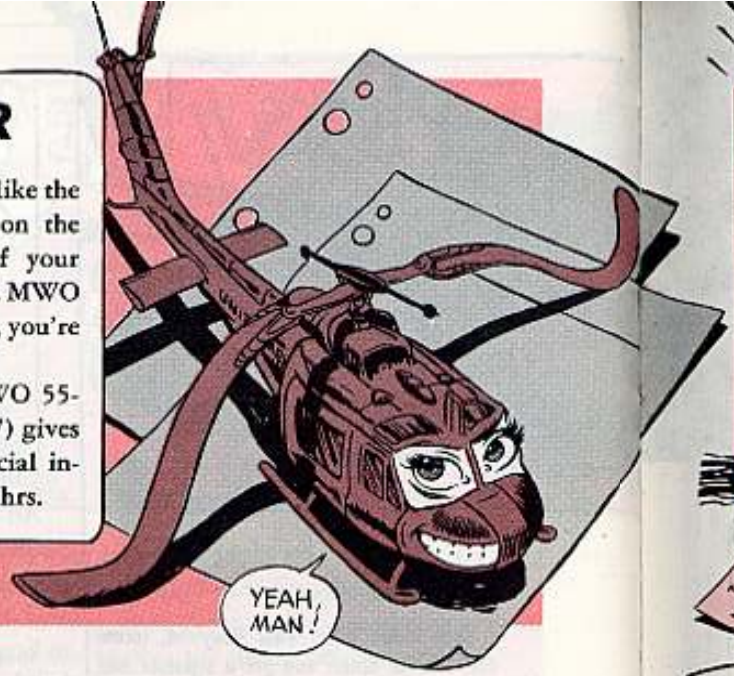
Then, coat the splines with corrosion preventive compound, Petrolatum (used hot) Spec MIL-C-11796 Class 3.

That'll do the trick.

TIME SAVER

MWO's pay big dividends — like the improved grip retention nuts on the Huey 540 main rotor hub. If your Charlie model didn't get 'em, via MWO 55-1520-211-30/18 (15 Jul 66), you're missing a good bet.

The mod, together with MWO 55-1520-211-30/23, Ch 2 (9 Feb 67) gives you an increase in the hub special inspection time from 200 to 600 hrs.



OH-23G HEEBIE-JEEBIES . . .

IGNITION COIL VIBRATOR

You can really lose your cool looking for a starter vibrator in your Golf model Raven parts manual. Trouble is — it's traveling under another name now.

Like — Vibrator, ignition coil, FSN 2925-066-4417, P/N 10-87999-1. You'll find it in SC2925-IL (Aug 67) index 1575.

Reclassified from the airframe structural components, class 1560, the vibrator is now listed with aircraft engine electrical system components class — 2925.

For you Sierra and Tango model Sioux mechanics, it's a Vibrator, Starting — same FSN . . . same P/N.

LATCH ONTO THE LATCHES

Dear Windy,

The 2 latches for the aft pylon clamshell doors of our Chinooks (CH-47) take a beating.

So, when we ordered replacements, we got 'em alright — attached to a complete pylon leading edge hinged fairing.

How come? We just wanted the latches

CW2 E. L. G.

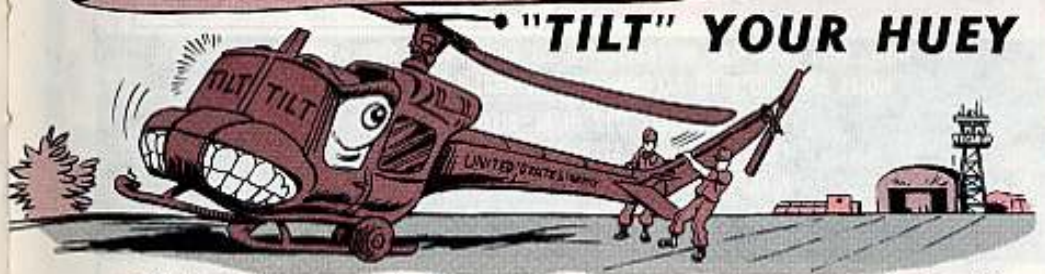
Dear CW2 E. L. G.,

Sometimes when a part is not yet in stock, supply sends the next higher assembly — in this case the hinged fairing.

But you can now get the 2 latches authorized in MWO 55-1520-209-34/70 (2 Feb 66) by using FSN 5340-866-6108, P/N H560-1BD.

Windy

"TILT" YOUR HUEY



Want to save time and elbow grease when mounting the grounding handling wheels on your Huey (UH-1)?

Have a couple of buddies hold the tail boom down while you jack down the wheels . . . no need to buck all that weight!!

Ease up on the tail boom and gently let the weight come to rest on the wheels.

'Course you go the same route before taking the wheels off. Lower the tail boom — jack up the wheels — take 'em off — ease up on the tail boom.

Ready? One, two, three — tilt!

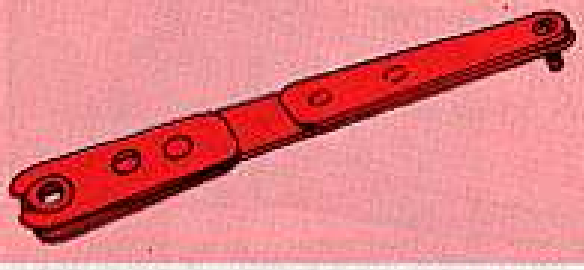
BUSTING UP A SQUEEZE PLAY

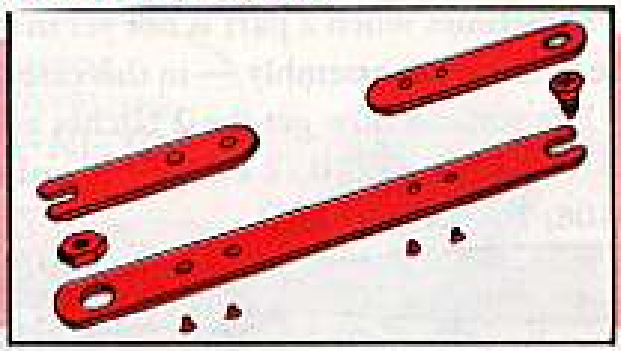
Dear Editor,

Getting and holding a nut in position long enough to start the bolt turning can be a real tongue biting deal — 'specially if you're working in one of those tough-to-get-to spots on a bird.

F'rinstance, you're bolting the elevators to the rear bellcrank of the T-41B — or attaching the elevator to the horizontal stabilizer.

But — you can save skin, time, and tempers with a tool like this.





NOTE: THIS TOOL MAY BE FABRICATED TO ANY LENGTH AND WIDTH. DRILL HOLES AND SLOTS TO ACCOMMODATE SEVERAL SCREW AND NUT SIZES.

MATERIAL: .032 IN. AL. ALLOY 24ST

1 EA. ½" x 7" APPROXIMATE LENGTH (SCRAP)

2 EA. ½" x 2" APPROXIMATE LENGTH (SCRAP)

4 EA. 3/32" 100° CSK RIVETS

FINISH: ZINC CHROMATE

Any airframe repairman can make it out of scrap in a jiffy. He can make a long john job or a mini-tool shorty.

We made this gizmo from .032-in aluminum alloy — which will bend a mite. You might want one that's a wee bit stiffer — so use heavier metal.

(Ed Note: You have a winner here — Good Show!!)

Sloan C. Dean
Atlanta Army Depot

SAFETY WIRING? NUTS

Dear Windy,

An 0-435-25 engine for our Sioux (OH-135) came with a tag on it saying that locking devices (safety wire or pal-nuts) are not required and have been eliminated from cylinder hold-down nuts.

Now, some of our mechanics want to string safety wire thru the nuts.

How about citing me the authority for not using safety wire, Windy?

SP5 A. M. A.

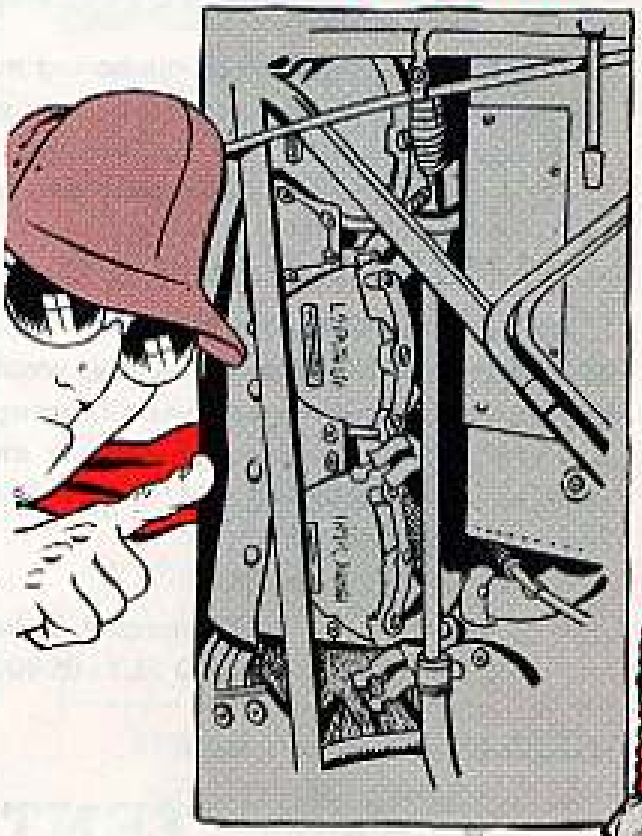
Dear Specialist A. M. A.,

The practice of safetying these nuts is fading out of the picture. However, until you get published authority to drop safety wire on a particular engine, keep using it.

For example, Ch 1 (1 Sep 66) page 3 to the EIR digest, TB 750-931-1/1, says safety wiring of cylinder hold-down nuts on the Seminole 0-480 engine is no longer required and the TM will reflect this poop.

The same deal goes for your 0-435-25 engine. Keep an eyeball peeled for the new poop.

Windy



DON'T LOSE YOUR COOL!

Hey Sioux birdkeeper! Don't get in a stew because the fan drive belt keeps breaking on your OH-13 and the engine loses its cool.

Simmer down. Could be you're not getting the right belt from supply.

F'rinstance, a whole basketful of belts are listed under FSN 3030-529-0255. What you gotta do is order the fan drive belt by part number as well as stock number. Use either P/N LD215-12 or P/N 47-661-041-1 and tell supply no hanky-panky . . . you'll accept no substitute.

TENT PIN RETRIEVER

Dear Editor,

Here's a tent pin retriever we use in our outfit. It saves both time and money because we can pull the pins faster without breaking them.

To make the retriever you need:

A metal hollow bar 4 to 4½ feet long;

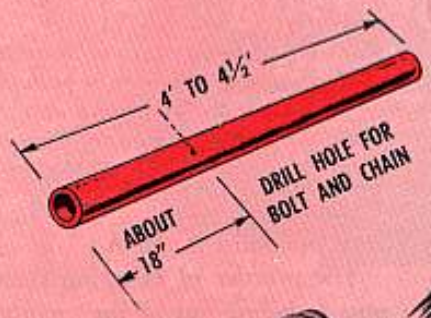
A 3½- to 4-in bolt with anchoring nut (the bolt should be long enough to go through the hollow bar far enough to allow a chain link to be hooked over it).

A metal chain 18 inches long.

We drilled a hole in the metal bar about 18 inches from one end so the bolt would go through it. Then we put the bolt through one of the links and through the bar and then put the anchoring nut on the bolt. Then it's ready to use.

Here's how you use it:

Clarence E. Eaker
APO N.Y. 09403



(Ed Note—A good idea.)

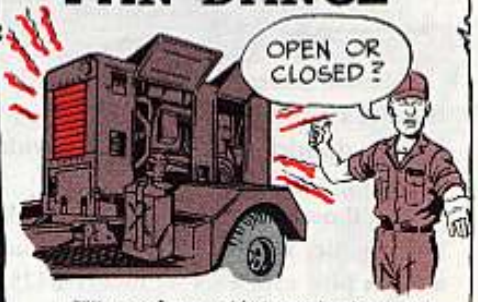
TENT MWO

Expecting cold weather soon? Better check your medium general purpose tent, FSN 8340-543-7787, and tent liner to make sure they've been modified by MWO 10-8340-211-30/1 (Apr 67). This MWO keeps the tent and liner from touching the pipes of your tent heaters.

CHECK YOUR ZIPPER

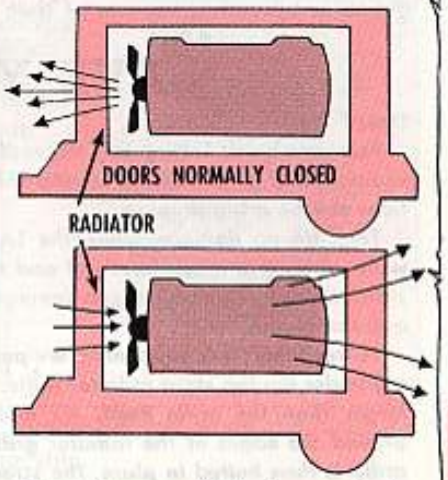
When you're erecting or striking your tents make sure all zippers are unzipped all the way so the flaps are loose. Then you won't damage your tent.

GENERATOR FAN DANCE



Wanta know if the side doors on your generator set oughta be closed or open while running?

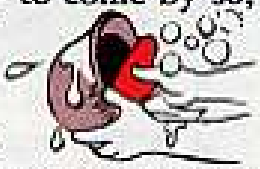
'S easy—just lookit which way the fan drags the air thru the radiator. If the fan shoves air thru the radiator from the back, close the



doors to run. If it draws air in thru the front of the radiator, you can open the side doors for extra ventilation—if it's not raining, snowing, or blowing dirt. After all, those doors were put there to protect the set.

CLEAN, MAN, CLEAN

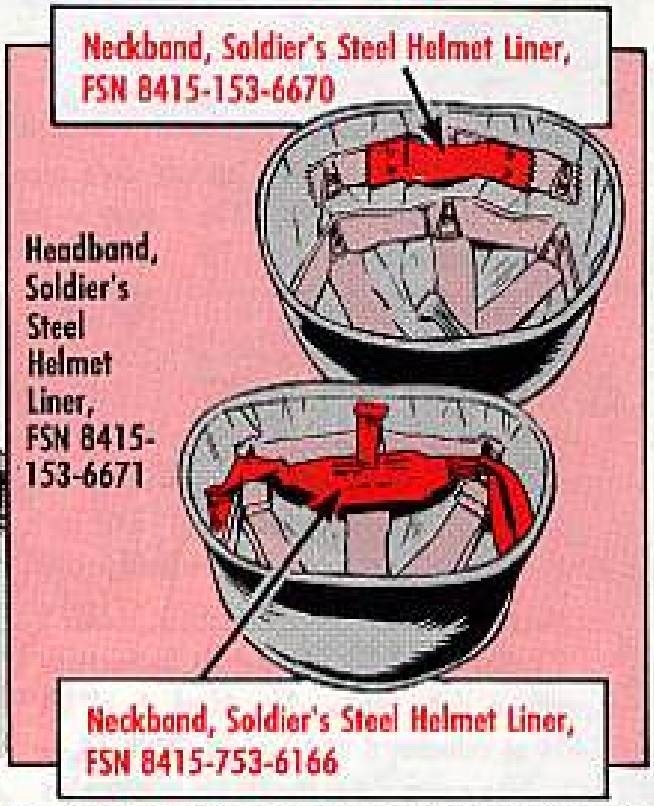
You're not only using your head but you may be saving it when you keep your helmet liner clean. A replacement liner may not be so easy to come by so, it's a good idea to take care of the one you've got.



Here's how—

Wash the liner with mild soap and water, then rinse and dry.

You clean the headband and neckband by scrubbing with a cloth and soapy water. Then rinse well and allow to dry.



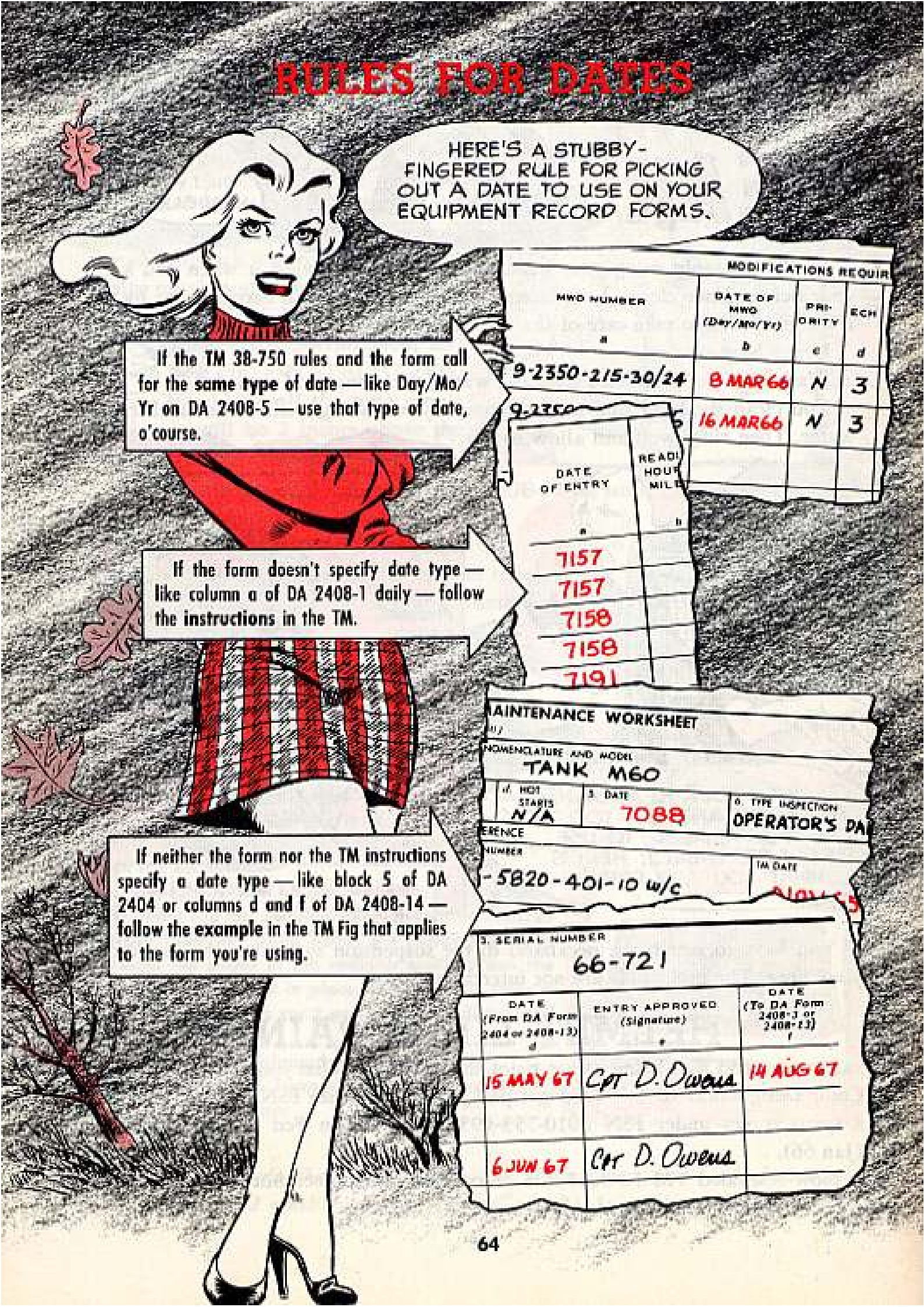
You have to match the neckband to the suspension system on the inside of your liner. The neckbands are not interchangeable.

HELMET LINER PAINT

You can end that helmet liner paint shade puzzle. What you want is Munsell Color Designation 1043/3. A 5-gal pail you can get with FSN 8010-753-4959; a quart comes under FSN 8010-753-4957 . . . both in Fed Cat C8000-IL-A (Jan 66).

Now-rescinded TM 10-8415-205-25 covered this subject, but the shade's still right no matter what happened to the TM.

RULES FOR DATES



Calibration Pub

Better keep your eyes peeled for TB-750-113 (21 Sep 67), Calibration Requirements for Test and Measuring Equipment. This includes the tools in your tool sets and kits that have to be calibrated.

Mig Welding Set Fix

On Air Reduction MIG welding set (FSN 3431-079-0488), models 2351-0685-601 through 2351-0685-907, the 5-watt resistor (R5) will short out and the rectifier (SRI) will burn up. So the resistor must be replaced with a thyrector soonest. The thyrector, and installation instructions, are for free from: CG, U. S. Army Mobility Equipment Command. ATTN: AMSME-MGI, 4300 Goodfellow Boulevard, St. Louis, Missouri 63120. Be sure you give the serial number of your MIG set.

Find Your MWO

If you can't find all the modifications for your equipment, order DA Pamphlet 310-7 (10 Jul 67). It's a complete index of MWO's.

The Missing Case

You got your Automotive Mechanic's Tool Kit, FSN 5180-754-0641, but you got the socket wrench set FSN 5120-081-2307 without the case. You'll find the Case, Socket Wrench Set, FSN 5140-322-5965, listed on page 4.101 of Fed Cat C5130/40-IL-A (Jul 66).

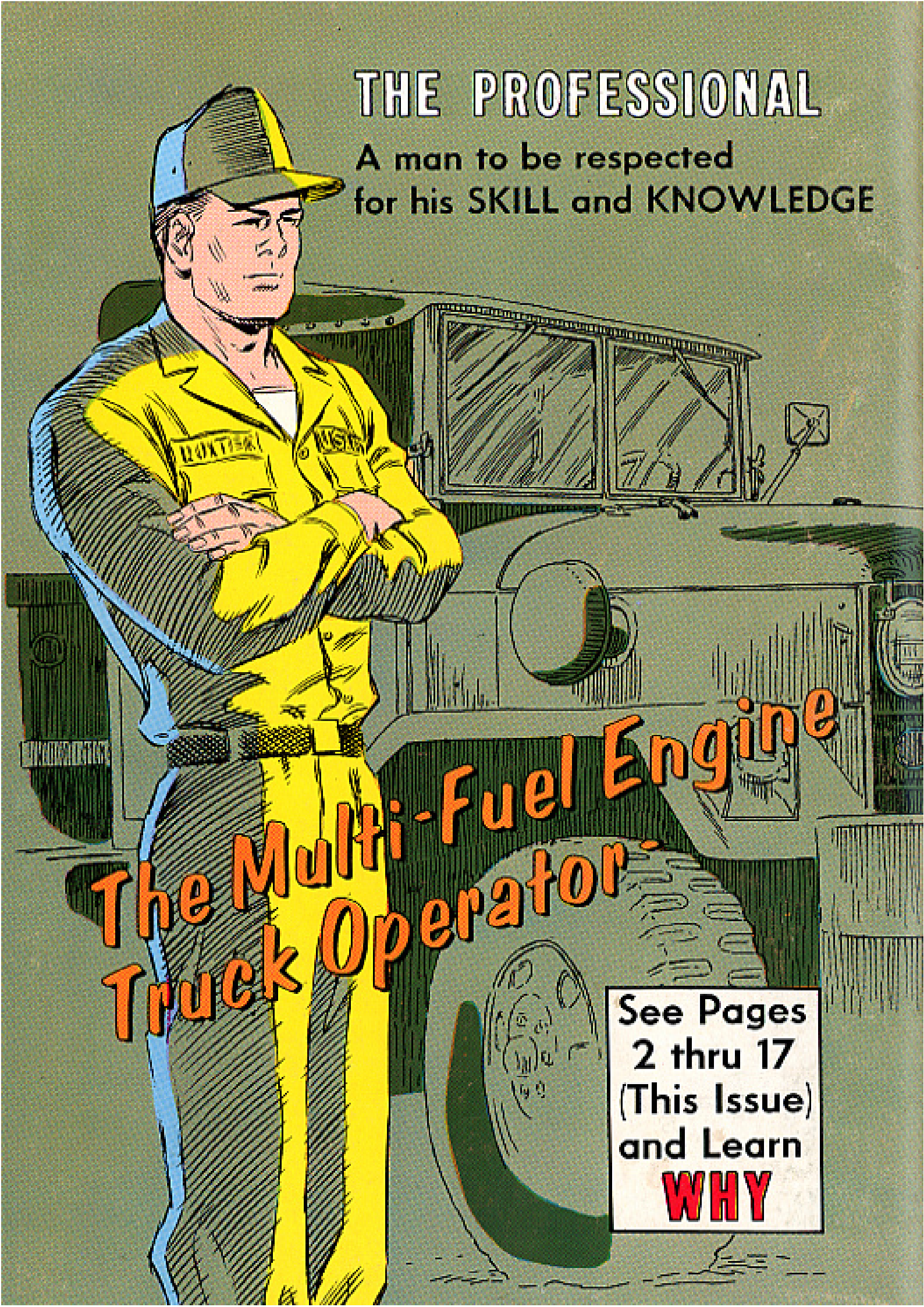
Make Sure First

The illustrated field manufacture items list (Chap 4 in the -20P and -35P manuals) will become part of your 55-series -20 and -35 maintenance manuals now under revision. But hold one, Tiger! Before you toss away your superseded P-manuals, be sure the Chap 4 poop is in your 55-series maintenance pubs.

The Kits Are There

You've looked through DA Pam 310-6 and its latest change, and you still couldn't find your 5180 tool kit. Don't give up—you'll find it listed in Fed Cat C5180-IL-A (Jul 66), or its latest change bulletin. The Fed Cat lists all sets, kits and outfits of hand tools in the 5180 group and class.

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


THE PROFESSIONAL
A man to be respected
for his SKILL and KNOWLEDGE
The Multi-Fuel Engine
Truck Operator
See Pages
2 thru 17
(This Issue)
and Learn
WHY