

Issue 67

**PS**

1960 Series

**THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY**





# QUICK ON THE DRAW



If your gun hasn't been fired lately, chances are all the oil in those highly finished mechanisms has leaked off. Which means that the next time you try to crank one off, it'll prove like a grinding wheel throughout at a reupholstering session. A little maintenance will ensure a lot of action and pain—especially in your back gun's hydropping small mechanisms.

Keep your small mechanisms in shape simply by getting together with your support tools. They'll help you do the job. The (instance) people don't mind several strokes doing the work, exercising—so long as you have the know-how and their help.

Remembering that this gun only the gun with a hydropping small work order... there's several ways to go about it. This depends on what type gun you're exercising and what equipment you have available.

You can use the old reliable M2 hydraulic oil pump, the quick-and-easy Power-power 10-ton jack, a regular hydraulic or water-type jack or an M22 wrench.

You've been off using the M22 wrench or hydraulic or water-type jack for your self-propelled gun—while the oil pump, Power-power jack or M22 wrench are good tools for your work gun.

Let's look at the use of each piece of equipment separately.

## EXERCISING WITH THE M2 HYDRAULIC PUMP Draining the Reupholster



1. Drain the reupholster by opening the petcock in the reupholster cylinder head. Catch the oil in a clean container, since it can be recycled.



1. If there is no petcock, drain the reupholster by pouring them on the tail of the M22 with care like with a self-propelled reupholster. Insert the oil in a clean container. Watch the reupholster indicator tape—when the tape stops moving in, tighten the drain plug.



2. Remove the reupholster hose from the top of the small cylinder. If the reupholster hose has a check valve, close it to be sure exercising the small cylinder. That way you won't have to drain the reupholster hose.

## To Connect the M2 Pump to Cylinder



1. Remove the small cylinder fill plug.
2. Lay or plug the reupholster hole in the small cylinder.



3. Insert the reupholster into the fill hole and seal the pump hose to the reupholster loosely.
4. After hand or pump in the reupholster or plug the petcock hole.



1. Operate the pump until all flow from the hose connection side comes up from the pump hose.



1. Tighten the pump hose connection.

## To Exercise the Gun

1. Wind the pump off the gun three out of battery (insert it in 10' battery).



1. Open the pump valve to let the gun go back into battery.

2. Pump the gun in and out of battery three to four times—make sure all the bearing surfaces and all undrugged parts of the gun are in the best condition possible out of battery, for 10' day that was not used the outside of the gun hole or small cylinder with M2. That will keep this portion from rusting. Run, if the pump is in battery.





1. Remove the pump hose and adapter and replace the filler plug, but don't tighten it. You won't lose any oil, but you still have to exercise the expander.



2. Rotate the top or plug from the expander hole and exercise the expander hose to the road cylinder slowly.

### To Exercise the Expander



1. Remove the plug in the filler valve and connect the fill oil pump to it.



2. Tighten the hose connection and the road cylinder fill plug.



3. While working the pump, keep your eye on the indicator sign. When the hose above the cylinder is full, another source will stop entering.



4. Keep the right amount of oil in the expander—check the level on the expander or cylinder or use your "X".



5. Work the pump till all these hoses around the road cylinder fill plug and the expander hose-pump hose, etc.'s remove the air bubble. You'll know all the air's out when the oil comes out clear from hose bubbles.



6. With a longer pipe adapter, take the inside of the expander cylinder with OMC through the holes by the indicator sign.

7. Open the valve on the pump and let the oil drain back into it. For hard results, pump and drain the expander several times, but do it easy-like—pump the oil in slowly, so you won't damage the seals in the packing. And never try to exercise your hydro-pneum mechanism through your expander.

8. Remove the pump hose from the expander and replace the fill valve plug.

9. Make a final check of all plugs and connections for leaks and tightness. If the expander has a double valve, make sure it's open when the job is done.

## EXERCISING WITH PORTO-POWER 10-TON JACK



1. Place the jack in position on the metal cylinder, leaving the end with a piece of wood or wood sh's it falls between the horizontal hole that hold the metal plates spring extension to the metal cylinder center. If your workshop has an emergency hand operation, like on the 400 and 800, place the jack between the emergency hand operation bracket on the cylinder and the benching.



2. Work the jack till the gas comes out of battery 4 inches— you'll see the 1/2-in mark on the arm of the jack.



3. Release the jack so the gas goes back to battery.



4. Pump or three or four times to make sure all bearing surfaces and all seals get bleed. The last time the gas is out of battery, seal the outside of the gas tube or metal cylinder with Teflon.



5. Bleed the replacement cylinder. Reassemble by drawing and filling the replacement.

## EXERCISING WITH THE HYDRAULIC JACK - SCREW JACK

1. Make sure your tool's on level ground.



2. Operate the gas three or four times with your jack, sending the gas out of battery via to eight inches each time.

3. Place the jack between the corner inside end's flat metal end-covers, with a wooden block between, last' careful that the jack is exactly in the level with the base end or right angle with the flat surface.



4. The last time the gas is out of battery seal the outside of the gas tube or metal cylinder with Teflon.

5. Check to see that the increasing methods are locked in place.



6. Take the replacement cylinder and then assemble by drawing and filling the replacement.

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## EXERCISING WITH THE MAX WRECKER



1. Make sure the tank and the wrecker are on the same plane. Then line the bottom of the MAX tank with the tank gas tube so the hose will not be pushing the gas tube at an angle. Put a wooden block between 'em to protect both the hose and the tube.

2. Lock your traveling controls.

3. Move the lower tank and forward three or four times, letting the tube move in and out six to eight inches each time.

4. The last time the gas is out of battery, cut the outside of the gas tube or steel cylinder with SAA.

5. Take the explosion cylinder and then exercise by draining and filling the explosion:

### A FEW GENERAL TIPS:

1. Exercise and take your explosion at the same time you're exercising your usual medication 'cause if the cylinder is connected to the plate in front, you'll get a false reading on your usual oil indicator. The tape might show on the PUL mark when actually the cylinder could be low ... or even empty. It's best to use the fill oil pump to do the job.

2. Remember to coat the exposed surface of the steel cylinder or gas tube lightly with SAA during exercising. It'll help protect 'em from rust.

3. Never try to exercise your hydro-pneum vessel by placing the gas tube against a solid surface and sliding the tank forward. You'll end up with either a broken seal or a heated tube, or both.

4. Always get a good crack or 1000 PSI max of pressure with a chrome-plated tube ... in winter, you will have to exercise 'em every six months, like it says in Group 1 CTS bag (4000 PSI and 1000 PSI).

5. Another thing to keep in mind, if you're in the tropics, you have to exercise your gas tubes often to keep that film of oil between the packing and sliding surface. You just lower the viscosity of oil, and makes it come out faster. For example, did you know that a difference in temperature of 100F just about doubles the chance of corrosion?

6. If you're in cool and climates, I'd be a good idea to keep a clean cloth to your oil tank, too. 'cause they're apt to freeze up when the mercury drops.

Now that you know how to do the job, it'll be easy to exercise your gas indicators before 'em, too, in order to keep the packings from being torn by the sliding. And, of course, whenever you exercise your wrecker, you'll make a note of it in your Wrecker Exercise Book.

Want to  
keep your  
eyes on  
the target?

## SPOT THAT HIT



Hey, now.

Some guys are giving Uncle Sam the way they're treating the commercial observation telescopes (888-668-6295/777) that's used to spot hits on the rifle range.

The biggest one's used routinely. They're for guys in training and so aren't sealed and don't have shock mountings like the tactical 888 and M40 observation telescopes. In other words, leave 'em in the supply room and in their case when you go out on maneuvers. Water, dirt and hard knocks will ruin the more sensitive jobs.

WITH THE GO-GO  
ON MANHOLE  
AND IT IS SUPER  
EASY TO USE.



There aren't any spare parts for the scope as when our binoculars break up, your support unit'll give you another one in exchange for yours. The direct exchange is provided for by DA 9-173, 15-Oct 88.



## FORGET IT



Remember  
anything?

You see TM 9-1599-209-12 if you're with a M40 SP 4.3-in scope, right?

That's fine and dandy, but forget about the second Maintenance Allowance Chart in the TM that refers to the mount mount. That'd be from the middle of page 110 to about the middle of page 111.

The MAC on the mount mount needs fixing and it's due for a face-lift.

## SHOOT, CLEAN

Maybe you've heard that some M1 rifles have developed a bad case of "rugged bore". Don't worry—it's not contagious to you, but your rifle can develop a bad case if you fire blank ammo and clean the bore ammo without cleaning the barrel.

That blank ammo leaves a heavy carbon deposit—enough to create a partial barrel obstruction. Then when you fire full ammo you get excessive pressure that'll sometimes cause a bulged or ruptured barrel.

So the cure to that disease of the barrel is clean—that's right—clean right after you fire blank ammo.





# Connie Rodd's

"LUBE 'N' TUNE UP"



Are those bladders wheeled vehicles lurching up all from their crankcases like a crew of quick sailors?

If you find that oil won't stay down in these engines, there's a good chance something's gummed up in your vehicle's breather lines or apparatus. And the most likely place to look for this gum-up is in the crankcase ventilation valves.

All your bladders wheeled vehicles have 'em ... though you may have to make like a private eye to find 'em. Besides, they've got as many aliases as an itinerant hobo ... *crankcase breather regulator* ... *intake valve* ... *Downdraft valve*. Whatever moniker these valves wear, their program is to keep a steady flow of air through the crankcase and up into the intake manifold ... except when you're gas the air flow shut off while loading.

Most of the TM's will you to clean these gadgets—with dry-cleaning solvent or volatile mineral spirits—every six months or every 4000 miles. That goes for both types ... the spring-operated levered type and the venturi-sucking-weight type. Both are controlled by intake manifold vacuum.

To help you spot 'em quick, here's the most likely locations where you'll find these valves and parts in TM's where you'll find 'em (ably about 'em):



CRANKCASE  
BREATHING VALVE



1963 CHEVY—4 CYL. AT REAR, LEFT FT. WHEEL HOUSING—SEE 107, TR. P. 107



1968 BUICK—6 CYL. AT REAR, LEFT END OF HOOD—SEE 107, TR. P. 107



1968 BUICK—4 CYL. AT REAR, LEFT FRONT OF ENGINE COMP. L. END OF HOOD—SEE 107, TR. P. 107



1968 CHEVY—4 CYL. AT REAR, UNDER LEAD-BATTERY—SEE 114, TR. P. 107



FRONT END  
PART 171



6-74 5005-BASE OF HEAVY BLUET CARBURETOR—PART 172, IN 4-1028



6-74 5005-BOP OF FAN, OR FAN COVER AND COVER—PART 134(7), IN 4-1028



6-74 5005-BASE OF FAN, OR FAN VENTILATION SCREEN—PART 131, IN 4-1028

### Dust wheel tongue



It's obvious I have my dust wheel and I wonder, why yours isn't there.

Just look at that tongue that's missing.

Tongue nuts can get rotated when you're rightening the nuts that hold the dust wheels on your M-172 front-enders.

It's the inner cap nut that holds the inside wheel to the hub, and the outer nut that holds the outside wheel to the hub.

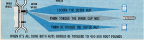
#### INNER MOUNTING WHEEL



#### INNER WHEEL, THE OUTER NUT THAT HOLDS THE WHEEL (PART 131) TO 400-500 FOOT-POUNDS



#### TO BEGIN ON THE CAP NUT HOLDING THE INNER WHEEL, THEN OUTER WHEEL, ARE MOUNTED—NEXT





You may not have the seven checks there to help you clean your pressure wash, but Snow-White's there to lend a hand.

Cleaning the hardback of your truck was once done only by water, plus a mild soap, plus elbow grease. You can now use a detergent to help do the job—that is, if it's one of the following: Magnex D-200 made by Magnex Chemical Company, Inc., Garwood, New Jersey; Avicel Super 850 made by Colgate-Palmolive Company, 100 Park Avenue, New York 22, New York; Snow-White made by Lysol Company, Inc., New York, New York; or M-F-A Cleaner-Builders made by M-F-A Bakery Appliances Company, Pittsburgh 8, Pennsylvania.

If you're not quite sure of just how strong a solution you should have, it's suggested that you start out with a 1% solution and see how it cleans.

Only these detergents listed above should be used because they've been tested and found to be harmless to you and your truck or don't say substituting.

It might be a good idea to keep your kit handy because new items that have been tested will be added from time to time.

For more information on Snow-White and DeWaxer, write to Snow-White, Dept. 100, P.O. Box 100, New York 22, New York.

## Pull off stops

Memo to All G743-series

Truck Drivers

From: Condit

Subject: Reminders



1. Some of your G743-series 24-ton trucks coming out of storage might still have a chronic stop-slip in the governor housing of your carburetor.

2. Also behind the stops is how your regular speeds in hand during the 1000-mile break-in early. After that, you check with Condit's support on removing the stop and making any necessary governor adjustments... like it says in TBI 9-80211, page 81.

3. Forget to pull out the stop and your engines will lug every time they meet up with a good sized hill or full load.



with  
1000 miles  
break  
in/1000  
mi



Did you M11-series numbers hear the cover sweep on your range finder? No, you say? Well, pull up an empty gun tube and hear this.

The M11 (T9811) and its new new, such you could make one each number. Same gun for the M11A1 (T9811).

In other words . . . FSN 1240-000-2002 is good for Range Finder M11A1 w/Case, Metal, Removable. The old number—the one for the range finder alone—was FSN 1240-500-5040.

FSN 1240-000-2001 now gets you Range Finder M11 w/Case, Metal, Removable. The number supersedes FSN 1240-044-0014, which was for the range finder alone. Once the range finder has been removed, your support will hold on to the case.

Maybe the man in support is short on guns. His oughts have one for each range finder he has in his stock . . . so do him a favor by letting him know about this number. FSN 1240-000-0001 is good for both the M11 and M11A1 range finder numbers.

You might also tell the man who after he has a container for each range finder, his stock records want to show the FSN's for the range finder/container combination.

There's one more thing to remember. Your Ordnance office is the best man when it comes to requisitioning the range finder/container combination. So see him before you close in a 1944 issue slip.

### *Loose job*



Now since your M11 (T9811) and M11A1 medium tubes have to go back to support you might ask them to give that lower fan clutch bearing (FSN 2930-500-0571) the good eye too. If it could use a bit of filing.

If it's dry, ask them to put in enough Grease, Aircraft, (FSN 9130-024-0001) to pack the bearing about 1/4 full. Remove the cap and wad the grease on the bearing where the Grease is this one will disappear.

Have 'em fill the seal with a knife to take it . . . a little less is better than too much . . . the excess you get thrown up over the clutch disks and they'll lock up.





In your M1-Coupled engine generator is giving you a hard time—it just won't come to a halt when the "stop" handle is moved to the normal position. You've seen the unexpected switch conditions, but you don't know how to adjust the switch.

Well, now . . . pull up a spare driver wheel and have a look-see and fix-it. You can have the adjustments done just in an hour.

Once you've removed the power unit cover, the first thing you want to do is make sure that the vacuum line and all electrical leads are good and secure.

Then you see if the switch is operating right. And that's done like so:



1. LEAVE THE ENGINE HANDLE.
2. CLOSE THE STOP VALVE SWITCH.

3. TAKE THE COVER OFF THE STOP-VALVE RELAY AND SEE IF THE HANDLE IS OPEN. IT SHOULD BE.



4. MOVE THE ENGINE HANDLE QUICKLY BY MOVING THE HAND HANDLE TO STOP.

5. THE STOP-VALVE RELAY SHOULD CLOSE WHEN YOU RELEASE THE STOP.

If everything has checked out, your adjustment is right. You want to look somewhere else for your generator troubles.

Let's say the relay isn't working right, and you have to make an adjustment. First . . . we'll suppose the relay's not open when the engine's cranking at its governed speed and the AC system's engaged. The adjustment works up this way:

1. Loosen the lock nut on the stop-valve switch.

2. Turn the adjusting screw clockwise one full turn and then run through these five checks for operation of the switch. If the ball nut doesn't fit it, give the adjusting screw another half turn. Do this until the relay does not operate with the engine's cranking at governed speed. Then tighten the lock nut.

Now . . . if the relay doesn't close when the engine speed is low, you do this:

1. Loosen the lock nut on the stop-valve switch.

2. Turn the adjusting screw counterclockwise one-half turn and run through your operation check. If you still don't have the right adjustment, keep making one-half turns—followed by an operation check each time—and the relay does close when the engine speed is reduced.

3. Then tighten the lock nut.

You should be in business.

And . . . remember . . . You can find more on this generator in *EM 1-1040*.



## A FILING SYSTEM

How about your Corporate world?

You giving the guy in supply a hard time trying to keep you supplied with those round-head screws that go into the packing machine on the outrigger jacks of your MFT loader?

You know what's happening—

YOU HAVE THE SCREW END TRYING TO GET...



...AND THE BALL CAP END OF THE SCREW HEAD

The screws you need is something that'll save those screws. And the answer's simple—just make room for 'em on the ball cap.

- 1 HOLD THE SCREW END OF THE SCREW IN TRAIL POSITION.



- 2 WITH THE BALL CAP END WITH A FILE.



- 3 WITH POINT, BLANK BLADE WHERE EACH OF THE SCREW HEADS TOUCH UPPER END OF BALL CAP.



- 4 NEXT GO IN-JOINT OF BALL BEARING SHOULDER CUT FILE FROM FOUR END. I CORNER FOUR END, REMOVE BALL CAP BY END. BALL CAP CORNER THAT HOLD CAP TO BEING 5 END.



- 5 NOW, WITH END OF FILE, MAKE A NOTCH ON BLADE FOR POINT TO GO THE END OF THE CAP.



- 6 OPEN BALL IS TIGHTER HAND AND GO TO WORK ON EACH MOTOR WITH ROUND END OF FILE.



Or you might want to scrounge a round, smooth-cut file for the same job.

Either way, make the shoulder deep enough for the ball cap to clear the corners. Be sure to allow a little clearance because there's some play in the middle sleeve.

## CORPORAL PUNISHMENT

8001, 80208A,  
8027 AND 802702  
S.A.—  
FOR 1983-83P-810



You can still a talk to making your own after those rubber boots covering the switches on your Corporal Type II firing panel wear out.

The boots have's made its way into your God T SML 100 yet, but you can get what you need. The shops have the word on word 'em as you when they get the requisition.

The things to get right are the manufacturers and stock number. The names change in Boca, Electrical Don and Motors Don, and the number you go it under is 8027 1971-83P-7811.

By the incidentally . . . keep checking the caps and the pressure on keep. Soon's the caps start looking like they're heading for the low runway, get new ones. And keep cleaning the pressure-vent bump-sockets with a clean rag so they'll stay in good shape.

## CANT DO IT TO CONDUIT

Dear Wolf-Rat,

Can you tell me if there's an MFD that will drop the electrical conductors at the rear of our 807 Corporal launcher from getting all chewed up while the launcher is being deployed?

Allyp A. W.



Dear Captain A. W.,

I'm afraid not. There had been some talk about relocating the conductors, but it's died out. The only thing you can do is be extra careful when expelling the launcher. And if the conductors do get chewed up, call on your support unit for help.

—A. W. (The author is a former member of the U.S. Army.)

1983-83P-810



## WHOA THAR



Take it easy. Go slow. Watch it . . . when you're moving the levers that send the AERO servicing platforms up and down and around and around.

Like Frisbee: the way it says in TM 9-588-12—when you raise the maintenance platform, don't let it keep moving until the limit valve causes it to slam to a halt. That kind of snapping on the edge of a valve can give you a shear valve as quick as it takes to come to a wrenching halt.

To ease the platform on a stop by slipping the control lever into neutral a couple times before you reach the place where the limit valve takes over.

Speaking of taking it easy . . . it's also a good idea to get to know that part of TM 9-588-12 that talks about raising the platform.

In simple words . . . it says you change direction by bringing the control lever to neutral first, so the platform will come to a complete stop. What you don't do is go from one direction to the other by slipping right through neutral.

That could jam things in the gear reduction box enough to bend the drive pin in the piston. And that's when you have to yell for your support unit.

## CLEAN THE VENTS, GENTS



You been reading how to raise units in the speed elevator gear assemblies on your Corporal crane?

Chances are you've got clogged vent lines on the assemblies.

What happens is that these lines get plugged with grease on the piston head's top cylinder as it goes. It builds up and gets out of the line by blowing the rods.

It all boils down to being a smart idea to run a line piece of wire—the Salsar jet No. 14—in the vent now and again to work loose any grease that may be caked in 'em.

## FLUSH IT



A head of foam may keep its place on a cool beer or may do a fine job of a fire, but it sure can play rough with the inside of the truck like the Fleet Carriage Model FCMS pumps.

Scum that this foam (sometimes liquid) also does a fine job of subverting the primer pump by crowding the float shut in the main pump-chamber. With the float locked in place, the solenoid valve won't work. So, the liquid blocks the primer pump body and the water won't slide in either.

Result: The pump is ruined.

You can have your pump and use it, too, if you'll always, but always, flush the pumping system with clear water after pumping operations involving use of foam.

## OPEN SEASON FOR DUCTS

Dear Sgt Doyne,

Our aviation outfit has some Russian Pelican 60000 BTU heaters. There are the responsibility of the Engineers. But, what about the ducts? What tech service has the responsibility for ducts—are they Engineers? If they are, what's the PDS and how do we get about?

SFC B. C.

Dear SFC B. C.,

Yup, those duct belong to the Engineers—but they're non-maintained items. You can buy them locally or requisition them through your regular Engineer repair parts supply channels.

Here's what you want:

*Sgt Doyne*

Manufacturer	Part No.	Item Description	
American In/Flux Co., Inc. Code 81507	10023-0 10024	Duct Assembly, 4-1/2 Inch O.D. 20'-00" Particularly, 10'-0 Total 2'-00" 24.70	

## COMBINE A REVERSE FLUSH WITH DO YOURS GOOD!



You can't be a winner without even playing a hand—and a flush'll do it.

It's real easy if you've got a Cummins engine with a pressure atomized injection system. Let your dealer support unit do it for you and give your Cummins a reverse flush every 400 to 500 hours of operation.

It's a good deal. The reverse flush will remove the carbon that's raked on the tip of the fuel injection nozzles. And, at the same time, it'll lengthen the time between your PM sessions when you have to remove the injection nozzles.

## NEED A HAND?

BA or National Guard units that are upgrading new equipment like the Water 1000 CFM Fire Trucks, purchased under FG 66-D-01,205-11, can get all the help they need just by making call.

The companies that make the right have technicians available around the clock with the installation, operation, and maintenance of their equipment. They'll also help you with the training of personnel.

Your work can get this assistance by writing, phoning, or teletyping the Engineer Regional Maintenance Office serving your area as listed in AR 710-112. You'll want to give them this info: type of equipment; government purchase order or contract number; type of assistance needed; length of time you'll need extra help; name and title of the individual the technician is to report to; and the security clearance required, if any.



## HEY, GET YOUR ENGINEERS PUGS



Hey, get your animal's animal's animal's.

From, they're in the house. They're here when you need the goods. Fuel, lubricants and you can get them for free now. You will fill out your DA Form 1146 same as before and send it through repair parts channels. But, because no fuel situation is needed you order parts separately from repair parts.

Wait! Before you include a Form 1146, you want to check out DA Pamphlet 114-1 (Index of TM's, AF's, LCP's, and AFWD's) DA Pamphlet 114-15 (Index of Engineer Supply Materials) and the Weekly 46 Publications Bulletin to make sure a DA pub has been available.

If a TM or other DA pub is available, then you shouldn't need a manufacturer's manual.

If you can't find what you need, more info is also, you can write to the Commanding General, U. S. A. Engineers Maintenance Center, P. O. Box 118, Columbus 14, Ohio, Army FMCEC.

They'll steer you in the right direction.

Incidentally, when you requisition Manufacturer's Equipment Materials, be sure you include the make, model and serial number of the equipment and the lot component. You'll also want to tell 'em the type of pub you need—operator, maintenance or spare parts list.



## THE RIGHT LUBRICANT

Course, you know it's mighty important to use the right oil in your Ingersoll-Rand rotary compressor.

As an Ingersoll-Rand, the compressor oil you use in the Ingersoll Rotary Compressor Model Eng-500, is a non-detergent oil that meets the standards of MIL-L-12484, 12484A, 12484B.



**INGERSOLL ROTARY COMPRESSOR MODEL ENG-500  
LUBRICATING OIL**



Temperature Range	Weight	Special	FDL-12 Gal Item	FDL-12 Gal Item
Above 100°	SAE 30	1199	FDL-12-1007 100	FDL-12-1007 100
40° to -10°	SAE 30	1118	FDL-12-1017 100	FDL-12-1017 100
0° to -40°	SAE 30	1075	FDL-12-1071 100	FDL-12-1071 100

Same kind of deal with your Ingersoll-Rand 11 Rotary screw-rotating compressor.



**INGERSOLL 11 ROTARY SCREW-ROTATING COMPRESSOR  
LUBRICATING OIL**

Temperature Range	Lubricant	Oil
Above 100°	Shell Lube 75	*
40° to -10°	Shell Lube 68	*
0° to -40°	Shell Lube 68	FDL-12-1017 100



\*You get the 75 and 68 by local purchase through your Shell supply outlet.

You'll want to check this out for your Ingersoll in TM 1-43 10-211-10 001 Jan 59 and LD 7-43 10-212-20-4 and -2 127 May 59, and for your Ingersoll in TM 1-43 10-214-10 124 Jul 59 and LD 7-43 10-214-20.



# THE "AN" STORY

Handy guide. Handy reference. Thumb-nail sketch. Well-remembered. It helps to have something like that handy some time for quick identification of electronic gear that sports an "AN" nomenclature.

Oh yes, most guys can read the code on the gear that they work with day after day and night after night. But sometimes when you're looking up a new job or you see a little music in a man's memory.

"Which means, of course, that it's time to check this pocket guide for that sort of thing.



The Joint Communications-Electronic Nomenclature System (JANS) was set up so that its indicators would show at a quick glance some key facts about an item.

Like this: whether an item is a set or a component, where it's used, what it's used with, what kind of equipment it is and so on.

Just one note: The "AN" is no longer limited to Army-Navy usage. It simply shows that the equipment is part of the nomenclature system developed not only the Army and Navy, but also the U.S. Air Force and the Canadian Armed Forces. Personnel on electronic items may be provided by the Army—but used by the Navy. Yet it keeps the same nomenclature no matter which service has it.

# STORY

## "AN" NOMENCLATURE SYSTEM

1. Here's an example for a signal radio set.



2. Sample of a component used with a particular set.  
ES-77/GR-10 Modem-Transceiver used with an AN-120/10.

3. Sample of a component used with two or more different sets (set).  
Sound Sec. 1-101/10.

If you're interested to obtain information about this system, look over to page 30 of MIL-STD-100, "Joint Electronic Type Designation System."

## EQUIPMENT INDICATOR LETTERS

LETTER	DEFINITION	DEFINITION
<b>A</b> Accessory	<b>B</b> Antenna	<b>E</b> Auxiliary equipment
<b>B</b> Block	<b>C</b> Control (radio)	<b>F</b> Battery
<b>C</b> Air Component	<b>D</b> Display	<b>G</b> Communication
<b>D</b> Drive motor	<b>E</b> Electrical (non)	<b>H</b> Miscellaneous
<b>E</b> Enclosure	<b>F</b> Filter	<b>I</b> See or working drawing
<b>F</b> Frequency	<b>G</b> Generalized	<b>J</b> Jacking
<b>G</b> General	<b>H</b> Handpiece (interceptor)	<b>K</b> Knowledge source
<b>H</b> High frequency	<b>I</b> Intercommunications system	<b>L</b> Maintenance and test equipment
<b>I</b> Interceptor	<b>J</b> Indicator/indicator letters	<b>M</b> Measurement unit
<b>J</b> Junction	<b>K</b> Keyboard	<b>N</b> Operating unit
<b>K</b> Key	<b>L</b> Loudspeaker	<b>P</b> Repeating
<b>L</b> Low frequency	<b>M</b> Mechanical	<b>Q</b> Specific combination of type
<b>M</b> Modem	<b>N</b> Modem set	<b>R</b> Receiving
<b>N</b> Naval (AFN)	<b>O</b> Oscillator	<b>S</b> Shipping and/or engineering
<b>O</b> Oscillator	<b>P</b> Power	<b>T</b> Testing
<b>P</b> Power	<b>Q</b> Quantity	<b>U</b> Unknown status
<b>Q</b> Quantity	<b>R</b> Radio	<b>V</b> Identification and receipt
<b>R</b> Radio	<b>S</b> Special type	
<b>S</b> Special type	<b>T</b> Test set	
<b>T</b> Test set	<b>U</b> Unknown	
<b>U</b> Unknown	<b>V</b> Variable	
<b>V</b> Variable		

## LET'S COMMUNICATE

## HOT POST

Everything's just about ready.

The AM/TCC-4 or AM/TCC-28 is off the rack ... the journey back to the plant ... and now it's time to plug up the modem, lock the whole works together and send down to some serious message work.

CRACK THE  
BUSH BY  
BUSHING HOLES  
FOR YOUR  
FEEDBACK  
FROM SPACE



Which brings us to the binding posts on the TH-15/T. The ones on Channel Under A and B Telegraph Modems TH-15/T and TH-15/T-1.

There are the kind that you push in so it's to slip the remaining wire in place. Just a little push, that's all. BUT when little push can give any operator a real shock if your equipment isn't grounded.

So how? In every binding post on these positions is wrapped nice and neat in a rubber insulation. Sort of a little boat designed to absorb the shock.

But, like any boats, they can get disintegrated, loose, worn, broken and maybe less. And a post without its boat being here is a little one here to handle.

So-o-o-o. Check the boats on your modems for disintegration, etc. If any are in bad shape or missing, there's only one thing to do. Get with a rubber! These rubber insulators are not top one items.

Right. An operator has no other more than he needs to get what he needs. In this case, he'll have to grab hold of a whole new binding post.

That means you'll be needing

PEC, BUSHING post type  
LIFE size six spring  
type type Tech No. L711-011  
P/N 084-17-144.

But, would it never thing, sort of be nice there's some kind of insulation to help your sight and the post when you push on it to slip a wire in place. A piece of rubber, plastic, etc.

While you're binding away at your posts, etc. might be a good idea to check on the condition of all the boats. Could be that the mounted work may need a few more to boot.

## FLAP 'EM AND FOLD 'EM



Just about the only time you want to flap your wings, naturally, (or unaccountably) is when you're using them.

After all, how else are you going to rigging up a connector plug except by grabbing hold of the wing nut and making with the screw?

But once things are snug and secure, a wing that isn't folded flat with its connector is very likely to get clipped. People and things bumping up against it, for instance.



with P-20 0 FORMING  
SILL AND '61' MORE  
S-200



Here's the deal: the wing-nut attachment on a connector raises to a vertical position when in use. But that's as far as it goes. It can't bend over backward.

Forcing it any further back will break it back. Bad. Bad because it'll be next to impossible down or across the plug connector base position.

Worse still because you can't do things up just by replacing the wing-nut attachment. That wing nut is not a replaceable part. You have to lock on or on other new connectors.

Which means an otherwise OK connector has to be tossed out only because its wing nut is fouled. And when an 18- or 24-pin plug is thrown on the pile just because somebody forgot to fold its wings, well—unpleasant things will start popping.

Every time you're fouled with a wing nut—on any of a dozen or more different kinds of connectors—you hold 'em in. Merand Book. It's a small enough store, but one that will keep your equipment on the line.



## POWERFUL PINCH



Coach! That really pinches.

So what's the man talking about? Who's getting pinched? Coach!  
Heh, heh.

No, it's the power cable. The power cable that connects a Jeep-mounted AMP CIRC-0 power supply with the vehicle power terminal box.

This cable stretches between the Vehicle Power Supply PL-137 (mounted over the right rear wheel well) and the Jeep's power supply located up forward on the right side.

What happens that pinches it this. Somebody raises the passenger seat for the reason or that—and then drops it back down into position. Now, there's mighty little clearance between the passenger seat frame and the right rear wheel well.

For one thing, there's not enough clearance for that power cable. So if the side has dropped down behind the seat when the seat has been raised (which usually happens), it's going to bear the full weight of the seat—plus the weight of the passenger—when the seat drops back into position.



Next time you climb into the passenger seat of a Jeep which carries an AMP CIRC-0, check the power cable before you sit down. Make it around so it doesn't get pinched under seat frame and wheel well.

Without a power cable—no power. Without power—no real pinch.

# JOE'S DOPE

The SCHEDULE  
of MAINTENANCE

AND NOW, LADIES AND GENTLEMEN, WHEN I  
FLASH THE QUESTION, YOU BEGIN  
TALKING... THE IDEA IS TO FINISH  
BEFORE THE BELL!

**PLAY BEARING!**  
THE 1 & SHOW

SO, I SAID TO HIM,  
FOR A SECOND SCHEDULE  
MECHANIC... I AM NOT  
RESPONSIBLE FOR  
THE MAINTENANCE.

**QUIET!**

DO NOT CLIMB  
THE LOBBY ROOM.



WE'LL REALLY GET INTO YOUR MAINTENANCE ALLOCATION CHART (APPENDIX E OF YOUR -47 OR -33 TR). THE TR TELL'S YOU WHAT YOU CAN DO AND CHAPTER 3 OF YOUR TR TELL'S YOU HOW YOU DO IT!



HOW DO YOU START WORKING ... INSURING THE TOOL

**SERVICE**

NEED TO CLEAN TO PREVENT ADD ON BIRD FEED AND SOIL



**INSPECT**

MAKE SURE IT'S WORKING CHECK ANY PART OF TOOL!

**ADJUST**



REGULATE THROUGHOUT TO PREVENT BREAKDOWN



**REPAIR**

ADJUST REPLACE PARTS, STRAIGHTEN, MAKE IT WORK AGAIN ...

**TEST**

CHECK WITH GAUGE WRENCH, ETC.

**REPLACE**



**THE HINDON**

STRAINER, BRUSHES, WRENCHES OR SCREWDRIVERS

**DO THIS**

BE SURE TO GET EQUIPMENT CHECKED REGULARLY

YOU'LL HAVE TO CHECK EVERY ONE OF THEM TO MAKE SURE!

REPLACE BRUSHES WHEN WEAR OCCURS!

DON'T GET MORE THAN 10 MINUTES WITHOUT OILING YOUR EQUIPMENT. OIL TO PREVENT ... AND DON'T FORGET TO OIL THE TOOLS YOU'RE USING!

# JOE'S Dope Sheet



Each Echelon must  
do its stuff  
To keep gear right  
up to snuff.  
The maintenance  
you give,  
May decide if you  
live.  
If the going  
starts to get rough!

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

## FIELD MAINTENANCE

IS OPERATED MOST OF THE TIME BY THE TECHNICAL SERVICES (COMMUNICATIONS ENGINEER, QUARTERMASTER, ETC.)

THIRD  
ECHO

FOURTH  
ECHO

THIRD  
ECHO

WE HAVE A BUILT-IN UNIT  
HERE AT THIS POINT, WHICH  
CAN BE THE SUPPORT ...

... THAT THE BOMBING UNIT ...

THEY REPAIR  
COMPONENTS AND ASSEMBLIES  
—HELP LOWER ECHOS,  
PROVIDE MAJOR REPAIR WORK  
AND MAINTENANCE (AS OPPOSED  
TO A KIND OF  
LONG-TERMINATION)

"THE FOUR ECHOS ARE IN LINE IN THIS  
ORGANIZATION, WITH ITS HEADQUARTERS AT THE  
TOP. THE ECHO IS IN FRONT, FOLLOWING BEHIND THE  
HEAD OF THE BOMBING UNIT AND THE BOMBING UNIT ..."

FOURTH  
ECHO

ALSO ARE PERMANENT SHOPS OR DEPT.—MOBILE...  
AND HAVE STILL MORE WORK. THEY SUPPORT  
LOWER ECHOS AND DO MAINTENANCE. THEY  
SUPPORT MAJOR REPAIR WORK TO LOWER  
ECHOS. MAIN DUTY IS TO REPAIR  
ASSEMBLIES, COMPONENTS AND SEND  
ITEMS FOR RETURN TO OTHER  
UNITS OR TO MAINTAIN  
FLIGHT STOCK.

# DEPOT MAINTENANCE... IS FIFTH ECHELON.



NEVER TO BE MADE VISIBLE... DEPOT BEING  
WORLD'S LARGEST. SEE PRODUCTION LINE BEHIND, FROM LEFT.

SO, YOU SEE,  
MAINTENANCE IS  
EVERYBODY'S BUSINESS



... FROM THE MAN WHO  
LEADS THE MOVEMENT—



TO THE MAN WHO  
SPRINKLES IT... THE  
RESPONSIBILITY...







## QUESTION AND ANSWER DEPARTMENT



### DAMAGED TOOLS

Dear Staff Writer,

We had a few surprises when we uncramped some tools in the assembly building at our Nike site. We got them on replacement.

The threads on a grease gun extension were chewed up and the blade on a cross up screwdriver was all dented.

What gives?

W.D.L.R.

Dear W.D.L.R.,

How come. That's one of those deals that shouldn't happen but did. And the tool service is this one. Refuse to waste or work down the situation and that's for you.

Tell you what I'd do—send the tools back to my support unit. AR 111-15 gives the support people the stamp on accepting the tools back.

Now . . . thinking out you have had tools after you've started to use them is a different story. When this happens, you want to fill off a UER (DA Form 488) right quick. AR 700-39 gives the go-ahead on sending in the UER.

Just make sure your UER mentions the shipping order number you got the tools under, the name of your support unit and the name of your outfit. And, of course, the UER goes to the tool service responsible for the tool.



W.D.L.R.

Staff Writer

## ROUGH-RUN RUCKUS



Dear Half-Mast,

After my truck has run awhile at normal operating temperature and at no greater speed than 15 MPH, it won't run smoothly at speeds less than 10 MPH. It runs something like vapor-lock, I think. What do you recommend?

T. A.

Dear S. A.,

An engine that runs rough when you're idling or at low speeds normally calls for a general check-up on pinpoint the cause. A tune-up's the way to locate your trouble, and it may put your engine in the pink without even releasing a wrench.

Instead of vapor-lock, rough running's more likely to be caused by a stuck or dirty carburetor venturi metering valve (Emulsion valve). If you find, after cleaning, that your valve, that the engine will run rough, there is could be a defective carburetor, or a vacuum leak either in the manifold or the vacuum side of the fuel pump.

If the carburetor's defective, tune it in and drive a new one. If it's a vacuum leak, check it out like your TM says.

## SEAT SCOOP

Half-Mast

Dear Half-Mast,

In TM 2-1400-200-000 (Oct 78) the parts list for the ACC, APC and AM-4.7 motor carrier, on page 72 is listed Seat, single, vehicular Commander's and driver's, cushioned, any order P/N 21-03-740-0000. But every time I order it, I get the seat without the cushions. What's the story?

SP3 W. E. D.

Dear Specialist W. E. D.,

Some of our book worms have been playing the numbers and names game. The present nomenclature in the TM isn't the right scoop. P/N 21-03-740-0000 will get you the seat pan only.

The way it was supposed to read was Pan, commander's and driver's seat, ... P/N 21-03-740-0000 without the cushion.

Right now, you'll have to order the cushions separately by asking for Cushion, seat, P/N 21-03-732-0001. In other words put both down one item's book to book to get a complete seat assembly.

21-03-740-0000  
21-03-732-0001  
21-03-0000

21-03-740-0000  
FOR SEAT PAN

21-03-732-0001  
FOR CUSHION



Half-Mast

## HOW TO GET THE MOST FROM YOUR USE YOUR UER



Dear Half-Mast,

Some of our new batteries are found to be so inflated they're useless when installed. Because vents were not properly sealed to prevent air from entering the battery during shipment and storage.

Instead of sealing the vents with seals or cellulose tape, why don't they seal each battery in a vacuum package so it'll arrive in usable condition?

Mr. M. J. W.

Dear Mr. M. J. W.,

There's just one thing wrong with your idea. An effective vacuum container might cost more than the battery.

Doesn't any vehicle that wants a free battery guarantee . . . even if it costs double. But it was to end up this kind of bats in Uncle's pocket than UER's were favored.

To make sure those batteries are shipped with vents properly sealed, that's a UER, like it says in AR 700-10, every time a inflated battery shows up.

## UNFAIR WEAR AND TEAR



Dear Half-Mast,

As you know, there's a lot of maintenance and work-detail jobs that play rough with your clothes. Like working with batteries (even with an apron), carrying a roof and stuff like that.

Is there any way we can get our uniforms replaced without cost when we ruin them doing this kind of work?

I go along with the "fair-wear-and-tear" decision, but when we ruin a pair of fatigues working with us there's nothing "fair" about this wear.

Sgt. B. C.

Dear Sgt. B. C.,

Your answer to this problem lies in AR 700-100-1 (with Change 1.) Para 15, page 18 of Change 1 gives the info on getting free replacement of clothing damaged beyond normal wear and tear while performing official duties.

The big thing here, though, is that you have to be sure the damage was not caused by any recklessness or neglect on your part. Each case is decided according to the specific details involved.



## SAND RIFLE STOCKS? NO!



Dear Half-Mast,

The question has been raised as to whether we can sand rifle stocks. I've always thought that it shouldn't be done . . . what do you say?

Sgt E. W. C.

Dear Sgt. W. C.,

Well, first off . . . there are no publications that specifically say you can't sand stocks or handguards, but it isn't a good idea and here's why.

In order to do the job right, you first have to get rid of the blasted oil by means of a vapor degreaser which only higher solvents do. If sanding's done without removing the oil, the grains will rub and cause the surface to become fuzzy.

Then the question comes up as to what comes should the stocks be sanded. The term "light sanding" may mean one thing to one man and another thing to another man, and as a result you may end up with many unserviceable stocks.



If you have different individuals sanding the stocks and handguards, eventually there'll be a difference in color. To get a stock you've got to have a controlled mixture of non-grain raising dye and heated oil. This requires good "know-how" and the solvents are not usually available to the using unit.

But all this doesn't mean the stocks can't be sanded if the word comes down to sand 'em. If your local command wants 'em sanded, chances are provisions will be made to see that a good job is done.

So that's the story.

Half-Mast

## SWIFT SHIFT

Dear Wolf-Muller,

LD 9-2110-286-18 (24 Feb 19) asks a assembly disassembly and servicing for the steering angle drive shaft assembly on the M113 and M113 (these models that aren't required by the TM or the old LD 9-206).

We disassembled this unit on one vehicle and found that servicing wasn't needed. Then, because this job used a lot of our mechanic's time and a stack of (junk) parts, we asked our Ordnance support to let us ship disassembly of this unit to our other units. It is necessary to take this unit apart assembly like the LD says?

CWO G. P.



Dear CWO G. P.,

Like it says in the last price, Sir, the LD is the best on servicing your equipment. It says is about of anything you find in the TM or any other pub.

But on this point of disassembling the steering angle drive shaft assembly, there's been a shift in thinking. The disassembly is no longer required. Instead, lubing is to be done by using adapters, lubricating gear—EOM 4050-187-9111—in the lubrication kit—EOM 4050-187-9111—that's a part of your No. 1 account and us.

LD 9-2060-286-18 is supposed to be revised soon to drop the disassembly and exchange the lubrication interval for those universal and slip joints to quarterly. So . . . until it arrives . . . you're doing right by getting approval from your Ordnance support to just up-servicing the unit and it's better than those number' us.

This'll save all that dough you'd have had to put into new universal joint parts.

Wolf-Muller



You know you don't prime something just to make it look pretty—quite the opposite.

And there are two things that make a prime job durable. The thickness of the film ("prime system") is its down-side mainly and the adhesion—how tight it sticks.

So what's your best bet for getting a thick, tight prime job that'll stick and last and protect your gear for the longest possible time?

Use the proper primers. Prime doesn't look so nice, but it's not designed to. It's designed to do whatever both the base material and the final paint coat. It fits in there like the man in a sand-wich and sticks tighter to a grain window.

Also it has "emphatic primer adhesion"—it's the stuff, so the stuff, so the stuff, so the stuff. It helps you build up a good thick protective film. It doesn't draw sides over the sharp edges of the job, and it smooths up any minor irregularities, nicks and scratches, particularly if you sand your prime coat before putting on the final coat.



And perhaps the most important thing about the primers specified for military equipment, they contain chromates and other compounds which block corrosion. These pigments react chemically with the base metal and form a corrosion barrier tight to the metal surface.

Bottom line, if you don't prime, your prime job won't last so long, and that means your equipment can corrode, and can kill you.

Before you start a prime job look up the job-sheet'll give you all the instructions of the prime business. Here are the publications that will help you be a primmer, not just a guy who can change color.

FOR	NO.
Painting Instructions for Field Use	TM 9-287
Paint Systems	TM 9-288 (1-5)
Painting Equipment	TM 9-289
Painting of Structures by Air Transport	TM 9-290 (2-1)
Standard Painting Lettering and Marking of Military Equipment	TM 9-291
Painting of Tanks	TM 9-292
Painting Aircraft, Aircraft and Helicopters	TM 9-293 (1-1)
Painting Vehicles and Tractors, Trucks and Buses	TM 9-294
Marking and Painting of Personnel Equipment (General)	TM 9-295 (1-1)
Marking and Painting of Personnel Equipment (Special)	TM 9-296 (1-1)
General List of Paint Systems	TM 9-297 (1-1)
Paints and Coatings Used by Transportation Corps	TM 9-298
Color and Marking of Military and Transport	TM 9-299 (1-1)
Painting and Marking of Army Aircraft	TM 9-300 (1-1)

Before you prime a piece of equipment, write down somewhere a copy of all the markings on the equipment. After the prime has dried, be sure to re-mark like it was before.

## ARMY AIRCRAFT

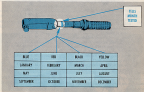


### TORQUE WRENCHES UP TO DATE

Now, I know, it's easy to overlook the color code on your torque wrenches and let 'em slip past their checking date. And since you almost always get your wrench back right away when it's checked, it's a little hard to get into a big event to have 'em checked promptly every time they come due.

But, you really oughta—because one defective wrench can get you into so damned much trouble that it outweighs all the good work you've done for years with accurate wrenches.

So the smart fella's run their wrenches over to Field Maintenance for checking and recording a date before they come due, not a little after.



## SEMINOLE (L-23) CENTER LIGHT



Dear Connie,

As you know, the landing lights on our Seminoles have to be turned off immediately on landing to prevent catching down the plastic assemblies covers in the leading edge of the wing.

Thus we have to flick on first one then the other briefly for landing. This is not only a nuisance, it alerts the pilot when he may be having more than enough to do landing his way around a strange airport.

Recently the Captain and collision light was put on top of the vertical stabilizer of the aircraft. We felt that this revolving beacon illuminated the need for the red landing light in the nose.

With my CEO's permission, we have replaced red landing light with an L-23 landing light, which is in all respects the same bulb, except white instead of red.

We have adjusted this light to give us good coverage of the runway when on the ground, and find that it is now a pleasure to feel the ship at night. Also, the additional white light forward is useful in our approach and landing.

L. G. F.



Dear L. G. F.,

It sounds like an excellent idea, particularly because of those plastic debris near the wing leading. But you and your skipper are running right on the ragged edge of trouble for unorthodox modifications. 49 CFR 25.117 (f) para 17) para 1 (1) lets you remove the red light. You're OK there, because you can see your ole oleighr light re standard white 49 does—but how do you explain putting the white bulb out?

But if you and all the other L-23 people who want that white light will get me LEO's (LMA Form 100) on it, maybe the Transportation Corps will make it legal for everybody. So grab your pencil...Man!



## SUPER SNIFFER FOR SAFETY

As you've learned many times before, always use full up with perfect procedure, and that means that everyone on board can be killed, either directly by the gas or indirectly by a crash if the pilot should be overcome.

So come over a super sniffer for your safety. This gizmo is called a Kit, detector, P/N 6661-281-8014. It's listed as my unit that has an Organizational Maintenance card no. (Army Aircraft), either as A supplemental (P/N 5160-521-0940, set B) (P/N 5160-521-0070) or as C (P/N 5160-521-0071).



You requisition the kit from your Detachment supply Officer. You also get two indicator tubes, P/N 6661-276-7145. The kit can be used either on the ground or in flight to check the atmosphere in cabins and cockpits.

But, play it smart, and don't rely on the kit as the means that you check off on your inspection of the exhaust systems and multiple venting or heating systems. This is an area where you can't afford to be even a little bit careless.

## SYSTEM MARKING TAPES

Dear Half-Mast,

The color code marking tapes on the different systems of our aircraft are getting in bad pretty every day and even, faded and peeling.

But nobody seems to know how to get more. Can you clear me?

SFC J. S. T.

Dear SFC E. L. T.,

Here are the tapes you want are new to the supply system, so new that they are not in your DDP's, and they don't have Federal Stock Numbers assigned to 'em.

But ask your Air Tech Supply or requisition from Ft. Lewis, TMC, and get your

P/N 6661-1 ..... for Fuel Lines  
P/N 6661-1 ..... for Inertial Lines  
P/N 6661-1 ..... for Hydraulic Lines  
P/N 6661-1 ..... for Instrument Lines  
P/N 6661-1 ..... for Fire Protection Lines  
P/N 6661-1 ..... for Electrical Cables



You see how it works, the P/Ns & P/Ns are the same, the last letter or letters in the designations show what system it's for.

You'll get a ten-foot length, which is about all you'll use before it starts out.

Half-Mast

# FUELING RULINGS



We've all seen those fueling procedures before, but let's run through 'em once more, just for safety's sake.

## DO

Fuel only in the open air.



Wait until the propeller or rotor has completely stopped.

Check for proper grade and quantity of fuel, and be sure the servicing equipment filtering system is clean and in proper working order.

Make ground-to-airing connections before opening tanks.



Remember that metal ground wires or dry contacts are not conductors. Be sure your aircraft is really grounded to the earth, or an approved grounding rod.



Stop fueling at once if any danger threatens.

Report any accidents, spills or mistakes immediately.

Keep a watch on the nozzle all the time.

Change nozzle at once if you spill fuel on you.

## DO NOT

Fuel in the hangar or any enclosed place.

Use fuel to fuel with engine running.

Take it for granted that the service crew is putting the proper fuel into your aircraft. Be sure that this is so.



Ever fuel an experimental aircraft.

Take any risk or chance of over a five-minute flight.

Try to get away with an amount of fuel.

Try to finish the workday, no matter how tired.



Copy home call that can fall into fuel tanks.

Copy home call that can fall into fuel tanks.

Smoke up, or drink or eat while fueling. No food other than SP-15.



## ROLL OUT THE DOLLY



A collapsed landing gear on an H-21 Starwing splits trouble in two ways. Besides ruining a valuable piece of machinery, there's the threat of at least three crew members to consider.

The safety angle comes into the picture when you remember that a collapsed gear leads to roll-overs, the moving blades hit the ground and... that's all the warts. The combination of the main rotor blades cracking at high RPM and an immovable object—like the ground—means anybody inside a quarter-mile from dark.

That's why you've got to give a lot of credit to the guys in the Clark Transportation Company at Bob Long McKeen, for singing "Roll Out the Barrel." When a hard landing by one of their Starwings collapsed its main gear, quick thinking rolled the barrel out on the nosewheel, also carried them on and—no more stress on top to cushion the touch-down. The result was no roll over and no further damage.



Your Starwing could run from this time, but with new wheels. Instead of playing the local lubrication drill by ear, there's a full sized drawing available on a dolly-eye model. It makes a handy mobile emergency landing gear. Your copy of the shoe made, with the full arrangement, is waiting for you at the song writer's address:

R. S. Clark Transportation  
Military Council  
14th & Spruce Streets  
St. Louis 3, Missouri  
RTB: 1764-44-01



## TAIL SHAFT PAINT

Dear Alfalfa King:

How come the tail rotor drive shafts on our Sikorsk (H-19s) aren't painted with enamel or lacquer or sprayable druggable rust prevention? Some like you'd do a lot for some keeping 'em bright.

Alfred E. D. B.

A LIGHT COAT OF  
ENAMEL (OR THE  
EPOXY-BASED SHAFT  
WAX, PREFERRED)  
WOULD BE BETTER  
TO PROTECT THE  
DRIVE SHAFTS FROM  
RUST. BUT BE CAREFUL  
NOT TO OVERDO IT.



Dear Sergeant E. D. B.,

Painted tail rotor drive shafts might stay bright longer, but there are several reasons why they need to be bare metal.

First, it's almost impossible to paint a shaft even enough that it won't rub off. It's been tried. (Remember, that shaft runs at 1750 RPM.)

Next, the shaft bearings are such a close fit that you'd have to remove the paint to slip one off the shaft when it needed replacement.

And then too, the shaft has a required Magnaflex inspection every so often, and all the paint would have to be stripped for that.

And in general, you're more likely to see any developing cracks or flaws on the unpainted shaft.

So, between the conditions playing on the shaft's, and a tight coat of grease, you can prevent rusting, and at the same time have a safe smooth-running shaft.

## FINGER TIGHT ONLY!



PLEASE, DON'T  
TIGHTEN THE NUTS  
TOO TIGHT!



Much trouble, much work being caused these days, besides much money going down the drain. Too many, for too many Sikorsk (H-19) replacement assemblies, P/N 1500-125-5051, and lock assembly, or subplate, P/N 1500-124-5050 showing up in field maintenance facilities because the bolts were too tight.

When the book says "finger tight" on these bolts, that's exactly what it means. Please don't put a wrench on 'em.

## CABLES CONFUSED?

When you aircraft-mechanics remove radio equipment to get an airframe work, please to take precautions. Tie or put colored tape on the connections when you remove the radio boxes. Then you'll be plumb sure that you get the correct cable into the right receptacle when you get 'em back. Could save time, money and trouble.



NO ON THE  
CABLE  
TIE OR  
COLORING



## SWEAT IT OUT

"It's not the heat, it's the FIVE-8°C humidity!" Don't stop to think that the same humidity that makes you an miserable can also make your paint job miserable!



When the humidity is too high your drops will bleed, or they will flake, white spots all over the place. And if you're repainting a metal surface, say maybe a new elevator, the primer and the finish coats just won't bond properly to the metal.

So sweat it out for a while. The humid weather can't last forever, even if you think it already has. Wait for a clear-day day to do your painting. Better to have a slip fly for a few days with a silver elevator than to spend much time, energy and gallons pushing up a peeling paint job.

Generally, if the day is so humid you feel sticky and sloppy, it's too wet to blow—*or*, paint, that is.

# The Scoop



to conduct the investigation of cases of "Obstruction of Justice."

## PROSECUTION

**RE SCOTT** will be being indicted on 11 counts of conspiracy to obstruct justice, including the cover-up of the assassination of Dr. Martin Luther King, Jr. **RE SCOTT** will be indicted on 11 counts of conspiracy to obstruct justice, including the cover-up of the assassination of Dr. Martin Luther King, Jr.

## DEFENSE POSITION

Attorney General Ramsey Clark will file a motion to dismiss the charges against **RE SCOTT** on the grounds that the government has failed to prove its case. **RE SCOTT** will be indicted on 11 counts of conspiracy to obstruct justice, including the cover-up of the assassination of Dr. Martin Luther King, Jr.

## PROSECUTION'S STORY

The government will allege that **RE SCOTT** conspired with other individuals to obstruct justice in the case of Dr. King's assassination. **RE SCOTT** will be indicted on 11 counts of conspiracy to obstruct justice, including the cover-up of the assassination of Dr. Martin Luther King, Jr.

## DEFENSE

The defense will argue that **RE SCOTT** was not involved in the cover-up of the assassination of Dr. King. **RE SCOTT** will be indicted on 11 counts of conspiracy to obstruct justice, including the cover-up of the assassination of Dr. Martin Luther King, Jr.

## THE COURT'S STORY

The court will hear the evidence from both sides and determine if there is sufficient evidence to proceed to trial. **RE SCOTT** will be indicted on 11 counts of conspiracy to obstruct justice, including the cover-up of the assassination of Dr. Martin Luther King, Jr.

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## THOSE FORKLIFTS

Yeah, you're a bigger 'ol' fella' than the crowd you mean than forklifts. You all of a sudden suspect the strength of a forklift and the reach of an average spanner.

This goes, too, whether you belong a forklift or gas-powered vehicle whether it'll cost 1,500 pounds or three tons, and whether it goes by the name of Clark, Yale or Terex, Toyomat, Service Crane, or what.

But, strength like this needs takes' care of. Vitamin maybe won't help, but avoid light exercise with . . . the lifting and strapping and stacking . . . and, well, you get the idea.

There are all kinds and shapes of forklifts—use for every kind of operation. TM 10-14 15, March 1956, gives the hardware on some 175 different ones. Get a copy of this for details on your vehicles TM, LO, 1956, performance data, maintenance, etc. Also get TM 10-14 14-1 (Jan 54) which gives you details on all the attachments for forklifts.



### Outside of Vehicle

**SHIELD APPEARING**—Storage for 5-6 ft. lift, low-profile, forward. It easily forms ladder body with.

**HEADS**—for working low, raised, shield, control side.

**WHEELS**—lifting, broken, shielded enough to block operator vision, broken from, raised.

**FORK ATTACHMENT**—for loading, not do several, unless shield, using eye block level 50%.

**WHEEL ATTACHMENT**—for low base.



**FORK ATTACHMENT**—for, low, raised, into gas work, raised.

**SEE LIGHT**—for working, low, raised, shielded, attached without.

**WHEELS**—a pair, raised, low, low, raised, and light.

**FORK ATTACHMENT**—for, low, raised, shielded, attached without, low, low.

**WHEEL ATTACHMENT**—for, low, raised, not do several, unless shield, using eye block level 50%.

**WHEEL ATTACHMENT**—for, low, raised, not do several, unless shield, using eye block level 50%.

## GAS & ELECTRIC MODELS



But, all models, gas or electric, with hydraulic or mechanical lifts, etc., are really strong under the skin. That's why this one "skin yourself" will just show you on the whole lot. Especially if you'll keep your eye peeled for serious injury that apply especially to your equipment. Okay?

Now, you'll notice that some of the deficiencies are in blue type. They are the serious deficiencies—the kind that were on your rig before, or any it sold, or made it real unsafe to operate. They have to be fixed pronto.

But don't ignore those minor deficiencies. They're the juvenile deficiencies of preventive maintenance—the kind that gang up and do a mugging job on your lift's and your own record if you don't squish 'em while they're young.

And don't overlook those BWO's. All 1948, Appendix IV, says you get a major gig for an BWO on the "correct repair list" that's not been finished.



A FORK, OR IT'S NOT A FORK!



## Operator's Compartment

**FUEL, AIR/OIL & PNEUM.**—Moving, adjustable levers, turn out (left) out (right) lever 10, 20, 20 (12). Fuel/Air/Oil, 20 (10) 170 and 20 (1) with lock. Interlock lever 20 and 20 (10) 20-20 should be in Departmental Equipment File 20 (10) 20.

**WASH WATER**—Access by, low washed, dry, closed.

**TURNING DEVICE SWAY LEVER**—**Sway**, lever, low, low, low, moving.

**LEFT CONTROL LEVER**—**Sway**, lever, low, low, moving.

**WORK OR DRIVE**—**Not operating**, lever, lever.

**LEFT CONTROL LEVER**—**Sway**, lever, low, low, moving.

**CLUTCH PEG**—**Sway**, lever, low, low, moving.

**TURNING HAND WHEEL**—**Sway**, lever, low, low, moving.

**TURNING DEVICE SWAY LEVER**—**Sway**, lever, low, low, moving.

**ACCELERATOR PEG**—**Sway**, lever, low, low, moving.

**STARTER SWITCH OR SWITCH**—**Not working**, lever, lever.

**WASH PEG**—**Sway**, lever, low, low, moving.



**BRAKE MASTER CYLINDER**—**Sway**, lever, low, low, moving.



**TURNABLE (T)**—**Sway**, lever, low, low, moving.



**SELF-LOCK BRAKE**, lever, lever.



## Gas Models Only



**BE PRESSURE (GAS)—**Low sealed, dry, checked (check valve's closed for correct pressure of life and at normal operating speed.)

**TEMPERATURE GAGE—**Unsealed, dry, checked (check valve's right (closed) flow pre-set (normal) working pressure and temperature marks normal operating point of between 100-160 degrees.)

**EXHAUST VALVE—**Low, broken.

**ENGINE—**Low sealed, dry, checked (check engine light (change reading—max 17 amps—for a short time after starting engine (light profile change at normal operating speed.)

**DOOR—**Handle missing, not operating, low.

**WIND DOORFL—**Handle, not operating, low.

## Electric Models Only



**IGNITION SWITCH—**Broken, not working.

**SPEED CONTROL LEVER—**Not working.



**DIRECTIONAL CONTROL LEVER—**Check, low, low, fuel missing.

**OPERATOR'S LANTY (SEE BRASS) (Mechanical)—**Not working (handle checked out and when operator's out of seat).



**SOUTHWEST FUEL (Mechanical)—**Not working (improper linkage adjustment).



**LANTY PEDAL OR FLEPCHER—**Not working.

**FLEPCHER-FUEL PUMPING AND SERVICE BRAKE (pedal)—**Service's hold light, improper adjustment.

## Front of Vehicle

**WIPER ARM/BLADE**—Inspect, clean blade, wick.

**CRACKER COVER AND RACKING CLANDS**—No leaks, wear and glass loss.

**CRACKER OIL**—Check oil level at full crank down—**Overcrank** means, stop, dry, refill, glass broken, painted.

**LIFT FULCRUM**—**Insure**ly mounted, bushes on lift cylinders, wear, flat P.A. or repair, load more than rated in O.V.S.S., if springs weak, down, bushes need replacing.

**CRACKER**—Insure, bushes, lift bars, rollers and their coating, wear, light springs damaged, out of alignment.

**WIPER/CRACKER**—**Insure**ly mounted, bushes on lift cylinder, price wear, flat blades, cracked lift cylinder.

**WIPER**—Arm, holding pin, spring.

**AIR PRESS**—Hydraulic system—insure valve by pump, piston and pump. Check TM 10-100 with Chapter 4—Air 10-100, 10 page 100.

**OIL LEAKS**—Hydraulic system—check lift and lift cylinder, piston. See TM 10-100.

**LIFT**—Hydraulic—operator wear, broken glass lift, cracks, wick slip, wrong adjustment.

**WIPER**—Mechanical—operator wear, broken glass lift, cracks, wick slip, wrong adjustment.



## Underneath Vehicle



**SPRINGS**—Check wear, look for wear, loose clips, loose, U-bolts, hangers, shocks or wick.



**STEERING MECHANISM**—Inspect, insure, properly adjusted. Check wear, cracks, straight, loose, wear, and loose tie bars, wear. Check tire level.



**DRIVE ENGINES**—Body wear, bearings, bearings and bushing wear.



**DRIVE AXLE**—Wear, wet hole dry, checked that also operated.

## Gasoline Models Only

**TRANSMISSION**—General, weekly, body hole. Check for leakage, mounting, look in wick, get into, power take-off lower, control linkage, loss, looseness.

**FUEL TANK**—Fuel leaks, wick, insure, mounted, broken or filler neck, wick, wick, dry, cap not properly positioned, wick cap using loose, wick cap may check. See level too high (check in at least 2 inches from top of tank).



**CYCLE HEAD AND VALVE**—Locked, one position or water-tight. (Springs used by engine and timing cover used by dies.)

**STARTING MOTOR**—In usual position, dies.

**GENERATOR, STARTING MOTOR, LIGHTS**—Lamps, linkage every other, with connection from dies.

**FAN BELT**—Locked, *loosely* tamped or disabled. (Check vehicle's *Philosophy*.)



**FUEL PUMP**—Looks top performance, for die. (New models with fuel pump, timing, linkage. Check engine level for vehicle's *Philosophy*.)

**AIR COMPRESSOR**—Vehicle valve, pressure and level—compressor hose, *loosely* about air pressure, but decrease or vehicle valve, pressure hose, and working right compressor, water, air and oil from hose, body.

**DRIVE SHAFT AND SHAFTS**—Dies, hose, tamped, worn, *Philosophy* and belt hose. (See vehicle's *Philosophy*.)

## UNUSUAL ENGINE NOISES

Any unusual noises coming from under the hood should make you suspicious as to an odd model. Report your guesses to your mechanic. There's a couple symptoms to consider you might meet up with.

**ENGINE IDEAS TOO FAST OR SLOW**—Compressor needs adjusting.

**WHEEL OR WHEELS**—Water riding, or maybe quick plug-and-stroke or pain-in-the-neck.



## ENGINE DIAGNOSIS

**EXHAUST**—Check at starting, in a *Philosophy* position.

**BATTERY**—Locked, looks like *Philosophy*. (Check hose, fuel, linkage, air intake, water level for *Philosophy* used by engine of *Philosophy*.)

**STARTING MOTOR**—Loose, tamped, belt-hose used, connected.



**WATER PUMP, FUEL PUMP**—Lamps, oil, fuel, hose, water, hose, air of fuel.

**GENERATOR MOTOR**—Of some electrical nature. (See *Philosophy*.) (Check engine level for *Philosophy*.)

**MAGNETO**—Compressor, locked, working, belt is not tamped.

**STARTING MOTOR, LOCK, FUEL**—Fuel is not tamped.

## COMPARTMENT Models Only

**STARTER ON**—Level for hose (or lower than it, but below top fuel tank). (See *Philosophy*.) (Check hose, fuel, linkage, air intake, water level for *Philosophy*.)

**FUEL AND WATER**—Locked, dies, hose.

**WATER**—Check at starting, in a *Philosophy* position. (See *Philosophy*.)



**STARTER MOTOR**—Locked, hose, dies.

**GENERATOR**—Lamps, hose, linkage, air intake, water level, fuel, linkage, air intake, water level for *Philosophy*.)

**AIR COMPRESSOR**—Lamps, hose, linkage, air intake, water level, fuel, linkage, air intake, water level for *Philosophy*.)



**STARTER**—Lamps, hose, dies.

**GENERATOR MOTOR**—Locked, hose, linkage, air intake, water level, fuel, linkage, air intake, water level for *Philosophy*.)

**FUEL PUMP**—Lamps, hose, hose, water, fuel, hose, air of fuel.



## Electric Models Only



**BATTERY**—There are two main kinds of batteries in models—the 18 and 24 cell acid type and the 20 cell nickel-cadmium type. Beyond knowing this, however, the operator has little business under the hood of an electric die.

**STARTER**—Locked, ability, water level, linkage, dies, not tamped.

**STARTER**—Lamps, hose, linkage, air intake, water level, fuel, linkage, air intake, water level for *Philosophy*.)

# YOUR BUFFER-TYPE PEDESTALS

They've been added to your Miller elevator system to give the leveling pedestals a helping hand. These buffer pedestals were designed to make sure your elevator remains just right when it's carrying a 10,000-lb payload.

Now, there's no need to keep "fine-tuning" their jobs. First off, you raise the buffer cap to the top of the pedestal to be lined up with the pistons when the elevator's riding on the bottom.

The cap should touch the bottom of the elevator platform/guide when the platform is three inches—give or take 1/2 inch either way—above the base original leveling pedestals. This means that when you adjust the leveling pedestals you can then go ahead to adjust the buffer pedestals.



The angle of the piston on the buffer pedestal is 1 1/2° inch. So, you can now only have 1/2 inch leeway to play around with. And, it's well important that the piston sets are adjusted right.

You'll have about a 1-inch vertical adjustment in the threaded adjustment cap on the buffer piston rod. You never want to have less than 1/16 inch of thread engagement between the cap and the piston rod.

## HYDRAULIC SYSTEM

The buffer pedestal will take all the hydraulic fluids that are OK'd for use in the elevator. You want to keep it upright during filling so be sure that you get the proper fluid level.

To fill, you remove the two filler plugs and bring the fluid level even with the filler holes. You can use an oil spout gun to do the job. Then, replace the filler plugs.

## REGULAR PM

During your regular PM, check all nuts, bolts and air screws and make sure they're tight.

The grease fitting'll take a little oil every six months or so.

Typical is usually for hydraulic fluid leaks. First, give a gasket around the filler plug between the cylinder cap and the cylinder, and the packing too.

If it's one of the pedestals that's been checked out and sealed at the factory, it'll also have a plug in the base that would be a good place to check for hydraulic leaks.



## PEDESTAL ASSEMBLIES

The buffer pedestal assemblies ought to be disassembled, inspected and cleaned once a year. If you don't have the gradual to do the job, call in your support people. They'll check over the piston and cylinder liner for wear. You should have a clearance between .001 to .002 inch. If it goes a little more, that's okay. But, if the clearance is more than .002 inch—then you want to replace the piston or the liner, or both.

There's a list of parts that are likely to need replacement. You can get them through regular Engineer repair parts channels.

NO	ENGINEER PART NUMBER	DESCRIPTION
E02-02-001	441240 021226	Big. Wiper, Buffer
	441240 021224	St. Buffer, Buffer
	441240 021223	Buffer, 20 Top
	441240 021224	Buffer, Temp. Buffer
E02-04-002	441240 02122	Liner, Buffer Cylinder
	441240 02122	Piston, Buffer
0204-1002	441240 021220	Packing, 20 Top



# CONTRIBUTIONS

2000

THAT'S FOR THE L SERVICE!



## LOOK AHEAD

Dear Editor,

DD Form 317 is required to be on the vehicle as a reminder of the next L service. Yet there, with higher headquarters' permission, modified the "oil-changed" portion to read "oil change" ... requiring entry of the mileage subsequent oil change is due rather than when changed last. No manual arithmetic is required this way.

Maybe FM 9-28.10 doesn't require this last, since the oil change isn't always related with the L service, the 317 tells us when to do it according to the manual.

Capt. B. B. Grant  
APO 101  
NY, N. Y.



(Ed Note—I like your idea of entering out the manual arithmetic on when to make the next oil change. But FM 9-28.10 was intended to be flexible enough to allow local command decisions like this that make maintenance easier for everybody. The same thing could apply to equipment that's called according to hours instead of mileage.)

## LOCK YOUR PIN



Dear Editor,

Here's a fix we've worked out on our TH-18 HPC tractor to keep the down-hat pin in a locked position when we're raising a gun.

Until we added a cone pin to hold the lock in place, the weight of the gun forced the down-hat pin up and forced the lock to rotate. This puts a lot of movement on the upper half of the down hat and a couple of times the gun wobbled. We couldn't put the pin back in until we straightened out the upper half of the hat.

All you have to do is drill a 1/2-inch  $P_{10}$  die hole in the lock and slip a cone pin in. Bend back the end of the cone pin and your lock's locked in its place.

Training Center Maintenance Group  
Ft. Leonard Wood, Mo.



(Oh, by the way—be sure you drill the hole in the lock into position. Take it all and don't hold the cone pin. Better yet, make yourself a rotating clip.



from 1/2-inch welding rod—no you can use any 1/2-inch or 3/8-inch steel hanger bar that works. You can bend it like so, but you'll want a shop or a clip to do the job.



Dear Editor,

Generators are used for use in motor vehicles without pulleys. The auto mechanic puts on the right pulley when he installs the generator. No other instructions being given, he simply holds the pulley by hand, screws up the nut, figures it'll hold, then forgets it.

This is where we run into trouble with our Delco-Remy generators and why they end up in the rebuild shop.



**KEEP PULLEY NUT TORQUED  
TO 35-40 FOOT-POUNDS**

The pulley nut should have 21-40 foot-pounds of torque since it does two jobs. In addition to holding the pulley in position, it's the only means of locking the lower bearing race to the armature shaft.

When you torque the pulley nut the way it should be, the bearing shoulders on the armature, washers, and roller-ball upper pressure in the opposite side of the bearing. This holds the lower race to solid part of the armature shaft.

When the pulley nut loosens, the pull chain comes slowly through the keyway. With this slow pull, it doesn't take long for the keyway to get mangled. But, most important, the bearing seats on the shaft instead of turning within the lower race. This causes wear and allows the armature to drop and drag the field coil, ruining the coil.

To get the right torque and to make sure the pulley nut loosens, you want to wrap the T-bolt around the pulley, and grip it right when you screw up the nut. It'll give you the leverage you need and will save your generator headaches.

**J. C. Mathews  
St. Leonard Wood, Mo.**

*Old Man's Good Deal.* Looks like you've got a firm grip on the answer. Once you've got the right torque, make a point to check the pulley nut during your regular oil service. Another thing, check the possibility of the armature shaft turning within the lower race of the bearing if you ever your engine water-cooled. The grease in the bearing is extra heavy when it's cold and the lower and outer races may seize.

## Connie Rodd's BRIEFS



### *It's still good*

Don't go tearing away the O&M 7 144, O&M 304 571 for your MBP APC just because you got in the new 144 P-2008-300-200 129 (or 581—the 304 manual only supersedes Section II of the O&M 7. The word in Section I is still good—and you need it.

### *A bit non-fuse-ing*

Buy more... if Signalfix looked back your repulsion and says it can't supply you with those 4-amp fuses for your 144-Alex Interconnecting Junction Box—the one in the BC run—the year back with Onlines. The fuse, P&H 0700.380, MBP—shows up in O&M 7 144, 14 Section 2, dated April 1958.

### *Save the cow's too long!*

Some guys only think of vehicles, wagons and other mechanical equipment when they think of DA. For in 408 (Specialty try Equipment Report). You're missing a lot if you don't use a 100 to send in the dogs about rollers, protective clothing and other individual items if they're not doing the job they were made to do. AM 700-28 gives you the lowdown. Its change 1135-Aug 1958 tells you the latest rating for Quarter-master items.



### *Fire off repulsion*

Don't take a chance of having the M16 spring rifle pop-off accidentally when you open the breechlock on your M16A1 or M16A1C recoilless rifle. Instead, get rid of the trigger spring (7180-47) now in the 144 in favor of a heavier one. Tell your support unit it's in the supply system and can be had from Onlines under Spring (7004100, P&H 101 5-580-1091). The old spring is made from 318 in stock...the new one out of 815 in stock.

### *Relay this info*

You can help things along after your support unit supplies TB 5 58P) to the relay assemblies on your M16 Carbine or rifle. The Thunderside hole in each indicator connects out down an binding between the arm and shoulder bolt. When ever you have the relay covers off, it'll pop in (juggle the arm with your finger. If there's any binding, get some plug roller grease on the shoulder bolt. You can get the grease from Quarter-master under 104 P 110-071 8128.

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



*They Said It Couldn't Be Done*

**C & B  
INSPECTION  
TOMORROW**

THE FOLLOWING IS A LIST OF THE  
ITEMS TO BE INSPECTED  
BY THE INSPECTOR  
ON TOMORROW  
1. ALL EQUIPMENT  
2. ALL SUPPLIES  
3. ALL DOCUMENTS  
4. ALL RECORDS  
5. ALL PERSONNEL  
6. ALL FACILITIES  
7. ALL UTILITIES  
8. ALL SAFETY  
9. ALL SECURITY  
10. ALL COMPLIANCE



**BUT**



**DID IT!**