

Issue 93

PS

1960 Series

**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

WELL, YOU'RE A
MIGHTY GUY!

**SPECIAL ADVERTISING
DA FORM 478
MAY 1960**

"GIMME



That's your engine pulling in air, and clean air is what it needs.

It's hard to believe how much cleaner your dirty air can make in the life of your engine, by you driving a lower motor or flying a glider.



A motor jet was made in which one hundred lbs. of air (that's a pound), was sucked into an engine over a 100-hour run. At the end of the run, that engine was so clean so clean as if it had been run for eight to ten thousand hours on clean air. It was using six times as much oil as normal, and the compression and power were just about gone.

AIR!"



OK, you know you can't get too deliberately run-die into your engine, but here's the rub: It would only take about a 10-in hole in your air cleaner or the air duct between the air cleaner and the carburetor to let that much die in from second-hand air.



In fact, an engine will give you satisfactory life if it is fed anything but clean, filtered air.

Another thing—even if your filter and clean air all right, a dirty filter element can choke down the air flow. And that's just like running with your clothes

pulling your way out. Your engine room may give up in a minute (think months) if the exhaust stack is and the extra fuel doesn't all get burned, some of it sticks



around to wash the tube all off your cylinder walls—which means out your engine before its time.

So please to check your whole air filtering system to be sure it's clean and tight, and that loop is the way. Under the worst of dirty conditions, you'll do well to clean (or at least check) your filter about every four hours of operation or whenever you feel up.



...the general rule is to

LOOK AT THE LOCK

Before you fire a grenade with your M1 Rifle take a look at that gas cylinder lock. There are three different locks used on the M1 and you'd be glad you have the one that's not to be used with the grenade launcher.

Here's the number of the firm:



FSM 1003-614-7426



FSM 1003-726-3959



FSM 1003-726-3871

There are two things that make the FSM 1003-614-7426 model for us. One is that it's made of nylon steel, and the other is the radius on the front top section. This will sometimes allow the launcher to become locked on the rifle. When that happens and a regular round is fired, the projectile could catch the launcher which could damage your rifle or you.



To make sure you know the difference between these gas cylinder locks, here's what they look like.

The grenade launcher is loaded with either lock, 1003-726-3959 or 1003-726-3871—and the grenade launcher must always be used and stored with either of these two locks.

Cassie Rodd's

"SHORT & SWEET HINT"



Jack the Ripper

You may think Jack the Ripper is a villain with a black mustache and carries a long knife. That isn't the case at all. He may be right in your hands. In fact, he may be in the back seat to yours.

How will you know that? Well, you'll have to be wide awake to make sure you can spot him. Here are some clues that should help.

He wears his protective mask like a poor man's. He loans it, sits on it, and throws it around like a football—cut realizing that when you don't a camera in-track to share an explicit your mask might not work.

Here's how to get his name of Jack the Ripper. His special trick is ripping the tabs (they're lined as cushions and made in your TM 3-4169-206-11P) out of his mask's carrier. Instead of taking hold of the middle tab and pulling on it



—to release the end tabs, use—by pulling hold of the end tab and yank. He rips the tabs right out of the carrier.

You'd be doing Jack a favor if you'd give him up as to how to release his carrier.



There's one thing about the bumper in the M111 caps on the M20 APC or M24 SF 4.2-in mortar.

It doesn't have the strength it needs to push up the ammo in the M20's machine gun if your bumper isn't up to par.

And be sure that any time you use the bumper, you keep the vehicle's left engine running to give you plenty of juice.

Don't forget, tho, full-throated batteries don't mean much to the bumper if the ammo-chest is kinked, dented or out of alignment. The bumper won't be able to get the ammo on the gun if the chest is damaged.

And while you're checking the chest, make sure the gun is head-up and aimed right and it's set up for right-hand fire.

In other words... there's more's no more for loading troubles.



BUMPERS

AMMO CHEST

The right work to get-out M20 machine (M) and M24 machine (M)-to keep the ammo quantity.



Stop that ahead

You'll really be in the dark if you accidentally turn ON the infrared power pack in your M10 APC or M24 SF mortar—if the infrared periscope doesn't happen to be in the operating position.

All kinds of shocking things can happen if this comes off.

Like frying or getting yourself a dose of electricity or doing damage to the infrared power pack.

What you might do is remind your Ordnance support unit to apply URGENT MWO 5-2508-205-56/1 118 Box 701. This modification will how to



IF THIS IS ON

DO NOT PUT IN IN OPERATING POSITION

DO NOT REMOVE THE CAP (or) OF THE

Install a dummy receptacle for the infrared periscope lead wire (M10) before serial number 4955 and M24's with serial number under 571.

Wash that water



You can't drink it, you can't swim in it, you can even use it to put out fires. That's right: Water! But it's also one of the greatest troublemakers in this man's Army.

Remember, equipment needs lots of your equipment and you can't help it. But there's one thing you can help and that is pouring water into your equipment when it doesn't belong there.



Take the case of the mechanical flame thrower. After it was washed down the main fuel tank wasn't thoroughly cleaned the inside. The next time it was fired—it splattered and spilt. The water caused the thickened fuel to break down in the container and clogged the firing.

So you say: What about the portable flame thrower. The L-100 says you can use water instead of fuel in the M240 for practice firing. True, but experience

has shown that clean water is not removed from the tank and the next time you try you'll see the M240 with thickened fuel—WOOOIE!

When you thought you thickened fuel wasn't thinned at all. The water in the tank worked on the thinnings and L-100 thinned the fuel.



So don't use fire with water. Use diesel fuel instead.

Also, water (or even moisture) will fuel up the thickener if it gets into it. So keep those containers of thickener closed when you're not using them.

LET'S COMMUNICATE

Used to be the 3 R's penny-ante version of the necessary solution.

But now, in the current age, Ridding, "Riding and Rinsing" has been joined by Reorganize. A Reorganize is a unit of measurement of Gamma Ray Radiation from a source such as a nuclear or hydrogen bomb—or an X-ray machine. There's a limit to the amount of radiation your body can take before it sort of flunkies out of the system.

So the Army's built "grade-card" on the subject—the EM-100/101 Radiometer—is the standard field radiation detection equipment that stands ready to tell a man whose danger's lurking around or over.

It reads out gamma radiation like some dangerous form of nuclear radiation and gives readings in both high and low levels of intensity. Plus, naturally, it'll go at high or 500 Reorganize per hour. And with the use of the correction chart, it can read as low as 0.1 Reorganize per hour with acceptable accuracy.

This Do Your Own Inspection maintenance will help guarantee it top-notch in efficiency and operation for your Radiometer. Just a keep-an-eye-upon-for-these-deficiencies.

The items in bold type are major deficiencies, meaning the more cannot be repaired properly or is in need of repair.

THE FOURTH "R"

LARGE DIAL—Fixed, solid



FACED AND HOLES—*moving, loose*

If you're reading radiation in enemy zones, the batteries are going to need a little cold weather protection. Just look off the thumb screw... slip the two out of the chassis... and slide it under your coat.

Only here will give the batteries the help they need not to get out in icy weather—and you'll still have enough cable to allow freedom of movement of the EM.

Speaking about batteries, always make sure the New General switch is turned to the OFF position whenever the Radiometer is not being used.



NETS SOLE—*loose, not visible*

COVER LATCH UNIT—*loose, not visible*

RINGS—*loose, not working*

FRIBBLE
RE SPRING PLATE—*loose, moving*

WATER WASH—*cracked, broken, moving*

CABLE—*loose, insulation frayed*

REPAIRS—*loose, cracked*

BATTERY HOUSING



Naturally, publications play a top role in proper maintenance and operation of any piece of equipment. In the case of the EM-100 you (this job) play that role.

One is the technical manual itself—TM 11-6600-200-12 (Nov 56), Volume 1; TM 11-6600-200-12P (30 July 59) which includes your organizational maintenance supply parts and special tools as well as the Maintenance Allocation Chart or MAC as it's called.

MAC says just what maintenance you can handle within your own unit with out having to send the piece of equipment to the shop. In the case of the EM-100 this and several other maintenance is limited mostly to replacing batteries, leads and caps.

Whenever you need a major fix, it's on a maintenance basis. You get an operational one in return.

NEED A LOCK FOR YOUR BOX?



"...AND THE BEST PART ..."

Means that the gear operator above was making a part for his Control Box G-275 ... and couldn't find it.

The gear in question is the lock-on stop-which is used to hold the spring-loaded HEAD-TRANS switch in the TRANSMIT position when needed.

In the course of bouncing around and being handled and mis-handled, that locking piece can get bent, broken or lost and need replacement. So, the supply company stocks up pretty simply.

In the beginning, as the book says, the lock didn't come a fitting in the 2FG Tank. It will lock a fitting when TM 11-5810-205-11P (2) Dec 54 fits the field.

About now, it seems, the complication started to show up. Many a unit needed a new lock, but couldn't find authorization or regulation use. Familiar problem. So, along came a much-needed Change 1 to the book TM which squared things away.

Could be that some men with lock box problems may not have seen this Change 1, dated 28 June 58. Is that just one thing

ONE SPECIAL PRICE for only a few more
a 1/2 inch x 1/2 inch 100 2000-248-6738



The 2FGP, is an obsolete 1 1/2 inch, which means it's prepared on an "as required" basis. Which simply means it is not authorized for storage in the prescribed list, but can be acquired should an needed for immediate use.

So, if the lock on your box is dipping, and you want to get a stop to the situation, just make use the acquisition ... dip into the list for a quarter-inch screw and lock-washer, and make with the simple installation.

Your box will be properly locked, stopped and ready for action.

THE NEEDLE WILL ROCK



Come to think of it, a fuse runs its level and become when it dies—out blows out. Cause when that happens, the meters and dials and needles on the dash stop moving. They fall back to ensure the flow of juice is interrupted—clearly telling a man that something's wrong.

IF THERE
WAS THE FUSE
WASNT, OH NO
IT WAS IN THE
A CORNER OF THE
A BAY



FUSE BLOCK F1-F16

But your Power Supply (PS-5517) has two fuses that are without a like anybody. Sooner than the failure of fuse F1 and F2 will not have any effect on the working of the output regulator. This is possible because the wire will have half-way connection and so the needle will keep reading after either or

both of them have blown. All of which means a repairman will get false readings whenever he goes to check whatever voltage he's checking (PRC-F's, etc.).

So look at those F1 and F2 fuses daily, and maybe a couple of times a day, depending on how usually you're using the PS-551.

BOOTS FOR SALE



These rubber boots finally have to be the "big shoe."

You see, they've got their own separate billing.

For in these many years, the rubber boots—no caps—on the leading gear in your AN/TTC-2 and AN/TTC-30 have been doing a "double" with the gear. Where one was—the other was. When you needed a new rubber cap, you had to take a new gear, too.

They fit over the leading gear on the Telegraph Machine 14, 16 and 17 of Classes Units A and B.

Without lots of money, you get jobbed hard when you slip a connecting wire in place and the equipment either isn't completely grounded or still holds a residual charge.



But no more.

These boots are now doing a solo act. You can hook them into your unit just by sticking 'em.

OE, Electrical, Radio, for leading gear,
PN 348-254-324 or call to HQ at 482-
344-22, 11 Aug 58.



So if any of your caps are ripped or worn and not insulating like they should, don't run the risk of getting shocked whenever you come in contact with a leading gear.

Now new caps are available by themselves, without anybody having to throw away otherwise OE, leading gear.

STRAP SLIPPING?

Sometimes a slipping strap can lead to lively developments.

Depends on what the strap is holding!

But one thing's for sure—the straps on your vehicle-mounted AMVERB-5 Radio box want to be tight.

Any other strap and everything will start slipping, especially the RT-77 Receiver-Transmitter. And it's hard to imagine anything tougher or common equipment than mounting your antenna on a Jeep or Nissan when there's no time to make the straps.



If the mounting straps on either the CW-100 Panel Cover or the RT-77 aren't buckled correctly to the straps on the RT-77 Mounting, the cover and the receiver-transmitter will shake around in the mounting enough to damage the components inside the RT-77.

If everything is good and tight, the shock-mounted characteristics of the equipment will keep things from bump-

ing up. But only so long as those straps hold everything in place right.

Whenever your unit is ready to roll — or is already on the roll — be sure the RT-77 and CW-100 are strapped in tight. And check those straps during operations, too. After all, they're only straps — and can work loose a little.

Keep 'em tight all the way all the time. Tight.



NO STEP, PLEASE

They look like little platforms and they're high enough up in the air to be platforms.

But that's where the resemblance ends on these A&S/TTC-17 antennas. For some folks have been creative their just this way by climbing out on them—with damaging results.

It looks a little wary. These antennas are built like steel with various kinds of electronic thorns in mind. Among them is the arrangement of the collector rods, which need a platform on 'em to be fixed up the way they are.

The clamps and supports will easily keep the antenna tied tight to its pole, but the whole matter will sag and creep if somebody can't stand on it.



TAKE CARE OF 'EM



When you get commercial pole-top antennas and maintenance info with your Signal Corps equipment ... take care of 'em. They're not so easy to replace.

Headly your TM-11 in writing and bound along with your equipment. But there are instances where the manufacturer's pole is the only info available. So if you're missing your manufacturer's operation and maintenance info, something

you do is look in your DA Pamphlet 10-4 scope if a TM has been published.

If a TM hasn't been published, then you'll have to get another commercial pole ... you can only get it by direct request to the manufacturer, if available.

Once you get your commercial pole, better hang on to it.

BLISTERING EFFECT



A hot package is a small envelope—which can lead to blistering effects.

Come to think of it, that's pretty much the operating and maintenance story on the projector lamp in the Army's standard projector.

The lamps in these projectors are 100 to 1,000 watt types, "since they have to throw a lot of light. And this means they get mighty, mighty hot. Forced cooling with blowers moves hot "man."

A case of coil-of-steam means the primary here, too. The higher the wattage the shorter the useful life.

For a 1,000-watt lamp, Fairbanks, the rated life is 18 operating hours. As the lamp heats, it will begin to darken and grow black. And as it darkens, the envelope will gradually absorb heat. Moreover, if the lamp is kept in the projector case long, blower will wear its fangs.

Worse still, the blistering could lead to a damaged envelope hole at the lamp support and actually fuse with the lens.



Always handle the lamp by the black support surface at the top—not by the lens. This is where a finger or tool in the wrong place will only lead to blistering effects. The oil in a fingerprint on the envelope will either heat or wear on the lamp as it heats up. That will quickly build up a hot spot. And so on.

Be watch that lamp for even the slightest trace of darkness—and anytime you lay fingers on it be sure to wipe it clean. Furthermore, you can easily scratch the face of the envelope with a fingernail.

DA Form 11-216 calls for a daily check on "external surfaces of optical components . . ." which includes the lamp. And if not a daily check, then a thorough cleaning before each use. Clear water and a lint-free cloth will do the job nicely.

When you shut off a projector that has operated switches the lamp and motor, shut off the lamp first and then let the blower motor run for a few more minutes. Otherwise, the temperature in the lamp will rise before it goes down—which could cause cracking of the surrounding lens.



GOT A SHIFTLISS IDLER?

You say the fan idler pulley won't line up with the fan pulley and the crankshaft pulley? How say it's a dog-gone aggravation!

Well, get your maintenance people to pull that idler out and do the three bolts in the support bracket. Then you can shift the idler assembly and line it up before tightening the bolts. It'll keep the fan belt from being skewed up.



IT CAN HAPPEN HERE

Naturally, the overcrank causes strain on your generator needs an accelerated lubrication.

But what's normal for one retch could bug up another. And when the overcrank causes gas leaks, it can lead to both the generator and all the misc. fire control complex that may depend on the generator's power power.

In two minutes of your time every 30 operating hours is cheap enough insurance against this possible cause of power failure during an alarm.

You just pull the overcrank switch cover and eyeball the shaft-to-disk.



If it needs lubing, apply OE 30 oil sparingly on all four points.

Then put back the switch cover and schedule your next look-up at this switch. Every 30 operating hours should do it.



SHUN OUT THAT SHIMMY

There's a waddy-waddy-maker that's easy to miss while making your daily inspection of these generators.

It's a shimmy in the head printer bracket that sits under the rear air cleaner. It happens because the metal the brass on long as some of these brackets, you can't screw 'em up snug around the air cleaner adapter.



As does bracket shimmy and shake the whole head printer box. Next thing you know, vibration rips off the nipple connecting the printer box with the dry stack.



The quickest cure for wobble in the bracket is a pair of metal shimmed head-to-bracket.



Make your shims about 1/2 inch wide, 7/8-inch long, and thick enough so it leaves a 1/8 inch of daylight between legs after the clamp is screwed up tight. This turns them for more tightening, if needed, after operating your Hui-Gee.



There's another cure for printer bracket shimmy, if you have no metal shimmed-for-shims. You can shimmed each clamp by cutting out a piece and re-welding.

THE OCTANE'S THE THING



To develop the road capacity of 80 GPM at 5000 PSI, the engine that powers the Clark H34-9C compressor requires gasoline with an octane rating of 80 or higher.

Which means the fuel you use must meet either Federal Spec MIL-G-10856, or RV-G-16. (These Specs with a lower octane than are OK, too.)

800 30-1-04 1 (with Charge 21 gives you a rundown on Fuel specs and tank numbers. Don't let that fuzzy-looking 80 number throw you. That means it's a Federal Supply Catalog, listing items for all the Armed Forces. It's the latest word on FSC Group 54 items—fuels, lubricants, oils, and more.

PLUG THE HOLE

Next time your support unit is doing some work on your Garwood H200 crane derrick, have them plug up the oil hole in the pinion-bearing housing on the rear-end axle of the marker.

This'll keep oil from dripping back into the differential housing before it reaches the main case and will keep your pinion bearings from falling.

All you need is 2 1/2 inches of .175 OD annealed, stainless copper tubing—PN# 4718-273-6621.

The oil hole is plugged by passing the copper tubing in, like so.

Be sure the tubing has clean joints and there's nothing clogging it up.



HAND THOSE GUARDS!

Dear Sgt. Green,

The arrest bar hold the door guard covers around our Nike storage power units are all clogged up from taking the guards off to get to the unit to full maintenance.

We've already gone through a couple of lots of equipment that I don't use, but there's no other way of doing things!

SFC J. P.



Dear SFC J. P.,

There's no in.

The best way to repair the damage on those guards is to throw away the original equipment and replace 'em with a dot-and-rod holding.

Here's all you have to do:



1. To start the hole, align each of the 12 original screw holes in the power unit of frame with a 7/16" drill.



2. At the top of the hole, insert 1/4" drill centered 1/2" below the 7/16" hole.



3. Then backen the dot between drill holes to hold each of the 12 holepins in the 1/2" frame.



4. Now remove all four equipment from each guard frame, and replace 'em with 7/16" x 7/16" hex-head bolts. Each each has head and just enough to back inside the existing holepin in the 1/2" frame, and weld the bolt to the guard frame in this position.

With this fix, there's no sweat whatever in taking those guard covers off your power units, or hanging them back after you pull maintenance.

DAYS TO HOURS



Dear Sgt. Dwyer,

This L and O service division for Engineer equipment is working out fine in our camp. However, while the new LOP's tell us what hole points to drill according to days of operation, the old LOP's have the D, W, M, Ed and A symbols.

Now, in order to standardize our operations, on what basis can we convert the symbols to hours?

CWO F.S.

Dear CWO V. S.,

Good question. No matter what the calendar says, the more hours a piece of equipment runs, the more holes it needs. So let's start on the small end and work up to the round numbers.



DAYS TO TURN	OPERATING HOURS
1/2 Day	2
D	10
1/2 Week	25
W	30
2-W	100
M	150
2M & D	200
E	300
L	500

As you can see, equipment that racks up a lot of operating hours is a shoo-gee that will also get a lot of lubrication in a short time.

Sgt. Dwyer

REFUELING YOUR



What a way to go into an off-duty world! It's not a guy in the post hospital who got his nose burned off and nearly had his nose carted off permanently while refueling his tracked vehicle.

Refueling someone you say? No, he wasn't a clown like some of the jokes you've seen around. As a matter of fact, he was running his own business. That's why he wasn't minding to well enough. The next thing anybody knew there was a hot spot over his head and he's out.

Why don't I know who means whom you? Come for you'll talk with the headgear over his mouth. If you don't want to wind up the same way, it might be a good idea to let me show these rules.

1. Before refueling ... always let the engine get cooled off long enough to let the fuel line cool to the air. This is because a hot engine raises the temperature of the fuel line, which in turn raises the temperature of the surrounding air.

The combination makes a lot of gas vapor which tends to stick around the hot vehicle. If there's an accidental spark or flame ... you're liable to be blown into the next world. The longer there this is present is hot head, whether you're.

You can lessen the chance of fire in the case by stopping your vehicle somewhere away from the refueling point. There is some other maintenance work for about 15 minutes before this.



ing over to get up. Also, your vehicle will hang up and not off faster if you take the quick down during the refueling period.

TRACKED VEHICLE



2. To prevent any fire which starts the work in filling lines should always be in contact with the filler neck during a fueling operation. If possible, always use hoses made of material that I consider this most desirable. As an extra safety step, you might try grounding wires to both the filler neck and the vehicle. Lower the grounding wires attached until the gas caps have been tightly closed.

3. Your rate of filling should never go more than the rate of flow for your vehicle - since this will cause spillage. And when you spill, you're more liable a lot of times are blown off. Shut up the doors for sleeping by this. To check the refueling rate for your vehicle, look up "1000 (200-11, 1) All Military Vehicles (Maximum Safe Refueling Rate)".



1. When using hot-rod reeling equipment, take care not to get a "large tank" from the filler pipes caused by hot-rod reeling for a fast flow of gas. Such reeling rates vary with the slope and volume of each fuel line and filler pipe.



2. Don't fill 'er to the very top. Space should be left in the fuel tanks for expansion. If you want a real gas measurement, check your vehicle's GM. For example, the GM's tank should have at least 10% inches of air space between the fuel level and filler neck top.



3. Use a hose with a portable for refueling like 10-type standing by with only another with the nozzle pointed right at the filler neck during the refueling operation.



- Smoking within 25 feet of any refueling area is not riding the train.



- Never leave a smoking gas engine unattended.

SIDE HINTS

- You want to be sure that the exhaust connections from the engine exhaust manifold to the muffler are put together and sealed right. They may be too snug to hand assemble but pushing them together back carefully makes for a seal that is the same plus. This'll make smoking harder when going into winter.



- Change your clothes as soon as possible if you get splashed with gas.
- Watch for gas leaks ... report 'em pronto.



- Make sure the filter cap area is clean ... that goes for the wiping rag, too.
- The screen unit in your vehicle's filter tank that acts as a filter and a fire screen, or should be taken out and checked every so often. A protruded air hose is best for cleaning the screen.
- Use good common maintenance sense and other procedures that may be MFP in your unit.

POLARIZE THRU THE FIELD



Grab all your TY-100 and TY-130 low voltage circuit breakers and lock 'em up. Then take a blue pencil and change the pump on polarizing your vehicle generators in FS 88, page 5.

To get the right polarity, you attach a hot jumper briefly to the field post, use the ammeter post, of the generator test adapter when installed on the generator. If you touched it to the ammeter post, it might weld to the post or fry your waddy fingers or worse.

So, with your engine stopped, here's the way to get the right polarity:

Take off the generator-to-ignition cable and install the test adapter on the generator. It's best to leave the cable disconnected from the adapter. But if you cannot do, make sure you have the adapter leads open.



Now, take down the regulator-to-battery wiring harness at the regulator.

Then hook your jumper to terminal 4 of the regulator-to-battery wiring harness . . . or, if it's handling, you can make this hook up to the positive post of the battery or the battery-cable post of the engine.



Now you're all set to bring the hot jumper over and touch it to the field post of the generator test adapter (a teacher mouth'll do).

After this polarizing job, complete the hooking for your generator output now. And now we've got this job "polarized," it's safe to go, attach the low voltage circuit breakers and put 'em back on work.

JOE'S
DOPE

YOUR EQUIPMENT'S CASE HISTORY

HEY,
CONNIE!
I GOT A
PROBLEM!

UNOH... JOE! YOU
COULD CUT YOUR
EQUIPMENT PROBLEMS
IN HALF IF YOU'D KEEP
YOUR DA FORM 478
UP TO DATE!

IN FACT, IF YOUR EQUIPMENT
COULD TALK, YOU'D ALWAYS
KNOW WHEN IT HAD
SOMETHING WRONG DO
WHEN IT GOT A NEW
MAJOR PART!

BUT THAT'S JUST
IT, CONNIE, 'S'POSE
I...

YOUR 478 IS NOT ONLY USED FOR
RECORDING REPAIRS, BUT FOR FILING MAINTENANCE
AND INVENTORY FORMS, RECORD OF OPERATIONS
FORMS, PREVENTIVE MAINTENANCE WORK SHEETS
-- TECHNICAL, AND CORRECTIVE MAINTENANCE
AND INSPECTION WORK SHEETS,
AND QUARTERLY OIL SERVICE.
WHAT YOU FILE IN YOUR 478
DEPENDS ON THE TECH SERVICE.

HOW DO I KNOW IF MY
PIECE OF EQUIPMENT'S
SUPPOSED TO HAVE AN
"ORGANIZATIONAL
EQUIPMENT FILE," OR
NOT?

CHAPTER 3 (11 DEC 88) TO
AIR TROOP SAYS THAT THE
HEAD OF EACH TECH
SERVICE BRIGADE THAT
IT ALSO SAYS THE JACKET
FILE WILL STAY AT
DRECHSELDAH WHILE THE
PIECE REMAINS ASSIGNED
TO A USING UNIT.

BUT,
CONNE, THIS
PIECE OF
EQUIPMENT IS...

1 THIS NUMBER AND
YOUR EQUIPMENT'S
SERIAL NUMBER'LL
HELP YOU MATCH
UP YOUR JACKET FILE
WITH YOUR EQUIPMENT!

3 IF YOU DON'T FIND
THE SERIAL NUMBER
ON THE NOMENCLATURE
PLATE, THEN LOOK ON THE
FRONT OF THE FRAME.
(OTHER PIECES WILL HAVE
IT IN DIFFERENT PLACES.)

2 HERE'S WHERE YOU PUT THE NAME
OF THE PIECE. IT'S NOT ENOUGH
TO MERELY SAY... "I'VE GOT A
3/4-TON TRUCK," OR WHATEVER!

2 TRUCK CARGO, 3/4 TON, 4X4, M37 W/1W
MC 82545 876
ENG NO. W0494H TRANS. N0231H2

4 IN THIS SPACE, YOU CAN
PUT THE ENGINE NUMBER,
TRANSMISSION NUMBER,
OR IF YOU HAVE A TANK YOU'LL
PUT DOWN THE GUN NUMBER.
THIS INFO'LL HELP YOU DECIDE
IF AN **MMIO** APPLIES TO YOUR PIECE
OF EQUIPMENT, WHEN YOU
REPLACE AN ENGINE OR TRANS-
MISSION, CROSS OUT THE OLD
NUMBER AND PUT IN THE NEW.



Jot's

Dope Sheet

Get "Hip", before it's too late!
Keep up your 478.
It's your gear's 201.
Tells who's been done,
keeps you and your piece up to date.

TIPS ON YOUR JACKET FILE

The jacket and its forms inside, go with equipment when it's transferred or evacuated, or even shifted from the Army to other agencies.

On the edge of your jacket keep a list of the IM's, TD's and LO's that apply to the equipment.

When the jacket's full and you start in another — staple the new one to it — both must stay together!

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

5

WHAT THEY WANT HERE IS THE DATE YOU DID THE WORK OR REPLACED A MAJOR UNIT!



242 709		
800 4107		
5	6	7
Aug. 30	15-410	800-4107
Aug. 31	15-410	800-4107
Aug. 27	15-141	800-4107

6

DEPENDS ON THE TYPE OF EQUIPMENT YOU HAVE! FOR INSTANCE: GENERATORS, YOU GO BY HOURS... TRUCK, YOU GO BY MILEAGE IT HAS BEEN RUN.



7

HERE, YOU PUT THE NUMBER OF THE WORK ORDER THAT ALLOWED YOU TO DO THE WORK OR, THE SERIAL NUMBER OF ANY REPLACED ENGINE OR MAJOR UNIT.



Aug. 28	18343	800-4107
Aug. 29	19240	800-4107
Aug. 29	18346	800-4107

Always complete calendar in trip and mail promptly. **DO NOT** use last column.

LOOKS LIKE YOU'VE WRITTEN SMALL HERE, NOT WITH THE BIG NUMBERS. MIGHT BE WE CAN JUST SQUEEZE THE SPACE INTO TWO LINES!



O.A. Form 478

REVISED 11-78

TRUCK CARGO, 1/4-Ton, 4x4, M37 W/D/W

ENG. NO. MC 42745 TRANS. NO. 67847
MC 40701 TRANS. NO. 67847

HOW AND WHERE THE EQUIPMENT REPLACEMENT RECORD

PROPERTY CONTROL	DATE	REASON	REPAIR	REMARKS
GRAND WAREHO, CAMPBELL AIRFIELD SAFETY WARE OF OIL CASE 10000	8	NO VET WSP WSP	9	
BILLBOARDING REPAIRS REPAIR WSP SAFETY WARE		WSP WSP		



8 HERE'S WHERE YOU TELL WHAT YOU DID YOU DON'T HAVE TO PUT IN THE MAKE AND OR THE TITLE... BUT JUST ENOUGH TO IDENTIFY IT. ALSO, WHEN A NEW TRANSACTIONS OR ENGINE'S NUMBER, ETC, NOTE IT HERE!!

9 PUT YOUR INITIALS HERE... YOU HAVE FINISHED THE JOB... BY THE WAY, SOME TECH SERVICES, FIELD AND DEPOT SHOPS USE THE BACK OF THE 478 TO KEEP A RECORD OF REPAIRS... OTHERS USE OR FORMS... FOR EXAMPLE... 2-4 478'S SA FORM 1078

NOTE: A COPY OF EQUIPMENT RECORDS IS ALWAYS KEPT IN ANOTHER COPY, ENCLOSED TO A MOBILE BOOKLET AND WHEN THE EQUIPMENT IS TRANSFERRED FROM UNIT TO THE ARMY TO OTHER AGENCY OR WAY, THE BOOKLET FILE AND THE FORMS MUST GO ALONG WITH IT.



AND KEEP A RECORD... CLEAR... IT'S NOT TOO SMALL... MAKE SURE ALL THE INFO YOU HAVE IS

ENGINE TRUCK WARE OF NEW ENGINE PULL	W/A
NEW ENGINE	W/A
NEW TRANSACTIONS	W/A

IF YOU'RE WORRIED ABOUT HOW TO HANDLE YOUR TRUCK FILE, CHECK THESE: TRUCKS AND TRANSPORT VEHICLES... TA 3-200, COMMERCIAL VEHICLES... TA 3-200, SPECIAL VEHICLES... TA 3-200, SPECIAL PURPOSE VEHICLES... TA 3-200, CHURCH, STATE... TA 3-200.



ORGANIZATIONAL EQUIPMENT FILE

THIS IS NOT A RECORD OF ALL EQUIPMENT... IT IS A RECORD OF THE EQUIPMENT THAT IS IN THE ORGANIZATION'S POSSESSION AND IS NOT IN THE POSSESSION OF OTHER AGENCIES.

478 IS ALSO USED FOR FILING MAINTENANCE AND INVENTORY, RECORD OF OPERATIONS FORMS, PREVENTIVE MAINTENANCE WORK SHEETS ... INSPECTORIAL WORK SHEETS AND QUARTERLY PMA SERVICE.



NATURALLY WHAT YOU FILE IN YOUR 478 DEPENDS ON THE TECH SERVICE.

HOW DO YOU KNOW IF YOUR PIECE HAS TO HAVE AN ORGANIZATIONAL EQUIPMENT FILE?



CHANGE 5 (11 DEC '56) TO AN 750-5 SAYS THAT THE HEAD OF EACH TECH SERVICE DECIDES IT!



SO YOU SEE, YOU DON'T HAVE TO HAVE EQUIPMENT THAT CAN TALK... THIS SET-UP DOES THE TRICK.



YEAH! WELL, SOON, IT LOOKS LIKE THERE'S NO NEED FOR EQUIPMENT THAT CAN TALK!



WELL, THAT'S THE PROBLEM WITH US NEW FANGLED THINGS TODAY... WE'RE OBSOLETE BEFORE WE GET A CHANCE TO BE USED.



Dear Half-Mast:

Is it just the ejector on the bolt of the M1 carbine that ejects all of the rounds from the weapon after they've been fired?

You have told that the ejector only plays a part after firing the last round and the magazine spring comes into the picture by exerting pressure against the last round which opens the last fired round.

This might have something to do with the ejector, but I think I'd stick with the idea of the ejector doing all the work.

Am I right?

PR. P.C.

Dear Private P.C.:

Here's the story. The magazine spring and followers of your carbine don't play any part at all in ejecting spent or live rounds from the carbine. Ejection is a positive action that is force and direction—given when you don't have a magazine in the weapon.

Here's a test you can make. Load a magazine with dummy rounds and put it in the carbine. Then hand cycle the weapon slowly. You'll see that the magazine follower has no contact at all with the round during extraction and ejection.



Now, take the magazine off and slide one dummy round into the chamber. Then pull the bolt back slowly to extract and eject. You'll see that the extractor itself holds the



round until it clears the chamber, and then the ejector "kicks" the round back right out.

Repeat the same cycle, but this time pull the operating slide back sharply. The ejection pattern will still be the same—except for the speed of the round as it comes out of the receiver.

The same type of extraction and-ejection applies to the M191 Springfield, the M1, M1A rifle, the Browning Automatic Rifle, the M1911A1 Pistol, and the M1 and M2 Carbines.



Dear Half-Bro,

I've got a problem on the electrical firing mechanism (749311) on the J-3 rocket launcher.

Some small army inspectors don't know the meaning of the term "double click" as used in para 716 (1) of TM 9-2092. They think it means that you can hear a double click. But what's meant here is a double electrical impulse.

I believe we could save quite a lot of money if we could clear up what "double click" means.

SFC R.D.F.

Dear SFC R.D.F.,

A lot of people have been wondering if a "double click" is something you can hear or whether it is electrical impulses.

When you can hear a "double click" it could mean the mechanism is out of adjustment, but it may also mean that parts are worn so that you get movement in the mechanism when you squeeze the trigger.

You can also feel that "double click" as a "snap" while you're squeezing the trigger. This is caused by two things.

Parts in the mechanism may be worn and cause slippage or a sliding effect which causes the parts to move forward. Then when the moving part gets to a high spot it stops. When this hap-

pens while you're firing you may think an electrical impulse has been generated and the rocket should have fired.

The second thing that can cause that "double click" is binding and restricted movement due to bad joints or parts not put together right.

That "double click" means the separate and distinct movements of the mechanism are occurring and as a result you get two electrical impulses.

Here's how you will if there's a "double click" in your launcher:

Quickly squeeze the trigger to the first position. You'll hear a click as the trigger is moved forward and then return to original

position like in any continuous movement. When the trigger hits the mechanism from it means the single click to be broken but you can't take that as a "double click."

If you do have a "double click" here's what you'll hear it:

Once in the position it moving forward in the trigger's being opened, it would then when you continue to operate the trigger and it allows the mechanism to return to its original position like to improve adjustment of the trigger mechanism.

In all cases, the inspector should check firing mechanism with the right hand to find out how much repair or adjustment has to be made.

Timing will show if the "double click" is caused by some type of restriction, or by the actual movement of the contacts.

HAND BRAKE SAFETY



Dear Half-Mark,

A lot of accidents have been caused by drivers who forget to put on the hand brakes when parking their vehicles.

Why not attach a warning plate to the dash of each vehicle, reminding the driver to apply the hand brake when parked?

Sgt. R. W.

Dear Sgt. R. W.,

Actually, it's a question of the best way to ring that warning bell between the driver's ears. Some think the only way to do that is to rig up a gadget that'll pull the handbrake handle when the driver lifts the load weight off the seat—or maybe an electric eye that'll pull in when he leaves the cab.

Your plan's less expensive, but some drivers don't read signs to read the dash plates that're on the vehicles now. So, I'd say a better way to take care of this problem is to make it a part of your regular driver-training program.



FOR A DUM STEER

Dear Mr. Mack,

It happens out after sunset over remote sites. The steering wheels lock on the MC-32 Federal crane while we're operating in mud or sand on the asphalt apron. Sometimes in real bad cases the supports and blocks put on the vehicle by MFD (66-1594-01) (77 July 83) get chocked off and the air vents heat up on the radiators.

The MFD was supposed to prevent this damage. How come it doesn't?

Sgt. W. L. P.

Dear Sergeant H. L. P.,

Here's the pick: When those steering wheels get stuck in mud or in a hard rut and you wind up that steering handwheel, you shoot a whole lot of air of hydraulic power down that vertical shaft. And if the wheels are stuck real bad, something's gotta give.

The inner outer rim it'll be the wind-off key near the top of the shaft. The key chews off and then the steering linkage moves forward, breaks off the MFD wraps and runs into the radiator. A costly mess.

Some thing could happen when you try to back up with that rig in soft ground. The wacky steering system is designed so the steering wheels are pulled and not pushed. When you back up, you put all the weight of the vehicle on those wheels. They always try to make a 180-degree turn...and what? You've had it! What makes it even sough is that you can't see the steering wheels from the driver's seat. You'll avoid all this trouble if you:



1. Stop at short hauls if you can. It's always best practice anyway, anyway.

2. Before backing up, look whichever the steering wheels are facing and line 'em up the way they should be.

3. Slide over the bracket out of the top of the vertical shaft in counterclockwise. Check this out every day before starting out. It'll help keep pressure off the wheelbarrow.



4. Now test the handbrake when the motor's in motion . . . and then always test it gradually.

5. If you have to go on soft ground, try to go in so you can't have to EXIT. Use forward only and only test to wide, sweeping turns.

When you're dealing with power steering, Sarge, brace those beams every

Handwritten note: ~~every~~ ~~time~~

HONEST JOHN NOTES

ROTATE THE PLATE



Now since you're wondering about the MAPP handling under your Honesty John notes, take a look at the number on the right hander.

If the hinge pin runs parallel to the ground, it needs changing 'n it's vertical. When the pin runs vertical, the number plate moves with the hander right and when you're working with a load, the overrigger is more steady and isn't likely to ride under the hander hander.

It doesn't make much to rotate the number on the hinge pin is on the vertical.

First . . . remove the four flat head screws.

Next . . . use a light hammer and brass drill to take off the cap.

Then . . . turn the number plate on the hinge pin is vertical with the motor pin with bottom.

Next . . . line up the tapped holes in the cap with the counterbore holes in the number housing and then put the cap back in the housing.

Last . . . get back the four screws and slide them



FRAME UP TROUBLE



It's easy to see that this 20-ton construction and maintenance truck Y-17A¹ M30 didn't get the lift it needed. The chassis frame bent about two inches between the cab and vehicle body.

It might just be word that improper lifting procedure is the villain. In this case, the frame was bent because the truck was lifted from shackles on the front bumper and the 60-degree safety chain shackles made excessive use of the frame.

When doing any lifting get hold of TR 5-118¹ (21 July 89) and Change 1 (21 Dec 90) for lifting and slinging details.



Lifting the G-749 series tracks is done a little differently—the rear axle lifting eyes are used. Change 1 on the TR covers this procedure.



Also check to be certain in TR 9-6002 which says:



"Do not use the drawbar rollers which double as rollers over all bars for lifting vehicle. Use lifting eye on rear spring. 24 inch cables located between rear wheels on each side of vehicle and at front lifting shackles located at front bumper. Be sure to use spacers bars on side of vehicle."

That's the story on all vehicles in the 3H series G-742 and the 4-axle G-744 series.



Toe-in, toe-out, caster and camber are the things that can knock your road's drive to plumb. May, how many people know the difference between them?

You drivers ought to be able to spot whether you have wheel alignment troubles by looking at the tire wear. If it doesn't tell you anything, certain signs around your tires will. Here's how these wheel and tire troubles line up:

Toe-In—Think the pigeon-toed manner of the family. When your car's steering, the wheels on the front axle



are closer together in the front than they are in the rear. Your drive will show feathered edges on the inside edges of the tread if you've got too much toe-in. This kind's feather will usually show

up more on the right wheel tire than on the left. (Most vehicles are designed with a bias—in it is called a camber-castor rack wheel's natural tendency to wander.)

Toe-Out—Remember the duck-look. In other words, the wheels on the front axle of a road wagon are toe-better apart in the front than they are in the rear. You'll get the feathered edges on the outside edges of the tread, with



more wear generally showing up on the left side.



Camber—This steady devil comes in two shapes—positive camber and negative camber. Camber is the tilt of the wheels.

Positive camber (from legalism) is when the wheels are closer together at the point of road contact. When it's bad, you get feather wear on the outside of the tire.



Negative camber (knock-kneed) is when the wheels are closer together at the top. Bad negative camber shows up

in more wear on the inside of the tire. (The right adjustment on most vehicles calls for a slight bit of positive camber.)

Castor—Castor means the backward tilt of the axle at the tilt of the king pin at the top. Too little castor causes the wheel to wander or wobble, and run the tires up for a good rate of spiky wear. On the other hand, excess castor causes the wheel to pull to one side. When that happens, that side wears up for excessive and uneven wear. Castor is what helps your wheels return to straight-ahead position after you make a turn.



All said, these tilt are worth looking into. If you're not sure which one you have—but you're sure that something's wrong because you're getting uneven tire wear—roll over to your auto's shop. The mechanic there will save you straight.

REPAIRS

KEEPING IN FORM...

DA 9-110

Here it is... the DA Form 9-110 you guided missile-crews'll be getting right soon. If you don't have it already.

It's full handle is Guided Missile Component Evaluation Data Report—but it's called CER for short—Component Evaluation Report.

As it says in AR 700-37 (27 Aug 69), the wrap you put in the CER'll help the slide rule people find ways to improve the equipment and run down on its maintenance.

You think maybe you can stop using CER's when you get the CER'91 Plus or. It's set up so the CER will be used for every gun replacement. The CER will get used when things stack up according to the word in AR 700-37.

One thing is for sure... you won't find a form that's much easier to fill out. And it's not going to take long to learn to do nothing's here you see a repair-

form for every failure or replaced item.

You can see by the instructions that you're supposed to read the form to find some Armed Ordnance people. But that doesn't mean it's entirely a run with sorry deal. You want to send in a report to Ordnance Armed on all such service items that're installed in or looked on as a necessary part of the Ordnance and item. That's what the AR says.

OK... let's say reports on failure of the SACMFB electronic tube—a Signal loss—stacking up at Ordnance. That's when the slide rule people decide whether the tube or the circuit is the trouble spot. If it's the tube, the Signal people'll help straighten out things.

If the form's going to do any good, it's got to be used right. So here we run through it, block-by-block, using what could be an actual failure in a Nike-Hercules system to kinda get the feel of things.



First of all... we'll use a spreadsheet since it's easier to read. You can use a pen, but make it a ballpoint. And please be careful but the writing to go through the carbon to the third copy of the form.



BLOCK 1—This is an area one.

BLOCK 2A—Put down the part number of the equipment.

BLOCK 2—This right fit location is the group. Use your notes and description, not just battery and location.

EQUIPMENT AND LOCATION		EQUIPMENT AND LOCATION	
PART NUMBER	DESCRIPTION	PART NUMBER	DESCRIPTION
10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000
10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000
10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000
10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000

BLOCK 3—Equipment means the major item, combination of major items or groups of real items, which do a special job in the vehicle system. In this case it's the 82 van. Another time it might be the truck, etc.



BLOCK 3B—This is for the serial number of the equipment.



BLOCK 4—A component is a group of connected assemblies and parts that can operate by itself, but may be controlled from the outside or get its power from another source. The example shows the 82 vehicle, if computer or electronically controlled that are called components.



BLOCK 74

This is where you get down to the meat of things by naming the failed or replaced part, and a part is one that can't usually be disassembled if broken, it doesn't really pay to do it. Besides an electric tube, this also includes things like a resistor or a tube socket. If you don't replace a part, and the tech (check, assembly, etc.) is sent to your support unit for repair, have this section blank for them to fill in when they do the repairing.

REPAIR THE PART
OR
REPLACE THE PART

**BLOCK 75**

This is where you get down to the PM for the part.

BLOCK 76

The name of the outfit that made the part you have, as it says in the instructions. If you don't know the name, don't bother. You might write "unknown" in the space making the report—don't think maybe you got slipped over the block.

**BLOCK 77**

This space for itself. If you don't know it, leave it the Block 77.

1. Part Name		2. Part Number		3. Part Description	
4. Part Location		5. Part Condition		6. Part Remarks	
7. Part Material		8. Part Quantity		9. Part Unit	
10. Part Drawing		11. Part Test		12. Part Repair	
13. Part Assembly		14. Part Disassembly		15. Part Inspection	
16. Part Storage		17. Part Issue		18. Part Return	
19. Part Issue Date		20. Part Issue By		21. Part Issue To	
22. Part Issue From		23. Part Issue To		24. Part Issue By	
25. Part Issue To		26. Part Issue From		27. Part Issue By	
28. Part Issue To		29. Part Issue From		30. Part Issue By	
31. Part Issue To		32. Part Issue From		33. Part Issue By	
34. Part Issue To		35. Part Issue From		36. Part Issue By	
37. Part Issue To		38. Part Issue From		39. Part Issue By	
40. Part Issue To		41. Part Issue From		42. Part Issue By	
43. Part Issue To		44. Part Issue From		45. Part Issue By	
46. Part Issue To		47. Part Issue From		48. Part Issue By	
49. Part Issue To		50. Part Issue From		51. Part Issue By	
52. Part Issue To		53. Part Issue From		54. Part Issue By	
55. Part Issue To		56. Part Issue From		57. Part Issue By	
58. Part Issue To		59. Part Issue From		60. Part Issue By	
61. Part Issue To		62. Part Issue From		63. Part Issue By	
64. Part Issue To		65. Part Issue From		66. Part Issue By	
67. Part Issue To		68. Part Issue From		69. Part Issue By	
70. Part Issue To		71. Part Issue From		72. Part Issue By	
73. Part Issue To		74. Part Issue From		75. Part Issue By	
76. Part Issue To		77. Part Issue From		78. Part Issue By	
79. Part Issue To		80. Part Issue From		81. Part Issue By	
82. Part Issue To		83. Part Issue From		84. Part Issue By	
85. Part Issue To		86. Part Issue From		87. Part Issue By	
88. Part Issue To		89. Part Issue From		90. Part Issue By	
91. Part Issue To		92. Part Issue From		93. Part Issue By	
94. Part Issue To		95. Part Issue From		96. Part Issue By	
97. Part Issue To		98. Part Issue From		99. Part Issue By	
100. Part Issue To		101. Part Issue From		102. Part Issue By	

BLOCK 78

This can be the toughest to answer. Try getting the words from the logbook, positive measurements made on the date the equipment was put into use. If these records don't give you the answer, put down the best possible estimate and mark it "Estimate."

**BLOCK 79**

In this case, you get down to the bottom that's based on the electrical using these instructions. The block is filled in only if you're in getting an electrical failure.

**BLOCK 81A**

Check one of these blocks that best tells how you know the part was failing or that failed. If you check Block 1, be sure to explain it in the "Remarks" block.

**BLOCK 81B**

Fill this one, you should have these when when the failed item is sent to your support unit. But, you can help speed the repair by checking the cause of the failure in Block 72 and checking 72A. When you do the repairing, the item's how to work journey through Block 7.1.



BLOCK 12 You flip over the last page of the 22 to get the info. The only info that applies. The headings "No damage," "Excluded," and "Warranty" are there to help you get the right info.



MAKE SURE YOU HAVE THE POLICY NUMBER AND THE DATE OF THE POLICY WHEN YOU ORDER THE MANUAL		NO	YES	I.D. #
I am a member of the following organization:	I am a member of the following organization:	I am a member of the following organization:	I am a member of the following organization:	I am a member of the following organization:
I am a member of the following organization:	I am a member of the following organization:	I am a member of the following organization:	I am a member of the following organization:	I am a member of the following organization:

BLOCK 13 No need here.

BLOCK 13 You want to be honest here if the facts are going to mean anything. If you understand the listed items, say so. Don't ignore the following something like body padding.

BLOCK 13 Check it if you needed help from your support unit ... If it applies (and it won't say what ... and if it is or it is, you indicated the listed item.

BLOCK 14 This is the "Remarks" section although it's not numbered. Here's where you describe work. Put down anything you think will help the tech service get a good picture of things so they get the facts and figures on the correct parts that led to the extra charge if you need one.

John Doe

I am a member of the following organization:	I am a member of the following organization:
----------------------------------------------	----------------------------------------------



You're just about done. Now ... you sign your name ... print your name and rank below your signature ... fold copy 3 of the form and staple it ... put your unit return address in the upper left corner ... and drop it in the mail. Good copy 1 is your supporting Post Conference Officer. If you made the repair, keep copy 2. If not, send it to your support unit. They'll do the repairing and take care of copy 2.

I am a member of the following organization:	I am a member of the following organization:
----------------------------------------------	----------------------------------------------

BRICK-A-BRACK ON BRAKES

Here's a reminder for you: whenever the way out gets your trailer too steep,



It's still Huggy in the round pig in the round hole, and Huggys are the truckers who know where and how the lines from their trailers to their prime movers are connected.

WHEEL SALES



So it is with the hooking of your Miles trailer—M270, M270, M200, M240, M240, W210A1, M150A1, M240A1, M240A1 and M161A1. They're alike on the surface, but underneath, as their braking systems, they're as different as Romeo and Juliet.

Take down A1 trailers, which come to you with air-over-hydraulic brake systems. You have two lines for these trailers—called by the names SERVICE and EMERGENCY.

For power-on you're riding the rear of the prime mover. The trailer's SERVICE LINE is on your right-hand in-



EMERGENCY LINE is on your left. But, up on the prime mover, the SERVICE connection is on your left and the EMERGENCY connection is on your right.

This means that when you hook up, the lines'll be crossed. If you hook 'em



upside wrong way, fit a some low-cost trailer brake system, but won't be able to get out. Means locked brakes and probably lock-ups/lining and drums. Could even give the trailer shoes barrel-through ribs.

The M200, M270, M200, M241, and M240 trailers have electric service brakes. The correct for working this



is supplied by the prime mover. The cable from trailer to prime mover—that's all there is.

But, right into the service compartment on the trailer is an emergency break-away switch. The power supply for this body comes from a 3-wire trailer line.

may that's carried on the trailer. The works like this—

There's a chain from the break-away switch that's hooked to the prime mover. When you make your hookup, this switch comes to be in the OFF position.



Now, let's say you're driving along and something happens—like the trailer and prime mover separate. The shock in the chain it takes up and the pull rips the break-away switch.



The emergency brakes get on-air-over-it and a loud buzzer starts squeaking. So, there you are—you know something's wrong.



It's a heckuva good idea to try this switch before you connect—just remember, use the IT handle. It's a cold trail.



GOODBYE TO THE OLD

If an organizational process doesn't get all the info-to-a-follower or delivery across to the design people handling the engineering end of the game, there's no much chance of seeing a customer procedure or product improvement for the system. That's why your field relations support center is supposed to see that everything's laid down right when they make out the final copy of your IIR.

Your choice AIR 790-41 (1 Aug 59) was first, defective Transportation Group air forms get written up on the new value-made DD Form 1275 (1-1-59) *Administrative Report*.

This special form was intended to assist in giving everybody maintaining records a better idea of how to report administrative conditions in a way that will satisfy the regulations—which will you when you're in the report.

The standard IIR (DA Form 158) based up by AIR 500-58 (1 Aug 51), is still in use for air forms belonging to the other sub centers—but it's gone simple—there's little on it that you take up again as far as TC air forms are concerned.

Even the other IIR will combine a few more on the best way to fill it out. So, it figures that a new form can be twice as much useful until you get used to it. And, it's fast to, when you don't fill out a report completely and accurately, you've just wasted everybody's time, including your own.

HELLO TO THE NEW

you estimate the former Block 5. Diagram you forget to fill in any of the blocks, the ACTION AGENCY won't be sure whether or not you left something by mistake... and finding out is going to take more time, looking up the whole deal.

Just for the look of it, it's back out a clean copy, block by block...



Block 1 - Blank



Block 1 - Blank

Block 1 - Blank with 1st box



The same info you can put on or down in your desk or working copy, the better field relations' completed forms is going to look. Like the AA copy, you or post-it's just as good as a copywriter for their copies, speed's the thing.

In fact, Category 1 and 2 IIR's are allowed to be moved along by telephone, airtel, radio or air mail, as long as you remember to follow up with a desk's copy of the form to come to post-it. You don't even have to bother with Block 4 or any of those spaces with a 1st under Block 4.

There's how you've got time to sit back and work up a desk copy to look up the info you've already passed on to field relations, you can fill out the 1275 the same as you would here Category 1 IIR. That means filling in everything except Blocks 1 and 5, which field relations fill out.

Any time you don't have the info asked for, use form P14 or LINC... or

Remember the smallest individual part name in your portfolio. This format for publication—**Manufacturer, stock number, year**—is if you think a change in any individual will improve the quantity or maintenance of the equipment ... or the maintenance allocation chart in your parts list should be changed ... be sure to include the '98 number and date on the

form and explain in Block 9, IMI form 202, "Recommended Changes to the Technical Manual, Publications Supply Manual 1, 2 or 3," is used for suggesting changes to—of course, stock numbers or wording in the supply manual. The difference is that ITZY's go to the requesting people at IMI in 98, while your ITZY's are handled by the catalogers.

Properly Classify the part's part on P/B, this is the first four digits of the P/B ... **1234-1234-1234** In this example, the entire group would be **1234** and the date **1234**. Only one class can be opened in each IM.

Check off the IM—On P/B when available and put P/B in part 3, Block 1, to cross check. Otherwise N/A goes here.

Serial No.—if line are or it hasn't

Price Category—
Direct manufacturer

Manufacturer—Company that made the subject item of report.

Part Catalog No./IM—Both line or IM ... don't forget the date.

4

PART INFORMATION	
Part No.	1234-1234-1234
Manufacturer	ABC
Serial No.	1234
Price Category	Direct
Part Catalog No./IM	1234-1234-1234
Year	98
IM	1234
Check off the IM	<input checked="" type="checkbox"/>
Part 3, Block 1	1234

Index or Diagram No.—Check with IM.

Figure and Index No.—Page number, line



A change that is really necessary should be in a separate report.

Block 1

Quantity in Use—Quantity in installed.

Quantity in Stock—On the shelf and ready to go.

Quantity Reported—Batter reported from all of flight activity's reported.

No. Batteries Failed—There is to be no more parts used and failed in last 12 months. There's none if some battery's been reported before.

Block 2

Inspection dates, if you have 'em. Add 'em for signature numbers.

7

8

Block 3

Notes—Step by step identification, going from end to end assembly to major component to end item.

Type, Model and Serial—That don't usually A/L, but components don't always have a type, model or serial designation... if they've either A/L's or (M), the blocks have.



1. Test Manufacturing Ability—DO Form 22P-7, "Important Material Data," is good info source. Could be direct, customer or 2nd article support activity. Don't forget, unless equipment's ROR.

2. Quantity Defective—Don't count failures caused by negligence or attributed to different cause from the one you're reporting.

5

6

Block 4

Get the word from 'em and explain to para 4, Block 7.

Detail the Assembly location info when possible... (the station number, right or left side, major number, line or all, upper or lower, etc.

BLOCK 1		BLOCK 2		BLOCK 3		BLOCK 4	
QTY IN USE	QTY IN STOCK	QTY REPORTED	NO. BATTERIES FAILED	INSPECTION DATES	NOTES	TYPE, MODEL & SERIAL	ASSEMBLY LOCATION
1	1	1	0				
2	2	2	0				
3	3	3	0				
4	4	4	0				
5	5	5	0				
6	6	6	0				
7	7	7	0				
8	8	8	0				
9	9	9	0				
10	10	10	0				
11	11	11	0				
12	12	12	0				
13	13	13	0				
14	14	14	0				
15	15	15	0				
16	16	16	0				
17	17	17	0				
18	18	18	0				
19	19	19	0				
20	20	20	0				



If it's engine trouble, tick off maintenance actions on all 28 questions in the "Rejuvenating Engine Checklist" book in Appendix B of the AR.

Now that you're finished with your check copy, feel certain checks it over and fills in anything you can't answer.

Then they give you a carbon of their completed I275 along with the original check you gave them. Both copies go in your file. Meanwhile, Fed passes the number-one copy of the-completed I275 to the new address for the engine people.



Also that you keep in touch with your support people for word of an answer from TMC. If your UR is one of many on the same subject, chances are you'll see the fix show up in the UR Digest of the TB-ARM 21-7-series as an interim fix.

When you think about it a little, this new UR does a pretty fair job of spelling out what's wanted from you. The hardest part is gathering up the info

for the I275 ... and your support unit helps you there.

The UR's the official way to enjoy yourself with one of the Army's favorite pastimes ... griping. Like lots of these engineer types in Army maintenance keep saying, the product could be improved if somebody'd complain on paper instead of over a glass of beer. (If you don't like the new regs on I275, complain about them, too.)

NEW MULTI-PART TM'S



The days of the TM 4-series publications are numbered.

Starting with the TM's covering the F-16C/D (F16-1A), you'll be working with a TM 55-series that's basically the same as the multiple-part TM's you're using for your other Army equipment.

You've got four groups of numbers around TM to tell you how things ➔

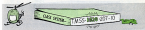
1. Tell you the TM's use only numbers designated to update 55-type publications from the Army's records.
2. Indicate major classification group and class.
3. Separate number for each manual in the same group and class.
4. Determine status.

In graphic form, the new system of numbering looks like this ... so pass it to your brain.



We won't be following the TM 55-part of it, but you'll have to get used to the group and class. The actual groups you'll be using are already published:

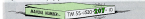
- Group 11—Aircraft and Airframe Structural Components.
- Group 12—Aircraft Components and Accessories.
- Group 13—Aircraft Landing, Loading and Ground Handling Equipment.



This is a real class-division system, since each of these groups is broken down into separate classes covering specialized areas of equipment. Let's take Group 15 for an example:

Class	Title	Class	Title
15A	... Aircraft, Road Way	15AD	... Chains
15B	... Aircraft, Water Way	15AE	... Joints
15C	... Aircraft, Other Than Air	15AF	... Jetways, Stairways/Compartments

TM 55-530-287 gives you the detailed list of groups and classes; TM 55-530 has the system breakdown by equipment manufacturers.



The 287 part of the TM example gives means this is the seventh manual put out in this group and class. That's because the first TM TC print in each group and class starts at 200. The other Tech services generally start numbering at 201.

As mentioned before, each FIC class has its own sequence of numbers. So the TM assigned the number 281 to the 15B0 class has nothing to do with the TM carrying the same 201 designation in the 15B0, or any other, class.

Just to make the point clearer, here's what the early sequence of number assignments looks like in these two particular classes.

FA 15B Road Way	FA 15C Water Way
1. 1-20-201	1. 1-20-201
2. 1-21-201	2. 1-21-201
3. 1-22-201	3. 1-22-201
4. 1-23-201	4. 1-23-201
5. 1-24-201	5. 1-24-201
6. 1-25-201	6. 1-25-201
7. 1-26-201	7. 1-26-201
8. 1-27-201	8. 1-27-201
9. 1-28-201	9. 1-28-201
10. 1-29-201	10. 1-29-201

The sequence numbers will continue to grow for each class as more TM's become converted to the multiple publication system.



Since the TM 1-series will slowly disappear, you'll have to get used to converting the old -1, -2 and -4 to the relations of maintenance numbers in the TM 5-series.

TM 1-Series	TM 5-Series
-11 (1st Quarter's Manual)	-1 Night Breakdown and applicable parts of -2 and -4.
-12 (2nd Operational Maintenance Manual)	-2 Maintenance Instructions and applicable parts of -1, -3.
-13 (1st Repair Parts and Special Tools List)	-4 Illustrated Parts Breakdown (2nd)
-21 (2d & 3rd Field Maintenance Manual)	Applicable parts of -2, -3, -4.
-22 (2d & 3rd Repair Parts and Special Tools List)	-4 Illustrated Parts Breakdown (2d & 3rd)
-31 (3rd Repair Maintenance Manual)	Applicable parts of -2 and -4.
-32 (3rd Repair Parts and Special Tools List)	-4 Illustrated parts breakdown (3rd & complete 4 illustrations/manual)



General type TM's have no maintenance relation designation. They just carry the title service number followed by a three-digit code ranging from 100 through 999 . . . like the new TM 55-105, "Fundamentals of Army Helicopter Maintenance," and TM 55-104, "Fundamentals of Army Amphibious Maintenance."

Each maintenance TM will carry instructions on both the powerplant and airframe for that aircraft along with related info . . . with in the applicable parts of the -1 or -4 and any other parts of the TM 1-series necessary.

The Time Compliance TM 1 will be applied by the MWO (Maintenance Work Order) system of working up modifications. For example, one of the first to come out for the Jeppia (H3) L3 looks like this:

MWO 55-1410-107-10/1

This is all the info you need. This is the **RIGHT** maintenance manual. It's the only one you need. It's the only one you need. It's the only one you need.



The parts and special tools lists will be printed in a separate volume as an appendix to the basic maintenance manual. But the figure and index numbers will be listed identically in the —30P, —34P and —38P for each piece of equipment.

The only difference will be in the listings. All listings, which accompany the illustrations by number, will be in the —30P when you're authorized that piece at that station. So, the page list-

ing is the authority on availability. If it's not listed in the —38P, you can't get it.

The listing of special tools will be limited to those each station's authorized use—which also is with which repair jobs the Maintenance Allocation Chart (MAC) allows for each station.

Since the volume doesn't normally list maintenance all the station maintenance and tool lists are part of that station responsibility.



THE APPENDIX BOOK—



Each parts and special tools list (—30P, —34P and —38P), though printed separately, is actually the Appendix II for each basic manual (—30, —34 and —38). The first volume part of the basic manual . . . Appendix I being the reference publications for that maintenance station and Appendix II's the MAC. Everybody's MAC is in the —30, regardless of station.

EXPLANATIONS—

The new TM 11-series, in case you're wondering, will be printed out this way:

1. Under subject 1—1 to king, just like the right handbook.
2. Under "5" list will have the —30, —34 and —38P.
3. Self-maintenance support articles will go into —30, —34, —38P, —34 and —38P.
4. Only "5" handpieces and TBC are authorized for —30 and —38P.

As with any changeover deal, you're supposed to give it a fair shake and, after looking it over real hard, come up with your comments. Hey, you got some already? Well, good . . . books away. The target for this mission is TCSMAC II at TMC, St. Louis.



Dear Editor,

The EM on our Austin-Warren hydraulic road grader says "bleed and clean entire hydraulic system at least twice a year".

We figured out you only half-clean the system when you just drain, flush and refill the hydraulic oil tank. Since the blade assembly sits lower than the tank, you still leave dirty oil in the blade ram—where grit and condensation from the whole system works.

So now, when our grader is due for

a hydraulic oil drain and flush, we've got a system that's simple on dumping branch water out of a tank.

Before we shut down for the service, we slide aside the blade so the left-side oil is like you would be working on a slope. Tilted like that, it's no sweat to pull the drain plug and watch the old oil run out of the blade ram.

Takes only a little longer, the blade works better, and no inspector is going to gig us for dirty oil.

M./lgt O. Feltus
 H. Bellvob



Old Man—Good thinking. If anybody sees one of these graders with a leg up, he'll know what's going on.

Connie Rodd's BRIEFS



Your rifle holster

If your rig or truck needs a new and sturdy rifle holster, contact manufacturers described in "Rifle Holsters" (ENR 11/14/88 p. 28) and "Rifle Holsters" (ENR 11/14/88 p. 28). You'll have to get a justification of requirement from your CO. It's a good idea to quote your CO and list item number for the equipment the rifle holster goes on.

Don't fight it

When maintenance or supply materials tell you to replace an entire assembly or assembly at one time, go along with them. Chances are you think you're saving money by ordering a single part and installing it yourself, but you may end up throwing an entire assembly out of adjustment by taking it apart and putting it back yourself. It's easier to maintain the entire time and type needed for these hard-to-get jobs.

Dragged by LD?

Some ARES-series tank units have been puzzled because EO 9-2080-21 d 18 (27 Jan 82) doesn't say it supersedes any other EO. Here's why: It's for Tank, Combat, Full Tracked TD units (Gen. 940004) (34000). Remember that EO 9-2080-20a d 18 (21 Aug 81) is still the LD you use for the ARES (44000).



Pe any language

It may be in French, but a guy working around an M-16-guided missile system can believe the words—"His Pan Teacher" means he comes across them. They mean—"Do Not Touch"—and just that. You'll see lots like "Touch off" (it always is the guy who made the equipment doesn't mean you to mess around with certain parts).

Know your colors

It's just as important to know your color codes for M-16-guided missiles as it is with ammo. Be sure to know what the colors mean before you start handling the missiles. The setup is in your TM. That way you won't have the color call out your head when it was using a shaped charge before shells for an inert warhead (blue) until a sharp-eyed guy spotted the trouble.

Getting in

If you've been having trouble with the commander's, driver's and turret hatch doors of your M42 tank, here's one way to look up (DAWD 9-1008-201-28-1 (28 Oct 85)). This repair modification class you're on getting rid of the problem on busters with serial number 1462 and better.

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

DON'T SHORT 



THAT
TM

