

Issue 69

PS

1958 Series

THE
PREVENTIVE
MAINTENANCE
MONTHLY



...bleeds, it's ready... every
often in these parts, the usual
play tricks on us... surface has
never appear like water and an
active imagination will create
what is commonly called a
mirage...

PLEASE, NO **HAIRY** PARTS **NOW**



Crossed a wire, you might have to see third floor, junction again, bicycle riggle's end or on—what they're the only thing you've got. In fact, your life may depend on hair's able to arrange up whatever's on hand and make it get you rolling again.

And to prove this, apply's a little of this same ingenuity is the only possible leading for us.

But it's easy to pony things up for first, the traditional support people take a few view of free-hand being and changing on a truck which they may get back for repair or rebuild. A Condy-powered Hydro-Matic Jeep would be mighty useful to service.

The other thing is, the supply people need training, too. They're always trying to iron out the bugs in their system

so they can give you what you need the minute you need it. And you want to help 'em any way you can.

Well, believe it or not, if you make a substitution or an improvised repair that keeps your vehicle running, you may actually be doing more harm than good. In justice time, I mean. Because supply stocks are based on usage, and when you use any part you don't need to take the place of one you do need you lower up the demand. In the next time you need it, it'll still be in short supply.

What do you do? For this as long as nobody's shooting at you, the very best thing you can do when you can't get a part vital to the safety or tactical needs of a vehicle or piece of equipment is to cleanline it until you do get



the proper part. Be real sure the cleanline report clearly shows that's the kind of part, exactly the last object, that's holding the vehicle or machine.

And you'd better give an extra approval check on the casual maintenance someone on that vehicle to be sure that everything you are supposed to do has been done.

Then if the Old Man or the Post Commander isn't complaining fire and dough for because the truck's not Hoody N Go, the search won't be on your listless.

And maybe the next time you need, when a part, you'll get an hour instead of a day-out.

So remember, keep the hairy parts handy for the real emergencies, but cleanline for lack of parts.

THE PREVENTIVE MAINTENANCE MONTHLY

Issue No. 24 1988 Oct 14
 Published by the Department of the Army for the education of organizational maintenance and repair personnel. Distribution is made through normal publication channels. Office Code is 0000000. Other issues may be obtained direct from Institute Maintenance Agency, 3000 Army Building, Fort Belvoir, Ill. 62205.

IN THIS ISSUE

EQUIPMENT	
Mount Magazine (all equipment)	7
Tracked Vehicle	11, 12, 13, 14, 43, 48, 50, 52
Motorized Vehicle	12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32
Office Machine	33
Generator	35-37
Battery	38
Maintenance Scheduling	39
Maintenance Agreement	40
Tire Test	41, 42
Spinning Wheel	43
Motorcycle	44, 45
Army Aircraft	46-48
Water Treatment	49

DEPARTMENTS	
Quality Field	53
Service and Support	57
Administrations	60
Quality Field's Book	64

If you've got a maintenance problem, don't just give up. Consult your manual, but when to get help. Read, fit, station, train, discipline, fire, drive, clean, and maintain are key to solutions.

Copyright © 1988 by the Institute of Maintenance Management, a division of the Department of the Army. All rights reserved. This publication is for the use of maintenance personnel only. It is not to be distributed outside the Department of the Army. The Department of the Army is not responsible for the use of the information contained herein. The Department of the Army is not responsible for the use of the information contained herein. The Department of the Army is not responsible for the use of the information contained herein.

MAINTENANCE
AND OPERATION

WHERE IT'S **HOT.**

| AND

DRY AND SANDY

SOMETIMES (COLD)



"The fighting man
in the desert
needs four five
legs... and the
desert itself is
the fifth."

Desert is a word the dictionary can't pin down. It gives six different definitions. If you mean a stretch of hot, dry, sandy country, you will get different descriptions. You're in air-conditioned lands call it "barrenland." You're outside is out on the range have a different word.

No matter what you call it, or how you look at it, desert is a place that is hard on men and tanks as hard on machines. Any weak spot will show up.



First of all, let's pin down just what a desert is. It's hot and dry now. Daytime temperatures go above 100 degrees. It's either sandy, rocky, or hard clay and usually a wide empty space with less than usual blowing sand. Then, just to be extra mean to you, it sometimes gets real cold at night, even down to freezing. All of this is enough to a rub-on both you and your equipment.

Maintenance takes on a new look real quick. Both in civilization, follow to keep your maintenance up will get you a chewing, and making a statement of change. In the desert, neither of your maintenance can get you long with luck, and making make your life insurance payable.

To make matters worse, you've got a whole lot more maintenance to perform. Desert conditions affect practically everything you use, and call for special care in maintaining it.



HEAT

Heat—First of all, of course, you have the heat. This not only makes you miserable, it's hard on your equipment. Your vehicle's cooling systems, liquid or air, depend on transferring heat from the radiator or cooling fins to the stream of air from the fans. Naturally, the hotter this air is to begin with, the less heat it will absorb from the vehicle.

To make things worse, desert roads are frequently rough or sandy, and the vehicle has to work harder, often in lower gears, to make headway. All this adds up to the danger of overheating.



So you have to watch your temperatures like a hawk, and be prepared to pull over *uniformly* your vehicle if they start up into the danger zone.



With tracked vehicles, you let the engine run at high idle to keep your cooling fans running. Wheeled vehicles should be headed up-wind if possible, to add the speed of the wind to the fan blast. If the tactical situation permits, shut your wheeled vehicle off and let it cool naturally.



All of this means that your cooling systems must be in perfect shape, or they won't have a chance to keep you going in the heat. On your trucks, all you can do is keep the oil cooler clean and be sure all your fans are running right. For tanks, you make sure that air-CPM, special equipment, rags or rakes are blocking the deck grille, either inside or outside. On the wheeled vehicles, you check fan belts, and be sure the radiators are clean inside and out, and maintenance is done in accordance with the latest TM when it is going below freezing or right over your vehicle's TM.

But, when filling a cooling system for street operations, you've got to set your level. There's no sense in filling the radiator of a cold truck plant up to the top, as the water heats and expands, you'll lose some of it, and water in the street is precious.



So, after your vehicle is stopped at the end of the day take a look at your water level just as soon as you've run you can release the pressure cap without heating the engine block, and while the vehicle is still hot.



Then, in the morning, when your engine's cold, take another look. The water level you see with the engine cold is the level you want to keep. Adding water will just waste it. It may take you a few days to learn just where to stop filling, but it's worth it. Some vehicles are tricky about this, so use your TM's.



Another thing, between the rough going and the storage of water, you must keep an eagle eye out for leaks in a liquid cooling system. A slow drip which wouldn't mean a thing in normal operation can be real serious in the street. A leak which drips one drop every second amounts to seven gallons in 24 hours, and that is more than most cooling systems hold. This becomes critical if you're away from your supply. So

keep the cooling system tight. Insure mechanics their hoses, hose clamps and fan belt stretch belts.



LUBRICATION



Of course, you'll make sure that your vehicle's lubricated with the right lube, as called for in your EM, for low-weather operation.

But, there's more to do. Heavy operation is cheap operation, so you've got



to be more careful in your greasing. A mixture of oil or grease with sand or dust makes use of the finest abrasive known. It's just like valve grinding compound.

You can't prevent some sand and dust from getting into your grease, particularly on the universal joints and chassis grease points, but you can take steps to keep the grinding down. First of all, you can grease your truck more often, and so have clean grease in and dirty grease out of the joints. In and around dust conditions it'll pay you to lube every day. But watch your chassis where lube leaks—don't have grease leak into your clutch housing.



Even greasing's not the whole answer. You can do more harm than good if you don't take every possible precaution to keep your grease, grease fittings and shackles and U-joints clean. Also your gear case breathers. Mostly it calls for a clean rag. Wipe off the grease fitting carefully before you grease it. Wipe the end of your grease gun, and also wipe off any excess grease, both from the fitting and from the shackles and joints after you grease it. The cleaner and drier your greasings are, the less dust they'll pick up.

Remember, the cleaner job you do, the less grinding compound you'll have sticking to your moving parts.



Air cleaners will need attention according to the dust conditions. Check 'em every day, and if the dust is bad, they may have to be cleaned or even replaced. Remember, a dirty air cleaner'll not only cause a clog in a point where it begins to pass dust on into your engine, it'll also get clogged up in where it restricts the air flow, and causes over-rich mixtures, oil dilution and power loss. Be sure and refill air cleaner oil pans to the correct level. Tankers want to be sure to clean the tops of their air cleaners as well as the oil separators. And keep your engines clean as possible — a dirty engine can run as much as 10 degrees hotter than when new.



WEAPONS



The only good thing about desert conditions is that you have little to worry about as far as rust is concerned. Which means that you can wipe your weapons drier than you'd dare keep 'em in wet areas. Any weapon will have to be checked for more often in dusty conditions, but keeping them oil wiped off will reduce the accumulation of dust, particularly at the barrel mechanism.

The use of a muzzle cover, or any other protective device, to keep dust out of your barrels and tubes will pay off.



LEATHER

Naturally you'll want to keep your bootleathers and leather gear soft and flexible because desert conditions tend to dry and stiffen leather. However, moccasins and stubbing are too greasy, and will leave you with an accumulation of mud which is hard on the leather and hard on you. Saddle soap is your best answer. It'll keep the leather flexible without picking up gels.



CANVAS

On account of the shortage of water, there's not much chance of keeping your canvas equipment clean. But, sand ground into canvas will wear it out and run through real fast. The best you can do is shake, beat and sweep, getting rid of all the dirt you can, particularly before folding a tent, fly, or awning. Also, continued exposure to sun, sand and dirt will dry the water repellent out of your canvas, so it'll need cleaning and re-waterproofing when you come out of the desert.



CLOTHING

Between the heat and the shortage of water, you'll have a real problem with clothing; you'll wear it up all day and drive all night. Of course, you'll wash clothes when you can spare the water.

When you can't, laying them out in the hot sun will dry 'em and deodorize 'em (sorta). But you try to have a dried set of clothes to climb into after sundown. And, like the canvas, your clothes'll last longer if you beat and shake as much dirt outa 'em as you can.

It's a terrible idea, the first time you try it, but it really works: cleanin' your mess gear in sand. When you have no water, you can get your canvas' tools clean by rubbin' 'em with lots and lots of sand.

End up by wiping the sand out with a dry rag, and if the tactical situation allows it, let your gear out in the sun for a while. (But remember, a flash of sunlight on a mess kit can be seen for twenty miles.)



MESS GEAR

DRIVING

Driving on the desert presents problems you won't find anywhere else. The FM 21-10: Most of it is off-the-road, and sometimes the surface is good, sometimes not. You'll find gravel, hard sand, dried mud pans, ruts and deep sand. Sometimes you may even hit sudden minefields, which gives you and that truck.

When the surface is hard, you have no more problem than you would on any dry road, except that you've gotta keep an eye open for ruts and holes. But



When you have soft sand under wheel, you'll have to be careful. Sometimes you'll find that the action of the wheel has packed the surface of the sand to the point that it'll carry one or two vehicles on a coat of霜. Continued traffic, however, will break through and get stuck. In this case, you have no speed over your



weight, in relation to the amount, so that each vehicle causes new ground. When you're driving on soft winter-keep less willing, use your momentum to carry you through.

In other cases, you may find conditions when the first vehicles pack down sand by running over it, and you'll get best results by making subsequent tracks up the tracks of the leader. Only experience will tell you how best to meet changing ground conditions. Whenever you're in doubt, come ahead on foot before taking a vehicle through. Lowering your tire pressure will give you better traction. But don't get too soft enough to ruin the tires. Avoid sharp turns in soft sand.



Exit is easy in desert areas, but brings you problems when it does fall. Your hard dry ground can turn into milky goo fast. It'll only be wet for a day or so, but you can get stuck tight while it is wet. In wet places, may be made roads or walk over the ground before you take out a vehicle.

CAREFUL: WATCH OUT FOR SAND HOLES! AFTER SAND-DRILLS, STONE AND SAND MIX (AS BEFORE) BEING BURNED, WITHOUT WARNING — SEE THE SAND HOLES. AND BEWARE OF THUNDERBOLTS IN THE MOUNTAINS ... FOR THE SAND HOLES.





When you do get a vehicle stuck, generally your problem is simply to get it back on top of the ground, up on un-frozen snow. This can sometimes be done by crawling, although there is a risk that the rear track, working twice the pull, will also break through. Wading, from a track on raised ground, is better.

Smart carriers carry poles or poles between the tracks and form a sort of ramp up



over the hole. Or sheets of corrugated iron, or even old canvas will help. If you have equipment to pump clear you can be out about 75 of your oil for ground trackless—practical at once.

Get caught, nobody will see you unless there are other traps nearby. Beware!

All the vehicles' drive mechanisms are the same. Tracks, sprockets, rollers, etc., etc., and the drive shaft mechanism is the same. Tracks, sprockets, rollers, etc., etc., and the drive shaft mechanism is the same. Tracks, sprockets, rollers, etc., etc., and the drive shaft mechanism is the same.



You can't be sure a three-hour drive won't turn into a three-day walk for a recovery section. Stay with your vehicle. Don't wander off and get lost.



Wrecker and FTR operators should also have some large traps and use it on their vehicles. This is used to form a "sand perimeter" device for recovery wading when working the off. You dig a hole, put the trap down over it, shovel back as much sand as you can and pull up all four corners of the trap back together. These corners then give you something to hook your cables to. Or you can bury a spare wheel, with the cable attached, under a trap full of sand.

INSPECT

Are your wheels operating in the correct direction to help you control in the most favorable shape. You normally look up on the shoulder. Inspected carefully for any wear and tear. Make sure you have a good view of the road ahead. Attention, both forward and around the vehicle.

WHEELED VEHICLES



Check your cooling systems, spring shackles, universal joints, tires and brakes extra carefully before you start into the woods, and keep a daily eye on 'em while you're out there. Your brakes will need to be checked often or they'll fill up with sand and grind away to junk.

Your radiators want to be kept clean and free of any clogging. Turn your propeller shafts and feel for slack in the U-joints. Wheel bearings want to be in top shape before you leave the post, and also be careful not to expose 'em when any sand is blowing. Make sure all DVM and such, emergency gear, etc. is on board and in serviceable shape.

CHECK THIS

TRACKED VEHICLES



Before making away from base, check the tracks, road wheels (particularly bearings), support rollers, and cooling fans. When under way, keep an eye on tracks, road wheel tires and support rollers for signs of rubber failure. Drive conditions are hard on rubber. You may even be forced over tracks for long operations. Once more, it all CDM and so on in place and fit to use?

And remember to check your TM's and DC's, particularly on the control equipment.

Cornie Rodd's

TOOL 'N' EQUIPMENT



Tool for your action

It's here!

The new multi-head arm lifts for your 2500-amp-horsepower range excavators.

It's being issued as part of the Special Tool Sets A and B, and goes under PPM 14-20-192-1679.

Never think with supply to see if they've got one for you.



Look alike, you...but



They're not the same. That's the story on the difference between your C741-series 2 1/2-ton and C744-series 3-ton tracks.

They look as identical as peas in a pod. Yes, if you put one on a track where it doesn't belong you're going to have plenty of hard-to-find ignition trouble.

They've both Delta-Rover jobs, their size and shape are the same, and every nut and screw looks the same. But

they're not interchangeable, because the shaft of one connects to a clockwise direction and the shaft of the other turns counterclockwise.



About the only way you can tell 'em apart is by checking the Delta model number on the filter base housing case before putting it into a track.

The 4742-series tracks use Delta Model 111526, P/N F29-F4-2452, and its shaft runs clockwise (as viewed from the top).

TOP VIEW



CLOCKWISE
ROTATES 180°

TOP VIEW

CLOCKWISE



The 4740-series tracks use Delta Model 111541, P/N F29-F4-2376, and its shaft turns counterclockwise.

Make 'em right

Gas leaks coming from your M44 or M48A1 tank's fuel-line quick-disconnect coupled off so, it could be happening for a few reasons, but one of the most likely is that you have the wrong fuel pump flexible line hooked up with the wrong elbow.

Just to start at the beginning, there have been two elbows made for that assembly. The earlier one is a 45-degree job that carries P/N 2910-214-0804. The later one has a 90-degree bend and goes under P/N 4738-558-9607.

There have also been two flex lines made. The earlier one is 29½ inches long and carries P/N 2910-214-0806. The later one is 12 inches long and carries P/N 2910-611-2871.

Now, it's just a matter of getting the right elbow with the right flex line—and this is how they go:

Use the line, P/N 2910-214-0806 (the 29½-in. one) with 45-degree el-



low, P/N 4738-214-0804. Use the line, P/N 2910-611-2871 (the 12-in. one), with 90-degree elbow, P/N 4738-558-9607. It's as simple as that—just don't mix the wrong line with the wrong elbow. Keep 'em straight.

Now, if you're still having leak trouble, get off a USR DA Form 400 selling Chief of Ordnance, Department of the Army, Washington 25, D. C., ATTN: ORZEHM, all about it.

Best step-around

You got best engine frame supports on your MT5 covered passenger carrier?

If so, take steps before it runs head into a real dangerous deal.

Since it's always best to stop something before it starts, why not be careful to see that these covers do not get bent by making sure they're always tight, and that the engine's taken out and put back into that vehicle like it says on page 108 of TM 9-7418.

But, after doing all this and the covers still don't stand up, you'll have to change 'em for a larger size. The

screw that's in there now isn't the one.

Screw, Cap, Hexagon Head nut—steel, oil- or nickel-plated, 7/8-24 UNF-2A x 4, ITEM 1405-208-0000.

If they're getting bent, replace them with this type:



Wanderlust

Does sniffling a burning-wire smell coming from your 1977 17-passenger Dodge bus? If so, you'll want to look up a copy of SB 9-78-52 (24 Nov 77) pronto.



Wire is that bus problem burning when the 12-volt battery runs low. The battery starts drawing a continuous flow of current from the generator for a recharge job. Within the time it takes the generator to fully charge the battery, that wire from the generator to the battery can get real hot and start

smoking. That wire, which is 12-gauge steel, isn't heavy enough to carry that kind of load for a long period of time.

SB 9-78-52, which covers warranty replacement of the wiring harness in the bus, gets rid of the light wire and replaces it with heavier stuff. It says that using tools will submit requests for replacement parts to Commanding Officer, Busbody Ordnance Depot, Toledo 1, Ohio. You have to read along the serial number of your bus, too.

The contract number under which these buses were bought is DA-29-115-ORD-21192. Check it out now, before you get yourself a burned bus—done medium rare.

Meanwhile, until you get the heavier wire, be on your guard. If your battery gets below 1.225 specific gravity (measured at 80° F.), take it out of the bus and have it charged.

Plugs Misfired?

Your GT40-series 30-cu-cm turbo keep coming up with fouled spark plugs, especially in the No. 1 and 6 cylinders? Well, be sure you check your fuel-pump vacuum-leakage before you send that truck to Orléans.

Quite a few trucks have been going in that hole's a thing wrong with 'em except a leaking diaphragm on the vacuum side of the fuel pump. That'll really foul up those spark plugs, because the vacuum line comes into the manifold right between the No. 1 and 6 cylinders.

A real easy way to field-check this is to start your engine and turn on your windshield wipers. Then gear your truck. If the wipers slow down or stop, check your fuel pump on that vacuum-gate because that's where the problem probably lies.

If the fuel pump's OK, then of course you make a compression test on the engine, and if the fouled cylinders (or any cylinders for that matter) show zero-



pressure that's not good at all. Below the rest of the engine, then the really clean have to go to Orléans, but check the fuel pump first.

PM in motion

That's good preventive maintenance in motion—the maintenance, adding machines, electric typewriters and all kinds of office machinery.



Of course, it's always a temptation to push a button or key or two just to

see 'em jump and hear the bells ring.

But finger-poking like that tests all the machinery bad...and bad.

It tests up the rollers, gears, wheels, levers, cams, keys, actuators, hammers, etc., that do the brain work on these mechanical time-servers.

Above the only time a machine should be handled except by a qualified operator or repairman—is when it must be moved.

The real fact is that careless poking by curious but untrained people causes more damage than everything else put together.

Next time you see an office machine—give it a dose of serious PM.

Small torque



Help solve the cracked manifold problem on your 1500 uncoated inline-4 cylinder vehicle and 1500 alloy-pipe-fitted motor variants by making a note of these torque specs. They're new—the result of torque checking.

From now on, torque the manifold clamp and nuts to 17-20 foot pounds, instead of 21-28 foot pounds like you've been doing. Those manifold and stud/nuts are run up to between 17-20 foot pounds, instead of 21-28 pounds. Torque those manifolds when they're cold.

This is the lower-torque nut and will probably stop a lot of that manifold cracking.

Save dry?



Are any greases alongside the kingpin-riding from the kingpin spindle bushing—of your Model 3100 1/2-ton Chevy pickup? If not, better get the vehicle back on supports.

Some of these Chevs get into the field with their kingpin bushings put in wrong—grease from getting on the kingpin. If the warranty's still good, the manufacturer'll fix it up. If not, your support man has to drill a grease passage through the bushings, so you can get grease up there.

Canvas Covers

"Calling names" are important, you know, and for those of you who've been hung up in your record-keeping on these items, here's the name and number on your M170 1/2-ton ambulance's canvas. There's no one kit containing all these items, so you'll have to identify each individual part separately. Just use these names and stock numbers:

- | | | |
|---|---|--------------------|
| 1 | Side Canvas Vehicle, left way | PN 240-12-912 6758 |
| 2 | Side Canvas Vehicle, right way | PN 240-12-913 6758 |
| 3 | Side Canvas Vehicle, left door way w/ end frame and trim | PN 240-12-912 6758 |
| | Side Canvas Vehicle, left door w/ frame and trim | PN 240-12-914 6758 |
| 4 | Side Canvas Vehicle, right door way w/ end frame and trim | PN 240-12-914 6758 |
| | Side Canvas Vehicle, right door w/ frame and trim | PN 240-12-915 6758 |
| 5 | Top, Vehicle way, w/ end board canvas | PN 240-12-916 6758 |



Step High



It's a long pull from the ground to the make and platform body on those 1 1/2-ton 2-ton make and platform trucks. Dangerous, too. That's why TB-24142 (11 May 48) was put out. It tells you how to put a retractable bumper up on that truck, so you don't have to dangle-hanging it. Makes getting into the body real easy.

WINDS & BLASTS



Makes a Storm For ...

YOUR FIRE EXTINGUISHER

A fire extinguisher's only good if it's filled right and working right, but you might be disappointed—had if your body is left exposed to the elements. It's, day out, especially around a 15-km/hr.

To make sure your cylinder'll always work right when you need it, grab some old scrap wood and build a shelter for each of the extinguishers you've got. You can set the cylinder out of the way of the direct blasts of the wind and other stuff, so the same time, keep it right handy. It and when you need it—it's only an extra's length away and you can slip it on in a flash.

Now if you're going to hang it on a wall or side of a building—you don't even need a house. . . or a wall. All you need is a roof, a back for a wall to lean on and maybe a couple of sides. . . just enough to keep the extinguisher out of the weather.

Before you get to it, make the roof with plenty of overhang. You can whip up the shed from old wood and the house, and if you decide to include a door . . . you can even put a handy little on it.

If you want to do it up right, paint it the standard fire color and label "Fire Only" on the outside. For roof-lining protection, cover the roof with an paper or canvas.



THE OLD AND THE NEW

Could be your Mike plus have had new weather made just around 'em lately. If not, they'll get 'em soon.

The new mast, which are "F" type, are being put on by your support with a few the old "O" type ones were out.

On some other where the new "F" masts are used, there's been trouble with the mast being loose, some are even breaking. The "F" mast have a hole drilled every 12 inches, just like the old "O" ones. So, the easiest way to install the "F" mast is to put the bolts right in the holes used for the "O" mast. But they don't always hold that way.

Talk to the field maintenance boys about it when the time comes to install your new mast. They'll make sure your "F" mast will hold.

If you've already got the "F" mast on your gun, check down the lines and on working. If they're not working the way they should, tell field maintenance.

A full-time and cleaning every week will help keep your "O" and "F" weather masts working.



To give a check all around on how well your weather made—old or new—are holding up, keep the dirt out from behind 'em, and make sure your elements're on the level.

DE-TAIL IT

Like Hiko, who gives a great big yelp if his tail gets caught in the screen door, your Nike-A has just minutes' warning of the rag on the hot tail pipe caught in the heating surface of the thrust chamber.

The rag, which contains the minute metal granules and which should always stay with the missile, is attached by various lengths of wire wires to the chest nut on mounting screws at the aft end of the missile. When you go to attach the thrust structure, it's easy for the rag to get caught.

Best way to keep this from happening? is to bend the wiring on the chestnut tape it adds like to the missile so it'll stay put and not hang like a ragging tail. This way you'll keep it out of trouble.



WIRE ATTACHMENT HAS PROPERLY ATTACHED TO AFT END OF MISSILE



THE YELLOW SLIT BETWEEN CENTER HOLES IS WIDENING AND EXTENDING BETWEEN HOLES



THE W WIRE IS PLACED

RUB, RUB, RUB

WORKS BETTER

You'd never catch a Nike-A jet engine using rings... unless he was making the chest windows on the missile do too using through.

You know the windows—two sets for looking at the "sub-cooled" indicator and the third is for looking at the high-pressure air gauges.



RUBBING RING IS CORRECT



The windows are made out of plexiglass... and time and wear put scratches in 'em—making it tough to see through to the other side.

You can make the windows look clear as new by rubbing them with red rings used by jewelers.

When you do it, rub the stick of rings on to a piece of flannel cotton cloth and then rub the cloth against the window for five to ten minutes.

The rings pass by this handle: Rings, diamond polishing, jeweler's, 14-16 1/2". It's an Ordnance item and has this P/N, 5890-048-2112.

The cotton cloth is the same kind used to clean your car lines.

NIKO-God T-2-5711 has been out since 1 Oct 57, but word's been going around that some Nike-A's barrels haven't applied it.



The NIKO's do use that pass a new type of ring pressure cleaner assembly and a wiper-type cleaner assembly on missiles with serial numbers from 1480 through 15,000 and 58,001 through 58,200. Missiles with other serial numbers are getting the new assemblies as they roll off the production line.

NEW SCREW UP NEW BARRELING P/N 522024



NEW SCREW UP OLD BARRELING P/N 522022



IT'S A RINGIER

Caution now . . . you want results when you're doing what you wrap hand-ling straps around your Nike-Ajax missiles. If the bolts don't hold the ring, and the missile together like they should, like to see those rings'll come loose and let your missile in for a fall.

Best way to avoid a situation like this is to be sure the bolts don't go through the handling straps one foot of gaps, dead end, when being used. There use a spare finger to put a light coat of already grease on the heads and end of the bolts.

The greases on Air Force form that goes by the handle: Grease, already, MIL-1-57-11A, Ammunition 1, about 2 cups 1/2, P/N 1458-300-0000, 1 lb. can. Your supporting depot can get it for you from the Air Force through Military Inter-departmental Purchase Request (MIPR).

Take extra care when you secure the bolts into the hole in the missile tank. You, the hole is made of steel and the missile tank is aluminum, which means the threads in the hole are softer than the ones on the bolt. If you try to force the bolt in "hard" of being up the threads, you'll strip the threads in the hole on the tank.

Then Greasener has made up the hole in the tank with new threads-by using helical inserts.



IT'S ST. LOUIS, LOUIS



Just like the Old Cavaliers 518-43 and 518-51 are, about Nike-Ajax Handbooks have TM numbers now, all in the 5000-series. And remind your publications men when they order 'em for you that they're needed only by the St. Louis Adjutant General Dept.

Don't forget, also, the 5000-series TMs are being superseded by second edition TMs. First is . . . some of the new TM's are out. So keep track of them.

TEST . . . RESPOND



Dear Milt-Matt:

Many Nike-Ajax missiles are taking a beating for no reason. People are forgetting that a missile is designed for one flight only. Five new cracks where Nike has the operation of 500 hours on them.

Here's why:

When fire control wants to check out its missile-tracking radar, many are calling for the rearing of the missile. Result is a lot of wear and damage to the structural parts and the hydraulic system of the missile and its launcher, especially G-rings.

Instead of the missile, the ATC man should use the new responsive located on the mast of the launcher control trailer. This will respond the same electronically as a missile would, and save that wear and tear.

What you'd bring this point across.



Capt. R. E.



If Your Show Doesn't Blow ...



YOUR SLIP'LL SHOW

You'd never catch a Nike-Ajax into orbit on a firing a regular magazine full of ammo like the blowby noise of the acquisition antenna.

But, you end up with the same kind of trouble when you fire the launch filter on the way RF can get full of dirt, flow of air to the motor ... the motor gets

The filter shows a dent in the face of the fan ... the filter doesn't stand up ... the bearing wobbles on the shaft ... and things come to a screeching halt.

The thing to do, even at altitude, is to keep the filter clean. And keep your good ear open. If you catch the motor taking a long time to crank up to operating speed, it could mean the filter's clogged with dirt.



After the filter's cleaned, could be the motor never does get wound up to the right speed. That might be a sign it's not working on all three phases.



What happens is that as you throw the ac systems main power switch on ... that off ... that on ... etc. ... over a period of time, the contact for any one of the three phases could become burned.

On the motor you know. That keeps one phase ... and means the motor runs slower on the two phases that are left. That's when you call in support.

When someone for two, or all three phases go, the motor won't.

It's a good idea to keep the contacts clean in relay-type switches, like the phase voltage check (also in your ac and radio power control panel).



Another thing... if any of the three Klump bars in the circuit blow, don't put in a new one until you check out the resist and diode. You know, run a continuity check with your multimeter. The idea is to find out what's causing the fuse to blow...not just replace it. If trouble can't be located, call your support unit.



BY THE COLORS

Then there's the one about the regulation-voltage regulator. Move-on-mover which've been burning out at some Nike-Ajax and M16 PCS sites.

Some the leads are color coded on some of the meters—and numbered on others. Also some the colors are being mixed...and then back. The mixing means the meter runs at a higher temperature and too much of this makes things hot for the meter.

Maybe your meter is working but right now...as long as up to your way across primary for a look-out at the way the leads run from the meter to the standard board ES connector.

Things oughta work up this way:



MISSILE BLITS

FAST ROUND

Maybe you've been able to read a couple TM's while waiting for the rail-line or rail to run from your propellant servicing truck to the Caspoid missile. It's been taking that long for the rail to run through the transfer line!

That'll happen when you hook up the hose to either the missile or the rail tank and then rotate the tank, copy-like, so being it around the needed 180°. That's the wrong way to do it 'cause slow rotating less missile or rail get into the vent tube. And, no vent, no quick loading.

180°
180°
180°
180°
180°



You rotate give the tank a quick 180° flip when you're ready to load. That'll keep the missile or rail out of the vent tube. And you'll be through loading a lot faster.

Something else that'll help get the job done faster . . . make sure the lowest three-foot section of the hose is level. Anything less and you make it tough for the ball to get through.



FIGHT THE URGE

A Corporal or Nike-A-jet missile just don't mix with a drill that's tearing out the old RPM's—scratching the nose and all not going along together.

That's another way of saying you don't want to drill any holes into a component of the missile—unless an MPFC tells you so. And then answer the thing

you want to drill, if it's possible. You know how it is when you're drilling through something . . . when you break through the other side the drill just wants to keep going. On a missile, the drill could go on through an air or fuel line—maybe the air or propellant tank.

It's a different story in the higher echelons. They have stops for the drill so they can go just so far—no more.



A MUST

Did you get wind of MPFC Ord Y42-W3—the repair deal for Corporal's tool?

The MPFC puts another hole in the legs of the missile shipping container and the M1 handling truck.

The $\frac{1}{8}$ -in hole gives 1½ inches above the center line of the hole that's already in each leg—giving you more leeway in adjusting the legs.



LANGUAGE



Come across a few vehicles which had the tops of their positive battery posts painted red for ready identification. That method can be improved on a bit.

Of course, you don't need any identification of plus or minus posts as long as the ungrounded + and - are on these batteries in production use will be good shape. Many times, tho, these signs are knocked off as people bang on the tops of the posts when passing cables on—which they really shouldn't do, of course.

So, to make sure the cables are put on the right posts to keep off reverse polarity from doing its dirty work, some means of identification becomes necessary.

One good easy way to do it here take a little red paint and draw a + sign on the side wall of the battery right below the + post. This is good, because it'll get less wear and tear than if it was on top of the battery post and in no way will paint come in contact with the battery post or cable clamp, so interference with good contact.



Of course, you'll have to get the blessing of your OJ to do this, but he can give it under the provisions of the maintenance paragraphs in AR 750-5. Chances are many OJs will jump at the chance, especially if they have a lot of new recruits in their outfit. This is one sure way of training these recruits as to which is a positive post and which a negative.

A little paint certainly is a lot cheaper than a whole new electrical system which has been bugged by reverse polarity.







What's the deal with these people? They're acting like they know something about me. Why? What's the deal? Why are they looking at me like that? Seriously?



What's the deal with these people? They're acting like they know something about me. Why? What's the deal? Why are they looking at me like that? Seriously?



What's the deal with these people? They're acting like they know something about me. Why? What's the deal? Why are they looking at me like that? Seriously?

"Networks are based on mutual operations."

... which means it's de-
pendent on and when
the equipment is used.
It's in page-out time.



What's the deal with these people? They're acting like they know something about me. Why? What's the deal? Why are they looking at me like that? Seriously?

What's the deal with these people? They're acting like they know something about me. Why? What's the deal? Why are they looking at me like that? Seriously?

Joe's Dope Sheet

NO matter what gear you maintain...
It's the wear, and the tear, and terrain
which decide when and where
you should give that gear care.
Sure, use your IO...and your brain.



REWARD!

FOR READING AND USING THE
FINE PRINT ON YOUR **IO**

LUBRICATION ORDER

TRUCK, 2½-1
M135, M211, M215, M21

Address: 100-214, 0-749

Specialty lubricants and additives are available for electrical equipment and other machinery or equipment lubrication. Please contact your distributor for detailed information on all equipment lubricants. Distributors also supply the following:

THOUSANDS MORE MILES
OF USAGE OUT OF YOUR
EQUIPMENT

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



QUESTION AND ANSWER DEPARTMENT



WHO CLEANS 'EM?

Dear HoY-Mat,

Which organization is responsible for the care and cleaning of water tanks of the T-34s, M1A1s, M1A1C1s and M48C1s? What kind of cleaning materials should be used?

SFC M. M.

Dear SFC M. M.,

Maintaining and cleaning these tank turrets is the job of using units . . . when the tank body is just as much a part of the turret as the large-type hatches on other turrets.

Para 111 of TM 9-2228 (4 Apr 54) is the key. It will show you clean out the tanks and what to use on them. The way it reads you can see that organizational maintenance people have all the tools needed for the job, except a steam jockey. The steam jockey comes in handy when a tank that carries drinking water has to be cleaned out.

In fact, tanks used for drinking water need special care. Using ether solvent or mineral spirits on the hatches will



give their water a nice brown-like flavor that isn't hurt anybody—but it'll lose a lot of friends fast-like.

The best beer for units with tanks used for drinking water is to bring their tanks to Ordinance at least twice a year for a clean-flushing . . . or as often as necessary, depending on how fast corrosion or other pollution on the inside.

Then, the using unit can flush out the tank and disinfect it by using 3 ounces of calcium hypochlorite crystals in a tank full of water. After the solution's in the tank about 12 hours, flush it out with clean water before pumping fresh drinking water in.

These handy sheets on their disinfectant are the 6-oz jar, FM 5618-104-0100; the 1-lb. drum, FM 5618-102-4170; and the 5-drum, FM 5618-100-0115. Chemical Corps issues it as Calcium Hypochlorite, technical.

Handwritten: **Handwritten:**

A SOLID 17



Dear Sgt. Doyen,

I've always found the vehicle classification for the J-line M53 wrecker is 17. On page 111 of FM 3-16, "Basic Requirements and Classification," it states that the classification is 17. Change 1 to the manual doesn't show any change to the M53 classification. It's still 17 in the FR, and FM 3-16, "Engineer Field Data" (June 1984) doesn't list the M53.

What gives?

Capt. M. B. B.

Dear Captain M.B.B.,

You're right. The correct vehicle classification for the M53 wrecker is 17.

Handwritten: **Sgt. Doyen**

WRONG PARTS



Dear Curtis,

We've received some complaints from our support for use on our M38. We put 'em on and they run rough as a roll.

After trying to adjust 'em and after swapping a couple back to support and we better results, our support ran into one, and found that the gasket from the drive body in the filter doesn't seem to fit. What happened? And what do we do now?

Sgt E. D. B.

Dear Sgt E. D. B.,

I can guess what happened. Somebody got the tin, PN 208-008-1179 (M38) which is used to repair M38A1 carburetors by mistake, instead of tin PN 208-150-1179 (M38) which should be used on the M38.

There are only two items in the tin that are different—the air guides.



And if an M38 carburetor is installed with an M38A1 tin, it will run, after a fashion. It behaves pretty well at road speeds, but won't idle smooth a horse and shows black smoke from the side on idle moments. Better than your position.

And about all you can do is return the carburetor to your support unit with a LTR (Form 485) explaining your troubles.



Curtis

SLEEPIN' ON AIR



Dear Cousin,

That's a rough night recently. My grandma's mattress let me down on the cold, cold ground. It wore up with a rip big enough to poke your fat through. But the mail'd come 'cause there's no patching kit issued with these inflatable mattresses.

What do I do . . . make up with some rocks?

UNC M. A. B.

Dear UNC M. A. B.,

You're right. These mattresses are issued without a patching kit, but one of these days now, they'll be coming through with their own special repair kit. But in the meanwhile, don't let this keep you awake nights. Your support unit should be able to fix you up with a couple of repair kits that'll keep you sleeping on air.

It's up to you.

EPIC KIT, BARE TIRE, and
ground application
EPC 040 071 400 040

12-patch kit,
P4 by P4



1 dual 12 up
in patch stick



1 tube roller
cream



EPIC KIT, BARE TIRE, and
ground application
EPC 040 071 400 040

12 patch,
P4 by P4



12-patch patch,
P4 by P4 b



1 dual 12 up
in patch stick



1 dual roller



1 tube roller
cream



Use 'em just like the instructions on the containers say.

The first one might be harder to make away and will give you what you need.



THERE'LL BE SOME CHANGES



Dear Staff-Meat,

The Tool Set, *Artillery Range Maintenance (Oid 4-77-10)*, is issued to turret mechanics by TSP's.

Now anyone can properly work in the close quarters of a turret without their wrenches, open-end wrenches and a number 6 beyond my imagination.

CWO E. A. H.

Dear CWO E. A. H.,

You're right. That's why this set has been deleted from the supply system. It's now being replaced by five sets, including one for turret mechanics, which have the particular wrenches needed for each kind of artillery they're to be used with.

According to SCS, each mechanic gets one of these:

Turret mechanic (MOS 151.10)—FSM 5180-091-0020 (OSM 5-4-1180-110-See, 40)... Tool Set, Turret Mechanic. This set has a ratchet and combination box and open-end wrenches.

Artillery's artillery automatic weapon mechanic (MOS 161.10) or anti-aircraft artillery gun mechanic (MOS 162.10)—FSM 5180-091-0030 (OSM 5-4-1180-110-See, 42)... Tool Kit, Artillery's Artillery Mechanic.

Artillery mechanic (MOS 141.10) who's responsible for maintenance of 105-mm and 155-mm howitzers—FSM 5180-091-0041 (OSM 5-4-1180-110-See, 29)... Tool Kit, Artillery Mechanic (105mm & 155mm howitzer).

Artillery mechanic (MOS 141.10) who's responsible for maintenance of 115-mm guns and 8-in howitzers—FSM 5180-091-0051 (OSM 5-4-1180-110-See, 30)... Tool Kit, Artillery Mechanic (115mm Gun & 8in howitzer).

Artillery mechanic (MOS 141.10) who's responsible for maintenance of 8-in guns and 240mm howitzers—FSM 5180-091-0061 (OSM 5-4-1180-110-See, 31)... Tool Kit, Artillery Mechanic (8in Gun & 240mm howitzer).

ARTILLERY
TOOL SETS

FREE LOADING TIPS



Tankers are smart enough to load their big doozies when they know a few tricks of the trade.



Centerline ... if you're with an M41 or an M42, you might know about the way of loading from across.



First ... when you slide the projectile part way in the chamber, push it far enough into the tube and insert ring support the weight of the round.



Then ... put the heel of your clenched fist on the base of the casing and give the round a hard push straight forward.



Make your hand and arm more forward and upward in a hollow through as the extractor are released and the breechblock drops.



Things work differently with an M43 tank because you are separated across.



But ... put the projectile about 10 inches of the way into the chamber.

**TRACE BLIND? HOLD
OUT IN BLIND FIRM**



Next . . . push the propellant casing in the chamber with the casing-feeding plug handle. The projectile . . . will be driven down in the projectile seat in the casing plug.



Then . . . the with-hand comes—put the heel of your chamber flat on the base of the propellant casing as your hands are putting it on.

Finally . . . give the complete round a good, hard shove forward until the casing releases the cartridge and the breechblock begins closing. This way, your arm and hand will be moving out of the way as the breechblock closes.



If the breechblock doesn't close, the odds are that you have a gap between the heel of the projectile and the closing plug of the propellant casing.



What you do when this happens is correct the casing with your casing and retaining tool . . .



and push the projectile from the filling with the casing and move it back to where its base is about 11 inches from the breech end of the tube. Again, put the casing in the chamber and try seating the complete round with a hand shove.

So, you can see it's mighty important that you make sure you've got no space between the projectile and the closing plug of the propellant case. In addition, it'll be a big advantage for you to get inside the chamber to shove out a weak round. It's either that—or your tool's main gun's out of action.

Remember one thing: Loading is only part of the job. Before you make rounds in any chamber, make sure the action, chamber and breech ring parts aren't loaded with dirt and other junk. And keep them the way of the world during and after loading.

ARMORERS' TOOL SET



If your MCR calls for an "armorers' Tool Set," then you know you can find the work listed in **CRD 4 (M1, J-10, Section 1**.

In case you're having some trouble telling just which tool fits with the description, here's how they line up.

<p>ICE, square, brass point, width, height 1 1/2 in., width 2 1/2 in., length 1 1/2 in.</p>	 <p>FOR 100-20-000</p>	<p>FILE, HAND, 45/16 in. cut, 1 1/2 in. length.</p>	 <p>FOR 100-20-000</p>
<p>ICE, flat and square point, 3/4 in. height, 2 1/2 in. length.</p>	 <p>FOR 100-20-000</p>	<p>FILE, 40, square cut, right-cut 1/2 in. cut, double.</p>	 <p>FOR 100-20-000</p>
<p>ICE, flat and square point, 3/4 in. height, 2 1/2 in. length.</p>	 <p>FOR 100-20-000</p>	<p>HAMMER, 1600, 7/8 in. head, 12 1/2 in. length.</p>	 <p>FOR 100-20-000</p>
<p>CHISEL, 1/2 in. width, 1 1/2 in. length.</p>	 <p>FOR 100-20-000</p>	<p>HAMMER, 1600, 7/8 in. head, 12 1/2 in. length.</p>	 <p>FOR 100-20-000</p>
<p>CHISEL, 1/2 in. width, 1 1/2 in. length.</p>	 <p>FOR 100-20-000</p>	<p>HAMMER, 1600, 7/8 in. head, 12 1/2 in. length.</p>	 <p>FOR 100-20-000</p>
<p>FILE, HAND, 45/16 in. cut, 1 1/2 in. length.</p>	 <p>FOR 100-20-000</p>	<p>HAMMER, 1600, 7/8 in. head, 12 1/2 in. length.</p>	 <p>FOR 100-20-000</p>



How many of these tools do you own? Do you know how to use them? Do you know how to take care of them? Do you know how to use them? Do you know how to take care of them? Do you know how to use them? Do you know how to take care of them?

<p>SCREWDRIVER, COM- MON, wood bits 2 in long, steel bit 1/2 in long</p>		<p>SCREWDRIVER, COM- MON, wood bits 2 in long, steel bit 1/2 in long</p>	
<p>PLIERS, side cut, 6 in long, 1/2 in</p>		<p>PLIERS, side cut, 6 in long, 1/2 in</p>	
<p>PLIERS, needle nose 6 in, 1/2 in</p>		<p>PLIERS, needle nose 6 in, 1/2 in</p>	
<p>PUNCH, CENTER 1/2 in dia, 10 in long</p>		<p>PUNCH, CENTER 1/2 in dia, 10 in long</p>	
<p>PUNCH, DRILL 1/2 in dia, 10 in long</p>		<p>PUNCH, DRILL 1/2 in dia, 10 in long</p>	
<p>PUNCH, DRILL 1/2 in dia, 10 in long</p>		<p>PUNCH, DRILL 1/2 in dia, 10 in long</p>	
<p>DRILL, HAND, 1/2 in dia, 10 in long</p>		<p>DRILL, HAND, 1/2 in dia, 10 in long</p>	
<p>WRENCH, OPEN END 1/2 in to 1 in</p>		<p>WRENCH, OPEN END 1/2 in to 1 in</p>	
<p>WRENCH, COMBINATION 1/2 in to 1 in</p>		<p>WRENCH, COMBINATION 1/2 in to 1 in</p>	
<p>WRENCH, COMBINATION 1/2 in to 1 in</p>		<p>WRENCH, COMBINATION 1/2 in to 1 in</p>	
<p>WRENCH, COMBINATION 1/2 in to 1 in</p>		<p>WRENCH, COMBINATION 1/2 in to 1 in</p>	

PALM IT



Does your M16 or M16C 30-cal. sporting rifle have the magazine "falling-out-blem?"

The reason it falls out! The magazine isn't being secured with enough force to overcome the magazine spring pressure... the top round has to be depressed enough to let the magazine seat back.

You have the answer in the palm of your hand... it's in it is your palm. Use it to tap the magazine after you put it in the receiver. There're two ways to tell if the magazine is topped right—a click will tell you the magazine catches have grabbed hold... and a yank on the magazine lets you know if it's necessary.



There're two ways to remove the buffer assembly from the sporting rifle—the right way and the wrong way.



The right way is first to make sure the bolt is forward and down of the buffer assembly.



The wrong way is to have the bolt in the "up" position as you make the buffer assembly to get it out of the receiver. The spring tension of the buffer will be bottomed out unless on the bolt.

USE THOSE MUSCLES



The muscles in your car, that is—now that you've got the sparks on either the 800 (TST) or 8000 (TTR) self-propelled gas or 8000 (TTR) self-propelled batteries.

Some times you have been a bit too gentle when moving the power release lever for the starter and you're in the **NEUTRAL** position. They're both working that lever and start and jerk-like, so's neither the spark a couple inches at a time. But when it comes to stability, that's not of pump-up treatment both lose way in the world as here are the electrical contact points and raise the motor.

First, that lever box with the motor just like any ordinary electric light switch. What's needed is a firm follow-through push on that lever so you can make a definite electrical contact—no waver on the motor and hold the motor lever in place 'til the spark is raised.

If you waver that lever not easy or too jerky, you won't see sparks electrical contact you need. Instead of a steady flow of current, you'll be getting spiky contact... which means more wear and tear on the motor, not to mention burned contacts. Remember, too, that the spark is going to move up-into position at the same rate of speed whether you waver the lever or jerk it.



You don't have to be electrical genius' working by giving the lever a firm push, either. Cause there's a slip clutch on the hand shaft which allows slippage when the spark is at all the way up. So just keep a firm grip on the lever until you hear the spark being against the rest of the vehicle when you know that the spark on the vehicle have around the

spark is place, like it should be.

After the spark is up, push the distributor shaft handle back to mechanical **NEUTRAL** position. You might want to put a rubber cap on the top of your motor hand saying, "Always return the distributor shaft handle to **NEUTRAL** after using."

Another thing to keep in mind: Turn the distributor shaft handle. And that's so be sure it's in the **NEUTRAL** position when you give power the spark. Here's why: If the distributor coupling is not in correct position, the gear ratio is enough to spin the necessary fast enough to break when from the necessary engagement.

To lower the spark, put your distributor shaft handle in **NEUTRAL**, the power release lever in **NEUTRAL**, lift up on your hand handle, and slowly lower the spark with the handle. Unhook your spark cable before backing into position to keep from missing it.

One final tip on safe way for you to keep healthy and in one piece it would mean that the electrical cable attached to the electric motor is unhooked except when you're using it. Otherwise, anyone or anything will definitely jam the power release lever and make the **PROBLEM** situation not real easy and his anything is to push. You also want to check and tighten the main cable and hook it up tightly in place, also joining the power release lever'll even trouble them, too.



BILGE WATER



There are still some early-production model M10 self-propelled M5-series lawnmowers running around with bilge pumps on 'em. Thought those were out with better ones.

If you've got one of these earlier vehicles and still have the pump, here's the story:

When your vehicle goes back for overhaul or rebuild, that pump will be taken off. If, however, you're having trouble with the pump now, might as well take it off like it shows in TM 9-7304, and screw it in supply because you won't be able to get parts to fix that pump up.

As far as draining the crew compartment of that vehicle when the bilge pump's off, this can be done through the drain valve located behind the cover



on the cover line of the hull floor. Check that valve often and keep it clean—you've made sure it doesn't run or creaks up. If this happens, you may find yourself stopping around in water with no way of getting it out, except by hand and pull.



SEEIN'S BELIEVIN'



Whaddya mean you can't get repair parts for items that DeLorean MFD's put on your equipment because there's no supply manual for 'em yet? Sounds like you haven't looked at SB 9-180 (18 June 1977).

The MFD itself is your authority for ordering the parts as long as the parts have stock numbers.... and the SB gives the supply people the authority for getting 'em to you. Use both the SB and the MFD numbers on your requisition. And get the SB.... it has a lotta other neat work stuff, too.

NEW FLICKERS



There's a few new training films out which you drop 'em and which drivers may want to see.

TF 9-2934 shows how to operate the winch of the G10-series 2½-ton trucks. TF 9-2136 gives the lowdown on adjusting the tilt mixture of the carburetors used on your G10- and G12-series 2½-ton trucks. TF 9-2517 lays out the dope on checking and adjusting the ignition timing on your GMC 302 engines. And TF 9-2641 and TF 9-2642 give you with goop on how to get your wheeled and tracked vehicles ready for deep-water fording.



Towing the

As all of you who have the C170-Series Hydra-Matic trucks know, their transmission is strictly something special. It will do an awful lot for you that no other transmission can do.

However, it also requires special treatment. And, in particular, whenever you have to tow your truck, you can't tow the truck for any distance with that transmission running over-wear and destruction will take place.

So, whenever you're got to tow a Hydra-Matic truck there's special classes or methods. And the type of device depends on the distance and how you're towing the lone truck.



For distances up to 10 miles with no towing device, if you need to do it, place the truck on level into the DRIVE/NEUTRAL position.



and the transmission differential free into NEUTRAL position in the disabled vehicle. You can't pull it over 10 miles on level, and you can't pull it over 10 mile distance with the cable.



To tow it backward, the leading 4 into-4 stud, keep the truck in DRIVE/NEUTRAL position and the left hand in 4 forward.



Hydra-Matic Trucks



Now, when you have to pull over 10 miles, over drive on cables and the leading leading device what you'll do if you're trying with all the vehicle on the ground, you're got to remove the fuel and the oil—pop the shafts from the back.



The one shaft you have the truck use in the forward use into differential gear...

The other pop-over shaft you have the truck use in the pillow block essential in the forward use normally.

The safest way to tow these shafts is just like the T10 5-6004 says. Remove them and put them in the bed of the truck and take 'em with you. Some people have tried to save time by taking them home as differential bearings and at the pillow block and then wiring them up to the frame out of the way.



This is all right unless you should forget and drop the front wheels on the ground with the drive flange in, or somebody should try to start the engine or move the truck like start in which case, the shafts could whip around and be broken.

The safest way is to remove them completely and carry them in the truck.

Now, if you're going to tow with a wrecker, you have a choice. You can lift the rear wheels off the ground—in which case you remove only the front pop-over shaft—or if you're going to tow with the front wheels off the ground, you

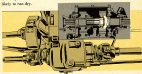
remove the rear propeller shafts but don't need to remove the front one.

These procedures seem like a lot of work, but they'll make sense to you when you understand that the forward drum of your Hydro-Matic transmission turns at approximately 8 times the road speed of the wheels when the transmission is in neutral and being moved. If the truck is moved too fast, pressure from the output pump builds up and attempts to apply the band to this drum—resulting in rapid burn-out of the transmission. That's why you always tow with the rear for case in neutral.

The reason for disconnecting the drive shafts when you're towing any G-740 truck over 40 miles is right in the transfer case.

First of all, since you're not supposed to tow faster than 11 miles an hour, the transfer case is likely to wind down on lubrication of the top shaft. The latter case won't get splashed up on its own as it does during normal driving.

Then, too, there's a bearing between the input shaft and the top output shaft that only runs when the transfer case is in neutral. This bearing is particularly likely to run dry.



And, last but not least, you wouldn't be towing unless there was something wrong with your truck. Which might include lost dollar leakage. This could possibly leak up your dog-clutches in the transfer.

And, by the way, you
could, you're not meant
to be allowed to power
the drive shafts.
That's why always tow
with the transfer case

By the way, the last word is that instead of taking out the front wheel drive shafts, you take off the transfer-case to front axle drive shaft. This won't let dry loss the front wheel bearings.

ARMY AIRCRAFT

Have you got the RIGHT NUMBERS?



You all know the importance of the correct numbers when the orders are broadcast' off the wall near the blinder. *Blinder*' never mistakes right run out you plenty.

And, believe it or not, it's every bit as important to get the right numbers when you're filling out your installed and spare aircraft engine reports on the Form 1850. For it, in the long run it may be more important to you. Getting the right number in the game can keep you from losing your points. But getting the right numbers on the 1850 might save what's inside those points.

Thus, the information collected from these reports gives the whole picture of aircraft engine performance throughout the Army. And from this picture they can pick out patterns of failure, probable life of the engines, all kinds of useful information.

The division is you comes first in better and safer engines, and second when you find the engines you need for replacements arriving at supply just before you need them. (Remember, the engine needed in Europe today had to leave the Hamilton factory a long time ago. They can't get out to you overnight.)



But, this happy sort of report had something else in store if the crystal ball is on the ball. That is, if the G-1 1850's show the true state of affairs. If the reports show engines lasting longer than they really did, or show less flying time per month than you really use, the engine you need won't be in hand when you need it.

Send it: maybe get extra copies of this AD. Use the "need-to-know" basis called for in the distribution instructions so that the engineering office and the record keepers can have 'em right in their ready little hands while filling out the required reports.

Remember again: This is a beautiful story, and it will work just as well as you make it work. So get the right shape into these volumes. Let's not have any more of these interesting items that show how hours on the engine as removed that there were an illustration—you didn't fly it backwards, did you?



Right, Joe—

KEEP IT CLEAN

Not the easy...the hydraulic oil in your main rammed damper fluid tank. Clean any known where dirt has found its way into this fluid tank, and then through the lines to the dampers...where it chews up the seals and internal leaks up takes place.



This, of course, cuts down on the damping action of the dampers, and possibly causes low frequency vibrations and occasional faulty operational results.

So, this dirt has to come from somewhere—it won't be there when they put the rammed together. The only place it can come from is outside, and the only time it can get in is when you service the tank.

Which means it might be your responsibility. But it's not hard to keep your results. All you gotta do is be real careful and clean when you open the tank for servicing. Wipe off all the dirt, grease, dust, & the tank and broken checkvalves you find around the filler before you open up.



And be sure you're using clean hydraulic oil into these rammed. Another thing—don't service the dampers with clean filter oil unless you absolutely have to, and don't leave open hydraulic oil runs around where dust can blow into 'em. Naturally, you clean the outside of the tank before opening it, just like you cleaned the fluid tank.

PLUG 'ER OUT



Come across a few Jeeps with rusted-out tool-compartments—and you should've seen these guys!

The trouble comes when a driver doesn't realize that there's a drain plug in the compartment, which has to be taken out every so often to let water drain out.

On your M38A1's, that drain plug is stuck in the center of that tool-compartment under the seat—it's right up forward. If you don't pull that plug every so often, plenty of water makes itself in the compartment and you can figure what happens. So, get it out and drain the compartment—then, wipe the seatpan from those tools and treat them like part 135 of TM 9-800-4 says to help stop rust.

On your M37's, the plug is also up forward—but it's positioned over in the right-hand corner. So, even when you pull this plug, some water might still remain in the compartment. The thing to do when draining is to park your M37 on a slope, on the vehicle's rolling to the right. This'll push all the water to the right-hand corner and it'll stay out. Then, wipe the tools dry and treat 'em for rust prevention like part 135 of TM 9-800-4 says.



TAKE IT OFF

You say you just got a new G-762 with JH and wish with the registration number on the door? You say it's causing you trouble because part 6c of AR 746.2000-4 129 Don 501 tells you to put that number on the hood? Well you what you want to do . . . take that rotten pickin' number off the door and re-install it on the hood. The AR is right.

CONTRIBUTIONS



On Robert Generators—

A SHUTOFF COCK DOES IT

Dear Editor,

Here's one for Robert generator sets, Models RF 300 and RF 5000, which have had MFR's 5-10073-1 applied to prevent carburetor icing. When you've got a Fuelcooler-3000 magnet on them, and a round heater disk, you've got trouble when you want to take the magnet off for lubrication or timing.



The round heater disk has to be taken off so you can take off the magnet.



And, before you get the disk off, the copper tubing coming from the carburetor down to the water pump has to come off. The tubing is part of MFR's 5-10073-1.





The way the setup is now, most of the coolant has to be drained before the copper tubing comes off because there's a hole in the water pump casing when you take off the tubing.

NO. 11 (11) ONLY WITH HOLES TO COOLANT -



Just put a chisel back over HOLES TO COOLANT on the copper tubing where it goes in the water pump casing.



Or, you can install valve that's 1/2 to 3/4 to 1/2 to 3/4 to 3/4 copper tubing. You also need the nipple and flow adapter that came with the 3/4.



Insert the nipple in the water pump casing, and screw the chisel back on the nipple. It cuts the copper tubing in the flow adapter, and that's all set to go.



When you pull the hose, close the chisel valve and you won't have to drain the coolant, just remove the copper tubing at the flow adapter.

Don't forget to open the chisel valve after reassembling. Remember that the chisel valve is always open when the generator's operating.

If your boiler has a square boiler door, you don't need this chisel and bit. Take the dump off the tubing and there's enough room to work the hose out.



There's one other situation where you won't need this bit. That's when the magnet is smaller than that's small enough to clear the round boiler door when you take it out.

Carl F. Brown
Camp Hill, Pa. A.



A HUYL DO IT



Dear Editor,

There are certain parts of an engine where a little glomch may pop off. One of these is the crankcase breather assembly of the GM-series V-8-car trucks and the M19 armored industry vehicle.

To keep this thing solid so it wouldn't vibrate out of its bearings, we've come up with a simple-to-do idea, and all it takes is a little weld.

Of course, this glomch isn't needed unless the threads in the filter tube breather become stripped or worn-out, which could happen just by removing and replacing the breather.

As you know, the breather assembly is held in place by a long screw coming down its middle and tying into a threaded breather offset in the filter tube. This breather is made of just two pieces of soft, threaded steel it's anchored to the sides of the filter tube.

Seeing that the breather has to be removed and reattached for tube order service every 1,000 miles, this breather may get loaded up. The threads get worn and distorted so the hole no longer fits snugly and, eventually, the two pieces of metal making up the breather separate.



To clean up that hobbling area, all we did was weld a little nut, which is the same size as the breather's threads, right on top of the breather's hole—the hole from which the long screw is removed. Now, you have a stronger nut holding that breather instead of the weakest breather.

One word of caution: Before you do any welding inside that filter tube, take it off the engine to keep sparks and slag away from the crankcase.

Gene W. Stoddard
Automotive Ordnance Dept.



Dear Editor,

Quantumway (RPO 18-702-L, Para 3a(3)), calls for steel (A578) lock stock. Giving a standard gage number can would not make it easier to get the metal. No one can know the desired equivalent of that metal gage. In this case it would be 18 gage.

CWO Harold L. Gauthier
Louisiana National Guard

(Ed: Mass-Tech's right. I agree with you, and so do the GM people. They say the confusion was a typographical error which has been corrected by including the gage numbers in Change 1 (April 1984). They'll also give their metal gage number as well as thickness when it's needed in the future. Thanks for the suggestion.)



Dear Editor,

Ever since we got those new 12-gauge Design boxes, there's been more glass breaking around here than on New Year's Eve. It's those glass windows on the door-roughener and the one here that's causing all the trouble.



The box is located in an upright position at the front of the passenger side, with the glass facing the side. When passengers start jiggling all the box, they have to turn 90 degrees. A technical challenge and you've got a job for the glass men.



All we did was rotate the box 90 degrees, so that the glass faces the wall door. Now, if a man slips his foot in the wrong place, it'll hit the metal side of the box instead of the glass, and there'll be no damage. The driver can still get at the box to open it without any trouble.

AND HE'S BROUGHT ONE!

434 CANVAS CUSHION

As you know, the straps and liners for the GMC Model 434 2½-ton stake and platform trucks don't come with the trucks from the factory, but are bought from other suppliers. The kit covers the truck all right, but the top of the steel under and the section locks are lumpy, and poke into the canvas.



In a short time it wears through, and of course the steel and flapping speeds the holes. Pretty soon the canvas is shot.

I suggest that these sharp projecting points ought to be covered some way. Possibly the section locks could be moved to the inside of the stake sections.

Edmond W. Hogan
Rt. Niagara, N. Y.

Old Note—One possibility is to put a salvage length of conveyor belt up above. It can be fastened by tacking off the straps, putting the belting under 'em, and running the belts back in the same holes. This way you don't need to drill any holes.



or change the truck in any way. Also you can't see the belting when the canvas is down. (It comes through rollers on each side of the steel under.)



Comic Road's BRIEFS

Hot dogs

Two new tags coming your way can save you hold-the-queer. AR 725-2-28 Oct 57 Maintenance of Supplies and Equipment, and AR 583 Oct 57 Motor Transportation. Get 'em.

Plugs popping?

Hard? trouble pulls? the plugs in your pneumatic sleeping suitcases—and keeping them there? The cure is simple. try restraining them a little. That means making 'em slide in easier, and then helps to keep 'em there.

Tape stays on

Always good news to leave the tape on your grenade containers until you're ready to use 'em. Then, if you pinch one under the top, the bottom won't slide off—leaving your grenade full the clock.

It's not your job

It's OK to want to keep the best-looking on worthless office chairs, but don't do the job on yours—whether it's the 444A1 105-mm, the 407A1 105-mm or the 422 7.62mm worthless chairs. The nearest guy to you with the tools to remove the backing is the man in your support unit.

A place for your back

Has your support unit been around to see you about a gun back container for your towel? Solid utility? You can appeal the man. ANVO Ord C21-W20 tells him to rig up a container for your 105's Whopper Second Rank. ANVO Ord C21-W10 does the same thing for the 105.

Cool cover!

You guided missile and howlers can keep cool in the hottest weather with those fancy cloth, water-impregnation coveralls and heads. They're part of your protective clothing wardrobe. Just slip 'em on over the rest of the outfit... spray for water on... and cool off. (right check 15 15-177 or 15 15-1-84 15 for sizes, numbers, etc.)





WONDER WHAT
HEARDING THAT
WELL, THROU
FROM
FORT FLASH
IF I DON'T
GET THEM
FORTYONE
BY 0500 I'LL
GET SHAMED



I
KNOW YOU'VE
GOT BATTERED,
BUT I
CAN'T FIND
A
FAMOUSLY
ANYWHERE
SOMEONE
MIGHT BE
NEEDING
EM.

**NEVER HOARD
SPARE PARTS**

**...SOMEBODY
ELSE MAY
NEED THEM!**