

Issue 98

**PS**

1980 Series

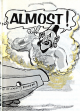
*At Large*  
**THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY**



YOUR USER...IT'S

MAGIC

ALMOST!



When you're got a gripe about your equipment... it's not designed right, it won't work like it ought to, it seems to have delicate parts, or it just won't do the job it's supposed to... what do you do?

You can't wave your Uncle's magic wand and all your troubles will vanish. Not quite. But you can do something that's almost that easy.

You use the UER, its proper name: DA Form 888, Un satisfactory Equipment Report.

The only "magic wand" you have is your pencil for filling in all the blanks on the UER that apply to your equipment that's unsatisfactory.

It's real important that you get down

the complete identification, model, manufacturer, serial number, manufacturer, contract number and conditions under which it's been operating.

Tell exactly what was wrong, find out a place or item if it'll help explain what happened. (You'll want to use AR 700-38 for the gump on exactly how to fill out the form.)

What do you do with it? Send it down to the chief of the technical service that provides your equipment. The address is in AR 700-38. (Don't command it says that you send it right to their headquarters, that's fine, but the main thing to remember is to get that UER in direct to the tech service chief.)

What'll he do with it?

He'll give it to his engineers and design men who developed your equipment. If the problem is real serious, he's a safety hazard or will damage your equipment, they'll get out a modification. Or they'll include a change when new equipment is designed or manufactured.

It's real important that you see the man who uses and maintains Army equipment close to the UER. It's the best way the technical service designers can learn how the equipment is working, how good their designs are and how good the manufacturer is.

Keep them informed with the UER. That's the way they can keep improving your equipment so you'll always have the world's best.



THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY

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IN THIS ISSUE

Page	Page
1	10
2	11
3	12
4	13
5	14
6	15
7	16
8	17
9	18
10	19
11	20
12	21
13	22
14	23
15	24
16	25
17	26
18	27
19	28
20	29
21	30
22	31
23	32
24	33
25	34
26	35
27	36
28	37
29	38
30	39
31	40
32	41
33	42
34	43
35	44
36	45
37	46
38	47
39	48
40	49
41	50
42	51
43	52
44	53
45	54
46	55
47	56
48	57
49	58
50	59
51	60
52	61
53	62
54	63
55	64
56	65
57	66
58	67
59	68
60	69
61	70
62	71
63	72
64	73
65	74
66	75
67	76
68	77
69	78
70	79
71	80
72	81
73	82
74	83
75	84
76	85
77	86
78	87
79	88
80	89
81	90
82	91
83	92
84	93
85	94
86	95
87	96
88	97
89	98
90	99
91	100

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# Wire Rope is Mulish

Like the old Army mule, wire rope will load away from design as numbers and you handle it right.

Handled wrong, wire rope can take one with a non-filing fork. Find up your rig never ways from bending, and see your operating costs sky high.

Whether you work it into a whole network of lines—the only case where you just reel it on a winch, well-laps wire rope is tough, durable and willing. Wire rope is also delicate, sensitive and dangerous when neglected or abused.

## ROPE STRENGTH AND WEARNESS

Standard construction in the lay is wire rope strength. By drawing the wires because they tend straight, wire rope picks up a load with more "give" than any single line of the same size. It's not based on stress and wind-on drums with little loss of load-bearing power.

Plus, this standard makeup also makes wire rope strong in case the lay is too weak. Even with careful handling, there's constant wear as the strands rub against each other while under load and the line bends over drums and sheaves.

Constant handling—forky loading and unloading, stopping spinning on drums, power pulling on loops, lack of lubrication—speeds up wear and kills cable long before its time.



# Mulish

## TIPS ON REEVING CABLE



Always wear leather-faced gloves when working on cable. Broken wire is incredibly sharp, and drums can be real slick weapons.

Check each drum as to see if you're truly in the right size for your cable, and drum no-load flange or corrugation from wear. Bending drums put a strain on cable. Undercut drums pinch it. Over-size drums flatten it. Flanged-up drums tear it. Corrugated drums grind it down.

The bigger the drum, the less bend and wear it puts on the wire rope than even size is. This is why recommended standards on drum diameter run up from 24 times the wire rope diameter. This is the



why applications rope should be thicker or stiffer than the manufacturer wanted.

Drums also need to be wide enough in the groove to let wire expand without binding or pinching. The free-running operation in the drum groove, you do, few cases with as follows:



Keep standard cable clear of other cables equipment that could catch the cable and cause it to bend.

When equipment is ready for working, use pay-off reel cable straight from the rolling mill or standard reel. When spinning cable from reel to drum, you need top-edge or bottom-bottom



will to avoid broken heads that ruin cable.



After a wire rope hookup has been secured, use a wire brush and cloth to clean cable before lubing it.

You lube wire rope with regular oil or light vas and reduce wearing friction between the steel wires that make up each cable. You go by the LO on your rig. You'll note that draglines, and other cables that work in dirt, use not



lubed. Lube oil can be brushed on, or applied by running the cable slowly through an oil bath.

Always clean and lube cables before you use it.

## OPERATION TIPS

Allow break-in time for new cable. Breakdown heavy loading and high speed operation doesn't give the cable time to work out kinks and take up slack in the rollers.

Keep cables straight and run. Slack cables will loop, and power pulling on loops will cause kinks that ruin cable. Kinked cable is weak, and will snap on shoves.



Lubricate by LO regularly but avoid over lube that will pick up-dirt. Dry, dry, lube cable prior to extra load on power equipment, wear out fast, and set up a safety hazard.

Breakdown heavy loading and high speed operation doesn't give the cable time to work out kinks and take up slack in the rollers.





Check drums, sheave and hook regularly. Binding, jerking, slipping or equipment puts extra strain on the cable.



Never unload cable suddenly. Sudden unload can pop the core, or "blowage" the cable so badly it can't be used.



Never overload cable. Overloads stretch cable, flatten it over drums, and collapse sheaves.



Never let cable cross itself on drums. Crossed up, uneven winding on drums—usually caused by back-balls—distorts wire on cable and jerky operation.

Never work cable on damaged sheaves. Replace bent, worn, wrong-size sheaves before they kill cable and threaten your rig.



Never abuse cable. Drilling markers or nails through cable damages sheaves and breaks the wire.



### CABLE IS "LIVE" WIRE

A whip-lashing cable can kill you, so protect yourself at all times when working with it.

Always keep clear of moving cable and winding drums.

Keep your rig when cable jolts, slips, or back up in any way—and may slip down until the trouble is corrected.

Inspect your cable regularly for broken wire and worn sections. When cable can't be salvaged by splicing, check TML 1-721 for directions.



Always check the drummers to be sure your cable is safely secured. Keep an eye on sheaves for loose bearings and check cable contact attack, brake and spooling drums to be sure the cable winds level on drum.



# Cable MASHIN'



How long does your steel cable stretch?

Next time you start a "winch" job you may not remember what your winch did last time you. It may have been used on a lightweight lift or pull, and in that case the cable may be loose around the drum, or it could have been pulled off the drum, and exposed to heat.



So you've got a heavy job coming up. The drum is heavier—a lot heavier—than last time, and the more wind of right cable will be needed to pull through those loose layers. After a year or so this old cable's a real safety hazard.

Before making any lift, it's always good winch' to see that your cable is covered with enough tension to give you a nice tight wind so your cable is wound just the instructions given in the TM for that piece of equipment.

A winch with a self-winder'll lay it on nice and even. If you're without the winder, take the time to struggle each wrap close and tight.

Even and  
to winder  
the lift...



Before doing any winch' or when tackle blocks are used, be sure everybody is clear. They've been known to wrap and slip a good 500 yards—real dangerous. Never take chances with any cable... start your winch' slow and say "tense cables" just as you wrap them.

Remember that proper stiling of these stands will hold off rust, and also, that proper drum wrapping is the key to long cable life. And do be careful when you're winch'.



## Connie Rodd's

"DON'T BE A DINKY DINK"



### Get the right timing

For you-come-which-ever-and-mechanic who's working and adjusting the 400E 800-hp engine with the word from TR-9-177 (8 Apr 69)—here's some advice.

Timing accuracy right for your type engine.

Forget abandonment procedure given in Section IV, para 11, and pictured in Fig 18 of this tech bulletin . . . which will show to install the rotor knock-back on the Titan fuel pump.

When you do an overhaul the fuel pump is up first: install the tie-rod, which comes with the timing kit, on the right side of the pump. Then look up your man in this tie-rod and follow



the tie-rod procedure covering in para 11 of the TB.

To keep this in mind when you're checking out the engine in those relative M1A2 and M1A3 light work, M20A1 runs 40%, M44A1 1500rpm (PM) and the M8A2 hi-speed tractor.

### Cap's right

Heading around with a 4-cyl 6746-cu-in wheeled vehicle? Then you'll want the gas-tank filler cap, 20M 28 20-141-0718, with the hand-operated vent valve. An 8000 put it down, so it's a star.

Most other trucks are still using the old cap (20M 28 20-141-0704); until they can be replaced to the new one.

The new cap with the hand-operated valve is the one you chose when fueling and to hot areas to avoid vapor lock.



## Smartphone

Supply may be loading your truck a lot of Lights, Machines, Christmas ornaments. **POW** 6120-776364 it which, as this glasses had a phony look 'bout it.

What you spotted wrong in a 80 ton that got you in backwards. The lens is white 'sard of black.

A bunch of these white-faced lights slipped into the system I marked with the latest **EMPCO**. No need to remove 'em 'cause the whiteboard's not supposed to affect the illuminating cyclotron ray. Besides, the hold-down make'll only break off if you pry it up.



Shouldn't be any more you see like this, as Christmas jumped on this course keep them lookin' like they need to... black side out.

## Specialist Saw

You can scratch one of the oil level checks you've been making on the hydraulic reservoir of your **MS** dump truck. Don't need 'em.

Whenever you read its other gauge, only the check that's fixed in case 14 of **LO BARON** (H Aug 17) is necessary. That's the one with the dump body down in level position. And the reading on the gauge should be at the tilted marker from the top. This is the line wood on it.



One of the readings used in the past ... with the dump body up on the safety beams ... could be dangerous. Specially if the control lever got left in **POWER-DOWN** instead of being shifted into **NEUTRAL**.

There's no need to make a check with the body up or all, just one check will do ... with the dump body down like the **SDays**.

## Round the jaw nut



The jaw nut which keeps the steering jack screw bending tight in the MK3 cups of your MS8 personal carrier or MK4 motor needs to be locked in at every Q-service adjustment.

Making sure it's good'n tight, will go a long way toward hitting the target. Loose when it's loose, your accuracy is reduced.

Once the nut locks off, the mechanism's inner mechanism has readjusted and realigned before it'll be on the loose.

One way to keep it in shape is to get your jaws on a self-locking nut that'll engage from both sides. Once you get a



lock nut like this, the jaw nut can be secured from supply or return. You'll need a No. 18-20MP-38 self-locking nut to do the job.

## Play-it-safe

The steel holding the dust screen leg supports into the bracket on upper-screening boxes of your MS4 SP Gun could stand a little locking up.

Secure the base of the leg running on the screening boxes has a loose fitting steel connection.

What you can do is take care of the

steel in the end by slipping a flat washer over the end (and center?) and over the hold-down pin, then put the end back into the bracket and get the whole washer steel down good'n snug so that it takes a pair of pliers (follow?) to turn 'em.

Washer, Flat, F44 1/2x1-1/2x1/8 (10311) might do the job up just fine. You may try any washer about 1/2 inch thick with an ID approx 1/2 inch and OD approx 1 1/2 inches.

When your SP's screen set up try to put as little weight as possible on the support when you swing around. You'll be needing the screen come a time the dust box know it flying sky high, correct the support with a little extra care.



## Relief for leaks



Oil will leak from the tubes of the rear, track tension and idler wheels and the compensating idler arms of your M48, M49C, M49A1 and M49A2, M49A3, M50A1 and M50A2 tanks, M10 HP gas, M10 HP burners, and M11 TRV's.

This leakage was supposed to be fixed up by application of M79C Oed G1-7100. It called for replacing the pipe plugs with tube fittings and use of G-1-A compound to insure a bond of oil.

Some, though, the tube fittings fitted in the M79C would let a hole mean overfill with grease and cause the tube ends to pop. So now a new tube fitting's going into the system to help stop the popping of the ends.

The latest word for the rest you want

FORMS, LIBRARY, PENDING, FORM, 1, 10, 100,  
100, 100, 100, 100, 100, 100, 100, 100,  
100, 100, 100, 100, 100, 100, 100, 100



If your vehicle had either M79C Oed G1-7100 (27 Aug 57) or M79C Oed G1-7100 (27 Jun 59) installed, all you'll need to do the job is the new fittings and bushings (PN 4750-11-7000) on opposite side of the road wheel tube and compensating idler wheels and arms.

On other hand, if these M79C's were not installed, you'll need to remove the pipe plugs and install pipe bushings and other parts fitted in M79C Oed G1-7100 (27 Jun 59). Then you'll be the new fittings and make with the grease gun and you're in business.

Might be you'll find some of these vehicles have had a 1-5 PM pressure-rated tube fitting, PN 4750-700-0111, installed on all these points. If so, take 'em out and get the new 1-5 PM fitting. It'll do a better job.



Everything done to your M88 series medium tank—maintenance, lubrication, cleaning—is to get you out the final drive so the sprocket can move the tracks so you get you where you're going.

You can get good results in the end by working over the final drive—at the rear of the tank between the hull and the sprocket—see below right. Here's what you might do to every 250 miles or so.



1. Get your tank on level ground and clean thoroughly. This must be done when the tank is cold.



drive finalized?



1. Check the filler plug and clean off any mud chips. Now use the plug it is important to attract mud chips and prevent metal from the oil.

2. Use a 7/8" to open drive plug on your center handle to remove the filler plug. (The cover locks the plug in at the side.)



4. Check to see if the oil's up to the bottom of the hole. If it is, you've got an excellent lubrication. If it's below the plug hole, squirt oil in as quick as it is your LCL will the final number the bottom of the filler plug hole.

5. Wipe off mud-chipping from the oil level and filler hole, cover the plug-in.

#### M88 POP

Things are a bit different every 250 miles or so—approximately. When you have to clean off the oil out . . . so you've got to open the oil drain plug. But the oil must be hot before you clean. Also, remember to clean the mud chips or powdered metal from the magnetized oil drain plug.

Be on the lookout if you're getting up mud chips on drive drive plugs . . . cause it's almost every sign that possible lubricating your way. Moreover, clean the powdered metal . . . that comes in normal operations.

Now, fill the final drive with oil as quick as it is your LCL.



# STANDBY RIGS



Standby equipment means just that.

These are the rigs that you don't use every day, but you have to keep in readiness to roll right off the line in an emergency ... like auxiliary generators for a hospital or a Nike site. Your CO decides when equipment is classed "standby".

Now, don't confuse "standby" equipment with rigs you may have in administrative or temporary storage—like snow plows, lawnmowers or other equipment that's not being used at the time. You don't have to pull daily services on equipment in storage.

**But, in long line emergency standby rigs, only in cases, you will need regular Before Operation services on them every day. If you operate them, they normally use complete daily or daily to also pulling your driving and After Operation checks.**

But, when they're standing by their business day after day, then just the Before Operation services are needed.



You have to operate these rigs once every seven days to keep them in shape. You want to run them more often if they're exposed to bad weather.

Now, if the equipment has a gasoline or diesel engine, then you run them under load for at least an hour after they reach normal operating tempera-

ture for their weekly exercise.

You operate electric-motor-driven rigs for at least one-half hour each week—long enough to be sure that the drive member is lubricating properly.



You need monthly operational logs (one copy for operator, one copy for file) for each item of readily equipment to keep a record of your daily and weekly exercise. Mark the forms **STANDARD**™ in large block letters in the upper left hand corner. You keep them separate from the operational equipment forms for logs in everyday use.

You also schedule these logs for service and inspections according to the TM's or TF's that apply.

You record your inspections on gasoline and diesel engine-powered equipment on DA Form 464 and electric-motor-driven auxiliary equipment on DA Form 1-54.



### NO! NO!

Now, if you have two or more similar items of readily equipment, you want to operate them on a scheduled rotation. This way each one will get its share of



operating hours.

In all cases, however, when they're not in use, they ought to get a daily and a weekly going-over.



### AUXILIARY EQUIPMENT

If your readily logs need special equipment—like heaters—to keep them ready for operation, then the heaters should be in action all the time. An engine that has to be warmed up for any length of time before it can be started won't be able to do its job in an emergency.

The idea behind readily equipment is that it be ready to operate right now!



So you may have to operate auxiliary equipment daily in order to make sure your readily unit is ready. You'll want to check the fuel supply and general operation of auxiliary equipment at least once or three times a day.

Also give a look-over twice a day to other equipment—like air pressure starting systems. You'll need the right pressure for starting the engine.



### DON'T FORGET!

Don't forget. The batteries in readily equipment ought to always have at least 14 charge.



# NO SCORE IS GOOD NEWS



Score) broke-down are bad enough even on run and work. On courses and other courses, scored-down are double trouble-because broken-are mounted on the scoring-plates, so the whole scoring stand and leader assembly has to be pulled for down-overhead.

So here's how to keep those down smooth as a baby's cheek, meanwhile getting more out of the things:

1. Be busy as a fever about cleaning all around the score plates before taking 'em off to pull your broke customers. The dirt and oil will show up things. Come get with your grease in hand.



2. Be your long-identifying around the scoring and putting score plates back in case to serve is finished.



3. In boxes with dry-type scoring-plates, look in back corners of things once a week. Oil or grease makes things slip or breaks feel less good when properly adjusted. Rub the plate at once after looking or looking the whole looking.



2. Inspect broke quickly. Check 'em for score things, like broke centers and lines or scoring belts connecting the broke leads. Get some things replaced before the score work through to wear the broke.



Meanwhile, like all every operations, you keep your score-thing from all those broke points until you advise the stand when serving or stopping. Shutting against engine power is about the quietest way to work on broke and save the down.

## SIMPLE AS ONE,

## TWO, THREE



MAKING THE MOST OF YOUR M301 AND M301A1 MINIBULDOZERS. THEY'RE SIMPLE ENOUGH TO OPERATE, BUT YOU'VE GOTTA BE THINKING ALL THE TIME, 'CAUSE ONE SLIP'LL BRAG UP THE WORK.

Easy does it when it comes to the fuel, leveling control systems of your M301 and M301A1 minibulldozers. They're simple enough to operate, but you've gotta be thinking all the time, 'cause one slip'll brag up the works.

You have two controls on the minibulldozer—one on the rear of the machine to

raise and lower the left rear end and the right rear end, and one on the front of the machine to raise and lower the left front end and the right front end. Each control gives you three positions—PUSH, LOCK, RELEASE. Here're a few operating tips on these controls:

1. Make sure the leveling valve levers are in the correct up-and-down or float position. Lay off tightening them with a wrench or pliers—too much pressure will damage the seals and valve seat.

LEVELING VALVE LEVER POSITION



2. Release a corner of the boiler, raise the selector valve handle to the correct PUMP—get the other selector valve handle in the correct position.

3. Using your pump handle in the pump down, pump-up and down and the corner's lowered to where you want it. When you have it done, change the selector lever from PUMP to LOCK position. Shut off the leveling valve, so you'll know it that the whole operator seat again. The lowered corner will stay in position until it's released.



4. To return the corner to its normal position, give the selector valve handle the correct line PUMP position. Release the leveling valve, and up it goes the corner, by increasing the leveling valve, you return the pressure to the in-down position.

LEVELING VALVE LEVER POSITION



5. To work lower both the left and right corners of the machine at the same time by placing both selector valve handles in the PUMP position and pumping-up and down. When the corners are at the right height, get both selector valve handles in the correct position. The leveling valve seat to be tightened to finger tightness before coming, so you'll get corners. To get the corners back to their normal position, get both selector valves in PUMP and release the leveling valve.

6. This is most important, so start it up in your engine before moving the machine, all four selector valves on your machine must be in PUMP position. If any of the selector valves are in PUMP or LOCK when the boiler's moved, the job of that in-down operator can't be reached.



Easy enough, huh? All you have to do is keep your mind on what you're doing—your work's go'ing wrong.

## RESCUE YOUR SIGNALS



A wilderness of mud... that's all it takes to just about throw out the signals coming from the radio set down to the RF unit set on your Nike site.

The reason, which is a heap of mud, is that the mud is piled up in the lower part of the flexible waveguide, just plain blocks

the path of the RF energy that's trying to get through the waveguide.

In... the next time you can't work down the reason for the weak signals, take all the waveguide... straighten out the bend... and aim it toward the ground. The radio's pretty good, but this won't do you.



## SECOND STORY, MAN



A place for everything and everything in its place may be OK for the days when there isn't a rain, but it's pretty hard to keep things ship-shape in the assembly building at your Nike-Ajax site.

"What with new parts coming in all the time, and old parts going out, what best floor space you do have just distributed in a hurry, and you no sooner get it rearranged up, when you're got to start all over. Which just makes it worse to find no place your work done and say next all at the same time.

One week, with six C-119s landing, has gone ahead and made a second floor—

except that—right above the other one. They hammered together the boards from some old lumber crates—and now they've got a steady, out-of-



the-way place to cover stuff.

Right out your GO when he things about the idea. If he gives his OK, the ground floor in your assembly building'll be a work zone again, instead of a storage room.

## TILT

How about this one Nike-Ajax case? To be on the point... it was in the ITC area.

They kept getting weak signals from their missile and radar check tables. They were straightforwardly check reports of those both weak signals. It couldn't have been a rougher one to crack if somebody had fogged the equipment.

Then this one guy, who used to be a crane, crane-repairer, so Sherlock Holmes, opened the missile. It turned out somebody had removed the lenses from the radar reflector and then put them back wrong. Instead of putting the top of each lens at the top of the mounting, they were tilted to one side. The lenses were taken out and put in right... and the signals came in strong again.

It's a good thing to remember next time your stuff goes around in circles. Going to you down the reason for weak check radar signals.

## COOKING WITH GAS

We're on the scene in the mess hall... the gas in the tubes in the high-voltage power supplies for your Nike-Ajax jet engines and missile check radar.

It can happen if the rubber shirking across the blinged sections of the movable equipment suddenly cover develops cracks. This runs through the cracks... past the door... and on to the high-voltage power supply chains in both the ITC and the TTE. And the tube can get to the end of the line in the ITC. The kind of deal was you up the essential tubes and check circuits.



As long as you on that rubber shirking. When it cracks, call on your support unit to put on a new one.

OW-W-W-W



That's what that rubber-covered cable would say if it could talk—you know, the one in that Chain-Generator you Honest John guys have—the one you start the store down on.

So . . . keep the slack cable in place, rack it in before you close the cover. It sure will add life to it.



8-111

ON THE BEAM



Start on inside gear on this line and turn 1 inch.

How's the launching beam on your MCH Launcher looking? Like maybe drooping at the front end.

The beam can get knocked out of whack when a guy decides to get close.



For the drooping, look for it to get out of whack.

you power down at launch point to lower the beam the last three inches into the travel lock or raise the line three inches out of the lock.

Keep in mind you can give the beam a real job if it goes into the lock under power. And it can be released if it gets

jammed coming out of the lock under power. To use the steering handwheel check five and ten five inches.

## YELLOW WILL TELL YOU



You don't get your miles on the parts inside the front elevating screen bearing block that's under the mounting beam of your H200 Hines Job Launcher. It's mainly a job for the people in your support unit and the other upper sections.

But you can spot a possible fault up inside the block if you can follow a straight line for a couple inches.

First... tighten the bearing mounting cap. And tight means the cap is flush or almost flush with the face of the block.



Then paint a yellow line across the face of the block and the cap.



If the parts inside the block are installed right, the cap'll stay put and the yellow line'll be straight.

If the big breaks up into three lines,



make a break for the phone and let your support unit to take a look inside the block.

## ROPE-A-PRAYED?

Is the starter rope for the Blower John 3031 generator not in your M400 handling with getting frayed?

Have you pulled on the rope to start the generator and wound up with part of it in your hand?

Tell you what to do.



Stand by the generator and face in the same direction as the starter rope end of the generator. Then take a look at the rope. If it comes out of the sheave like above, the rope'll bind against the sheave when you pull on it. The rope wants to come through the other sheave slot... and here's how you get it to work that way.

1. Slide the screws back toward the generator to provide an opening in the sheave that the rope can through.



2. Slide the rope out of the sheave the sheave angled from the other way.



3. Take out the six screws and washers that hold the starter assembly to the housing.

LET SCREW



4. Rotate the starter assembly so you can get at the four top screws, and washers that fasten the yoke to the starter mounting ring, or remove the assembly altogether.



5. Loosen the top screws about two-and-a-half turns.



6. Turn the yoke counter-clockwise until the opening in the yoke, that the rope goes through, is exactly half under the opening in the sheave - which will add up to 1/2" turn.



7. Tighten the four top screws.

8. Put back the six screws and washers that hold the starter assembly to the housing.



## CABLE TIPS ARE TENDER



No matter what kind of rig you're on, there are two clues in the life of a shielded ignition cable when you're about to handle it like a hot-laid egg.

When you connect it—and when you disconnect it.

To shield and seal the connection, these male cable tips have to mate with the receptacle exactly right.

So you never-never-never jam cable

tips into receptacles, and you never-never-never yank them out. The one trick you might "save" that way will haunt you when the spark leaks out, moisture leaks in, and static builds up your communications.

Which explains why savvy vehicle operators and mechanics connect and disconnect their shielded cables by the numbers.

On a disconnect, first you loosen the nut. Then you rub the tip lightly until you're sure the rubber seal is seated below you lift the cable tip out of the plug or distributor receptacle.



And on connecting, you first take up enough cable slack so you can feed the tip straight and easy into the receptacle. If you try to shove it in at an angle, you will spot the rubber seal and end up with an unsatisfactory coupling, which will lead to all sorts of complications.





DM 9-228-2 gives you a basic form that must be kept in your DA Form 478 Organizational equipment file jacket. These forms (or lack of forms) will show shape your equipment's fit.

So, take a look at every jacket you have, and run through them to see if your equipment is in top shape. If it is, then there are the up-to-date forms you should find.

Forms that might or always be present:

1. Technical and inspection inspection form (The 478's table outlines this one for 4-44, 4-1, or any other kind of equipment form)

**FOR TRUCK COMBAT VEHICLES:**

DA FORM 2188

DA FORM 244

DA FORM 244

DA FORM 478

1. Your 478s from all re-attached vehicles and 478 and 214s for tracked vehicles. You don't have to keep all 2 maintenance forms.

**PART-TIME FORMS...  
FOUND ONLY WHEN USED:**

1. DA Form 1180-2 and 1180-1 (used as work time sheets or requisitioned as the former that 1180-1 with back 01 showing the request will contain number)

1. DA Form 111 (Work Report for 1 equip) when equipment goes for light vehicle maintenance.

DA FORM 111

1. Vehicle Classification Inspection Form DA Form 60-2 for transport vehicles and DA Form 60-1 for trucks

DA FORM 1444

DA FORM 401-2

DA FORM 214

DA FORM 214

1. General Work for DA Form 1100-1 to be done during the work that can't be done because of parts shortages or other predictable causes. This work file is not to be used as a detailed maintenance form. It's used in vehicles work before it arrives at repair by the shop or to be taken into it.

4. Load table form - used according to load 100 to keep track of the maximum 14,000 weight and maximum 112,000 cubic feet applied out on equipment 10' load with present form series set.

And, of course, you'll have in your vehicle's 478 jacket each form in the records of annual maintenance and spot-check inspections as well as any other records about the maintenance of your vehicle.

In other words, all relevant records on your vehicle's maintenance ought to be in its 478.

You'll want to read the wrap in AR 750-1 sub 11 and AR 750-1500-1 on the equipment file jacket.

Naturally, you keep a DA Form 478 for all your major items.

# CONVOY FLAGS



The leading vehicle carries a blue flag—FVN 0541-041-0511, Flag, identification, convoy, leading vehicle, color bearing, blue, 12-in hoist, 18-in fly.

The rear vehicle carries a green flag—FVN 0141-041-0111, Flag, identification, convoy, rear vehicle, color bearing, green, 12-in hoist, 18-in fly.

The vehicle of the world's commander carries a white and black flag—FVN 0341-041-0311, Flag, identification, convoy, commander of series vehicle, color bearing, flag divided by line from lower left to upper right hand corner, upper triangle white, lower triangle black, 12-in hoist, 18-in fly.



The flags are listed in Chapter 5 of *DD FORM 1341*, and you order the flags from *Q08*.

When you mount them on your vehicle, they'll normally go on the left side of your vehicle except in places where vehicles are driven on the left side of the road, then you'll have to mount them on the right side.

You can mount the flags on the front

or at the rear of the vehicle but you'll have to place them so they won't interfere with the vision of the operator or crew. And they're not to cover up or be in the way of the lights or any other part of the vehicle that might be a safety hazard.

# JOE'S DOPE

The  
**NEW LOOK**  
in  
**MAINTENANCE**

'SMATTER, BUDDY? Y'LOOK LIKE Y'LOST A THREE DAY PASS.'

...Y'R WHAT?

WORRIED... ABOUT GETTIN' MORE **ISSAN** REPAIRED EQUIPMENT THAN YOU USA?'

WHY MAN—YOU NEVER HAD IT SO GOOD... TROUBLE WITH YOU IS YOU DON'T DIG THE SCRIPT... HERE, MAKE THIS SCENE WITH ME.

LIKE, I am a technician with the equipment Battle Group in the field. Just tonight, when I see this 753 come around' back, struggle' in yards.

TH' DISPATCHER SAYS YD' GOT TROUBLE!

YEAH! THIS JOB'S GOT NO POWER... SHOT LIKE A GO-YR-OL GIGGOL WITH TH' GOUT!

So, like what I simply replaced  
the generator, battery and  
regulator.

HOW'S SHE  
GO NOW?

NAH!



OKAY I'VE  
REPLACED THE  
FANBELT AND  
STARTER--  
HOW'S IT  
NOW?

NAH!



HMMM!  
I GIVE  
UP.  
HELLO...  
SUPPORT.



LISSEM, I GOT  
A BEAT 24 NEEDS  
A COMPLETE  
OVERHAUL AND...

HOLD  
IT!



HAVEN'T YOU HEARD  
ABOUT **IRGAN?**

SURE, BUT  
THAT'S FOR  
DEPOTS!



FOR DEPOTS **AND** ALL  
SCHEDULES OF MAINTENANCE  
...CHANGE 5 TO AN 750-5  
SAYS IT LOUD AND CLEAR!



It works like this:

1. You keep making a part to the limit of its designed life!
2. Never replace 'em just because they're old unless you don't look care.



I DIG YA... AS LONG AS A PART PERFORMS --USE IT...RIGHT?

RIGHT? AND ONE THING MORE--



YOU GUYS (AS WELL AS THOSE IN FIELD AND DEPOT) SHOULD USE TEST EQUIPMENT TO SEE WHICH PART'S GOOD AND WHICH IS BAD... BEFORE YOU START REPLACING!



LIFE, IF WE DO IT THAT WAY WE CUT OUT COSTLY GUESS WORK!

AND YOU'RE SURE OF KEEPING STUFF UP TO ARMY SERVICEABILITY STANDARDS.



BUT IS **IRGAN** JUST AS GOOD AS DEPOT REBUILD?

OF COURSE! BECAUSE IN EACH CASE YOU GET AN EXPERT JOB.



THE TECH SERVICE PEOPLE USE THE **SAME** INSPECTORS, **SAME** DIAGNOSTIC EQUIPMENT AND MORE TO THE **SAME** STANDARDS OF PERFORMANCE.



I DIG... THEN THE ITEM THAT'S BEEN IRGANED IS AS GOOD AS THE ONE THAT'S BEEN STRIPPED DOWN AND

RIGHT AND THIS PIN-UP SLING IT UP!



# Joe's Dope Sheet

The AR sums it up, you'll recall—  
**'IROAN** is the best deal of all—  
Doesn't change the degree  
of repair quality  
and it saves on high-cost  
OVERHAUL!



**'INSPECT REPAIR ONLY AS NECESSARY**

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

HA HA HA HA HA...  
CLITE GAS ON THAT  
PIN-UP, EH?



WHAT'S A MATTER??  
...WHAT?? Y'DON'T GET  
IT?



LOOK... THE POINT IS, WHY WASTE TIME AND  
MONEY ON EXPENSIVE FACTORY REBUILD  
WHEN ALL SHE NEEDED WAS **IRON**...  
SEE...



THEY DISASSEMBLE ONLY AS  
FAR AS NECESSARY... THEN  
REPAIR IT... BRING IT UP TO  
"SERVICABILITY STANDARDS."

NATURALLY, SOMETIMES  
IT WILL BE COMPLETELY  
REBUILD... **IF IT NEEDS**  
TO BE.





OF COURSE IT'S GOOD  
... IT'S A MAINTENANCE  
TECHNIQUE... HERE'S  
YOUR AUTHORITY---



AR 750-5  
CHANGE 5 (11 APRIL '80)...  
**IT SAYS...** (AND GET  
THIS KIDDO...)



"...it does not change  
or lower the required  
quality of maintenance  
or prescribed service-  
ability standards."



WADDYA MEAN, IS  
THIS **GOOD**??



IT SAVES MONEY  
AND DELIVERS  
A GOOD PIECE OF  
EQUIPMENT...




WITH NO COMPROMISE  
ON QUALITY.





DOES IT  
WHAT??



NO!...IT DOES NOT CHANGE THE  
WAY WE DO OUR ORGANIZATIONAL  
MAINTENANCE...WE CONTINUE  
TO INSPECT AND REPAIR LIKE  
BEFORE!



ACTUALLY, THIS AIR HELPS  
YOU KEEP YOUR EQUIPMENT  
UP TO SERVICEABILITY  
STANDARDS BY ELIMINATING  
UNNECESSARY MAINTENANCE!



**I.R.O.A.N.** IS JUST A  
NEW NAME FOR AN  
OLD IDEA!

## BELT TIGHTENER

### QUESTION AND ANSWER DEPARTMENT



Dear Half-Mast,

The generator drive belt adjustment bar seems to be too short on the Chevrolet 1100-series vehicles.

It's got the bar out as far as it will go, but still can't tighten up the belts enough.

How about having the bar made longer to get more tension out of the belts, which seem to be in good condition except they don't fit right?

Mr. E. W. H.



Dear Mr. E. W. H.,

Making the bar longer is one solution and it may be the best one . . . if you were faced a bunch of overdue belts. When that's the case you can ask your supplier unit to make a longer bar.

In most cases, though, when a generator fan belt has stretched beyond the limit provided by the adjustment bar, you can't depend on it, even though it may look like it's in good shape. When this happens it's time for a change.

*Half-Mast*

## CLIP THAT CORD



Dear Half-Heart,

You know the clips on the hydraulic lines in the *A* column of our Mike-Jack? The ones used for fastening the detaching end to the hydraulic line.

Looks to me like the clips are so tight that they're crushing the cord, just as we attempt to spread the clips, they just stay spread and don't hold.

What's the chance of getting a better clip for the job?

CHAS J.C.B.



Dear Mr. J. C. B.,

These clips do give the appearance of being right-tight, but actually that clip has to be one that forces no-embed about being able to hold the cord in place during stress when latched and during violent maneuvers.

Fast is, by spreading the clips to get the cord into place, they'll lose their tension and become useless... never do

it. The cord'll work loose the clip by just raking the cord and spreading it into place. This way there's no chance of over-spreading the clips.

The tension applied on the plastic coating of the cord won't affect its burning qualities one bit nor will it damage the cord. These clips'll do the job just as long as they're not pulled apart.

## RAIL WAIL



Dear Andy: How,

How do I get the top rails that're listed as Part No. WFO-499417 in the Ord 3 AVE-GT28 for the M30A1 Jeep?

Can't find 'em in the Ord 3 AVE-GT28 nor the -JWP manual for this vehicle. Is ... do I just let the top sag when I install the windshield kit?

Sgt R. P. K.

Dear Sgt R. P. K.,

Top rails were meant to be the life of the vehicle. And the only way to get new rails is to make 'em up like 'em up from salvages. That goes for the brackets, too, for fastening 'em to the windshield—if they're missing.

Once you've got your rails, you'll want to hang onto them. Even if you

find them 'em in your back at night to make sure they don't get liberated.

Like that Ord 3 says in the note in para 3 of the introduction, many parts listed there are not stocked for issue. And only those in the Ord 3 or the -JWP manual are for organizational maintenance.

*Andy*



## PLUGS—HOT OR COLD



Dear Half-Mast,

The Old 7 publications for G708, G741 and G758-series vehicles (in their sport plugs) are FSN 2529-415-7124. For the G742, G744, G752 and G759-series (with the another plug), FSN 5811-712-4218, is Great. For more (ENC) also say the text are interchangeable.

For how told they have a different heat range—whatever that is. Just what is the difference?



Dear Sp. J.C.K.,

Those two plugs — FSN 2529-415-7124 and FSN 5811-712-4218—are interchangeable in the G742, G744, G744, G752 and G758-series vehicles, Range, just like the SFL's say.

You'll also find the same info in the new JBP TM's, like TM 9-1526-295-287 (6 Apr 79) and TM 9-1526-211-287 (4 Jan 79). The money's a bit different on the Jeps—but more about that later.

Even though the two plugs are interchangeable, their heat ranges are different. FSN 2529-415-7124 is what you might call a medium "hot" plug. This simply means that it'll perform better at idle, or when you're doing a lot of stop-and-go-driving.

The other plug, FSN 5811-712-4218,

is a bit on the "cool" side. And this means it's better when you're doing heavy, long-distance hauling. So, it's just a question of picking the plug that fits the type of driving you do most.

Incidentally, you're likely to see either of those two plugs with the 5811 or the 2820 as the base of the FSN. These plug-are listed in the two groups. But it's the last seven numbers in the FSN's that show you see the difference. And you'll likely find it best, when ordering, to use the numbers the way they're listed in the Old 7 or the JBP manual for the vehicle.

As for what makes one plug "hot" and the other "cool," it's mainly the way they're built...or machined. The design concepts here have been to main-



ferred from the plug, through the ceramic block, and into the cooling-system liquid. The plug has to stay hot enough to hold down carbon deposits, but not get so hot it'll cause pre-ignition, or knocking.

If you want to dig deeper into this, talk a squire at TR-4-855-8 (17 Div-54).

On the 5700-series vehicles, you'll find the latest pump-on spark plugs in

TR-4-1128-208-20P (15 Feb-55). This vehicle and the 6740 use either the hot plug, FSM 2500-815-7124, or one that's still hotter, FSM 2500-430-0068. These two are interchangeable in the Jeep. But the hotter one is better as filler, for stop-and-go driving, or for handling light loads on short trips.

Whichever plug you use, it's best not to mix plugs with different heat ranges in the same vehicle.

*Half-Mast*

## MORE ABOUT MORTARS

Dear Half-Mast,

What's the scoop on the 81MM Mortar Mount T61 and Tube T100? Are they the same as the Mortar M29 and Tube M29?

SFC M. C. G.



Dear Sergeant M. C. G.,

The 81MM Mortar T61 and Tube T-100 were type classified as a Standard Army Weapon way back in 1944. The T61 Unmodified became Mortar Mount 81MM M29 w/Reaplan. The T61 Modified became Mortar Mount 81MM M29A1 w/Reaplan. And the T100 was designated as Mortar 81MM M29.

There are still some weapons around that carry the T number. There will be kept well, they're no longer economically repairable.

*Half-Mast*



## TO FIT OR NOT TO FIT?

Dear Half-Brother,

I've got a problem on the spring seat bearings of the 241-series G-742, G-743 and 2-see G-744 series trucks.

Should the grease fittings be left in the spring seat bearing housing or should they be removed and 1/2-inch plugs installed after lubrication?

The IOP's don't tell you either way.



Dear Inquirer I.C.W.,

They should be left in. The IOP's do read: Rear Spring Seat Bearings—Lubricate wires on bearing cup, lubricate through fitting until lubricant appears around cup, tighten up cup screws.

Since they don't say anything about putting in a fitting, they indicate the fitting is already there—or should be.

As regards the story, Serge, what these trucks were being built there was a temporary shortage of hole fittings and they made in a plug instead so as not to hold up production. That is why you have some of them with plugs and some with fittings. They never intended for the plugs to be left in the spring seat bearing bearings.

Half-Brother





## WRECKER HOSE LINES



Dear Half-Man,

What's wrong with making the hydraulic lines for wreckers from component parts? Hydraulic lines for the steering gear could be assembled from the hose and tee adapters, and all those of those parts have JEN's on them and be ordered from supply.

Also couldn't we do the same thing with the hydraulic lines for the wrecker boom?

Mr. J. S.



Dear Mr. J. S.,

Sorry, sir, but you're safe.

The idea looks real good on paper. But, due to the high oil pressure, the lines have to be crimped right to the couplings that you can get them with ordinary tools.

Neither the field nor the depot have the special tools needed to crimp them on right.

Try doing it without these tools and sooner or later one of your junctions will be go like a Texas gopher.





## Two-Speed Rear Axles



Those 110- and 5-ton commercial trucks that have two-speed rear axles can do a lot for you if you know how to use 'em.

First, the two-speed axle's not like the high- and low-ranges in the transfer case of your regular vehicle. It's a real close shift. In other words, if you start your truck in transmission low, axle-low, shifting to axle-high will give you a axle about halfway between transmission low and transmission second.

Then as you continue to pick up speed, you shift to transmission second, but at the same time you shift the axle back to low. That gives you a gear axle higher than transmission low, axle-high, and you go picking up speed.

Your next shift is to axle-high-one step higher. Then, of course, when you shift to transmission third, you put the axle back to low again.

On most combinations, this goes on all the way up to fifth gear, axle-high which gives you a total of ten forward speeds, each one a little higher than the one before.

Downshifting works the same way. First you shift your axle down from high-range to low-range, then as you shift your transmission down, you shift the axle back up. Once more you'll find you have ten gear ratios.

**Be sure you do remember how a "shift" feels your axle—that is, both a real close shift with a axle. As you pick up speed the axle shifts up, but it's not high. As you shift up, the axle shifts up, but it's not high. As you shift up, the axle shifts up, but it's not high.**

**McGraw-Hill**



You also have two speeds in reverse, but since you always back your truck slowly and carefully anyway, you never need reverse high gear, but always use the low gear range.

This is called "upshifting."

Now a upshifting is even easier than a

regular one. What's more, you work in. You'll most likely have one of the reverse trucks with the auto-shift control on the gearshift handle. It's also like buttons on the side of the shift, or a trigger that you raise to let the low and right for high.



Before shifting to low or main gear with a hand, you push the button down, or left, then start off in the usual manner. Then, when you are ready to shift the axle from low to high, push in on the clutch and release the clutch and wait until the axle completely is still, and then engage the clutch and apply the throttle.



Go on gathering speed, but before you shift to second, push the button back down, or left. Make your shift from first to second just as you always do. The axle will still back back down to low while you're upshifting your transmission.



After your shift, pull the button back up, or right, and when you're ready to shift the axle up, release the clutch and throttle again. You do the same thing for your shift from second to third. Push the button down, or left, and then make your shift to the regular way. Then pull the button up, or right, again and start your throttle when you're ready for high axle.

**CAUTION:** Don't get behind the axle line for an advance of the wheel/disk. Because changes in traffic conditions or road conditions could make you start the throttle, resulting in an axle shift you didn't want. Be what the axle gets before making your shift and give it info.

You do this up through as many gears as you want to use, bearing in mind your speed limits, road conditions, grade and loads. Somewhere in the test ranges you'll find just the right rule to run in. Naturally, you'll use the highest gear you can without hogging your engine.



Shifting down with the transmission in its highest gear and the axle in high, you first drop to low axle, by pushing the button down, or left-down either clanking your shafts or kicking your shafts. On the down shift some drivers like to leave the throttle closed and give the clutch a quick kick. They figure this lets their engine pick up speed while the axle is shifting, and makes a smoother shift with no loss of speed. Also, it reduces shock load on power train. Then when your vehicle speed falls off some more, you pull the button back up, or right, and make a regular downshift to the next lower transmission gear.)

**You repeat this operation by "upshifting" with transmission gear with your axle shift.**

Double-clutch-drivers will find that the same rules apply on shifting the transmission with the axle shift—with one exception. On an upshift, since you are not making as great a gear change, you don't wait as long between shifts for the engine to slow down, and on a downshift you don't accelerate quite as much between gears. Other than that, shift like always.

It'll take you quite a little practice to learn to make the best use of your new speed axles, but once you catch on you'll never want to be without 'em.



Are you MIA, MIAA! and MIAAA! means tank coverage missing the target by a dog's hair on ballistics fire indicators! Does your 30-mm gun have a chronic case of Maggie's disease?

In either case, your 30M sensor azimuth indicator could be keeping you out of the scoring column. To check it here's your step-by-step.

For the Accuracy Test, you check manually—like this:

1. Use your gunner's periscope by it as a well-defined aiming point like a house or tree top.

2. Bring the azimuth (level) and azimuth (level) to picture to look 90° past the reference point.



3. Then, while looking through the gunner's periscope, manually traverse the turret in a complete circle (360°) forward and in reverse the aiming point, ensuring exactly on target.

4. The azimuth (level) and azimuth (level) picture should read zero.



For the Missage Test, you use both power and manual... like this:

1. Manually traverse a well-defined aiming point with your gunner's periscope.



1. Manually traverse the turret.

2. Set both the azimuth (level) and azimuth (level) picture to zero.



3. Traverse the turret but for short distances with visible stops. In this a few times—off in the same direction.



4. Manually traverse the turret in the opposite direction back to the aiming point.

5. Use the power of ballistics making a complete circle (360°).



6. The azimuth (level) and azimuth (level) picture should read zero.

7. Test in both directions.

If picture(s) don't read zero to indicate the Accuracy or Missage Tests, better for your (indication) support unit. You can never be sure there's something wrong with your azimuth indicator.

## LET'S COMMUNICATE

MEMBER 1, 2, 3, 4, 5, 6, 7, AND 8 OF...

# THE ANGRY



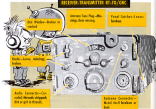
And it's quite a group.

The ANGRY-1 through 8 family of radios has relatives all over this man's army. In tanks, jeeps, down-and-out half's, M cars, and you name it.

Good workin', standardizin', rugged, and reliable—in members have teamed up in various combinations to get the message through.

But keeping all members of the family—large and small—in good shape and on best behavior calls for some close attention to certain items plus keeping in

### RECEIVER-TRANSMITTER 40-70/GRK



20

# FAMILY



time these eyes peered all the time for areas of lines.

I might check this little "biography" of each member of the 1 through 8 family. Then, let's to change your picture of what's best and what's best for each one. Sort of a "Be Your Own Inspector" check.

All of the items in **BOLD TYPE** are considered major deficiencies. Which means they must be corrected before the unit can go into action.

First, the larger members of the family:

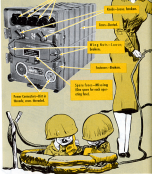
### LOUDSPEAKER 15-16A/18



21

**POWER SUPPLY PP-108/GR, PP-122/GR**

Four-Winding Motor 2 amps, one 1 amp for the PP-122, and 10 amps, two 2 amps for the PP-108, respectively placed.



Radio-Receiver

Power-Source

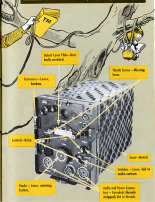
Wiring-Station-Accessories

Antenna-System

Signal-Source-Unit

Power-Source-Unit

**AUXILIARY RADIO RECEIVER R-122/CBC, R-109/CBC, R-120/CBC**



Signal-Source-Unit

Radio-Receiver

Antenna-System

Power-Source

Case-Details

Antenna-System

Radio-Receiver

Signal-Source-Unit



**RECEIVER-TRANSMITTER RT-66/GR, RT-67/GR, RT-68/GR**

**RT-68 (RM) Control**—Screw cap covers mixing lever, slide mixing.

**Output Brake**—Insensitive, plus locked in lock.

**Switches**—Lever flip to make contact.

**Low-Boost**

**Knobs**—Lever, mixing knob.

**Radio and Power Connections**—Control, short-circuited slot in front.

**Control Ring**

**MAXI GALE M8-71/GR**

**Insulator**—Dipped, coated, covered with grease, pad, die.

## ORIG SET GROUP AM/634-6

10072001 (A, 145/634-6)

Connector Plug—Insert  
hook, correct.

Jackets—Pull to make  
contact rather than  
rip or crack.

Keypins—Insert, cor-  
rect.

Radio Connector—Cor-  
rect form.

20071000-

Insulation—Frayed,  
crack.

Plug—Inserts here, fail  
to make contact cor-  
rect.

Bracket—Use replace  
0-61/3—Plug here, fail  
to make contact cor-  
rect.

## Mounting MC-399/GR

Latching handles—lock to open or closed position.

Cables—handle has twisted, self-draw, loop.

Wing Nut—Pull to secure top and bottom of mounting assembly.

Switches—fall to make contact.

Power Lamp—Burns out good wiring system.

Ground Strap—Covers, insulating.

Shock Mounts—Bridle, draw out.

Wires—Wiring; see how loose.

Emergency—Wiring; hooking device.

Wing—Secured; loose.

## CONTROL BOX C-375/PWC

Switches—loose, fail to make contact.

Emergency—Early; handle stripped.

Wires—Wiring; loose.

Control—Loose.

## HANDSET H-33/PT

Coil—Insulation frayed, cracked wire exposed.

Push-to-talk switch—Fails to make contact, rubber shell rigid or self-draw.

Wires—Coiled.

Caution: Check to make sure all members of the family used it's a case of hooking up the cables, connectors, antennas, etc. Be so thorough that family size be sure all connections are tight.

## HANDSET HINT

Remember those Grade-D movies where a couple of guys in a hurry see a girl? So does an overworked engineer? Our character jumps up and down on the luggage, while the bare wires wrap the handset.

It's no surprise assuming when a man picks something along the same line with the transmitter cap on the earlier models of the H-15 (11PT Handsets).

Figure it this way. By the time the microphone element, screen guard, gasket, washer and microphone cap are all screwed on—you've got quite a lot of "waffle's."

So much, as a matter of fact, that it's practically impossible to screw the cap on more than one complete turn. Don't

worry, though, if the cap doesn't screw completely down to the final housing thread.

Given the housing has extra threads left to hold the element snugly in position... even when the gasket, screen, washer and breath-shield get lost. The loose caps have at least one extra thread left to allow for a better building job.

But if your unit will have the older, shorter caps, you might try turning out the screen and gasket of the breath-shield assembly next time you put together the microphone components.

This will give you at least one extra thread engagement and won't do the whole assembly without affecting the quality of the operation.



## SOME CRUST

That "crust" you sometimes spot on the inside of those NYLON 66-66/U cells is certainly a danger sign.

It's caused by the physical wear in making the calls and it makes a perfect hiding place for many electrolytes.

To break out the pen knives, files, or even fine sand-paper and scrape off that crust. But be noted that it doesn't take much visible interference to pile up trouble for a cell.



# ARMY AIRCRAFT

## AIR BRAKES



Some of these Otter (U-14) parking brake handles have a nasty habit of vibrating into the locked (ON) position when you're not looking. Then, while your favorite flyboy is cruising around the wild blue yonder, thermo-expansion of the rod/piston in the brake system locks the handle—same as if the no handle had been hit while setting the hand brake on the ground.

Even if the hydraulic fluid doesn't expand upward, it only takes one application of the no handle while landing to finish the job. And loss of directional control during a landing roll usually results in more work for the accident investigation boys.

This accident-looking-for-a-plot-to happen exists on Otters manufactured before serial number 57-6187. Since some of the earlier ones have been modified already, just worry about those Otters with serial numbers 55-1973 thru 59-2878 & 59-6244 thru 59-1127.



If you're twisting a wrench around one of these, look up item eight under project 59-1888 in TR AYW 21-5-9 (29 Sept 59). It supersedes the entry under project 59-458 in TR AYW 21-5-1 (1 Jan 59). The latest copy of the TR Digest pamphlet would contain a spring with, P/N 1620-17-4442 (P/N CAC2000-11), on the handles of the unmodified aircraft.

## A PILOT'S BEST FRIEND

Nobody enjoys seeing 10 inches of tall case blades come flying by his cockpit on touchdowns...and that's not his whole tall case assembly, no less.

Luckily, it was a walkway situation. But it could have happened in the air. Now, since the safety of pilots sometimes gets ground crews all shook up, here is this:

This year one involved an H-1H—that's the blade with the metal tall case blades. The metal tall blade was later checked with a microscope and found to be made from silk. In-flight vibration did the rest.

The new TM 1-11-15-158, dated 21 Jan 63, with Change 1 (20 Apr 63)



show everybody on how to fit new tall case blades above the minimum safe clear distance.

The new TM changes some of the info used in the old TM. So check carefully to see what you have to do on each model of the H-1H.

## EDP—USE WITH CAUTION



Everybody knows ACP (Aircraft Out of Commission for Parts) hangs the way off the tall grasshopper. Today it's EDP (Equipment Dealt for Parts) that hangs from the emergency-type frame.

But EDP won't work any better than ACP if you spend a good thing by overusing it. Too many EDP requisitions on your depot at one time will kill the goose with the golden eggs, and all you'll get from the goose is a south wind with feathers.

If the part you're about don't's happen to be stocked in the supply system, it will might take you longer to get it on a requisition action than it would if you bought the part, made it or cannibalized it locally. In other words, try everything else available to you before you EDP.

Hold off on the EDP tags as a last resort until your support outfit with you that buying, making or cannibalizing that part is no-go. That'll automatically increase your chance of getting faster action from the depots. After all, the fewer EDP orders coming through, the easier it is to fill them when it really counts. An EDP line in the hangar is about as useful to you as a Category B bird hit on run on the back ferry.

WITH JP-4  
THE ONLY

## GROUND IT— OR LIVE DANGEROUSLY

WATER BEING KEPT  
IN AN AIRCRAFT  
FUEL TANK CAN  
CAUSE VAPOR BURN,  
TWO TIMES WORTH  
"ROOM"



"Course not . . . else you wouldn't be reading this right now.

With JP-4 fuel entering the scene for use in your transport (MILITARY) turbine engines you've got to be extra careful not to encourage that big boom. A lot of you already know that JP-4 has harmful blend-of-fuels that cause stress on hardware in tanks that store them. You've been used to handling. But it's not known by any means.

The vapor pressure or volatility may be just as low, but an explosive mixture of JP-4 vapors and air can form in temperatures as low as -10-degree F.

Storage ground handling situation is a potential trouble operation. As it takes to ignite a storage or aircraft fuel tank full of the stuff is the smallest spark you can imagine—including those devilish little static electricity sparks. Even excessive fuel splashing or surface ignition, as the stuff's pouring into a poorly grounded tank, can build up enough static electricity to set off. Keeping the nozzle below the fuel surface helps.

Anybody thinking to make a career out of fuel handling better remember to

double-check the electrostatic bonding or grounding before raising a fuel tank cap open or separating a fuel nozzle's trigger. And a responsive eye what's even more sensitive than you, will definitely help you recognize enjoying life.

This stuff is really that water's at more or much trouble as fire. Only, in this case, the pilot ends up on the clay end.

Some JP-4 below-zero temps, water takes longer to work out and attracts other types of contaminants while it's in storage. Under cold weather airborne conditions, that suspended water can easily freeze any time before it reaches the fuel control unit.

And once ice hits the fuel system, can engine starvation be far behind?

So, if you're working with JP-4 or around the place where it's kept, treat it with respect. Learn the easy way by reading through TM 10-1187 (26 Feb 64) "Precision Handling Operations for Aviation Fuels"—backed up by TM 10-1181 (14 Sep 55), "Precision Handling Operations," with 3 Changes, and TM 10-1113 (24 Sep 58), "Precision Tank-Vehicle Operations."

## IT'S 1987 EVERY YEAR.



Just picture an index listing every single Transportation Corps time compliance item issued since the year 1—and think how much fun it'd be to check out each one of your aircraft against the compliance list.

That'll give you some idea of what could happen if TC never considered an un-dated time compliance. Worse than that, try imagining the supply system possibilities with you trying to support every aircraft in the inventory under both the old configurations and the new ones resulting from each modification. You'd be just plain lucky if you got the right part for the right aircraft more often than the wrong one.

That's why the new IED Modification of Aircraft Modification is so important to the whole support system. If you fill one out correctly each time you're doing a modification, then the IED file back in St. Louis, where those modifications get, will be accurate.



Besides, it only takes minutes or even less, but runs out maybe months of not tops for the supply system. That'll jellie better with the engineers that you've applied such and such modification to so and so aircraft. Then the engineers pass the word to the supply people. That way most parts become available to support the birds with the "new look" caused by the "alter" effects of the modifications... and fewer parts are needed to support the "before" jobs with the "old look".

Eventually, the 1987 card file will

cover the engineering people that all aircraft covered by a particular time compliance have been taken care of... and then that modification can be recorded instead of slugging up the publication system. The file also gives the supply people that they can drop all support on the unmodified version of those birds. But it won't work that smoothly if you forget to report that you made the modification.



## AFFECTS UR, TOO

Give that 1987 a little more thought and you'll realize how it helps out the UR program. With an up-to-date 1987 file, it cuts down investigation time and gives quicker, more accurate replies. Why? Because the file automatically tells if you've applied any outstanding modifications or the amount you've working up which might affect the post covered by the UR you sent in.

But if the file's blank because you didn't send in all your 1987's as soon as possible, then the TC boys might waste a lot of your time telling you to do what you can't help. Luckily, that's not what you want from the mailboxes hanging under your bunk.

Overall, your commander will de-

cide if each modification should be complied with, depending on whether it could interfere with your local tactical situation or support operations. Then your Army or Area commander will let both you and TC know about his decision.

When there're no local rules to guide you, follow ACTION-TIME from 27. The word in the AB is you make out a 1987 on everything that doesn't come under an exception in the regs. To make it easier for you, parts of some mod modifications involving a UR include a 1987 form to put your responsibility on. Keep a supply of these yellow cards on hand for reporting their compliance which do not come in a file.

## CHANGE THE ADDRESS

The regulations and the form have been around for a while, but the TC address is new. Be remember to scratch out the old address on the flip side of the form and write or type in this one:



**REGISTRATION MATTER (CHANGE)**  
1. 1. Box 27, Mail Office  
R. Unit 4, Street  
APO, 9634-4

That'll help out the post office people. Also keep in mind that letters TM 1-series time compliance may seem be calling themselves HPO's (Modification Work Order), just like on all your other Army equipment.

## BUST THE CYCLE



Ever get the feeling one of your aircraft was being shunted into scheduled depot maintenance when it should be home doing the chores?

Well, under the new **ECAM** (Inspect and Repair Only as Necessary) concept, you can forget about cyclic depot maintenance. You're now allowed to run in that aircraft on the basis of its condition.



There's been a scrupulous depot maintenance program down the runway in the last few years... **DTR**, **IRAN** and **SCAMP**. Each served a purpose in its own day. For example, the recently superseded **SCAMP** program was the Army's method of bringing its flying fleet up to a standard inspection after depot maintenance responsibility was transferred from **USAF**... and it included making all the necessary modifications to hit the goal.

**ECAM**, the new program, is aimed at letting you keep each bird until it starts giving sick—instead of making you follow a set flying time or calendar

cycle for you to re-depot.

**TMC** issues **TCRAC-FA C19** Nov 79, on "Depot Maintenance of Army Aircraft, **IRAN**," stated the change-over... and you'll get to see the new program in the latest **TR AVN 21-R**.

The idea is for you and the JAG education crew to start worrying about your bird at the first sign of symptoms rather than you can correct. Then both of you get into a new medical maintenance facility with your JAG education support to diagnose the aircraft's condition.

When it looks like none of you can help the poor critter at the local A&T station and you think the situation warrants it, consult your local doctor—the nearest depot maintenance shop—about putting your sick bird into the hospital. But, for **Pen's** sake, don't wait until the ailing bird is ready for the scrap heap instead of the hospital.



If you're serious or worse, and the depot doctor decides to admit your aircraft for overhaul, be familiar with **AR**



## Cornie Rodd's

### BRIEFS



#### Take handy hints

Your CC sure can get a handy hand from a couple of handy pals. They're especially for him. Tell him about *On Pampoler 750-1-1 (Mar 88) PM Guide for Commanders—Mike Ajon*, and *On Pampoler 750-1-2 (Mar 88) PM Guide for Commanders—Mike Hercules*.

#### Let air out first

Only mechanics who hate themselves long to let air out of tires before splitting the two-piece hubs on aircraft wheels. Depending on tire size, you've got anywhere from 25 to 70 PSI locked up inside the tire for lots of potential COMB (Personal or Winged Bomb). Tapered tires can read up on tire handling in *TB 1-41-1-2 (Aug 87)*, "Disassembling, Mounting and Inflation of Aircraft Tires and Tubes."

#### Picture, too

There's a new supply manual (with pictures) on your No. 1 Supplemental tool set. The number is *DAF-4-5185-A17 (15 Mar 88)*. And it's called *Tool Kit, Automotive Maintenance, Organization Branch (and Elsewhere)*, Set No. 1, Supplemental (31 88-754-0012).



#### Give grounds

Make sure those grounds are in place where your battery cables pass through the battery boxes on your COMBAT jumps. They lose snap. And without 'em, vibration may soon cause the sharp-edged metal to wear through the cable insulation and short your electrical circuit.

#### Now steps on M123

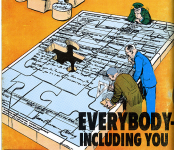
You drivers of the 10-ton M123 cargo truck now have a lot you can call your own. Both the M123 and the single and dual wheel M122 truck models are covered in *TB 7-1128-206-12 (4 Feb 88)*, which also supersedes *TM F-8000 (1 Mar 82)* and section 1 of *QRD 7 594, G791 (31 Jan 88)*.

#### Tougher tubes

Has vibration broken the engine-to-oil-thermostat/cold wall tubes in your Model C-318s (shakes) and Model C-318s (blump) 1 1/2-ton Dodge trucks? If the vehicles were bought under contract DA-30-112-CRD-30740, DA F-137 (28 Mar 88) tells you how to get free flexible replacements.

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

# YOUR USER HELPS



## EVERYBODY- INCLUDING YOU

File off to IBM (ISA Form 456) on your equipment that's not up to par. See 800-520 for details.