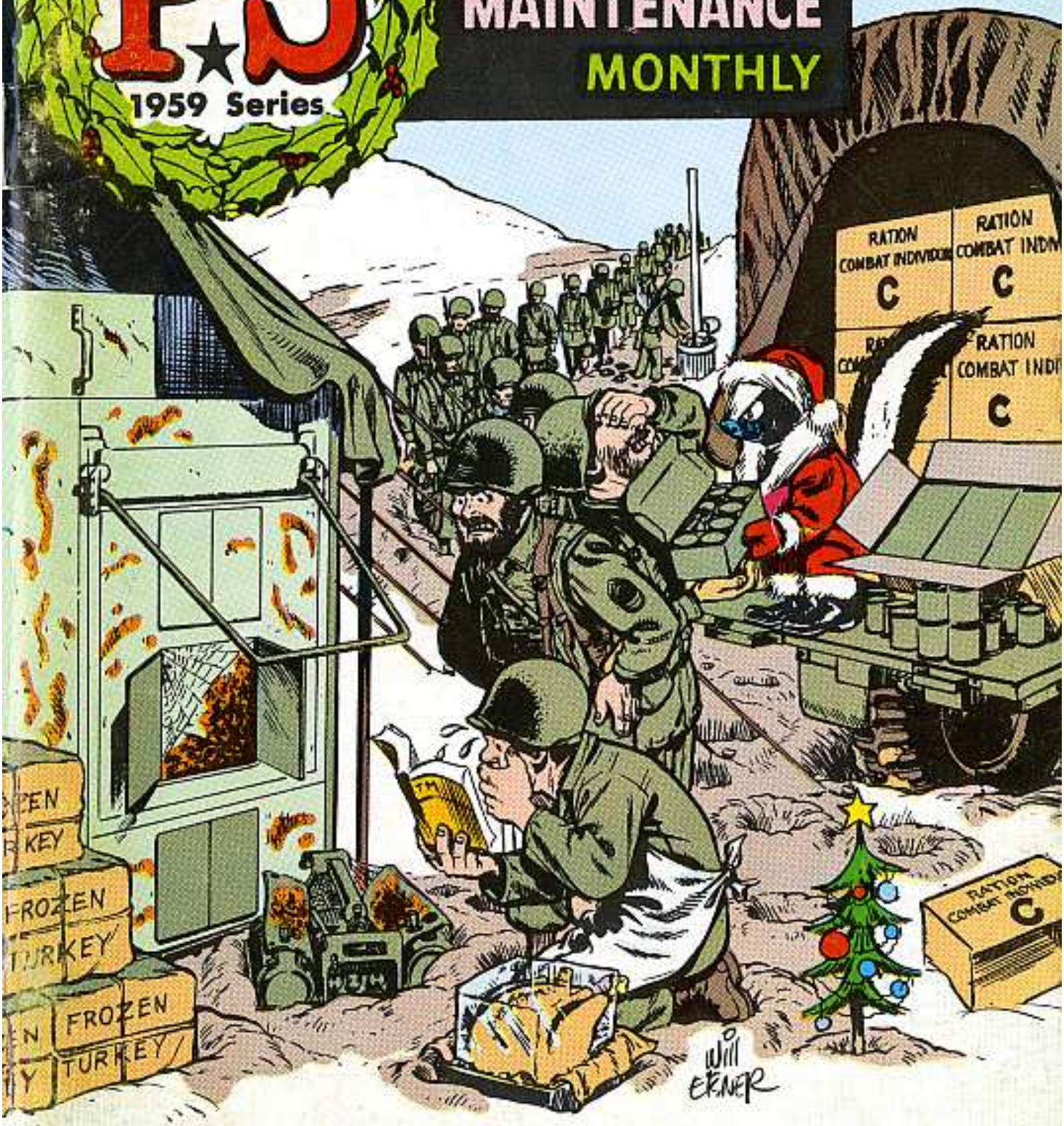
Issue 84

PS

1959 Series

THE PREVENTIVE MAINTENANCE MONTHLY



"So NOW *you think about-maintenance..."*

TOMORROW'S TOO LATE

Some people get funny notions . . . like the guys who think Preventive Maintenance is for trucks and tanks and nothing else.

Man, they're just not with it.

Preventive Maintenance, just like the rule book* says, is for **all** Army equipment . . . not just trucks and tanks.

For example, the care and cleaning you learned to give your rifle the first day it was issued to you—that's PM. And remember when you had that training on the machine gun? A big part was on how to disassemble assemble, adjust, clean and lube it right. That's PM.

And so it goes . . . rifles, machine guns, ammo, artillery and all your Army "hardware." You've gotta have it in the fight.

Don't forget, tho, things like field ranges, tent stoves, compasses, radios, telephone and similar equipment. They make you and your weapons work better for combat.

What else? Shoes . . . uniforms . . . tents. In fact, every piece of Army equipment you use, wear or operate has to have PM. If not, it'll break down, fall apart and be no good for you or your outfit.

So as your sergeant says, it'll "behoove" you to get with it today and make sure the Preventive Maintenance gets done—and done right—on your equipment.

Tomorrow could be too late.

*PREVENTIVE MAINTENANCE IS THE SYSTEMATIC CARE, SERVICING, AND INSPECTION OF EQUIPMENT FOR THE PURPOSE OF MAINTAINING IT IN SERVICEABLE CONDITION AND DETECTING AND CORRECTING INCIPIENT FAILURES. PREVENTIVE MAINTENANCE IS THE RESPONSIBILITY OF COMMANDERS AT ALL ECHELONS. IT IS THE CORNERSTONE OF EFFICIENT AND ECONOMICAL MAINTENANCE.
—AR 750-1

PS THE PREVENTIVE MAINTENANCE MONTHLY

Issue No. 84 1959 Series

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IN THIS ISSUE

ARTICLES

DEPARTMENTS

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

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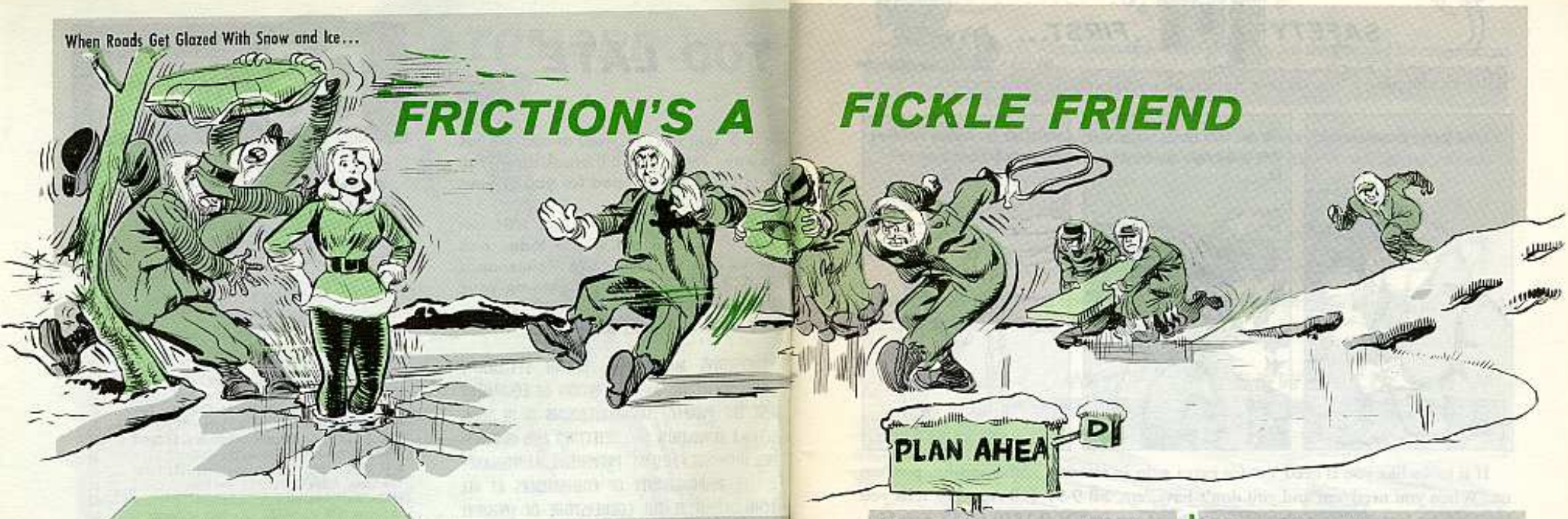
When Roads Get Glazed With Snow and Ice...

FRICTION'S A FICKLE FRIEND



Once winter slips those icy fingers between you and the road, you vehicle drivers are likely to find one o' your best friends is fulla fickle tricks.

Odds are you never gave this friend a thought . . . until she fades away just when you need her most.

Her name's Friction, a screaming terror to moving parts inside your vehicle, but a life-saver down below where you need a grip on the road for moving back and forth, for turning, and for bringing that buggy to a halt.

Without the help of Friction when you want to stop, momentum's likely to slam you into a tooth-scattering stop against the vehicle up front. And if she phf-t-t-s while you're in a turn, most likely centrifugal force'll fling you into a skull-splattering nosedive.

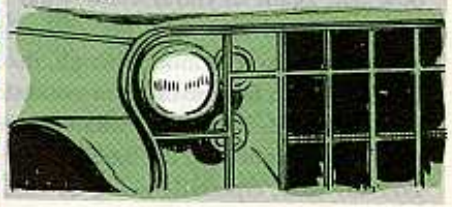
So . . . when you find you've gotta go over slippery ice or snow and fickle friction goes into her fade-out act, how do you keep your vehicle under control? First of all you . . .

Start yesterday to get your vehicle and its equipment in shape for any trip. While your engine's warmed up, give your defroster a check-run.

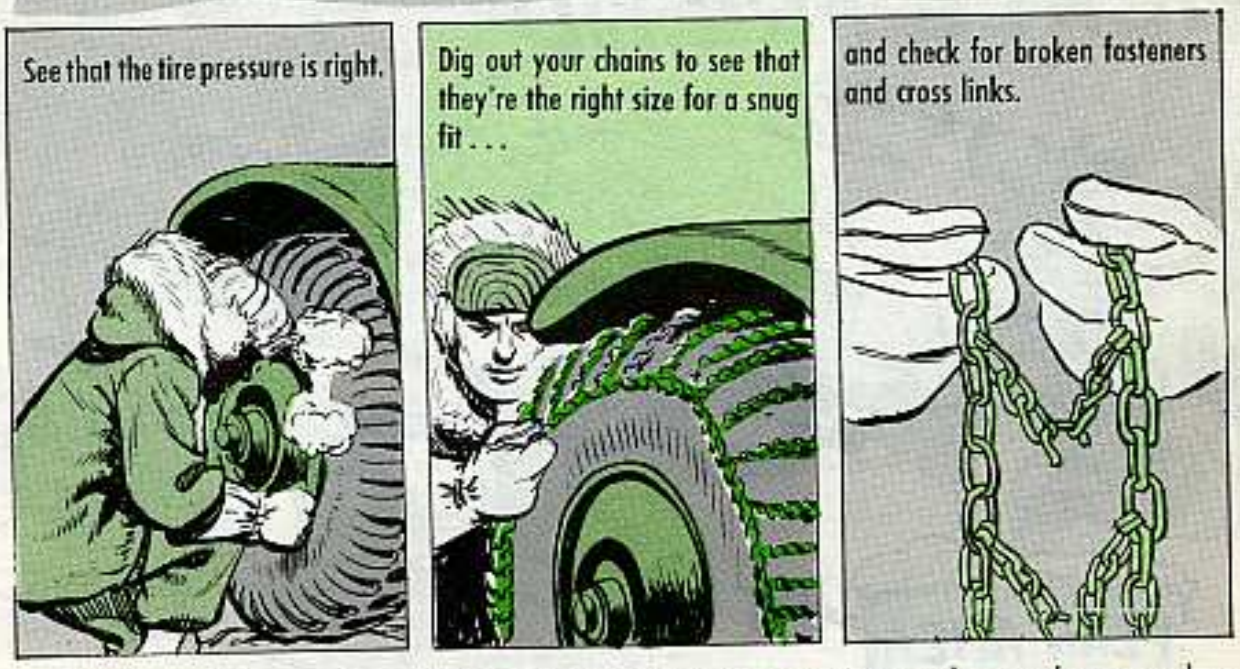
If your vehicle's parked outside, cover the windshield with cardboard or canvas. It'll save a lotta frost scrapin'.

And if you find you've gotta go when it's not workin', if possible, wedge the hood open so's the engine's heat will sweep across the windshield and help the wiper keep it clear.

Before you get underway you'll wanta make sure all glass is free of frost. This goes for your driving lights both fore and aft.



Before clapping a foot on that starter, give your vehicle a safety check.



If it looks like you'll need 'em for extra grip in starting and stopping, put 'em on. When you need 'em and you don't have 'em, SB 9-99 (10 Apr 51) tells you how to get 'em and installation instruction are in TM 9-1870-1 (18 Feb 55).

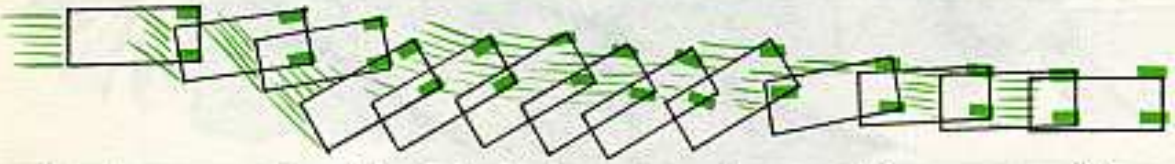
If you find your brakes are frozen, don't break 'em loose by force. Thaw 'em with hot air from the M40 slave kit applied outside. This cold starting aid's described in SB 9-16 (21 Oct 54). Then, to make sure the brakes don't freeze again, remind yourself to apply 'em lightly a few times while moving any time they get wet. The heat caused by the drag will dry 'em.

Once you're moving, try your brakes to see they don't drag to one side. This kinda "pull" can put you in a pine box, so it pays to test 'em now and again so you'll know what to expect when you need 'em.

Good idea to remember, though, that any braking you do on ice and snow is to be done with a feather-touch to avoid skids and spins. Even with chains, you may get a side-skid. Besides . . . whatever the road conditions . . . it's best to tap that brake pedal lightly all the time. Jamming may lock your wheels and put you in a skid any time, especially going downhill.

So . . . easy does it when stopping. Ease up gently on the gas and let engine compression do your braking on slippery roads. And keep your foot off the clutch pedal till you're easing to a halt.

If you do feel yourself skidding, about the only control you've got is to turn your front the same way your rear's going. Since the vehicle won't bend, this may stop your spin and put you back in control.



Just be sure you lay off both the brake and accelerator till you get straightened out, then feed 'er a little gas.

BEFORE GOING DOWNHILL...

Shift to the gear you'd need or used to climb it . . . or the next lower gear if it's real icy.

When you see a curve up ahead, slow down before you get into it.

Even on a level straightaway, make like a road inspector with your eyes glued to the front . . . instead a squirrel huntin' through the roadside trees, that is.

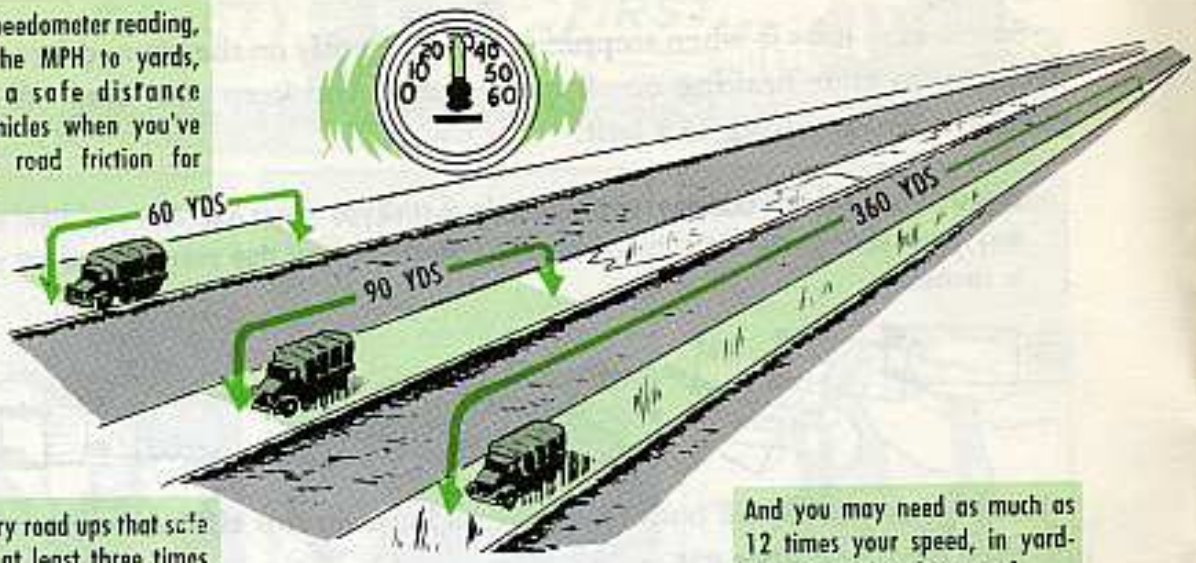
KEEP YOUR SPEED DOWN...

Whenever there's ice and snow drive like there might be a bridge out around the next turn. There just might be . . . or a wrecked vehicle may be sitting crosswise in the road. And don't try to scrape paint off the bumper of the vehicle up ahead.

BR-R-R-R-R

Cold outside? If the average temperature reading for the coldest month in your area is +5°F or lower, you may need the M40 Cold Aid Starting (Slave) Kit to start your vehicles in an emergency. Read all about it in SB 9-16 (21 Oct 54) and TB Ord 390 with changes. The kit has both hot air heating and electrical units.

Twice your speedometer reading, converting the MPH to yards, gives you a safe distance between vehicles when you've got normal road friction for stopping.



But a slippery road ups that safe distance to at least three times your speed converted to yards.

And you may need as much as 12 times your speed, in yardage, on a glazed icy road.

When you can't see the ground between you and the vehicle ahead, you're on your way to your own wreck.

Keep an eye peeled on your rear view mirror, too. Even when the vehicle behind is a safe distance and you get a sudden urge to stop, **don't** . . . unless you hafta. Signal before you change speed or make any move except straight ahead.

If your vehicle's disabled, use your highway warning kit when there's one on the vehicle. Kits're OVE for military vehicles with rated capacity of 10 passengers and up or more than a ton of cargo.

Keep in mind, too, that details of any accident you have are to be filled in on the spot on Standard Form 91 and DD Form 518. If you hafta tow or be towed, use approved towbars, secured at both ends.

At the end of today's trip, start putting your vehicle in shape for tomorrow. Park in shelter or on hardstand when you can.

If you hafta park in mud, slush or wet ground, avoid freezing into ice pockets by covering the area with boards or brush. Instead a pulling the handbrake . . .

which might leave you with frozen brakes in the morning . . . hold the vehicle in place by leaving it in gear and place blocks under the wheels.

Just keep in mind that friction's a warm friend that you need most on an icy, snowy road . . . the very place she's most apt to fade away. Hope she don't leave you, but keep your head if she goes.

Hand him a monkey

All you tank crewmen want to back off when it comes to removing your fixed fire extinguisher cylinders. You've not got the right tools, and you need to get your unit mechanic to do it right.

He'll have to be sure he's got the right tool.

The largest connection measures 1⅝ inches across the flats. So there're only three types of 2d echelon wrenches that'll fit . . . either a rough toothed pipe wrench, a smooth jaw monkey wrench, or the right open-end wrench.

The pipe wrench's rough jaws will ruin that connection by rounding off the flats.

So, the smooth jaw wrench you want to hand your mechanic goes by this name: Wrench, adjustable automobile, 0 to 3⅝-in jaw opening, 15 inches long . . . FSN 5120-264-3793. It's in Common Tool Sets No. 1 and 2, and it's also in the OVM of your outfit's M62 5-ton wrecker.

You can also give him the right open-end wrench, FSN 5120-277-2326, which is found in both No. 1 and 2 and the No. 2 supplemental tool sets. It has $1^{7}/_{16}$-in and 1⅝-in openings.

This'll save your time

Any time you find you've gotta unhook the lead wires on your equipment's hour meter, don't be half-safe. Be sure you get 'em back on the way they belong. Else you'll get reverse polarity and that meter'll peter out in no time.

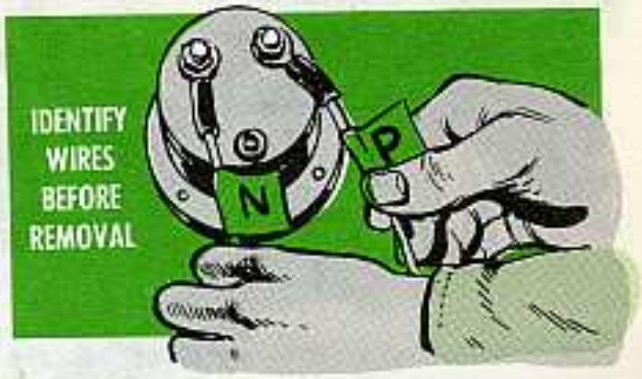
This's no sweat on most meters where the positive wire's red and the negative's black or green. Those you just have to match up again when the time comes.

But on the others, where the wires aren't marked in any way, you gotta be

mighty careful. This's no time for guesswork. And the time to act is **before you unhook those wires.**

Here's what to do: Before you unhook the wires, give a gander at which one goes to the positive + spot on the meter. Wrap a piece of tape around that wire and mark it P or +. Then wrap a piece around the wire that goes to the negative (—) spot and mark it N or —.

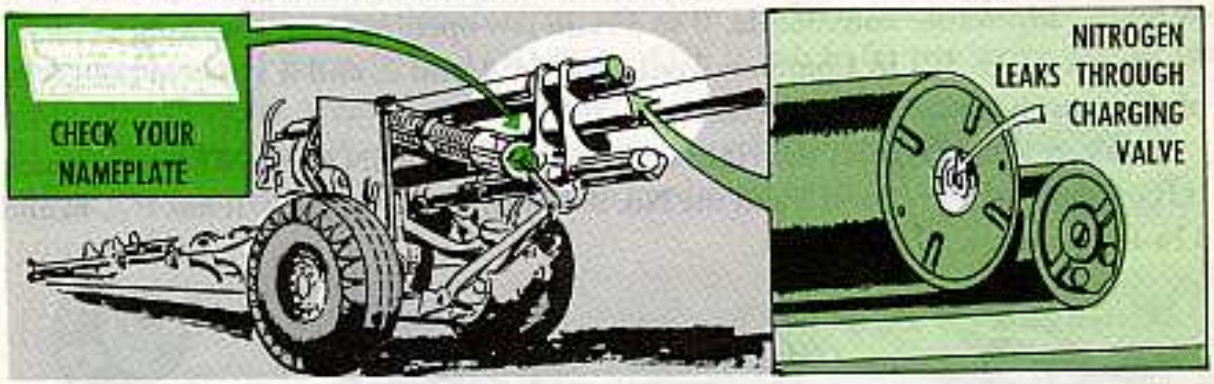
If you guess and hook 'em up wrong, you'll burn the meter out in a matter of minutes.



Fire off info

This is for you—if'n you're in a battery what fires the 155mm howitzer equipped with an M6A2 recoil mechanism.

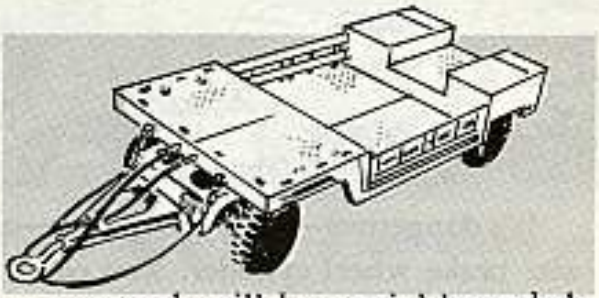
If any of your recoil mechanisms were made by the American Locomotive Company, the people at Ordnance Weapons Command want to hear from you. ALC's recoils are developing nitrogen leaks through the recuperator charging valve.



Ordnance has already repaired some mechanisms and now wants to get a line on the rest of 'em so they can gather replacement parts together and hit your outfit when the valve on your recoil goes.

Your outfit wants to fire off a note to Ordnance Weapons Command, Rock Island, Illinois, ATTN: ORDOW-FM, and give 'em the serial number of all your ALC recoil mechanisms, plus where you're set up.

Parts before pubs



Got yourself a two-ton, four-wheel M143A1 bomb trailer that has axles that don't match up with the M143?

The word is that this new model has 12 parts that're different from the ones listed in Ord 7-8 SNLG798 (21 Dec 56), and it may be quite a spell before a new parts pub will be comin' 'round the mountain.

So, if your M143A1 needs repairs before you get a new parts pub, here're the ones that differ from the M143, with Group numbers to clue you on the parts they replace:

AXLE, w/flanges and spring seats, assy—**FSN 2530-323-8538**—Group 1100.

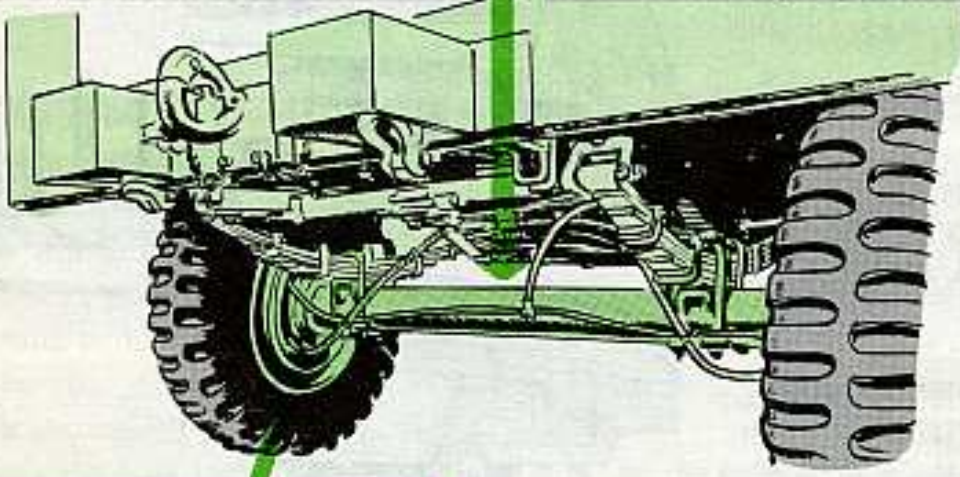
AXLE, w/flanges and spring seats, assy—**FSN 2530-323-8538**—Group 1100.

SPRING, shoe guide pin—**FSN 5340-699-9018**—Group 1202.

LOCK, hub bearing adjusting nut—**FSN 2510-741-1378**—Group 1311.

DRUM, brake—**FSN 2530-741-1425**—Group 1311.

NUT, adjusting, hub bearing—**FSN 5310-741-1379**—Group 1311.



HUB, w/bearing cup, assy—**FSN 2530-693-1010**—Group 1311.

CYLINDER, wheel, assy—**FSN 2530-741-2065**—Group 1204.3.

PARTS KIT, cylinder, wheel—**FSN 2530-537-2210**—Group 1204.3. This one's a 3rd echelon item.

GASKET, hub cap—**FSN 5330-614-4356**—Group 1311.

SEAL, oil hub bearing(inner)—**FSN 5330-741-1429**—Group 1311.

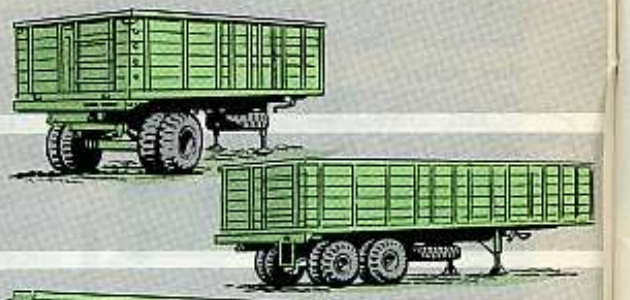
PIN, shackle, spring, rear—**FSN 5315-316-1062**—Group 1601.3.

Of course, you'll order the axles only after approval by your Ordnace support.

DANGEROUS

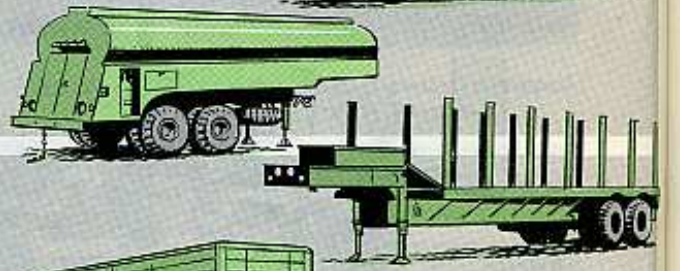
It's dangerous—really dangerous—using a semi-trailer that may have a wrong-size brake wheel cylinder. You could have the wrong cylinder in any one of the following semi's:

SEMI-TRAILER, CARGO, 6-TON, 2-WHEEL, M118A1.



SEMI-TRAILER, STAKE, 12-TON, 4-WHEEL, M127A1.

SEMI-TRAILER, TANK GAS, 12-TON, 4-WHEEL, 5000 GALS., M131A1 AND M131A2.



SEMI-TRAILER, LOW BED, WRECKER, 12-TON, 4-WHEEL, M270A1.

SEMI-TRAILER, VAN, REFRIGERATOR, 7½-TON, M349A1.

The way this comes about is that the supply people picked up some numbers that are different from what the production models got. So natch, when you order a replacement cylinder you'll get the wrong one.

The wheel cylinder parts that you **don't** want are:

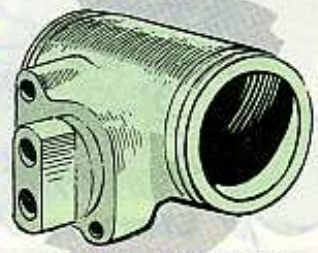
Wheel Cylinder (1⅞-in ID), FSN 2530-318-1223.
Bleeder Valve, FSN 2530-287-8252.
Kit, repair (support item), FSN 2530-693-0997.

BRAKING CRASH

The correct and only wheel cylinder parts that go in these semi-trailers are:

BLEEDER VALVE, FSN 2530-737-3260.

KIT, REPAIR, FSN 2530-678-3331 (SUPPORT ITEM).



WHEEL CYLINDER (1⅝-IN ID), FSN 2530-678-3332.

With the wrong wheel cylinders—or worse yet, if they've been put on only one side—your semi can easily do a jacknife. The oversize cylinders put an over-pressure on the brakes, causing them to do a lock-up of the first degree.

The problem now is to get your hands on the right cylinders. If your supply people can't get the cylinders (and kit) through normal supply channels, then the only thing to do is to go out on **local purchase** until supply channels can furnish them to you. (The bleeder valve is already in supply, so you should have no trouble getting it.)

Here's the way they size up for local buy. Use the following Wagner Electric part numbers "or equal" and you can keep those semi's rollin'.

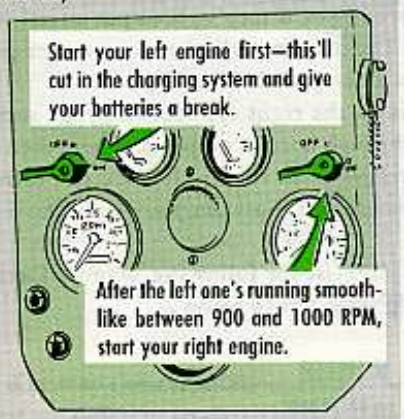
PART NAME	NUMBER
Wheel Cylinder	LO-FD-21090
Repair Kit (support item)	LO-FC-11596
Kit Components:	
Cup	LO-FC-12360
Boot	LO-FC-19114

Just turn the oversized cylinders back into supply to be held for any other future use.

Twice as Careful

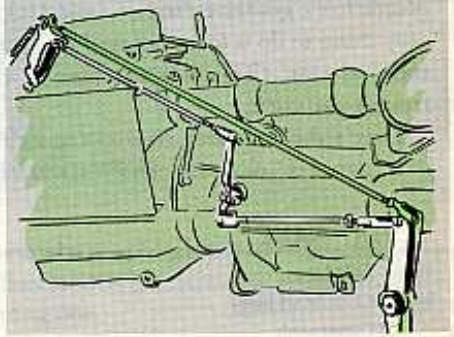
Starting

Getting these engines going so's you'll have a smooth trip is mighty important. You do it this way:

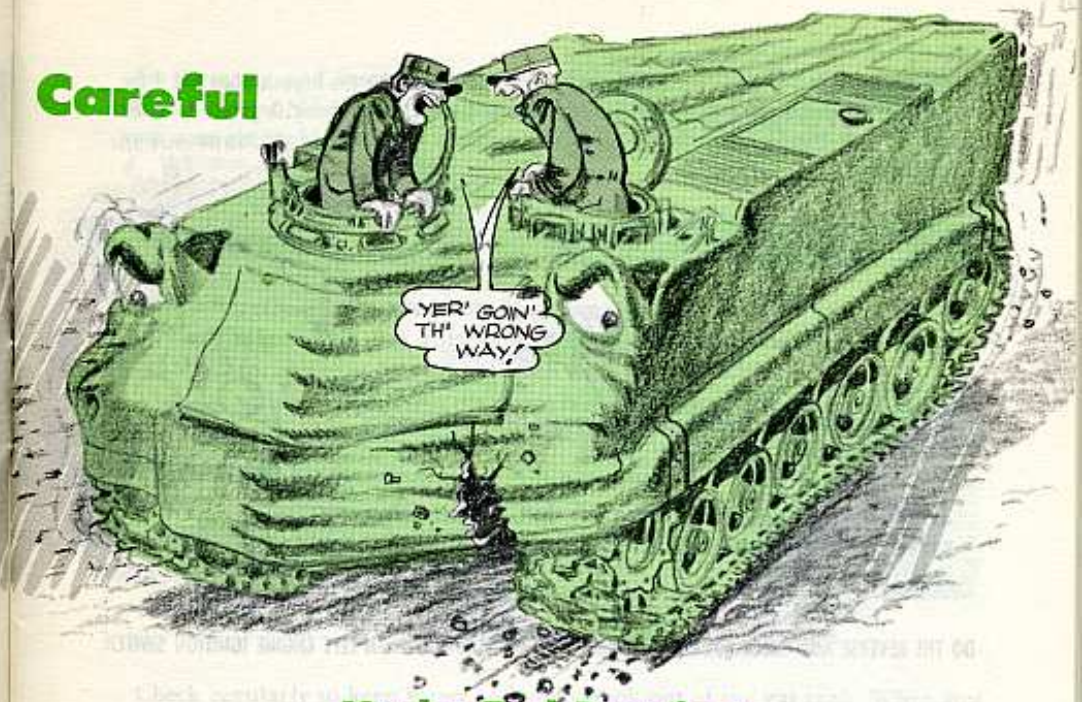


Synchronization

One of the hardest times an operator can give his vehicle is to run it when his engines aren't synchronized. Before moving out, make sure everything's up to par in this department like this:
Step on the gas. Watch both tachometers until they level off at 2000 RPM. They should be within 100 RPM of each other. If not, call your unit's mechanic.



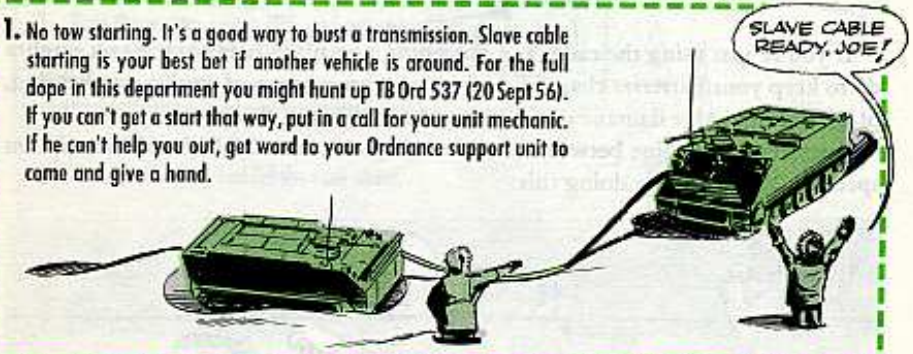
He'll set things straight by loosening the jam nuts at each end of the throttle control rods for the carburetor of the engine that's out of adjustment, just like it says in para 179, TM 9-2300-203-12 (Oct 58). After he adjusts the rods and retightens the jam nuts, he'll check the synchronization.



Mucho Bad Practices

Now, there're three things you don't want to do with this vehicle—unless it's ab-so-tive-ly necessary or somebody's shooting the live stuff at you.

1. No tow starting. It's a good way to bust a transmission. Slave cable starting is your best bet if another vehicle is around. For the full dope in this department you might hunt up TB Ord 537 (20 Sept 56). If you can't get a start that way, put in a call for your unit mechanic. If he can't help you out, get word to your Ordnance support unit to come and give a hand.



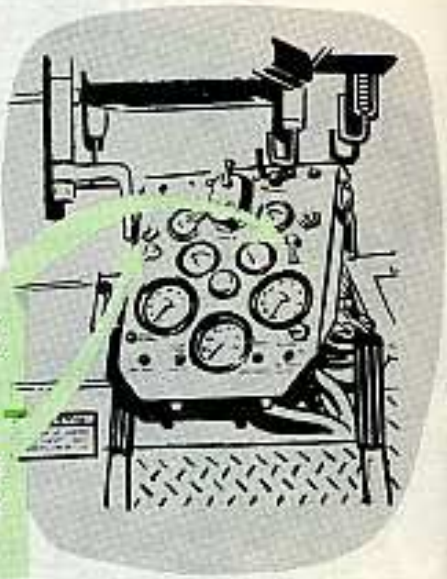
3. In the M59 and M84, there's a double danger of hydrostatic lock. This can happen when and if the fuel pump is left on and is groaning to supply fuel to an engine that's not running. Or gas can be forced past the carburetor float valve, through the carburetor into the intake manifold and into one or more cylinders.

TO CHECK FOR LOCKED ENGINES:

1. Turn on master switch.

2. Turn on right engine ignition switch—so you can turn over left engine without starting it.

3. Press the left engine starter button with short, few-seconds-long pushes, and listen to be sure the engine doesn't jam—with a "chug" or "whine".



DO THE REVERSE AND CHECK FOR RIGHT ENGINE LOCK BY STARTING WITH LEFT ENGINE IGNITION SWITCH.

Radio

If you're just using the radio and not going any place here's what you oughta do to keep your batteries charged, and prevent any chance of engine overheating, plug fouling, valve damage or dropping the alternator charge rate.

Keep the left engine between a minimum speed of 1000 RPM and a maximum speed of 2000 RPM by doing this:

1. Lock brakes.

2. Shift lever into NEUTRAL position.

3. Disengage auxiliary shift lever (down position).

4. Shut off fuel to right engine.

In the early and intermediate M59 vehicles (Serial No. F7 through F786) use fuel shut-off valve.

In the late model vehicles (Serial No. F787 and above, and all M84 vehicles), make sure the right ignition switch is OFF.

If you have to use the alternator for a long time, change the engine RPM at least every 30 minutes. For instance, run it a half-hour at 1500 RPM, boost it to 2000 RPM for the next 30 minutes, then back to 1000 RPM.

You also want to be sure that the comm system is OFF when you start the engine. Otherwise, you're liable to blow something from the voltage surges when the charging system starts.

Drainage

Check regularly to keep water and other gook out of the gas tank. When you find some of that muck stuff around, be sure and drain it. Here's how you go about it:

1. Turn the master switch OFF, and put something under the vehicle hull fuel drain plug to catch the stuff.

2. Remove the plug and let the tank drain.

3. Afterwards, clean and install drain plug.

O'course, you don't wanta operate the fuel pumps when the gas tank is empty. This leads to overheating of the pumps without the gas to act as a lubricant—resulting in extra wear of the pump parts.

This goof move also can cause the armature of the pump to race, setting off a spark that could get to the gas tanks—and ka-boom.

To avoid this, be darn sure you have enough gas in your tanks to get where you're going and never leave the ignition on when the engine's not running.

PM IN THE DRIVER'S SEAT

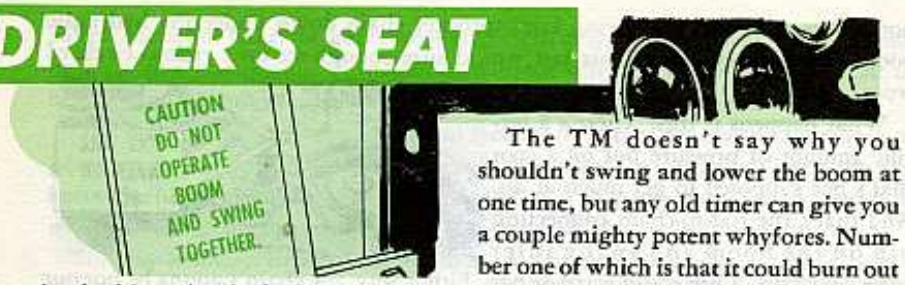
Good operating habits can be the best PM any piece of equipment can get. Equipment that's run the way it's supposed to will last longer, give less trouble and will be safer for the driver and all concerned.

On the NC 10 Federal crane, for instance, the zoom-zoom guy and the one who's not as careful as he might be are triple threat men—in reverse. They're dangerous to their buddies, themselves and their equipment.

Take the Joe, f'rinstance, who moves both the hydraulic swing and boom control hand levers at the same time . . . or the one who lets his boom travel too fast or stops it sudden-like . . . or even the bozo who "rides the clutch" while lifting or slewing.

ONE AT A TIME

Raising or lowering the boom while slewing is one of the mortal sins of crane operating. TM 10-1694A (Apr 58)—the Cherrypicker's bible—tells you right out not to move 'em both at the same time, and as if that's not enough, there's a sign right next to the levers to warn you.



The TM doesn't say why you shouldn't swing and lower the boom at one time, but any old timer can give you a couple mighty potent whyfores. Number one of which is that it could burn out the double-action hydraulic elevating and swing cylinder pump near the bottom of the radiator. This'd happen because you'd be asking the pump to supply more power than it's rigged to produce.

This power failure could result in a load tumblin' down on somebody's noggin.

Another thing, elevating and slewing at the same time is a sure way to throw the crane's hoist load wire cable outta its proper groove. And you know that leads to wearing, crimping and fraying of the cable—a real mess that could only be worse if the cable snapped as a result of this wear.

SLEW 'ER SLOW

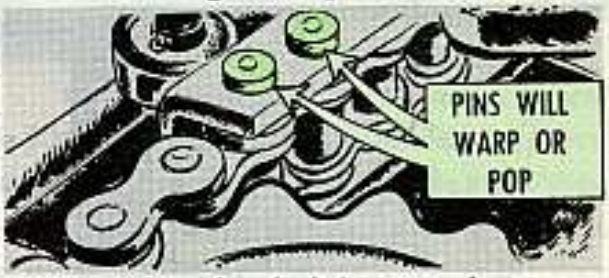
Now, about slewing a loaded boom too fast and too far or stopping or starting it suddenly. The best advice is "Don't!"

Again, the TM says you shouldn't, but doesn't say why 'cause the reason's obvious to all heads-up operators: 'Taint good for the NC 10 and could be downright fatal to somebody in its vicinity.

Although the swing boom's speed is controlled by a governor, it's up to the operator to slow it down when it comes near the 180 degree position. If he doesn't slow it to a snail's crawl it'll be brought up sharp when it reaches the end of its travel route . . . and the result's gonna be about the same as when it's stopped or started sudden-like. And that could be from middlin' bad to gosh-awful.

For one thing, it could snap the cable and send the load larruping into space, with sad results to the load and anything it might meet up with. Or, it could damage—if

not break—the boom and swing idler sprocket chain down under the hydraulic boom elevating cylinder. This last would sure-enough set up a vicious circle of woes.



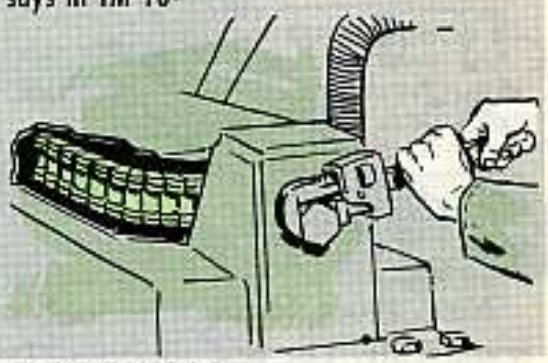
What happens is this: There's a terrific amount of pressure put on a spot that's not supposed to get much at all. And that's the rod-to-chain connecting pin on the boom and swing idler sprocket chain. A pin could warp or pop. Either way, the chain's gonna be put out of kilter to some extent. They call this deflection.

CHECK THAT CHAIN

It's up to the operator to see that this doesn't happen—either as a result of his own operation or someone else's. In other words, he's supposed to be on the lookout for signs of deflection.

If the chain's at all loose, notify your mechanic pronto. There's not supposed to be any deflection in the chain at all between the boom swing sprocket at the base of the boom pivot and the boom swing idler sprocket located under the hydraulic boom elevating cylinder.

Your mechanic can check for deflection by doing what it says in TM 10-1694A, para 55.



NIX ON RIDING THE CLUTCH

Riding the clutch on the NC 10 while elevating and slewing is another bad habit that could prove disastrous to all concerned. What happens is that the operator's looking for a shortcut. Instead of stopping the crane, and putting it in neutral and applying the handbrake before starting to hoist and swing, he tap dances on the brake and clutch pedals.

Sure, he can inch his way into a close spot this way, but the gears are gonna

suffer. Sooner or later, the gears are gonna mesh at the wrong fraction of a second, or his foot's gonna slip . . . suddenly, without warning to the guy out front or below. And a lot of valuable cargo's been banged up this way too!

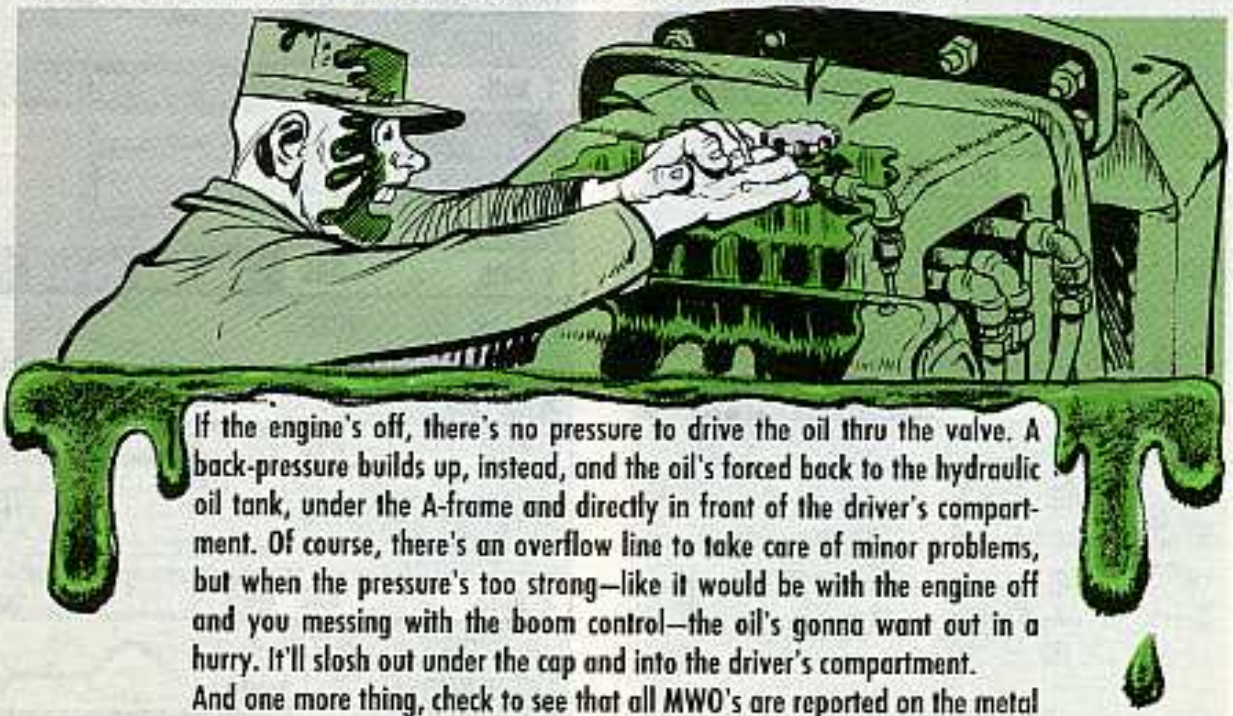
The other thing that happens all too frequently is that the constant meshing of gears wears 'em down. Then that disease called slippage sets in and first thing you know the brake and clutch are both unreliable. The crane becomes an unguided missile as far as the operator and the guys around him are concerned.

So, play it smart. Before hoisting or slewing, make sure you do like it says in TM 10-1694A. Place both transmission shifting levers in neutral, release the clutch and pull on the handbrake. And keep it in neutral, with handbrake on, all the time you're slewing and booming. OK?

Here're a couple other words of wisdom that add up to smart operating—and darned good PM in the driver's seat: **Never let the boom down while the engine's not running!**

You won't find this one in the TM but men in the know realize that this could lead to trouble.

The hydraulic boom elevating cylinder raises and lowers the hoist and swing boom and has a piston stroke of 23 inches. To raise the boom—something that's done by moving the hand lever—a pump forces OE under pressure thru a control valve and hoses into the elevating cylinder. The engine's gotta be running to exert that pressure.

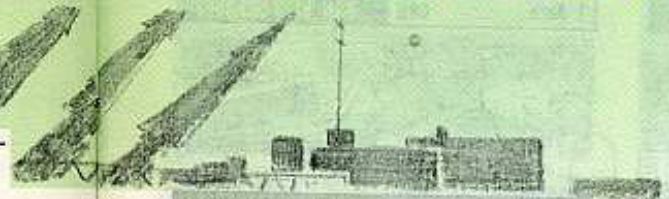


If the engine's off, there's no pressure to drive the oil thru the valve. A back-pressure builds up, instead, and the oil's forced back to the hydraulic oil tank, under the A-frame and directly in front of the driver's compartment. Of course, there's an overflow line to take care of minor problems, but when the pressure's too strong—like it would be with the engine off and you messing with the boom control—the oil's gonna want out in a hurry. It'll slosh out under the cap and into the driver's compartment.
And one more thing, check to see that all MWO's are reported on the metal plate.

MISSILE BLASTS

PRESENTING—In this corner (of your Nike site) . . .

THE TOOLS EVERY MECHANICAL GOOD ASSEMBLER NEEDS



Here they are—two of the tool sets you mechanical assemblers use in the assembly area at your Nike site.

The sets go by these handles:

SHOP EQUIPMENT, GUIDED MISSILE SPECIAL, ORGANIZATIONAL, MAINTENANCE, FSN 4935-590-7431, SM 9-4-4935, J25-8 ...AND

TOOL KIT, ORGANIZATIONAL MECHANICAL ASSEMBLER, (GM NIKE), FSN 5180-545-8642, J10-44

You're authorized one of each set.

SHOP EQUIPMENT, GUIDED MISSILE, SPECIAL, ORGANIZATIONAL MAINTENANCE, FSN 1450-590-7431

BIT, SCREWDRIVER: 0.087 thk spherical shaped tip, ⅜ sq-drive, 1 ¾ lg

1 Auth | ORD | FSN 5120-388-9495

BIT, SCREWDRIVER: fl tip 0.625 w, 0.625 sq-drive, 1 ³⁵⁄₆₄ lg

1 Auth | QM | FSN 5120-595-8149

BIT, SCREWDRIVER: S, zn-pltd, ⅞ dia x 1.7345 lg. 0.386 sq female drive ½ deep oval shape 0.180 thk x 0.172 lg.

1 Auth | FSN 5120-302-1686

INSERTER, PACKING PREFORMED:

1 Auth | ORD | FSN 5120-391-1662

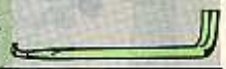
PULLER, MECHANICAL al, cd-pltd, 2 in lg x 2²³⁄₃₂ h.

1 Auth | ORD | FSN 5120-388-9656

PULLER, MECHANICAL: S, cd-pltd, 5½ lg x 2 in w x ¼ dia.

1 Auth | ORD | FSN 5120-218-0729

REMOVER: "O" Ring, 4¾ lg.

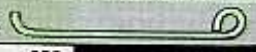


1 Auth | ORD | FSN 5120-342-4291

TOOL, COCKING, REGULATOR VALVE:

1 Auth | ORD | FSN 4935-587-2407

TOOL, TRIPPER:



1 Auth | ORD | FSN 4935-587-2408

WRENCH, TORQUE: rigid frame, ru hdl, preset sealed mech, w/audible & visual indicator, integral wrench end, open, ¹³⁄₁₆, 12 pt, 300 in-lb cap.

1 Auth | ORD | FSN 5120-337-2464

WRENCH, TORQUE: stght hdl, preset sealed tor mech, w/audible & visual indicator, integral wrench end, open, ⅝, 12 pt, 50 in-lb cap.

1 Auth | QM | FSN 5120-302-1689

WRENCH, TORQUE: stght hdl, preset sealed tor mech, w/audible & visual indicator, integral wrench end, open, ¾, 12 pt, 28.5 in-lb cap.

1 Auth | QM | FSN 5120-302-1688

WRENCH, TORQUE: stght hdl, preset sealed tor mech, w/audible & visual indicator, integral wrench end, open, ¾, 12 pt, 150 in-lb cap.

1 Auth | QM | FSN 1520-302-1690

WRENCH, TORQUE: Stght hdl, preset sealed tor mech, w/audible & visual indicator, integral wrench end, open, ¹³⁄₁₆, 12 pt 112 in-lb cap.

1 Auth | QM | FSN 5120-302-1691

WRENCH, TORQUE: stght hdl, preset sealed tor mech, w/audible & visual indicator, integral wrench end, ⅞, 12 pt, 200 in-lb cap.

1 Auth | QM | FSN 5120-302-1692

WRENCH, TORQUE: stght hdl, preset sealed tor mech, w/audible & visual indicator, integral wrench end, 1¼, 12 pt, 450 in-lb cap.

1 Auth | QM | FSN 5120-302-1693

WRENCH, TORQUE: stght hdl, preset sealed tor mech, w/audible & visual indicator, integral wrench end, open, 1½, 12 pt, 600 in-lb cap.

1 Auth | QM | FSN 5120-302-1694

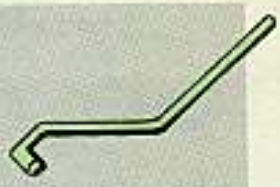
WRENCH, TORQUE ADAPTER: S, heat treated, tempered & cold fin, zn-pltd, 15 deg offset, ⅜ 12 pt, box end, ⅜ sq box end adapter.

1 Auth | ORD | FSN 5120-337-2468

WRENCH, TORQUE ADAPTER: S, heat treated, tempered & cold fin, zn-pltd, 15 deg offset, ½ 12 pt box end, ⅜ sq box end adapter (issue until stock is exhausted, no replacement authorized).

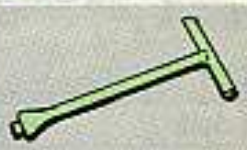
1 Auth | ORD | FSN 5120-337-2469

WRENCH, WARHEAD INSTALLATION: alloy-S, cr-pltd, ⅜ dble-hex socket, 50 deg offset, dble-hex box and 16 deg offset.



1 Auth | ORD | FSN 5120-563-3997

WRENCH, WARHEAD INSTALLATION: bz, thd ⅞ -24NEF-2A, T shaped hdl ⅝ thk x 5 in w x 11 in lg.



1 Auth | ORD | FSN 5120-699-2634

TOOL KIT, ORGANIZATIONAL MECHANICAL ASSEMBLER, FSN 5180-545-8642

ADAPTER, SOCKET WRENCH: ¼ in male sq plug, ⅜ in female sq-socket (Fed Spec GGG-W-641, Type XI, Class I).

1 Auth | QM | FSN 5120-227-8095

BOX TOOL: S, loose tray, approx 7⅞ x 8½ x 21 in (ORD TAC dwg no 07573-Y).

1 Auth | FSN 5140-357-5483

EXTRACTOR, COTTER PIN: 6 in lg (Fed Spec GGG-E-926).

1 Auth | QM | FSN 5120-222-4284

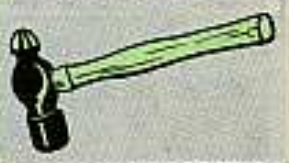
FINGER, MECHANICAL: flex type, 15 in reach.

1 Auth | QM | FSN 5120-629-6258

FLASHLIGHT, ELECTRIC HAND: without batteries, w/lamp, Signal Corps, 2 cell type TL-122, right angle type.

1 Auth | SIG | FSN 6230-264-8261

HAMMER, HAND: machinist's, ball-peen, ¾ lb (Fed Spec GGG-H-86, Type L, Class I).



1 Auth | QM | FSN 5120-224-4082

HANDLE, MOUTH MIRROR: (MED 5-419-350).

1 Auth | MED | FSN 6520-541-9350

MIRROR, MOUTH EXAMINING: magnifying glass, cone socket, w/o hdl (Fed Spec GG-M-431, Type II, Size I).

1 Auth | MED | FSN 6520-541-9005

PADLOCK: pin tumbler mech, br case, cd fin shackle, 1¾ in w, 1 7/16 in h, keyed individually, w/o clevis w/2 keys (Fed Spec FF-P-101, Type EPB). ENG 42-5752.475.102.

1 Auth | ENG | FSN 5340-205-5517

PLIERS, DIAGONAL CUTTING: 7½ in nom size (Fed Spec GGG-P-471a, Type H, Class I, Style 2).

1 Auth | QM | FSN 5110-239-3253

PLIERS: side cutt, lg rd nose w/cutter, 6 in lg (Fed Spec GGG-P-471a, Type P).

1 Auth | QM | FSN 5120-247-5177

PLIERS, SLIP JOINT: stght nose, comb, w/ cutter, 8 in nom size (Fed Spec GGG-P-471a, Type F, Class I, Style I).

1 Auth | QM | FSN 5120-223-7397

SCREWDRIVER, CROSS TIP: Phillips No 1 tip, wood hdl, 3 in blade (Fed Spec GGG-S-121, Type VI, Class I, Style 2).

1 Auth | QM | FSN 5120-293-3348

SCREWDRIVER: CROSS TIP: Phillips No 2 tip, wood hdl, 4 in blade (Fed Spec GGG-S-121, Type VI, Class I, Style 2).

1 Auth | QM | FSN 5120-293-3347

SCREWDRIVER, CROSS TIP: Phillips No 3 tip, wood hdl, 6 in blade (Fed Spec GGG-S-121, Type VI, Class I, Style 2).

1 Auth | QM | FSN 5120-293-3346

SCREWDRIVER, CROSS TIP: (Reed & Prince type) plastic hdl, 3/16 in dia tip, 3 in lg blade (Fed Spec GGG-S-121, Amendment I, Type VI, Class 2, Style I).

1 Auth | QM | FSN 5120-596-0866

SCREWDRIVER, FLAT TIP: plastic hdl, w/bolster & wrench grip, ¼ in tip, 4 in blade (Fed Spec GGG-S-121c, Type I, Class 5, Style I, Design B, Shape B).

1 Auth | QM | FSN 5120-278-1282

SCREWDRIVER, FLAT TIP: plastic hdl, w/bolster & wrench grip, 6 in blade, 3/16 in tip (Fed Spec GGG-S-121c, Type I, Class 5, Style I, Design B, Shape B).

1 Auth | QM | FSN 5120-278-1283

SCREWDRIVER, FLAT TIP: wood hdl, stght sided tip, 3/16 in w tip, 2½ in lg blade (Fed Spec GGG-S-121, Type I, Class 2, Design A, Style 2).

1 Auth	QM	FSN 5120-236-2100

SOCKET, SOCKET WRENCH: 3/8 in sq-drive, 6 pt, univ-jt 3/4 in opng (Snap-On Tools Corp No FS10A, or equal).

1 Auth	QM	FSN 5120-517-8102

SOCKET, SOCKET WRENCH, deep lg, dble-hex, 3/8 in sq-drive, 3/8 in opng (Fed Spec GGG-W-641, Type I, Class 2).

1 Auth	QM	FSN 5120-277-1463

SOCKET WRENCH ATTACHMENT, SOCKET HEAD SCREW: 7/32 in hex, 3/4 in sq-drive, (Fed Spec GGG-W-641 type IV.)

1 Auth	QM	FSN 5120-596-0939

SOCKET WRENCH ATTACHMENT, SOCKET: 1/4 in hex, 3/8 in sq-drive (Plumb No. 4990-1/4 or equal).

1 Auth	QM	FSN 5120-243-1673

SOCKET, SOCKET WRENCH: univ-jt type, 3/8 in sq-drive, 12 pt, ½ in opng (Fed Spec GGG-W-641B, Type I, Class 3).

1 Auth	QM	FSN 5120-242-3355

WRENCH, BOX AND OPEN END, COMBINATION: 3/8 in hex or 12 pt opng, 15 degree angle of open end, 4 3/16 in nom lg over-all (Fed Spec GGG-W-636a, Type III).

1 Auth	QM	FSN 5120-228-9504

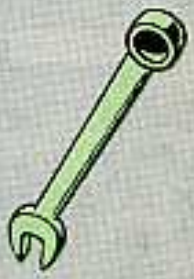
WRENCH, BOX AND OPEN END, COMBINATION: 7/16 in hex or 12 pt opng, 15 degree angle of open end, 5 in nom lg over-all (Fed Spec GGG-W-636, Type III).

1 Auth	QM	FSN 5120-228-9505

WRENCH, BOX AND OPEN END, COMBINATION: offset type, ½ in openings, 12 pt, 15 degree angle of open end wrench opng, 5¼ in nom lg over-all (Fed Spec GGG-W-636, Type III).

1 Auth	QM	FSN 5120-228-9506

WRENCH, BOX AND OPEN END, COMBINATION: offset type, 7/16 in openings, 12 pt, 15 degree angle, & offset, 7 in lg (Fed Spec GGG-W-636, Type III).



1 Auth	QM	FSN 5120-228-9507

WRENCH, BOX AND OPEN END, COMBINATION: offset type, 5/8 in openings, 12 pt, 15 degree angle & offset, 6½ in lg (Fed Spec GGG-W-636, Type III).

1 Auth	QM	FSN 5120-228-9508

WRENCH, BOX AND OPEN END, COMBINATION: offset type, ¾ in openings, 12 pt, 15 degree angle of open end wrench opng, 8 in nom overall (Fed Spec GGG-W-636, Type III).

1 Auth	QM	FSN 5120-228-9510

WRENCH, BOX AND OPEN END, COMBINATION: offset type, ⅞ in openings, 12 pt, 15 degree angle of open end wrench opng, 10¼ in nom lg over-all (Fed Spec GGG-W-636, Type III).

1 Auth	QM	FSN 5120-228-9512

WRENCH, BOX AND OPEN END, COMBINATION: offset type, 1 in openings, 12 pt, 15 degree angle of open end wrench opng, 12½ in nom lg over-all (Fed Spec GGG-W-636, Type III).

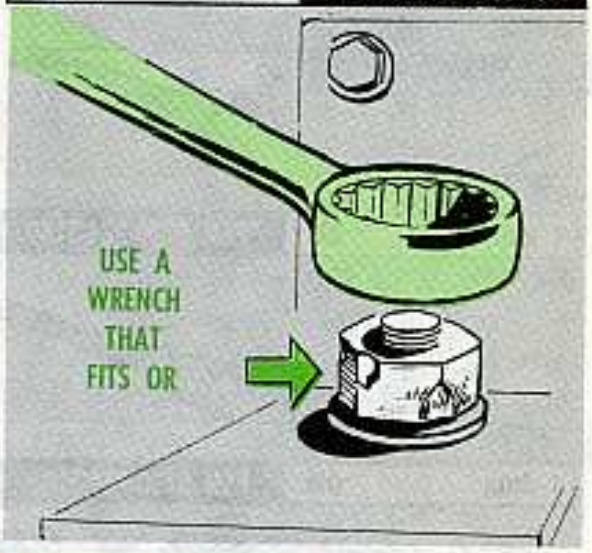
1 Auth	QM	FSN 5120-228-9514

WRENCH, OPEN END BOX: Flare Nut Type, sgl-hd, 12 pt, 1½ in opng (Fed Spec GGG-W-636A, Type XIV).

1 Auth	QM	FSN 5120-277-5072

WRENCH, OPEN END BOX: Flare Nut Type, sgl-hd, 12 pt, 1⅝ in opng (Fed Spec GGG-W-636A, Type XIV).

1 Auth	QM	FSN 5120-277-5073



WRENCH, OPEN END, ADJUSTABLE: sgle-hd, 1⅝ in jaw opng, 12 in lg (Fed Spec GGG-W-631a, Type I).

1 Auth	QM	FSN 5120-264-3796

WRENCH, OPEN END BOX: flare nut type, sgle-end, 12 pt, ⅜ in opng (Fed Spec GGG-W-636, Type XIV).

1 Auth	QM	FSN 5120-224-3156

WRENCH, OPEN END BOX: flare nut type, sgle-end, 12 pt, ½ in opng (Fed Spec GGG-W-636, Type XIV).

1 Auth	QM	FSN 5120-224-3157

WRENCH, OPEN END BOX: flare nut type, sgle-end, 12 pt, ⅝ in opng (Fed Spec GGG-W-636, Type XIV).

1 Auth	QM	FSN 5120-224-3158

WRENCH, OPEN END BOX: flare nut type, sgle-end, 12 pt, 5/8 in opng (Fed Spec GGG-W-636, Type XIV).

1 Auth	QM	FSN 5120-224-3159

WRENCH, OPEN END BOX: flare nut type, sgle-end, 12 pt, 11/16 in opng (Fed Spec GGG-W-636, Type XIV).

1 Auth	QM	FSN 5120-224-3160

WRENCH, OPEN END BOX: flare nut type, sgle-end, 12 pt, 13/16 in open (Fed Spec GGG-W-636, Type XIV).

1 Auth	QM	FSN 5120-224-3162

WRENCH, OPEN END BOX: packing nut type, sgle-end, 12 pt, 3/4 in opng (Fed Spec GGG-W-636a, Type XIII).

1 Auth	QM	FSN 5120-184-8581

WRENCH, OPEN END BOX: packing nut type, sgle-end, 12 pt, 7/8 in opng (Fed Spec GGG-W-636a, Type XIII).

1 Auth	QM	FSN 5120-184-8582

WRENCH, OPEN END BOX: packing nut type, sgle-end, 12 pt, 1 in opng (Fed Spec GGG-W-636a, Type XIII).

1 Auth	QM	FSN 5120-184-8583

WRENCH, OPEN END BOX: packing nut type, sgle-end, 12 pt, 1 1/4 in opng (Fed Spec GGG-W-636a, Type XIII).

1 Auth	QM	FSN 5120-184-8587

WRENCH, OPEN END BOX: packing nut type, sgle-end, 12 pt, 1 3/8 in opng (Fed Spec GGG-W-636a, Type XIII).

1 Auth	QM	FSN 5120-184-8589

WRENCH, OPEN END FIXED: dble open end, 15 degree angle, spear-hd, alloy-S, 3/8 & 7/16 in openings (Fed Spec GGG-W-636, Type IV).

1 Auth	QM	FSN 5120-277-2342

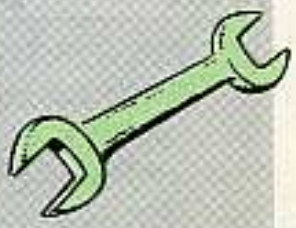
WRENCH, OPEN END, FIXED: dble open end, 15 degree angle, spear-hd, alloy-S, 7/16 & 1/2 in openings, 1/4 thk hd, 5 in lg over-all (Fed Spec GGG-W-636a, Type IV, Style 2).

1 Auth	QM	FSN 5120-187-7123

WRENCH, OPEN END, FIXED: dble open end, 15 degree angle, spear-hd, alloy-S, 1/2 & 9/16 in openings, 17/64 in thk hd, 5 1/2 in lg over-all (Fed Spec GGG-W-636a, Type IV, Style 2).

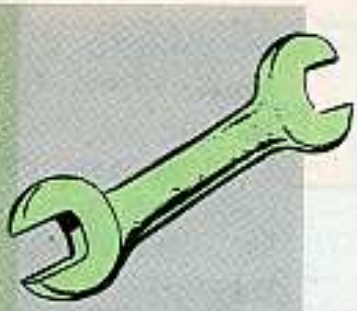
1 Auth	QM	FSN 5120-187-7124

WRENCH, OPEN END, FIXED: dble open end, 15 degree angle, spear-hd, alloy-S, 9/16 & 5/8 in openings, 19/64 in thk hd, 6 in lg over-all (Fed Spec GGG-W-636a, Type IV).



1 Auth	QM	FSN 5120-187-7126

WRENCH, OPEN END, FIXED: dble open end, 15 degree angle, spear-hd, alloy-S, 5/8 & 11/16 in openings, 7/16 in thk hd, 7 in lg over-all (Fed Spec GGG-W-636, Type IV, Style 2).

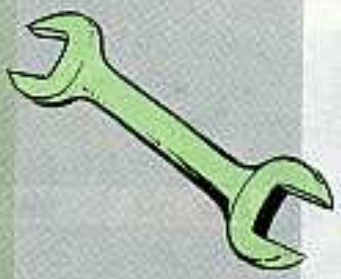


1 Auth | QM | FSN 5120-277-8301

WRENCH, OPEN END, FIXED: dble open end, 15 degree angle, spear-hd, alloy-S, 11/16 & 3/4 in openings (Fed Spec GGG-W-636, Type IV, Style 2).

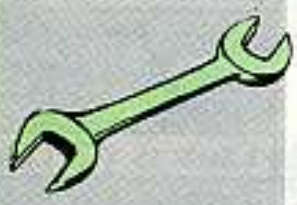
1 Auth | ORD | FSN 5120-449-8133

WRENCH, OPEN END, FIXED: dble open end, 15 degree angle, 3/4 & 7/8 in openings, 3/8 in thk hd, 8 3/8 in lg over-all (Fed Spec GGG-W-636, Type IV, Style 2).



1 Auth | QM | FSN 5120-240-5609

WRENCH, OPEN END, FIXED. dble open end, 15 degree angle, spear-hd, alloy-S, 25/32 & 13/16 in openings (Fed Spec GGG-W-636a, Type IV).



1 Auth | ORD | FSN 5120-277-3021

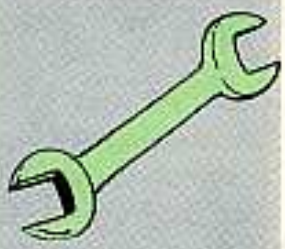
WRENCH, OPEN END, FIXED: dble open end, 15 degree angle, spear-hd, alloy-S, 15/16 & 1 in openings, 7/16 in thk hd, 10½ in lg over-all (Fed Spec GGG-W-636, Type IV, Style 2).

1 Auth | QM | FSN 5120-277-7025

WRENCH, OPEN END, FIXED: dble open end, 15 degree angle, spear-hd, alloy-S, 1 1/4 & 1 3/8 in openings, 3/16 in thk hd, 14 in lg over-all (Ord std dwg No TKKX5).

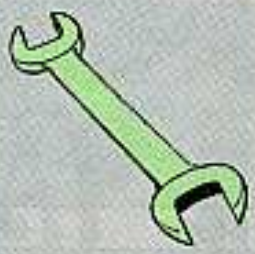
1 Auth | QM | FSN 5120-293-1212

WRENCH, OPEN END, FIXED: elec midget dble open end, 15 degree angle, 5/16 & 11/32 in openings, 3/10 in thk hd, 3¾ in lg over-all (Armstrong Bros Tool Co No H-14, or equal).



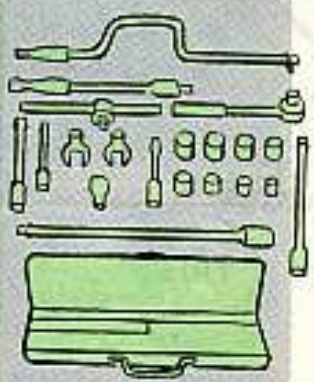
1 Auth | QM | FSN 5120-277-2341

WRENCH, OPEN END, FIXED: engineer's dble open end, 15 degree angle, 1 1/16 & 1 1/8 in openings, 11½ in lg over-all (Fed Spec GGG-W-636a, Type IV).



1 Auth | QM | FSN 5120-293-0190

WRENCH SET: socket, 3/8 in sq drive, 12 pt, w/handles, crowfoot wrenches drag link bit, & univ-jt, 1/2 & 5/16 in crowfoot, 5/16 to 3/4 in 12 pt openings, 20 pc in bx (Bonney Forge & Tool Works No TD-12, or equal).

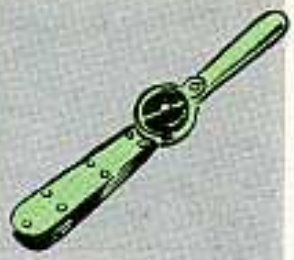


1 Auth | QM | FSN 5120-449-8200

KEYSET, SOCKET HEAD SCREW: L-type handles, hex type, 0.050 in to 5/16 in w across flats, w/ro, 13 wrenches in set (Fed Spec GGG-W-652, Type I Class A).

1 Auth | QM | FSN 5120-204-0972

WRENCH, TORQUE: deflecting frame L-hdl style, w/visual pl indicating tor mech, ½ in sq male drive, 600 in-lb cap (Fed Spec GGG-W 686, Type I, Class I, Style A, Size 7).

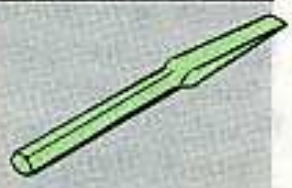


1 Auth | QM | FSN 5120-221-7947

WRENCH, TORQUE: rigid frame L-hdl style, dial indicating tor mech, w/ visual indicating mech, ⅜ in male sq-drive, 150 in-lb cap (Fed Spec GGG-W-686, Type II, Style A, Size 0).

1 Auth | QM | FSN 5120-230-6380

CHISEL COLD HAND: ½ in w cut, 5¾ lg overall; in accordance w/Fed Spec GGG-C-313, Type N, Class 1.



1 Auth | QM | FSN 5110-186-7107

SOCKET, SOCKET WRENCH: ⅜ in sq drive, 12 pt, deep, thin wall, 7/16 in opening; in accordance w/Fed Spec GGG-W-641, Type I, Class 2.

1 Auth | QM | FSN 5120-277-1464

WRENCH, OPEN END, FIXED: double head type, ⅝ and ¾ in openings, 15 degree angle of hd, 7 in nom lg over-all, 11/32 in thk hd, in accordance w/Fed Spec GGG-W-636a, Type IV.

1 Auth | QM | FSN 5120-224-3102

SCREWDRIVER OFFSET: opposite offset, opposite ends, each offset tipped, flat tip parallel to long axis of body, flat tip 90 degree angle to long axis of body, ⅜ in wide, 6 in over-all; in accordance w/Fed Spec GGG-S-121, Type IV, Class 1.

1 Auth | QM | FSN 5120-240-5232

PUNCH, CENTER, SOLID: ⅛ in nom dia at top of taper pt, ⅜ in nom dia of stock, 4 in long over-all; in accordance w/ Fed Spec GGG-P-831, Type II, Class A, Size 4.

1 Auth | QM | FSN 5120-293-3509

DRIVER, IMPACT: H. K. Porter Co No PLT-12-LMPA or equal.

1 Auth | QM | FSN 5120-532-9113

KNIFE, POCKET: 2 blades, 3½ in lg (QMC 41-K-525)

1 Auth | QM | FSN 7340-163-2543

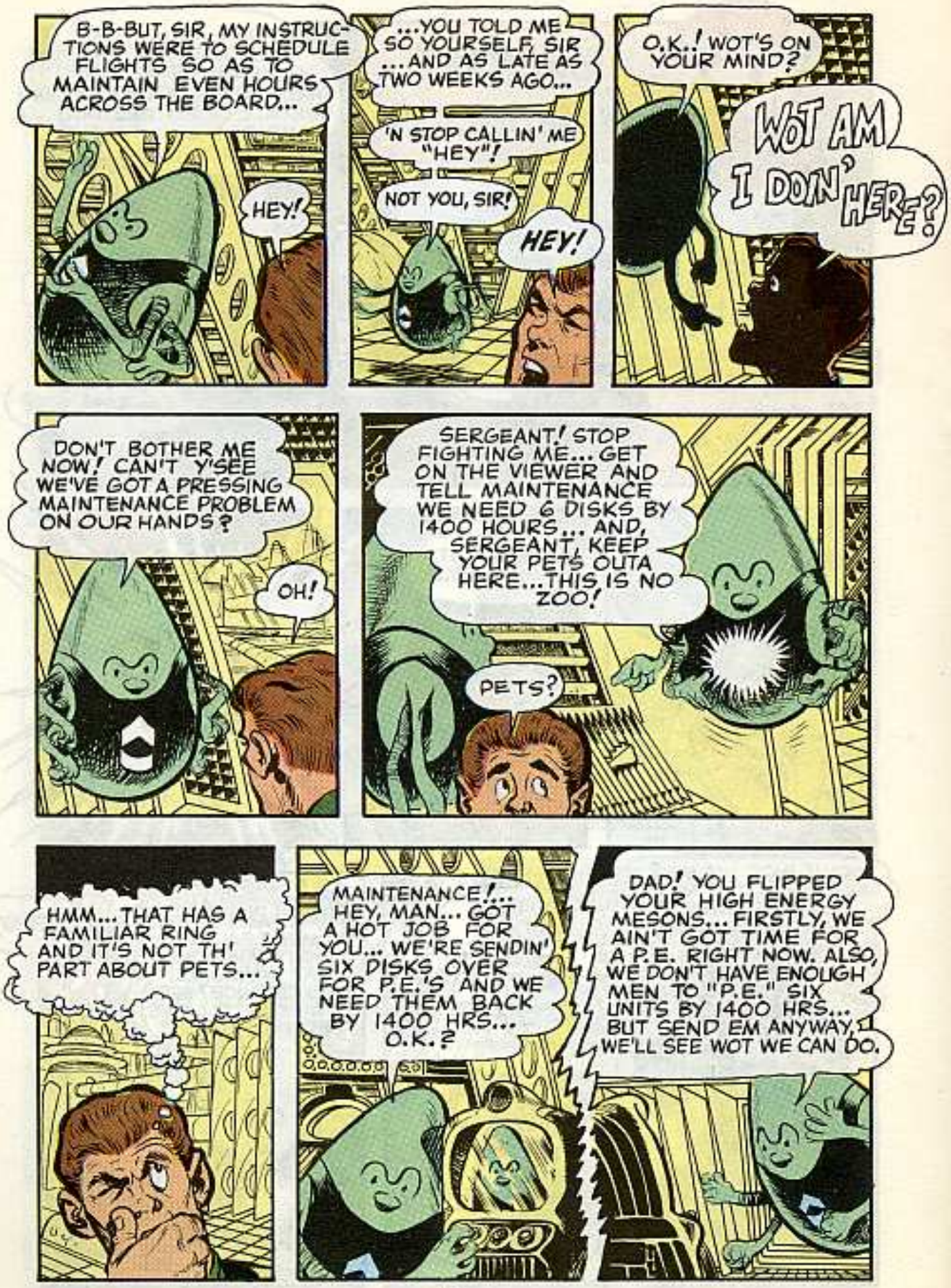
WRENCH, BOX AND OPEN END COMB., Offset Type, 12 PT, 25/32 in opn 15 degree angle, 8 in nom lg overall.

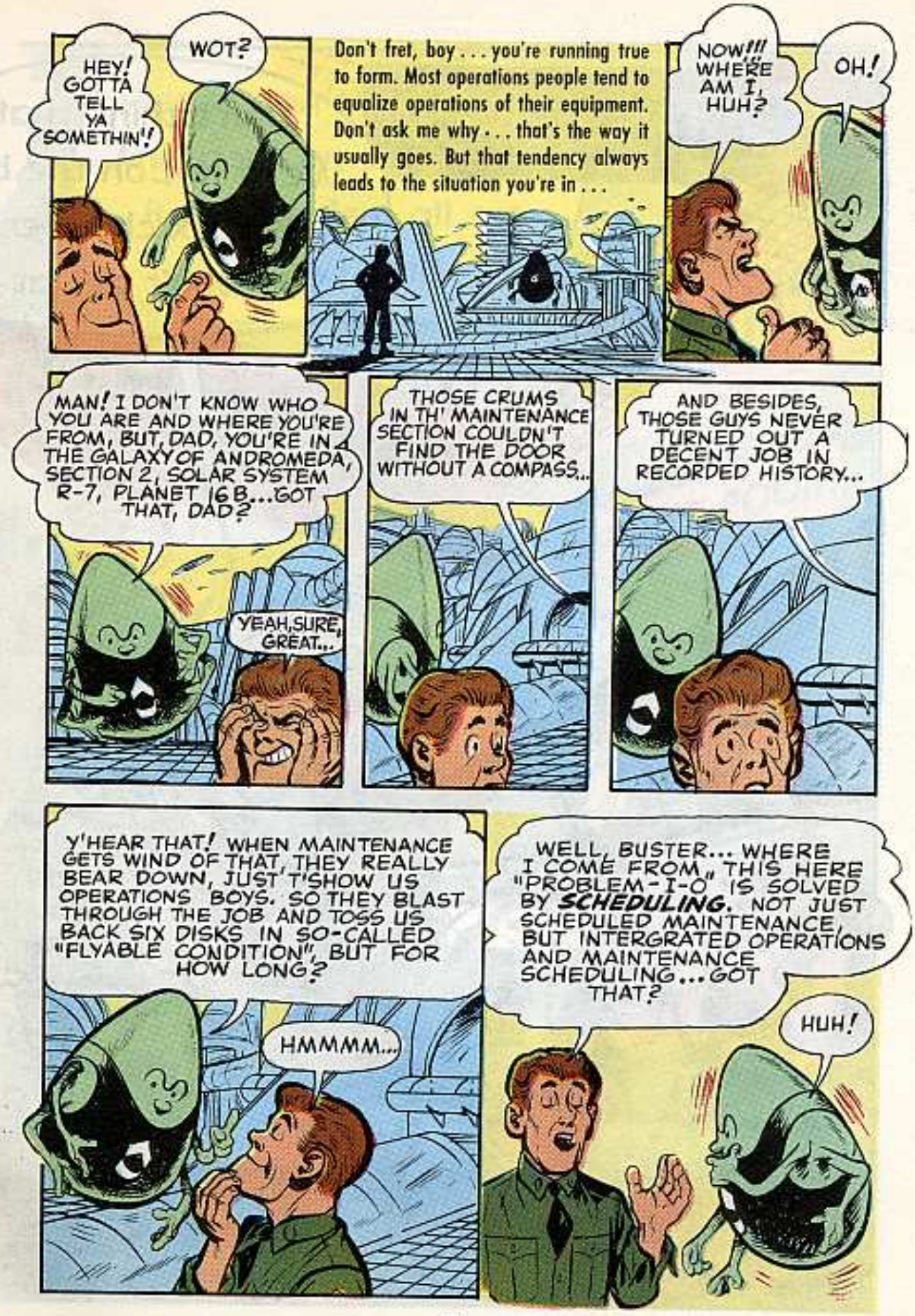
1 Auth | QM | FSN 5120-277-8832

SOCKET WRENCH ATTACHMENT, socket hd, screw ⅜ in nom hex plug end size, ⅜ in nom sq dr.

1 Auth | QM | FSN 5120-596-1199

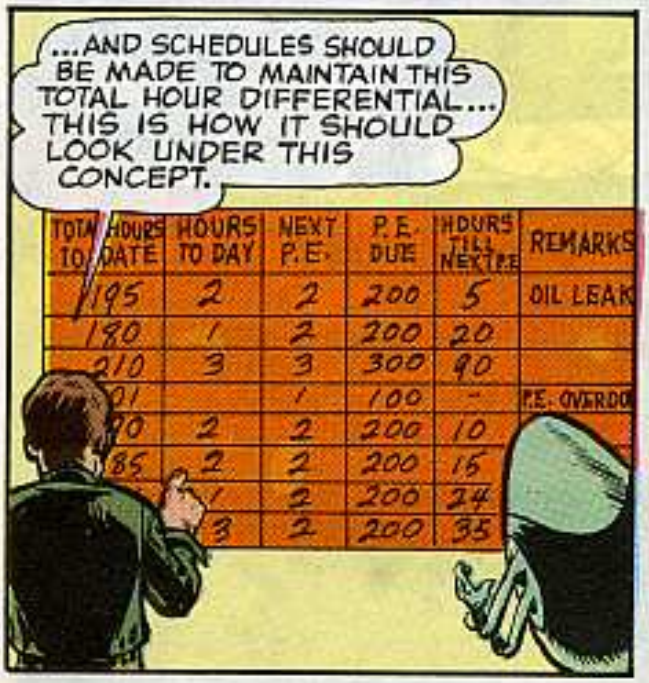

JOE'S DOPE
AIRCRAFT SCHEDULING
WELL, SIR... EVERY AIRCRAFT IN TH' COMPANY IS WITHIN THREE HOURS OF EACH OTHER, AND ALL OF 'EM ARE DUE 2ND P.E.'S AS OF RIGHT NOW...
The operations sgt puts his finishing touch on the OPS status board, and a grin breaks out on his face . . .
HOW'S THAT FOR FANCY JIGGLING, SIR?
B-B-BUT, SIR... MY...
ZAP
WOW! WOT HIT ME? WHERE AM I? MY HEAD'S SPINNIN'!
PUL-EEZE GET OFF MY CEPHALON!!! ("HEAD" TO YOU.)
AS I WAS SAYING... HOW IN TH' NAME OF *@!?+@! AM I SUPPOSED TO MEET GALACTIC FLIGHT MISSIONS THAT WAY. CALL MAINTENANCE! SEE HOW SOON IT'LL TAKE T'GET SIX OF 'EM OUT!
EEOW!


B-B-BUT, SIR, MY INSTRUCTIONS WERE TO SCHEDULE FLIGHTS SO AS TO MAINTAIN EVEN HOURS ACROSS THE BOARD...
HEY!
...YOU TOLD ME SO YOURSELF, SIR ...AND AS LATE AS TWO WEEKS AGO...
'N STOP CALLIN' ME "HEY"!
NOT YOU, SIR!
HEY!
O.K.! WOT'S ON YOUR MIND?
WOT AM I DOIN' HERE?
DON'T BOTHER ME NOW! CAN'T Y'SEE WE'VE GOT A PRESSING MAINTENANCE PROBLEM ON OUR HANDS?
OH!
SERGEANT! STOP FIGHTING ME... GET ON THE VIEWER AND TELL MAINTENANCE WE NEED 6 DISKS BY 1400 HOURS... AND, SERGEANT, KEEP YOUR PETS OUTA HERE...THIS IS NO ZOO!
PETS?
HMM... THAT HAS A FAMILIAR RING AND IT'S NOT TH' PART ABOUT PETS...
MAINTENANCE!... HEY, MAN... GOT A HOT JOB FOR YOU... WE'RE SENDIN' SIX DISKS OVER FOR P.E.'S AND WE NEED THEM BACK BY 1400 HRS... O.K.?
DAD! YOU FLIPPED YOUR HIGH ENERGY MESONS... FIRSTLY, WE AIN'T GOT TIME FOR A P.E. RIGHT NOW. ALSO, WE DON'T HAVE ENOUGH MEN TO "P.E." SIX UNITS BY 1400 HRS... BUT SEND EM ANYWAY, WE'LL SEE WOT WE CAN DO.

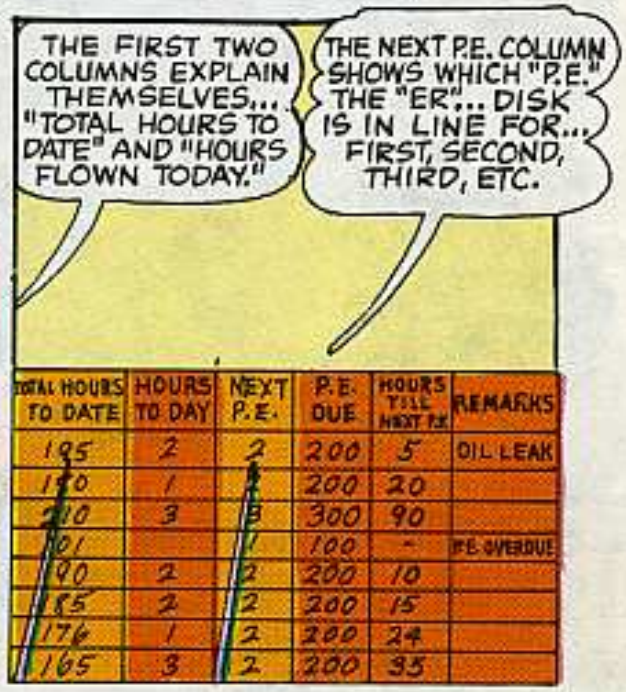

HEY! GOTTA TELL YA SOMETHIN'!
WOT?
Don't fret, boy . . . you're running true to form. Most operations people tend to equalize operations of their equipment. Don't ask me why . . . that's the way it usually goes. But that tendency always leads to the situation you're in . . .
NOW!!! WHERE AM I, HUH?
OH!
MAN! I DON'T KNOW WHO YOU ARE AND WHERE YOU'RE FROM, BUT, DAD, YOU'RE IN THE GALAXY OF ANDROMEDA, SECTION 2, SOLAR SYSTEM R-7, PLANET 16B...GOT THAT, DAD?
YEAH, SURE, GREAT...
THOSE CRUMS IN TH' MAINTENANCE SECTION COULDN'T FIND THE DOOR WITHOUT A COMPASS...
AND BESIDES, THOSE GUYS NEVER TURNED OUT A DECENT JOB IN RECORDED HISTORY...
Y'HEAR THAT! WHEN MAINTENANCE GETS WIND OF THAT, THEY REALLY BEAR DOWN, JUST T'SHOW US OPERATIONS BOYS. SO THEY BLAST THROUGH THE JOB AND TOSS US BACK SIX DISKS IN SO-CALLED "FLYABLE CONDITION", BUT FOR HOW LONG?
HMMMM...
WELL, BUSTER... WHERE I COME FROM, THIS HERE "PROBLEM-I-O" IS SOLVED BY SCHEDULING. NOT JUST SCHEDULED MAINTENANCE, BUT INTERGRATED OPERATIONS AND MAINTENANCE SCHEDULING... GOT THAT?
HUH!


JOE'S Dope Sheet
Don't think that
We're not on the ball,
But six choppers
You won't get at All!
MAINTENANCE
Please can the excuse,
And pour on the juice—
Just have 'em all set
When I call!
OPERATIONS
PILOTS' ROOM
SCHEDULE MAINTENANCE!
WE HAVE THE WORLD'S BEST EQUIPMENT ...Take care of it

And for you cats who have made a lifetime career of beating M.O.'s heads (not to mention other areas) . . . leave us point out **one** simple fact . . . maintenance **cannot** be scheduled without first scheduling operations . . . and that's no chicken and egg theory.



TOTAL HOURS TO DATE	HOURS TO DAY	NEXT P.E.	P.E. DUE	HOURS TILL NEXT P.E.	REMARKS
195	2	2	200	5	OIL LEAK
190	1	2	200	20	
210	3	3	300	90	
01		1	100	-	P.E. OVERDUE
90	2	2	200	10	
85	2	2	200	15	
1	1	2	200	24	
3	3	2	200	35	



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210	3	3	300	90	
01		1	100	-	P.E. OVERDUE
90	2	2	200	10	
185	2	2	200	15	
176	1	2	200	24	
165	3	2	200	35	

THE "P.E. DUE" COLUMN SHOWS THE 100 HR. SET-UP... AS YOU CAN SEE, THEY ARE SPACED AS SUCH. 100, 200, 300...

P.E. DUE.
200
200
300
100
200

NOW YOU SUBTRACT THE TOTAL HRS. FROM THE "P.E. DUE" AND YOU GET THE HOURS TILL NEXT P.E.

P.E. DUE	− TOTAL HOURS	= HOURS TILL NEXT P.E.
200	195	5
200	180	20
100	101	P.E. OVERDUE
200	190	10

Y'SEE, THIS CONCEPT IS TO ARRANGE FLIGHT SCHEDULES SO AS TO MAINTAIN AN EVEN DISTRIBUTION IN THE COLUMN "HOURS TILL NEXT P.E." ONCE ESTABLISHED, THIS WILL REQUIRE ONLY A MINOR DAILY EFFORT TO MAINTAIN!

AMAZING!

OH SURE!

ANOTHER APPROACH IS "PARTITIONED PERIODIC" THEORY. WHICH MEANS THE MAINTENANCE IS BROKEN UP IN SEVERAL PARTS, AND PERFORMED ON A SCHEDULED BASIS.

TOTAL HOURS FLOWN	HOURS TO DAY	NEXT P.E. I	II	III	IV	V	HOURS TILL NEXT P.E. I	II	III	IV	V
305:15	3	340	350	375	390	395	35	45	70	85	90
487:10	1	500	505	515	530	540	13	18	28	43	53

THE FIRST HALF OF THIS CHART SHOWS THE MAINTENANCE DIVIDED INTO ***FIVE*** PARTS AND INDICATES THE HOURS IT SHOULD BE PERFORMED AT.

TOTAL HOURS FLOWN	HOURS TO DAY	NEXT P.E. I	II	III	IV	V
305:15	3	340	350	375	390	395
487:10	1	500	505	515	530	540

THE SECOND PART SHOWS WHEN THE MAINTENANCE IN HOURS IS DUE... FOR EXAMPLE: TOTAL HOURS FLOWN IS 305 HRS., NO. I MAINTENANCE IS TO BE DONE WHEN TOTAL HOURS FLOWN REACHES 340, SO IN HRS. TILL NEXT P.E. SECTION, UNDER "I" IS 35 HRS... SIMPLE, HUH!

HOURS TILL NEXT P.E. I	II	III	IV	V
35	45	70	85	90
13	18	28	43	53

THEN ALL YOU DO IS ADD ON THE "HOURS FLOWN TODAY" TO THE "TOTAL HOURS FLOWN" AND MAKE YOUR CHANGES DOWN THE LINE... BY THE WAY... ABOUT THOSE DISKS, 'OL PAL...

HOW DO THEY FLY? YOU KIN TELL ME, BUDDY-BOY...

WOT!

HAR HAR HAR


THEY COULDN'T GET OFF THE GROUND WITHOUT US, BUDDY... 'CAUSE...
WOT'S SO FUNNY, KAT?
WE'RE THE ONES WHO FLY!
Y'SEE, MAGNETIC EXCELLED IONIC FIFTH DIMENSIONAL PROPULSION. BOY... LEVITATION, THAT'S TH' THING, DADDY-O.
CRAZY! MAN...
SURE THING, DAD! YOU DON'T SEE ANY APPENDAGES BETWEEN ME IN THE GROUND...
WILD! WILD ...BOY.
HEY! SO WOT'S THE P.E.'S PULLED ON?
ON US! OF COURSE... DO Y'READ ME, KAT?
UN-ZAP
WOT HAPPENED, SGT! THERE WAS A BLINDING FLASH...
AW HECK... HE'LL NEVER BELIEVE IT... ANYWAY, SO NO SENSE EVEN STARTING!
TO CONTINUE, SIR! WOT WE NEED IS BETTER SCHEDULING. MORE SCHEDULING! IT'LL PAY OFF IN DIVIDENDS OF AVAILABLE AIRCRAFT AND MORE OPERATIONAL HOURS, PLUS...
... PLUS MY OWN SPECIAL BRAIN-STORM WHICH IS...
YES
P.E. ALL THE PILOTS, SIR...
GROAN...

QUESTION AND ANSWER DEPARTMENT

LAMPS CAN BE HAD

Dear Half-Mast

Where can we get hold of some of those GE 12 charging indicator lamps that go on the Hercules launcher operating unit assembly? And is there anyway we can keep them from busting?

CWO B. A.

Dear CWO B. A.,

Those lamps have been given to the Engineers and you ought to be able to get them by requisitioning Lamp, incandescent, GE-12, 2 Pin, 6.3 Volts, 0.15 Amps, FSN 6240-617-1488. If you run into a hard time, your support unit can get the lamps on local purchase.

As for protecting the lamps, the best thing I can say for now is to treat 'em with kindness until a modification comes out giving the lamps guards. Newer LOU's will have guards over the lamps.

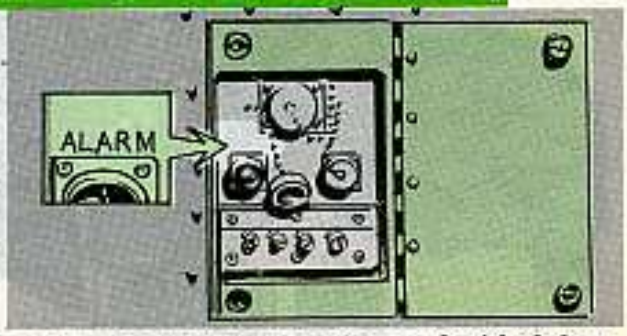
Half-Mast

NO CAUSE FOR ALARM

Dear Half-Mast,

The word "ALARM" shows up above the two-prong male outlet on the side of our Nike-Ajax control indicator. What's the alarm for?

SFC G. D.



Dear Sgt G. D.,

It was for connecting an external section alert alarm. But then it was decided that the alarm wasn't needed, so the components for installing it were never authorized.

Half-Mast

HOW HIGH?

Dear Half-Mast,

According to your timetable for engines as published in PS 75, page 61, we've two hundred more hours to use on our 0-470-11 engines in our L-19's.

But the field maintenance people won't buy it. Can you give me the authority, so I can quote chapter and verse?

CWO R.W.E.

Dear CWO R.W.E.

That figure of 1200 hours between engine changes on your 0-470-11 came straight from the horse's mouth. It is based on TSMC TWX A 00-09-00681 dated 8 Sept '58 which extended the 0-740-11 engine to 1200 hours for a 90-day period, and TSMC TWX A 00-11-2039, 20 Nov 58 which made it permanent. Look for it in a NEW-6.

Half-Mast

NIX ON MIXING

Dear Sgt Half-Mast,

Several times I've been asked a question which I hope you can answer for me. Is it OK to mix the Army's ethylene glycol antifreeze with other permanent-type antifreezes in a vehicle's cooling system?

Sgt. L. A. M.

Dear Sgt L. A. M.,

Dip a finger in those solutions on a dark, cold night, and you can't tell the difference. Just stop and read the labels on the containers. Both the commercial and

Army issue antifreezes are mainly ethylene glycol—that's the part that prevents freezing. So one will prevent ice from forming about as well as another.

But it's best not to mix 'em except in an emergency, and here's why:

Manufacturers use different additives to get special characteristics. They use about a dozen different soluble oils or salts as corrosion inhibitors in different brands. Some of these inhibitors may cancel each other out, so that you lose corrosion protection when they're mixed. Some mixtures would form deposits in the cooling system and others would cause foaming of the coolant.

ABLE TO GET YOUR CABLE?

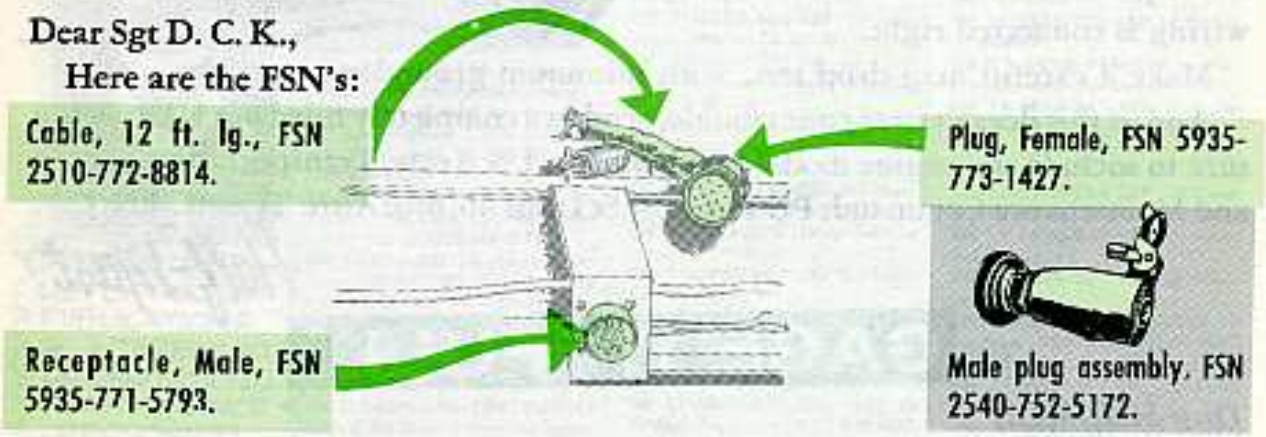
Dear Sgt Dozer,

I'm urgently in need of FSN's for electric cable, receptacle, and connector for my M200 2-wheel chassis generator trailer (Figs 16 and 17 of TM 5-9057). Could you please furnish the numbers?

Sgt D. C. K.

Dear Sgt D. C. K.,

Here are the FSN's:



You get them from ordnance.

Half-Mast

MAG DIFF?

Dear Half-Mast,

What's the difference between the right and left magnetos on our H-13 helicopters? It seems as though the right mags are letting us down, because the plugs they fire are fouling up a whole lot faster than those fired by the left mags? Whaaaa? And is there anything we can do about it??

Maj. J. O. T.

Dear Major J. O. T.,

No difference in the mags themselves. On the 0-335 engines the couplings are also the same, and both mags are timed and synchronized exactly the same.

On the 0-435 engines only the right mag has the impulse coupling (see your TM 1-2R-0435-42.) So there's little chance that your magnetos are at fault.

But, it is possible that the plugs fired by the right magneto may foul out more

easily, since they are on the lower side of the cylinders. This is especially likely if the engine is using lots of oil.

But, as to things you can do to help yourself, here're a few:

First, check TB AVN 23-2 and check with your QM POL people to be sure your AVgas is getting it's dosage of TCP as needed.

Then, always set your magnetos with a timing light—don't guess. And always check your manuals—don't rely on memory.

Check the magnetos for secondary output.

If possible, put the ignition analyzer on your system and check the harness for high tension leaks. Be sure your wiring is connected right.

Make a careful mag drop test, with minimum ground run-up time.

And, if this doesn't cure your trouble, send in a completely filled out UER, being sure to include the engine model number. (To US Army Transportation Supply and Maintenance Command, PO Box 209, St Louis 66, Mo. Attn: TCSMC-EH-13).

Half-Mast

GAGE IT "FULL"

Dear Half-Mast,

How much oil goes in the crankcase of the M38 and M38A1 Jeeps? Every time I flip a page in TM's and other pubs, I find a different story. It's nearly got me flippin' my lid.

PFC F. S.

Dear PFC F. S.,

This confusion's been floating about like a fog for quite a spell—only because people forget that each filter has its own oil capacity, too.

Crankcase capacity of both vehicles is four quarts without the oil filter. Early production M38 and M38A1 vehicles had a Cuno oil filter that required an extra one-half quart. Later vehicles use an oil filter that takes a quart. That's why the pubs for these vehicles say 4, 4½ and 5 quarts at different places.

What you want is a FULL crankcase. So be sure you're getting the right amount of oil by putting in the amount needed with the filter it wears, then measure it with the gage. If the oil level's not at the FULL mark, add enough to bring it up. After the engine's been run a while, check the level again.

Half-Mast

The SOS

A SELECTED LIST OF RECENT PUBLICATIONS OF INTEREST TO ORGANIZATIONAL MAINTENANCE PERSONNEL.

AR 700-38 Aug DA Form 468 UER

LUBRICATION ORDERS

LO 5-2410-203-20-1,-2 Jul Tractor IHC Mod TD-18-182

LO 5-2815-202-20 Jul D-7 Tractor Engine

LO 5-4610-203-20 Jul Water Purif Unit, 1 70 to 2 HP, 3000 GPH, Met-Pro Mod 3000-2700

LO 5-3112 Jun Tractor Cat Mod D-4

MWO's

MWO 9-2300-203-20/3 Jul M59 and M84-Instal Neutral Starter Switch

MWO 9-2300-203-20/4 Jul M84-Relocate Mortar Base Plate Stowage

TECHNICAL BULLETINS

TB 9-1410-250-12/8 Jul AA Missile XM6E4

TB 11-1162-1 Jul Radar AN GSS-1, Modified

TB AVN 23-5-4 Jul; **TB AVN 23-5-5; TB AVN 23-5-6** Jul UER Digests

TECHNICAL MANUALS

TM 5-505 Maint. of Eng equipment, (Aug 1959)

TM 5-2815-202-12P Jul Caterpillar Mod D339 Replacement Engine

TM 5-4310-210-15 Jun Compressor, Reciprocating, 5 CFM, 175 PSI (Am Brake Shoe Mod G-321) W-Cont Eng AU 85

TM 5-6115-226-20P Apr Gen Set, 1.5 KW, DC, 28 V, Skid Mtd (Winpower Mod G-1528-2AD16-1)

TM 5-6115-227-20 Jun Gen Set, Diesel, 60 KW, AC, Convert to 50 KW, 50 Cy (Szekely Mod 501 W-Cont Eng Mod RD 572)

TM 9-1055-203-15 Jun Trk Mtd 762-MM Rocket Heating and Tie-Down Unit M78A1

TM 9-1450-250-10P; 20P/1; 20P/3 Jun Ground Handling Equipment (Hercules)

TM 9-9502-2 Jul Hydraulic Sys Test Stand M14 (Ajax)

TM 11-5820-228-20P Jul Receiver, Radio R-257/U

TM 11-5820-285-10P;-20P Jul Radio Transmitting Sets AN/FRT-26, AN/FRT-26A, AN/FRT-26B

TM 11-5820-302-12P Jul Antenna Grp OA-1389/GRC

TM 11-5820-306-12P Jun Mounting MT-300/GR

TM 11-5825-216-10P; -20P Jul Radio Beacon AN/URN-3

TM 11-5826-207-24 May Radio Recov Sts AN/ARN-30A, AN/ARN-30B, AN/ARN-30C

TM 11-5830-216-10P; -20P Jul Intercom Sets AN/UIC-1, AN/UIC-1X

TM 11-5935-201-12P Jul Control Boxes C-21/TRC-1, C-214/TRC-1, C-21D/TRC-1

TM 11-5965-219-12P Jul Chest Unit H-17/GT

TM 11-5965-221-15P Jul Chest Set H-18/GT

TM 11-6115-206-10P Jul Power Units PE-75-C, PE-75-D etc.

TM 11-6625-290-12P Jul Generators TS-465/U, TS-465A, B, C, U

TM 11-6660-201-12P Jul Metero Stations, Manual AN/PMQ-1, AN/PMQ-1A

TM 11-6660-214-15P Jul Metero Balloon Conditioner MI-513/GM

TM 11-6740-214-10P; 20P Jul Printers, Proj Phase PH-642/TP, En-15 (1), EN-15 (2)

TM 39-T4004-2 Jun Op and Maint Instr w. III Parts Breakdown

TM 5-1450-201-20 Jun Manual Elevator Hydraulic

TM 5-2815-201-20P Jun Engine, Cat Mod D-318 (for Cat 12 Grader)

TM 5-2815-203-20P Jul Engine, Cat Mod D-342

TM 5-4120-208-12P Jul Air Conditioner Ref Engine Mod TA 5226

TM 5-4310-208-15 Jun Compressor, Reciprocating 55 CFM, 80 PSI

TM 5-4310-209-15 Jun Compressor, Reciprocating 15 CFM, 175 PSI

TM 5-6115-211-10 Jul Generator Set, Hollingsworth Mod JHGX3A

TM 5-6125-207-12P Jul Motor Generator 15 KW, Input-60 Cy, Output-400 Cy

TM 10-500-2 Jul Aerial Delivery, Supplies, Equip C-119

TM 10-3930-213-20P Jul Plane-loader R553 Army Mod MHE 149

TM 11-3895-203-12P Jul Reel Equipment CE-11

TM 11-5805-257-12P Jul Generators, Ringing Hand G-42/PT, G-42A/PT

TM 11-5805-261-12P Jul Telephone Terminal TA-269/U

TM 11-5805-279-15 Jun Telegraph Carrier Terminals AN/FCC-3A, AN/FCC-7A

TM 11-5815-253-15P Jul Rectified Power Units PP-108/TG, PP-108A, B/TG

TM 11-5820-242-20P Jul Power Supplies PP-690/G, PP-690A/G

TM 11-5820-245-15P Jul Antenna Group AN/FRA-14

TM 11-5820-247-12P Jul Radio Set AN/FRC-15

TM 11-5820-307-10P; -20P Jul Radio Set AN/FRC-42

TM 11-5820-310-12P Jul Antenna-Filter Group OA-1395/GRC

TM 11-5820-337-10P; -20P Jul Receiver-Transmitter RT-70, A, B/GRC

TM 11-5820-348-12P Jul Antenna Equipment RC-292

TM 11-5821-210-12P Jul Radio Sets AN/ARC-55, A, B

TM 11-5895-219-24; -10 Jul Radio Receiver-Selectors R-196C, D/ARW-26Y

TM 11-5965-230-12P Jul Headsets HS-30-A, B, C, D, E, F, G, H, J, K, L, R, U

TM 11-6115-206-20P Jul Power Units PE-75-C, PE-75-D, etc.

TM 11-6130-211-10P; -20P Jul Power Supplies PP-1097A, B/G

TM 11-6625-283-10P; -20P Jul Signal Generator TS-452/B, C/U

TM 11-6625-222-12P Jul Test Set TS-140/PCM

TM 11-6625-299-20P Jul Signal Generators AN/URM-64, A

TM 39-120-98 Interim Ch 1-2, Jul

TM 39-87-1 Interim Ch 4-2, Jul

TM 39-H-61 1959

TM 39-T283-2, Aug

TM 5-4310-214-10 Jul Compressor, Rotary-Recip (Davey Mod RPC-15)

TM 5-6115-211-20 Jul Generator, 3KW AC 120-V, 1, 3 Ph, 120 240-V Single Ph

TM 5-6115-229-10 Jul Operat Generator 5KW3 (Hol-Gor Mod CE-55-AC WK6)

TM 5-6115-232-10 Jul Generator 10KW (Hol-Gor Mod CE-105-AC WK8)

TM 5-6115-235-10 Jul Generator (Consolidated Diesel Mod 4060)

TM 5-6125-201-10 Jul Motor Generator 15KW, (Hollingsworth Mod JH-15A (JH-15C)

TM 9-1430-501-20P Jul Hawk Battery Intercom Gp

TM 9-1430-502-20P Jul Radar Set, AN/MPQ-35

TM 9-1430-504-20P Jul Radar Set AN/MPQ-33

TM 9-1440-500-20P Jul Launcher, Trailer 2-ton XM390

TM 9-1450-500-20P Jul Loader, Transporter, Missile SP, HAGMS

TM 9-4935-500-20P Jul Shop Eq GM, HAGMS

TM 9-4935-501-20P Jul Shop Eq GM, HAGMS

TM 11-2985-200-12P Jul Antenna Coupl Units CU-128A, B, C, D, E, F, U

TM 11-5805-226-10P; -20P Jul Receiver, Order Wire R-543/TRC-29, R-543A/TRC-29

TM 11-5805-237-15P Jul Telephones TA-105/FTC, TA-105A/FTC

TM 11-5805-243-12P Jul Tele Set TA-1/PT

TM 11-5805-255-12P Jul Tele Set TA-263/PT

TM 11-5805-272-12P Jul Generators GN-38

TM 11-5820-240-20P Jul Receiver, Radio R-418/G, R-418A/G

TM 11-5820-241-12P Jul Power Sup PP-689/G, PP-689A/G

TM 11-5820-243-10P Jul Power Sup PP-764/G, PP-764A/G

TM 11-5820-243-20P Jul Power Sup PP-764/G, PP-764A/G

TM 11-5820-266-12P Jul Power Sup PP-846/U

TM 11-5820-267-12P Jul Power Sup PP-804/U

TM 11-5820-283-10P; -20P Jul Rec-Trans RT-66/GRC, RT-67/GRC, RT-68/GRC

TM 11-5826-207-10 May Radio Rec Sets AN/ARN-30A, B, C

TM 11-5985-207-15P Jul Antenna AT-438/GR

TM 11-6125-208-12P Jul Motor Gen PU-175/U

TM 11-6625-299-10P Jul Signal Gen AN/URM-64, AN/URM-64A

TM 11-6665-203-12P Jul Radioc AN/PDR-46, AN/PDR-46A

PAMPHLETS

DA Pam 310-1 Jul Publications Index

TRAINING CIRCULARS

TC 17-4 Jun Tank Gunner's Guide (M48A1)

TC 17-5 Jun Tank Driver's Guide (M48A1)

MAINTENANCE FORMS

DA Form 9-93 Jun Hercules Weekly Chk Sheet

DA Form 9-94 Jun Hercules Monthly Chk Sheet

DA Form 9-96 Jun Hercules Monthly Chk Sheet Missile, Target Track Radar System

DA Form 9-106 Jul Ajax Fast Turn on Procedures Chk Sheet Computer and Recorder Group

DA Form 9-103 Jul Ajax Daily Chk Sheet Computer and Recorder Group

DA Form 9-104 Jul Ajax Weekly Chk Computer and Recorder Group

DA Form 9-105 Jul Ajax Monthly Chk Sheet Computer and Recorder Group

DA Form 9-108 Jul Ajax Engagement Proced Chk Sheet, Missile and Target Track Radar Systems

DA Form 9-109 Jul Ajax Fast Turn On Proced Chk Sheet, Missile and Target Track Radar Systems

WHEN WINTER COMES

Take some ice, frost, crystallization, snow, ice fog, fine blowing snow and —30 degrees F. temperatures.

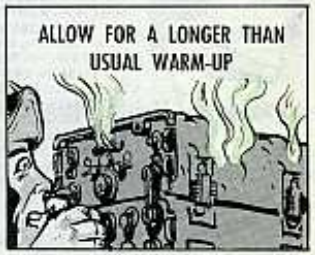
Mix it together. Then blow it over your communications equipment for a ten-day period. Or twenty. Or a year. Or whatever. And then keep that gear in perfect operating condition.

Sound Experimental?

Well, anybody who has worn the Polar Bear patch—or ever worked with Army communications in frigid weather—knows this combination is routine. Strictly routine.

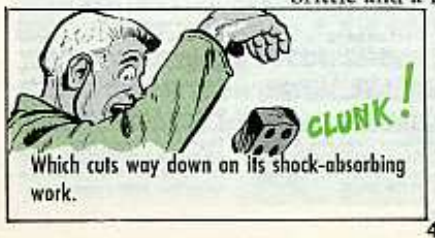
So, sort of draw up an ice cube and try tuning in on some ear muff suggestions for Signal equipment when old man Winter moves in.

There's a time-tested, rule-of-thumb (or whatever finger you use) that helps thaw out many a cold weather radio problem:

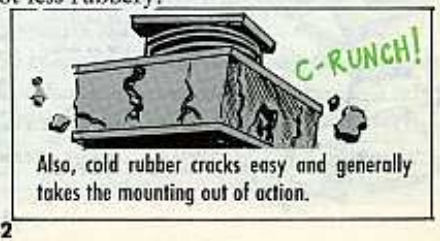


SHOCK:

The number one ingredient for shock mountings is rubber. And cold weather is going to make rubber brittle and a lot less rubbery.



Which cuts way down on its shock-absorbing work.



Also, cold rubber cracks easy and generally takes the mounting out of action.

If the set's going to be on the move, then, spare the shock and help spare the equipment.

CORD AND CABLE:

To flex or not to flex. There's really no question about it: never flex it when it's cold. Cord and cable lose their flexibility when the temperature skids down to Brass Monkey Range.

With any kind of handling in that kind of cold you run the risk of cracking the rubber insulation on your wire. Cable on a reel, shouldn't be unreeled until it's been warmed up enough to flex freely.

WARMUP:

Cold weather also sets up a series of electronic capers inside your radio or telephone that usually show up right in the beginning of the act. Changes in resistance, capacitance, inductance, etc., are sizeable enough to require readjustment of circuits. Gears, drives, rotating shafts (especially in push-button tuning units) are sluggish.

So the one sure thing you can do to help things along is to allow for a longer-than-usual warmup of the gear. Nothin' quite like a good warmup, simple as that.

Naturally, you'll use the microphone cover or frost shield authorized for your set. Because if ever it was needed, it's when the temperature drops down low and your breath ices up on the "mike" or handset.

BATTERIES

Batteries probably take more of a beating from freezing weather than almost any other kind of communications equipment. The colder they get, the quicker they lose their efficiency.

If you're operating in a frigid clime, chances are that the dry-pack batteries in your radios and telephones will be the cold-weather type. That is, there's a low temperature, cold-weather battery for equipment using batteries in the BA-1 through BA-999 series. The cold-weather battery has the same BA number as the normal-temperature one—but they are in the 2,000 series.

Like so: The BA-270/U in your AN/PRC-6 has a cold-weather twin named BA-2270/U. The 2270/U is identical to the 270 in size, use, and everything else except effective operating temperature range and number. The BA-2270/U will take things in stride even when the mercury sags to —40 degrees.

But no matter how "winterized" a battery is, it'll always put out better for you if you keep it as warm as possible. Slip it out of the set when it's not in use and keep it as close to your body as possible. Even take it into the sack with you at night. The idea is simple: the longer you can keep your battery warm, the longer it'll put out for you.

Comes time for a tape job and it's the same old, cold story. Tape will crack and get brittle along with anything else with plastic or rubber in its makeup. Best cold-weather tip on tape is a version known as Insulation Tape TL-600IU, FSN 5970-240-0620. As always, keep it close to your body.

If you're bringing in overhead lines for a switchboard or some terminal equipment, the bigger the drip loop the better. There's bound to be moisture in one form or another just about all the time.

And to sort of climax this frigid tale—always try to get your Signal equipment under some kind of shelter whenever, wherever, and however you can.

SPEAKING ABOUT SPEAKERS...

It's a little tricky.

Mounting the LS-166/U loudspeaker in your ¼-ton, ¾-ton, or what have you. Especially if there's no bracket on the vehicle to hold the speaker.

What happens is easy enough to figure. When that speaker is slipped out of the vehicle comes time for radio repair, maintenance, etc., it gets separated from the bracket that holds it in place.

When it comes time to put the speaker back into a vehicle, there's no guarantee that the same buggy will be standing outside waiting. But there's a real hairy chance the vehicle that gets the speaker won't have a bracket.

And without the bracket that goes with the bolt and wing nut assembly, chances are much too good the speaker will end up on the floor of the vehicle, serving as a football, footstool or general under-the-foot nuisance.

So since your Sig 7 & 8 fails to give you any spare brackets, it's mighty important that you keep track of the ones you get with the loudspeakers. Unless you know for sure that the loudspeaker will go back into the same vehicle it came from, it's a good idea to remove the bracket whenever you remove the speaker—leaving it attached to the speaker and keeping everything together.

When you do come up short on brackets, it's easy to shape one up out of a piece of flat stock. Just a simple U-shaped bracket with a couple of holes drilled in it will do the trick. It should fit tight enough to keep the loudspeaker from shaking around when the vehicle's moving.

Just remember the most important thing is to keep that speaker attached firmly to the vehicle—not bouncing around on the floor, seat or under somebody's boondockers.

Be Your Own Inspector with

THE LIGHT TOUCH

What? It doesn't?

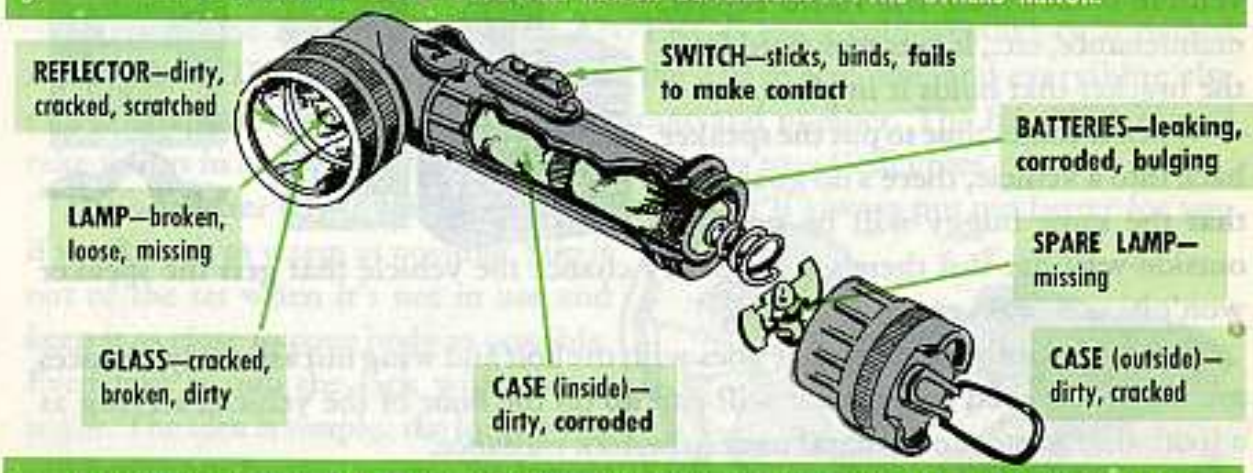
A simple thing like a flashlight (MX-991/U) doesn't work? At a time like this?

Sure thing. There's nothing quite as teeth-gnashing as a flashlight that's lost its beam on a dark, dark night with a big push coming.

Simple little things like a bulb or battery or maybe a blackout filter if the operation calls for it. Or a diffusion lens. Without them a man in the dark has to wait till dawn to see what he's doing, or what he's missed doing.

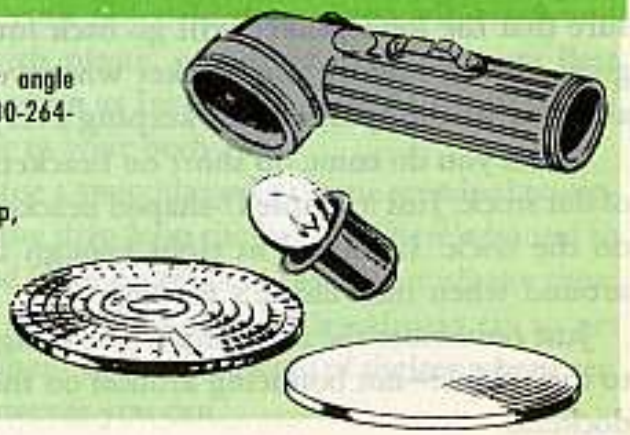
A minute or so is about all you need to check off those few items that make the difference between night and day.

ITEMS SHOWN IN **BOLD TYPE** ARE MAJOR DEFICIENCIES . . . THE OTHERS MINOR.



IF ANYTHING IS AMONG THE MISSING, OR NEEDS REPLACING, YOU MIGHT TRY THIS RUNDOWN FOR READY REFERENCE:

FLASHLIGHT MX-991/U:	batt operated, right angle tubular case, FSN 6230-264-8261
LAMP, INCANDESCENT:	2.7 volts, .15 amp, FSN 6240-155-7935
LENS, DIFFUSION:	FSN 6760-356-4825
FILTER, BLACKOUT:	FSN 6230-300-8098



Any man who uses battery-powered equipment knows that those batteries have to be procured separately. They don't come with the end item. In this case, you'll be using old reliable BA-30, FSN 6135-120-1020. Two of 'em.

SOP for all batteries, of course, is to slip them out of their cases whenever the phone, radio or flashlight is going into storage. This makes the batteries last longer and also keeps the items that use 'em from getting battery corrosion.

WISE GUYS

Dear Half-Mast,

There for a while we were stumblin' over the antenna guy wires for our AN/TRC-24 just about day and night. No matter how careful you are, those wires can snare you, causing all kinds of injuries. Not to mention shifting the position of the antenna a shade, too.

So we string white tape in a criss-cross pattern right from the ground up to a height of about four feet on all the guy assemblies. Other units around hang short streamers of white cloth or white rags.

Thought I'd pass the word along to the rest of the gang so's they can maybe use our "wash line" technique.

Sgt C. R. W.

Dear Sgt C. R. W.,

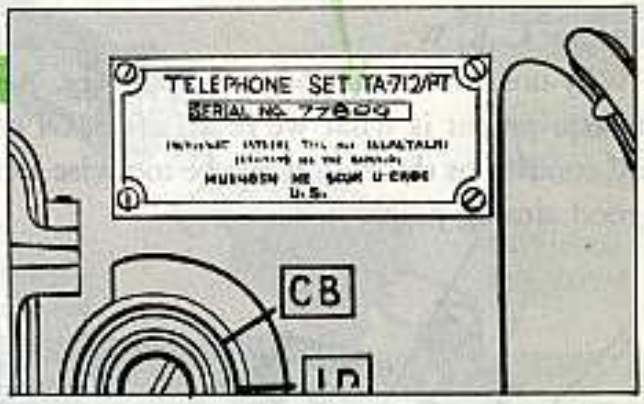
Why not, as long as your CO approves. Anything that eases the strain on men and equipment is what we're all after. Of course, if you're operating under tactical conditions this might not be too wise a move. All that white tape might make a good aiming point.

CREAKY CRANK

If the crank on your field telephone is getting creaky, could be it's one of the early models that came down the line without its shot of RT (ruggedized treatment).

The earlier models of the TA-43/PT and TA-312/PT telephones use a crank assembly that doesn't quite have the muscle needed to handle the job for the long pull.

So how to tell which crank is ruggedized and which one isn't? Easy. Check the serial number on the panel of the telephone. And if that serial number falls below 77801— then your handle needs careful handling.



REQUISITION: Crank assembly Hand: Turns gen. incl. crank, handle, housing and spring FSM 5805-392-7762

All of which means that when it no longer gives you a snappy crank, you requisition a newer, stronger version as listed in TM 11-5805-257-35P for hand ringing generator G-42/PT and G-42A/PT.

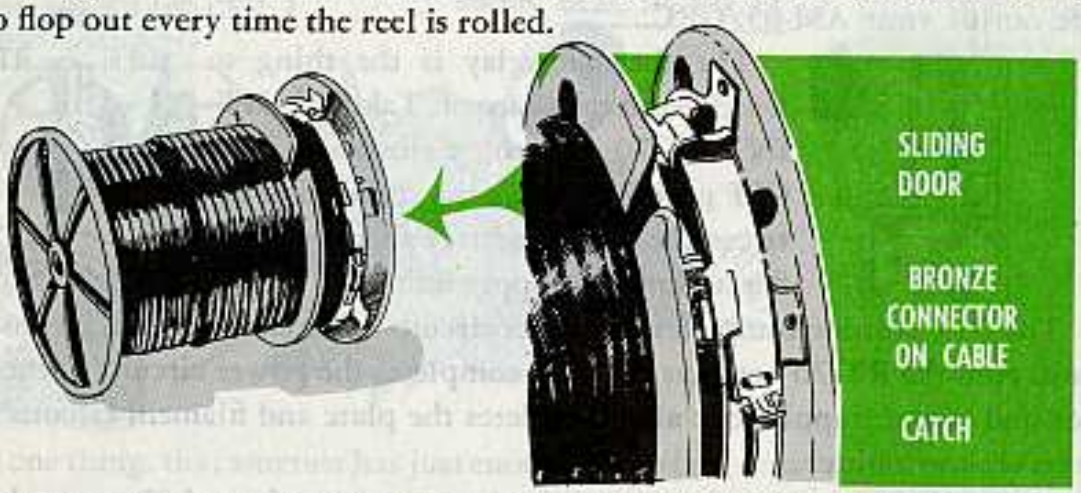
What you'll get is **CRANK ASSEMBLY, HAND**; turns gen. incl. crank, handle, housing and spring. FSN 5805-392-7726.

REEL ROUTINE

When the reels are ready to roll—that's when the danger is greatest.

When it comes time to get those DR-15 reels off the truck a wire outfit is gonna be in a bit of a hurry. No time to waste time. But those reels and quarter of a mile of Spiral-4 cable wrapped around are plenty rugged. Ready for rough action.

Not quite so with the bronze connector, though. It needs a real careful touch before, during and after operation. But unless it's secured properly to the reel, it's going to flop out every time the reel is rolled.



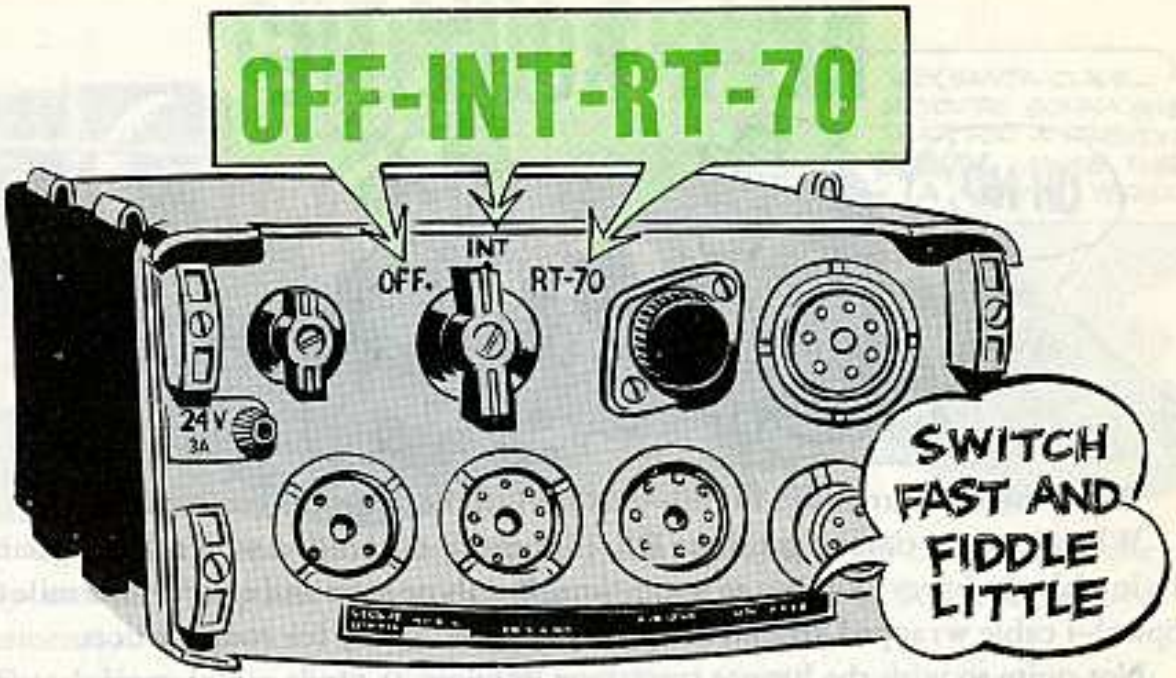
That's the story, then. A reel is rolled into action. The connector flops loose because it wasn't secured. And a quarter of a mile of Spiral-4 is out of action before it starts just because a connector bumped its head and can't make a connection.

So check those reels. Satisfy yourself that the sliding door on the side of the reel is closed . . . the catch is caught . . . and the connector is snug inside.

Once that's taken care of, you (and your reels) are ready to roll.

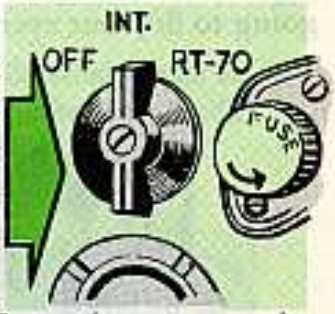
AUTHORITATIVE 20-11

Need an article of protective clothing or safety equipment? Well, then, take a squint at TA 20-11 (10 March 58). This table covers all individual safety equipment and is authority for getting such items as protective gloves, aprons, helmets, hoods, etc., that you may need in your work.



Shrewd advice that's stood the test of time when it comes to getting the longest life out of your AM-65/GRC.

The thermal relay is the thing to watch—and take care of. Take the OFF-INT-RT-70 switch, f'rinstance. The OFF position breaks the connection between the storage battery and the amplifier and power supply unit.



The INT position completes the power circuits to the amplifier and power supply unit. And the RT-70 position not only completes the power circuits to the amplifier and power supply, but also completes the plate and filament circuits for the receiver-transmitter.

You'll do yourself and your equipment a world of good if you make those switches without delay. That thermal relay K-1 in the amplifier is designed for quick action, and will cut off your current if there's delay in switching.

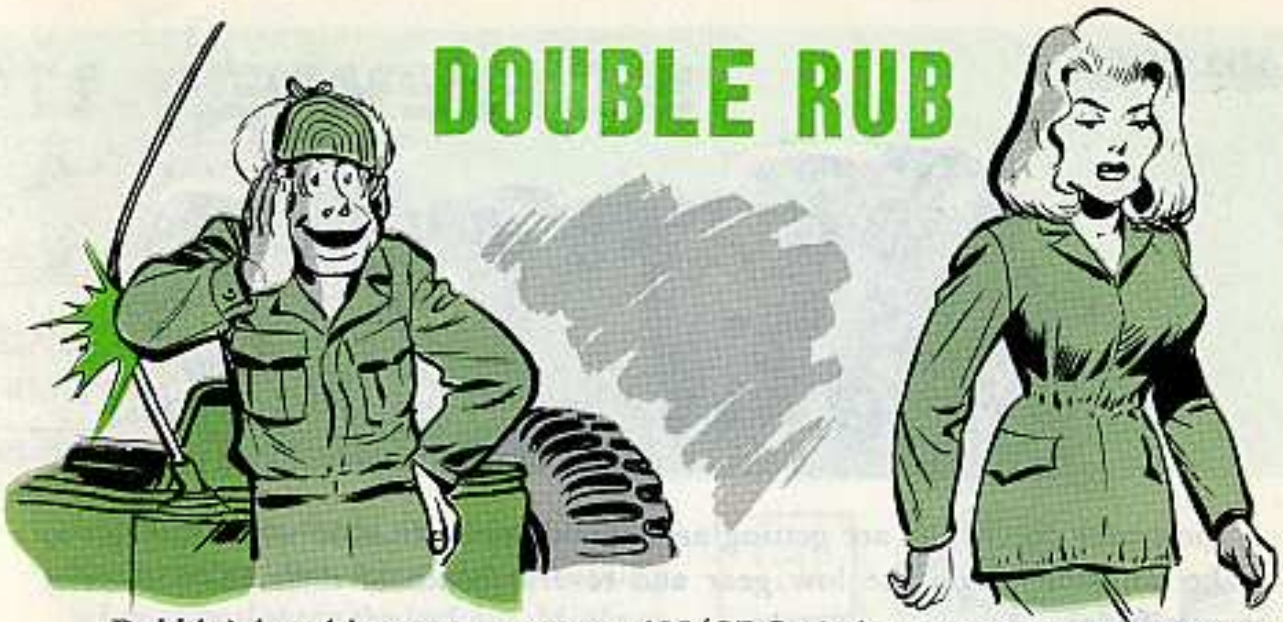
Fiddling around with that OFF-INT-RT-70 switch like it was built for fun and not serious business will shake up your thermal relay and ballast tube R-32 both.

Speaking about the thermal relay K-1, never turn the OFF-INT-RT-70 switch on your amplifier panel to the RT-70 position unless Receiver-Transmitter RT-70/GRC is hooked up—or a suitable load substituted for it. Without a proper load, that old thermal relay again will be heading for damage.

Too many times, of course, just plain fiddling leads a man to switch to the RT-70 position when there's no RT-70 there! So switch fast when the need arises—but watch careful-like where you switch.

A man who switches fast but fiddles little can count on operation from his set, 5 by 5.

DOUBLE RUB



Rubbin' the whip antenna on your AN/GRC-19 the wrong way—or any way—can lead to trouble for both you and the antenna.

For one thing, that antenna has just enough radio frequency flashing around it to cause a bit of a burn. And sometimes somebody in the crowd working around the Jeep or ¾-ton truck where the set is mounted will accidentally brush against the antenna. Like when everybody watches Connie walk by.

This rubbing not only gives the man in contact a moment of trouble, it also produces a contrary reaction on the antenna itself.

So the secret for solving this minor perplexity is a simple sheath. Made out of polyethylene, this antenna sheath covers about five feet of the lower section of the mast sections and part of the mast base itself. It's listed in the latest edition of the SIG 7 & 8 for the AN/GRC-19 dated 19 Jan 59.

Strictly speaking, what you'll be getting is: Cover, Antenna: insulating sheath; 46¾ in lg x 1¾ in dia; FSN 5820-571-2558.

TANK TALK . . .

SCREWED UP

Some tank mechanics are getting an extra share of trouble when they go to make adjustments on the low gear and reverse bands of their CD-850-series transmissions.

Suppose the crew's daily check—or the road test for the Q (quarterly or 750 mile) preventive maintenance service—turns up somethin' kinda funny with the transmission. Maybe it's not shifting smooth-like . . . or there's as much vibration as a shook-up rock 'n roll singer . . . or it's making noise like a couple of hogs on the loose. Also, you might notice the shifting gear lever keeps wanting to jump out of position.

Another reason for suspicions is when you're cleaning the transmission oil filter disks and you notice metal grit there—like the leftovers from a just filled tooth. These, of course, are just a few ways you can tell if something's wrong with your transmission.


CHECK ADJUSTING SCREW ON LOW-RANGE AND REVERSE BAND

But supposing everything's okay in these departments. You're a careful guy and you're going to check out the adjusting screws on the low-range and reverse bands anyhow.

So you take off both transmission inspection covers on the rear of the hull. You take a look-see and—wow! There aren't enough threads left on the adjusting screw for a fly to stand on. So right away you want to sound the RED alert and turn the transmission in because the band and drum—or both—are badly worn.

That's about as wrong a move as taking on two wives at the same time. Looking at the threads on the screw just is *not* the right kind of inspection to make in checking for band or drum wear . . . 'cause some of these CD-850 series transmissions are rebuilds, with the low and reverse drums undercut. This, in turn, reduces the number of threads that show on the adjusting screws.

So you can't depend on a visual check of the threads. You oughta check with your Ordnance support when you run into an adjusting screw with a low thread count.

Some organizational mechanics are also losing out even after making the right

SCREWS

adjustment on the screw. Seems they're not holding the screw from turning when they tighten the locknut. Might as well not start the whole thing in the first place if this happens.

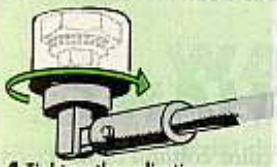

WHEN LOCK NUT IS TIGHTENED . . . SCREW TURNS WITH IT.

Here's what you can do about it—step by step:

1 After the bands have been adjusted to 30 foot-pounds . . .


2 . . . back off the adjusting screw five to six flats of the screw head.

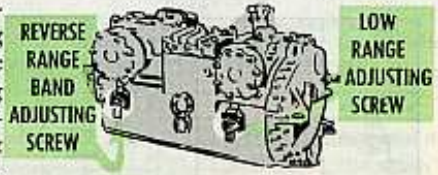

3 Before you tighten the locknut, pencil mark two temporary lines—one across the top of the adjusting screw and the other across the transmission case directly in line with the adjusting screw mark.


4 Tighten the adjusting screw locknut to 200-foot pounds.


5 Check the two lines to make sure the adjusting screw did not turn when the locknut was tightened.


6 If the adjusting screw did turn, the bands are not properly adjusted. Try again.

Another big boner being pulled is mistaking the **low-range-band adjusting screw** for the **brake adjusting screw**. It's an easy mistake to make 'cause the low-range-band adjusting screw is near the brake inspection window. They may be near each other but they got nothin' to go with one another. So be careful, huh.



PRIMP YOUR PRIMER PUMP

Some of your early model M48A2 medium tanks may be having primer pump troubles.

Seems that it was necessary to use a 90-degree elbow between the fuel intake line check valve and the primer pump diaphragm. This elbow had to be just right in order to connect up the fuel inlet tube. Otherwise, the elbow had to be backed off to make the connection. This caused a loose connection—and the leakage.

There's not much you can do about it . . . except to replace those primer pumps—if you can get them.

If they aren't available, why not take the pumps to your Ordnance support unit and see if they won't solder the elbow to the pump body.

OFF-COLOR CHART

Somebody threw in the wrong batch of paint in the color column of the chart identifying the torsion bars of the M56 90-mm SPAT on page 180 of TM 9-2350-213-20 (Jun 58).

Here's the way it oughta read:

POSITION	COLOR ON OUTER END PRIMARY BAR	DIRECTION OF ARROW PRIMARY	DIRECTION OF ARROW SECONDARY	LOCATION OF BLIND SPLINE IN ANCHOR – PRIMARY –	LOCATION OF BLIND SPLINE IN ANCHOR – SECONDARY –	COUPLINGS	CLUTCH
LEFT FRONT	RED	↶	↶	5 O'CLOCK	12 O'CLOCK	OUTER INNER	NONE
RIGHT FRONT	YELLOW	↷	↷	7 O'CLOCK	12 O'CLOCK	OUTER INNER	NONE
LEFT INTERMEDIATE	WHITE	↶	NONE	5 O'CLOCK	NONE	NONE	INTER-MEDIATE
RIGHT INTERMEDIATE	BLUE	↷	NONE	7 O'CLOCK	NONE	NONE	INTER-MEDIATE
LEFT REAR	YELLOW	↷	↷	7 O'CLOCK	12 O'CLOCK	OUTER INNER	NONE
RIGHT REAR	RED	↶	↶	5 O'CLOCK	12 O'CLOCK	OUTER INNER	NONE

LOSING YOUR GASKETS?

If you don't keep a sharp eye peeled on the exhaust manifold gaskets . . . you M48A2 tankers may have to scream for the hook and ladder boys.

Seems those little devils are working out from under the manifold flange. This sets up a fire hazard 'cause the gas or oil around the gasket area could ignite—and then maybe, wa-hoom, and you'd better be quick on the draw with your extinguishers.

Until they come up with a permanent fix, it's best to inspect the exhaust manifold gaskets right quick and then at every one of your regular Q maintenance services (750 miles or three months, whichever comes first).

If you find a blown gasket, replace it with a new one. You can get the item by asking for FSN 2805-774-4568 (Ord).

WAIT A WHILE

Don't fret if you can't replace the circular rubber material that goes on the upper end of the M100 panoramic telescope on your M52, M53 and M55 self-propelled howitzers.

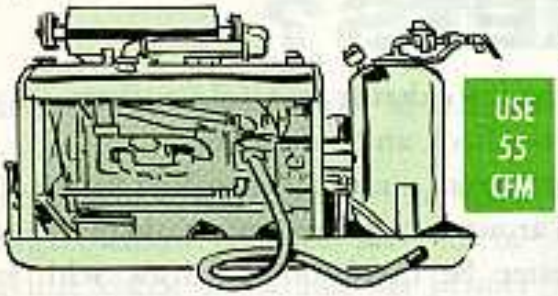
Seems this item is listed on page 17 of ORD 7 SNL G258 (Nov 57), the pub for the M52 SP howitzer, under the handle of Cover: assembly. But, don't go and try ordering it. This item has become "unauthorized".

The word's out, though, that a new item is in the mill. It will be authorized as soon as it's available—called Cover assembly, under FSN 1240-661-1714. Don't go ordering it until you get the word.

DON'T GO NEAR THE WATER

That is—if your outfit rates Diving Equipment Set No. 2, SM 5-4-4220-S02 (FSN 4220-269-7906). You don't want to use the 15 CFM air compressor (FSN 4310-204-2598) since it's not considered safe. It's being removed from the set and isn't going to be replaced.

Since the 15 CFM compressor is being taken away and you're not going to get another one, you use the 55 CFM compressor that's part of Diving Equipment Set No. 1 (FSN 4220-269-7905). If you don't have Set No. 1, you are being authorized by TOE and TA change the 55 CFM compressor for Diving Set No. 2.



A Real Smooth Seal For . . .

YOUR NIKE HYDRAULIC ELEVATOR

Hear tell that some of the new weather seals have been taking a beating every time the elevator surfaces . . . and that's not good.

To keep your weather seal from getting slapped around, scrape all the paint off the sides and ends of the elevator platform. Then put on a thin coat of a mixture made with one part graphite to four parts of light-weight lube oil. Put this mixture everywhere you remove the paint.

KEEP IT LUBED

Clean and lube it as needed—but not less than once a week.

Clean all the dirt and gook from between the seals and the imbedded side and

end angle assemblies with a hose and broom. Then, still with the broom and the hose in your mitts, clean the dirt and film from the sides and ends of the platform.

Now, you put on a fresh coat of the oil-graphite mixture.

You can get the graphite you need under FSN 9620-233-6711 (Ord) as Graphite, Powdered, 1-lb can.

In case you can't get hold of some graphite right off, you can use grease (GAA) on the seals temporarily. The GAA won't harm the neoprene seals.

NEED PUBS? A SPECIAL TOOL?

If there's no DA pubs or manufacturers' manuals available for your rigs, you can get a special parts listing by writing to the U. S. Engineer Maintenance Center, P. O. Box 119, Columbus 16, Ohio, Attention: EMCDY.

Same goes, too, if you need tool listings and your equipment isn't listed in SB 5-100 or any other pubs. You can write to the Engineer Maintenance Center for 'em.

In either case, send them the full rundown on your rig—nomenclature, make and model number, FSN, manufacturer's number, and all the other info listed on the ID plates.

TAKE CARE OF THE ID PLATES

The ID plates on your equipment carry a lot of important information. So you want to take good care of them. Don't overlook them on your regular PM services. Comes a time when you need those plates and your stuff doesn't have them—you're in real trouble.

Letting them rust or slapping a coat of paint on them like you'd blot out an old telephone number is strictly no-go either.

If you find them painted over, don't scrape it off—use paint remover. They're no good to you if you can't read them—painted over or scratched off.

Make Your Engineer Equipment Inventory Forms Right. . .

THE FIRST TIME

You can save yourself a lot of time and trouble by filling out your Engineer Equipment Inventory DA Forms 5-73 and 5-73a right the first time. When they're wrong, your support unit technical editors or the reviewers at the Engineer Maintenance Center are certain to bounce them back for correction . . . and that doubles

everybody's work. The only way you can be sure you've done the job right is to make a physical inventory of the equipment uing a DA Form 5-77. Note the info found on the ID plates, and then later carefully copy that info from the DA Form 5-77 to the 5-73.

HERE ARE 14 OF THE MOST COMMON ERRORS MADE ON FORM 5-73:

STOCK NUMBER: Garbled, incorrect, not readable.

SERIAL NUMBER: Left out. Not applicable to equipment or year of manufacture.

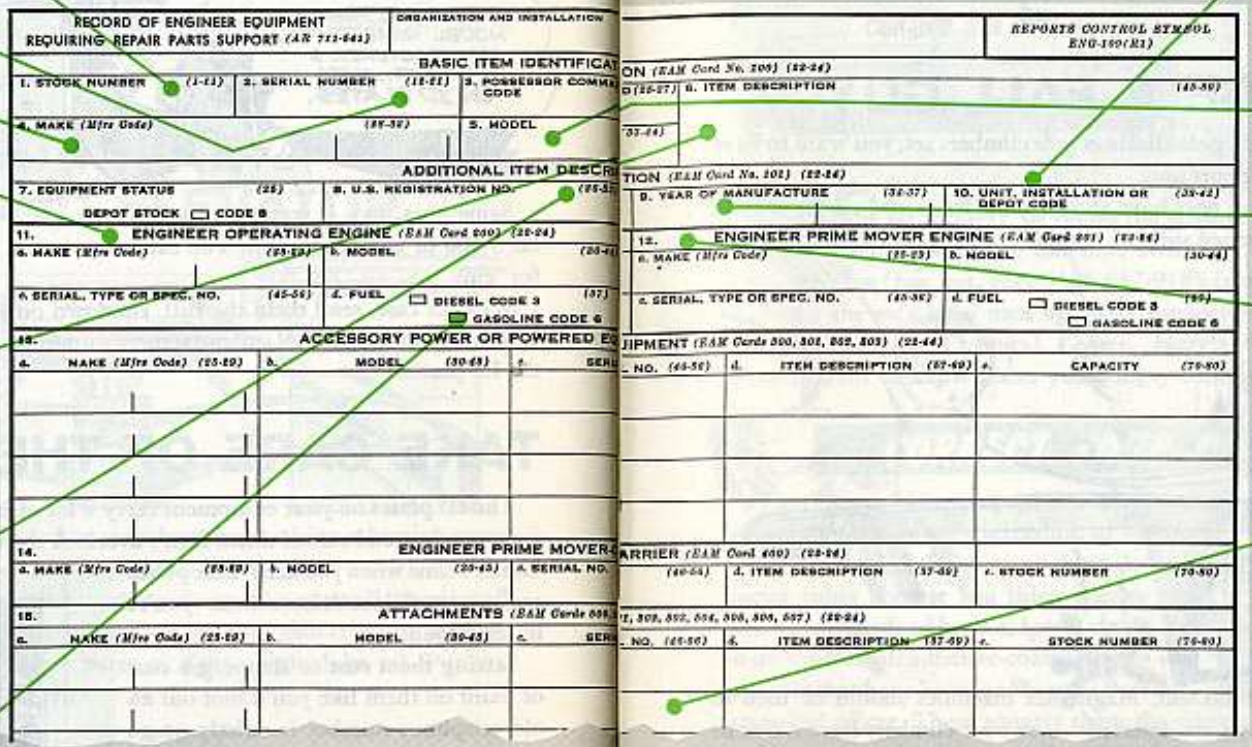
MAKE: Not reported.

OPERATING ENGINE INFO: Left out. (No serial, type, or specification shown. Wrong model reported.)

ITEM DESCRIPTION: Incomplete. (GED, DED, CFM, KW are part of description usually left out.) Not compatible with SB 5-70, SM 5-1 series or SM 5-5 series.

U. S. REGISTRATION: Left out.

ACCESSORY POWERED EQUIPMENT: Usually left out. Info reported conflicts with other items or pubs. (Pumps should be shown here as accessories of pump sets. Give make, model, etc. of the pump itself and of the electrical end of a generator set.



CODES: Those assigned to entire command frequently given. (Individual unit, installation code as assigned in accordance with AR 711-541, para 10K, is to be shown).

MODEL: Not reported.

YEAR OF MANUFACTURE, ENGINE: Missing. (No explanation given in Block 19.)

ENGINEER PRIME MOVER: Ordnance items shown. (Should be reported in Item 18.)

ATTACHMENTS LISTED IN FSN AND ITEM DESCRIPTION: Not shown. (When reporting such equipment, the SM 5-1 series will show the attachments that should be reported as part of each stock number.)

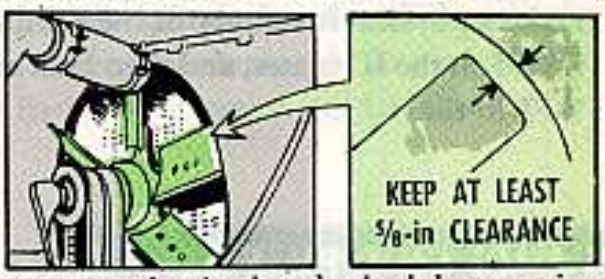
INFORMATION REPORTED NOT READABLE: Failure to reverse carbon when forms are typed on reverse side.

NO EXPLANATION OF BLOCKS LEFT BLANK (See Block 19.)

HIT THE FAN

That's the radiator shield on your Cat D8's, serial numbers 9A1301 through 9A2000.

The clearance between the right and the left side of the shield and the fan blade is less than ¼ inch. So you have to be careful that the blade doesn't get beat up by clipping the edge of the shield, or a hunk of the shield doesn't get whacked into the radiator.

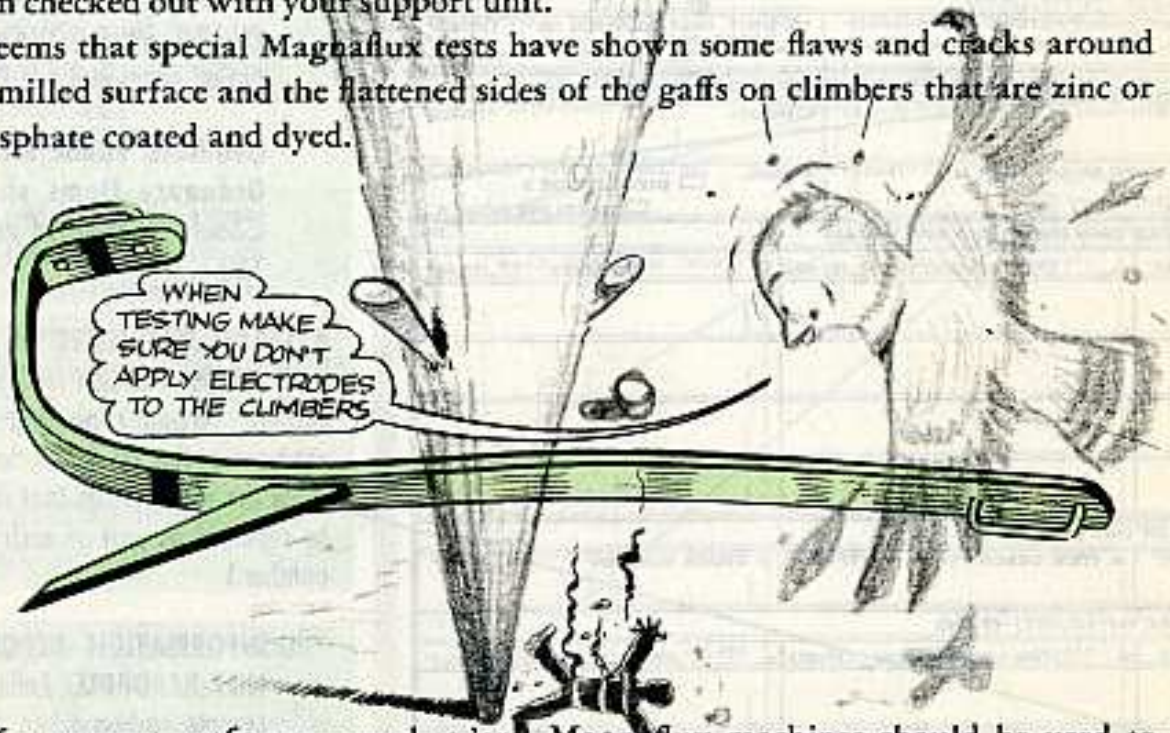


To get your blades spinning room, you take out the fan shields and cut 'em until you have about ⅝-in clearance between the shield and the blades. If you're not authorized to do the job, next time your D8 goes into the shop, have your maintenance support people give you a hand.

DON'T BE A FALL GUY

If you're in an outfit that rates pole climbers or a climbers set, you want to have them checked out with your support unit.

Seems that special Magnaflux tests have shown some flaws and cracks around the milled surface and the flattened sides of the gaffs on climbers that are zinc or phosphate coated and dyed.

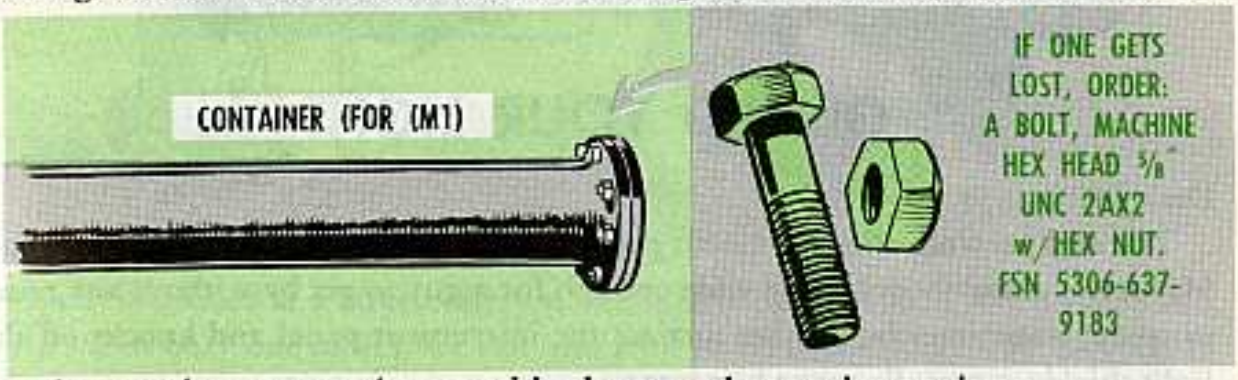


If a support outfit near you has 'em, Magnaflux machines should be used to check out those climbers. If flaws are detected . . . or your climbers have a zinc or phosphate-coating . . . turn 'em in pronto.

This way you'll make sure that what goes up doesn't come down—the hard way.

NUTS AND BOLTS

When you take the nuts and bolts out of the top of the container of your M1 war gas identification detonation set, it's a good idea to keep track of 'em. You



can't store the set securely, or reship the set unless you've got 'em.

If you should happen to lose one, order a Bolt, Machine, hex head, 5/8-in 11 UNC 2Ax2 w/hex nut, FSN 5306-637-9183 from your Ordnance support.

When the set's been used up, your support notifies Chemical Corps Materiel Command, Army Chemical Center, Maryland, ATTN: CMLAM-M-SYD.7. They'll want to know about your empty containers.

CORRECT YOUR COLOR CODE

That brown color on page 2 of the instruction card set for your M9A2 Chemical agent detector isn't according to Munsell.

So, before you throw away those detector tubes because you think they're the wrong shade of brown, better check with those small adhesive-coated plastic squares that have been sent to your Post chemical officer. These squares show the correct color.

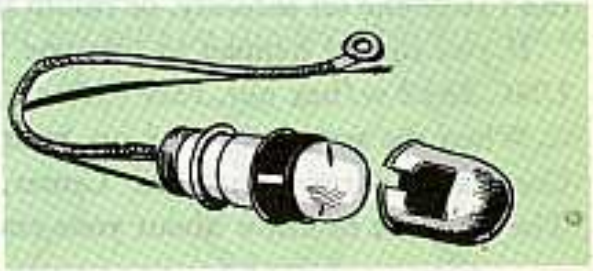
If you don't have 'em, or if you need more, your support writes to the Commanding General, U. S. Army Chemical Corps Materiel Command, Army Chemical Center, Md., ATTN: CMLAM-M-SYM.

CONTRIBUTIONS

GUARD YOUR LIGHT

Dear Editor,

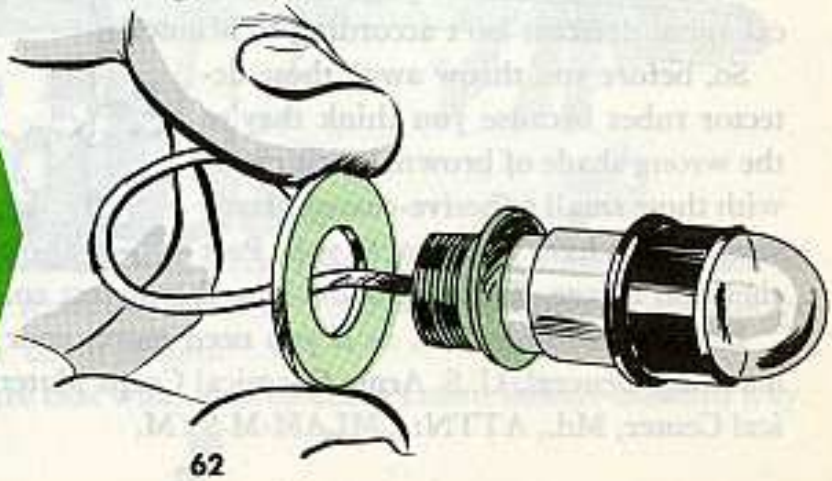
The area between the instrument panel and the side of the cab in the Garwood M20A(F) crane-shovel is just wide enough for a guy to get by without any room to spare. Sometimes he brushes against the instrument panel and knocks off the light shields, especially when he's wearing a jacket.



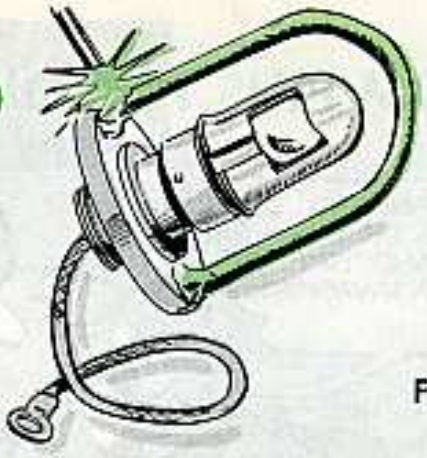
Lots of times these shields get lost. We get gigged without the shields, and in order to replace them we have to order the complete light assembly—wire, socket, bulb, shield, and nut.

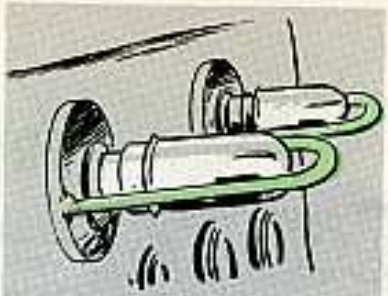
Since I made guards for the lights, we haven't lost any shields and we haven't been gigged. You take the light assembly off the panel by disconnecting the wire in the rear of the panel and unscrewing the nut.

Now you get a ½-in washer with a 1⅝-in outside diameter and put it around the base of the socket.



Then you take a piece of welding rod and make a U from one edge of the washer to the other going around the light and shield. Now you weld the rod to the washer,





replace the socket and the guard's in place.

SFC Leo F. Poppe
Ft. Leonard Wood, Mo.

FENCE IT IN

Dear Editor,

We're stationed at a Nike battery which is only two feet above sea level. When we tried to bury our cables, we ran into a lot of trouble—water kept seeping in and they were a real headache to keep dry.

We think we've licked the problem now, though. We've dug up all our cables, and run them around the site on a covered wooden fence-like railing, which keeps 'em about a foot off the ground. The cables are now out of water, and protected from the direct rays of the sun. Every ten or twelve feet we hinge the wooden cover so's we can get at the cable junctions.

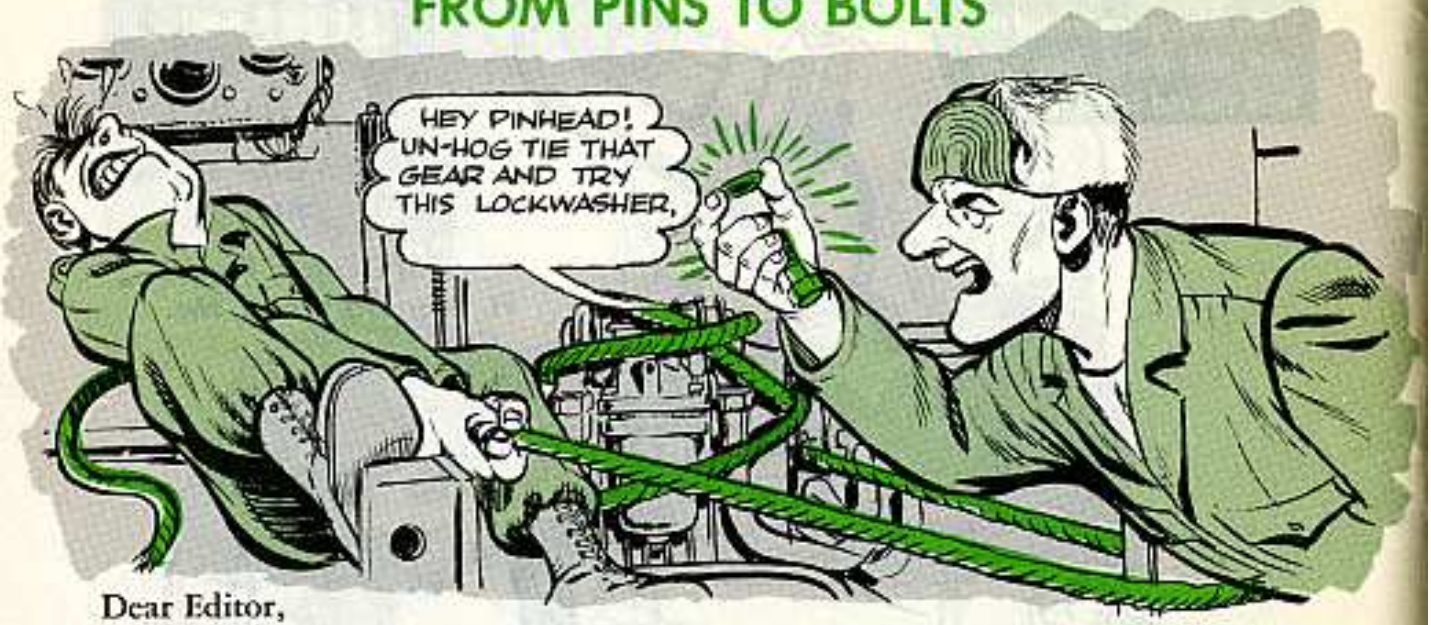
To finish the job, we painted the entire cable support yellow, and the hinged portions red, so it's easy to find the connections. We haven't had a bit of cable

trouble since we put our cables above ground, and the fence-like effect makes the site look neat and orderly.

1st MSL BN, Tolchester, Md.

(Ed Note—Sounds like you've hit on a hot solution to a damp problem.)

FROM PINS TO BOLTS



Dear Editor,

The controlled differential on our M59 APC's vibrated excessively every time we pulled on one of the steering levers.

We investigated and found that the differential wasn't securely tightened in its mounting bracket and the constant vibration caused the mounting pins to en-

large the bracket holes. The larger the holes got the more the differential would vibrate. This bracket doesn't seem to be hard enough to keep the loose-fitted pin from pounding it larger.

We got our vehicles fixed by getting three ⅞ x 7-in bolts (FSN 5305-022-0822), using them with lockwashers and nuts instead of pins. This way, we were able to draw up the bolts—which tightened the brackets against the centers of the mounting bushings. These bushings have a steel center, which gives a good firm mounting . . . yet they are also shock-mounted because these are vulcanized bushings. Thought this might help other shops with the same problem.

MSgt Clement E. Cole

West Point, N. Y.

(Ed Note—Right good maintenance thinking, Sarge. But there're two things you want to be on the lookout for. Make certain the mounts, FSN 5340-321-6194, are still in good condition. They may have to be replaced before using the bolts. And, when using the nuts and bolts, be sure you have a snug fit between the bolt and the bracket.)

Connie Rodd's BRIEFS

Got an mhe 152 forklift?

There's an URGENT MWO out calling for welding on a couple steel blocks and bars to give greater strength to the outer mast assembly on those Service Castor trucks. Clue your support guys to MWO 10-1605F-3 (1 May 59). After the weld job's done make sure it's recorded on the lift's DA Form 478 and MWO recording plate.

TM 5-505 goes to "Q"

Take a quick look at that article in PS 82, pages 4-15, and scratch the bi-weekly and bi-monthly Engineer services you see mentioned there.

You now use **Q** (Quarterly) and **L** (Lubrication) services.

The new TM 5-505 (Aug 59) is off the presses. It sets up the **Q** and **L** services and provides for lots of other changes.

Order yours today!

Wrench sets

Ther're some new SM's that give you a breakdown (FSN's and pictures) of some wrench sets. They are:

¾-inch square drive,
FSN 5120-204-1999, SM 9-4-5120-A01

½-inch square drive,
FSN 5120-596-8622, SM 9-4-5120-A02

1 inch square drive,
FSN 5120-357-8826, SM 9-4-5120-A04

New stop

Has your support unit been around to fix your 1917A1, 1919A4, A4E1 or A6 .30-cal machine gun? The small arms repairman will show up to put in a new short round stop—the way it says in urgent MWO 9-1005-212-30/1, dated 15 May 1959. The new stop will hold to the side plate assembly better.

You can use it, so...

Here 'tis—the Federal Stock Number for the rubber switch boot that goes to the new type pushbutton switch in the Nike-Ajax and Hercules systems. Order the boot from Ordnance under FSN 5975-681-3028. Another thing, the Ord Part Number has been changed from 8908704 to 9000692.

Exercising recoil mechanisms

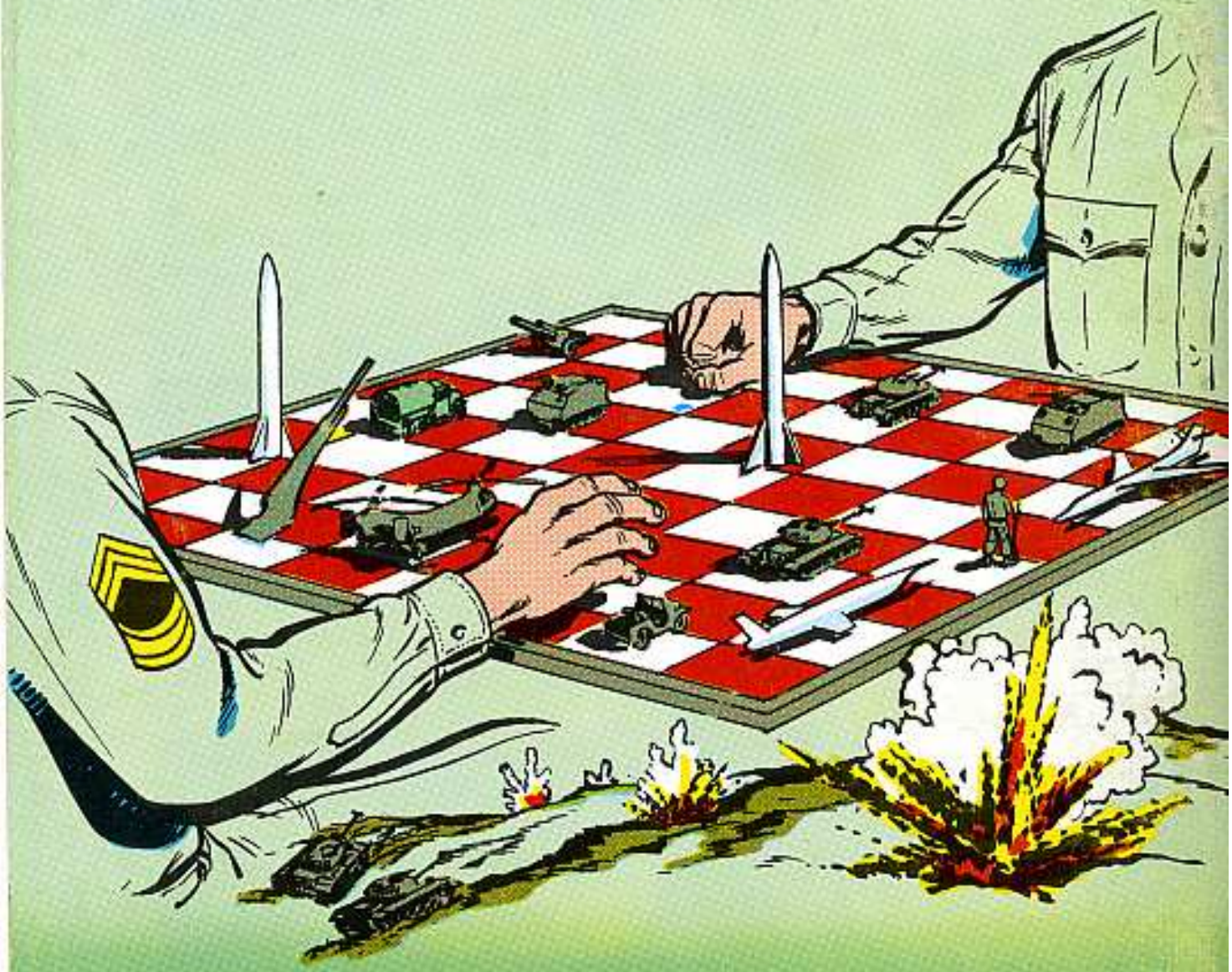
Been wondering who's supposed to exercise the hydrospring recoil mechanisms—organizational or field maintenance? Unless word's been given by the support Ordnance officer that the using unit can do the job, it'll be done by third echelon (like it says in your weapon's TM).

TC supply men...

Be sure you read TSMC Supply Letters 30-59 and 31-59, dated 21 and 22 April 1959. SL 30-59 gives the word on using DA Form 1546 for TC items. SL 31-59 is of special interest to you railway people. It tells where and how to get some items you may need.

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

MAINTENANCE IS NO GAME



BUT...IT CAN MEAN THE DIFFERENCE BETWEEN WIN OR LOSE