



THE
PREVENTIVE
MAINTENANCE
MONTHLY

SEPTEMBER 1951 VOLUME 1 NUMBER 4



'BIG TWO' CONFERENCE



The relationship between a driver and a first-class mechanic can be beautiful. Instead of regarding the monthly and semi-annual inspections as a pain in the chair—and the driver as the village idiot—the mechanic can help get the driver on the ball by letting him in on the little secrets of automotive design and pointing out the special wiring that certain owners take demand.

The mechanic himself practically sways part of the vehicle. He knows the stuff they're made of and what they'll stand. If the driver understands all this, he'll know just how far he can go before the store breaks the car's back. He'll know...if the mechanic tells him. Another time of the scheduled 900 servicing, when the driver sits in the mechanic's assistant, is a good time to tell him.

Take the Case of the Chattering Clutch. Suddenly there's a bang at the driver the morning to keep the engine running like light. The clutch seems to be keeping the engine from dropping out of the truck. But there's a big driver out there—the rest of things that only a mechanic would think to tell a driver. And that's that loose engine mount makes the engine too heavy—when the clutch is engaged, the engine jumps slightly away and the clutch goes chattering and grinding after it.

The driver of an up-and-coming vehicle like the large motor 400 and 400C, taking a load of around over a steady pattern under every line, can save the loss of all about by allowing a piece of advice that a mechanic can best give him. Picture the driver breaking himself up to change the engine wiring. He makes a sharp turn out of a road and suddenly finds the heavy turning that means the truck has slid away from the drive stand and is coming off. He's holding the truck by the handle in such a way as to get like this. But well—there is a trick that will get that truck back on its wheels again. The driver steps the vehicle in, suddenly, then it is secure and back up. The truck can back into place and he's on his way again.

Twiddling along behind as the mechanic spots the head of his truck, the driver explains that a couple of days ago he had to blow out the gas line, but that when he went to tighten up the line, it broke. The mechanic shows him how to wind a piece of wire or rope around the strands of the line to make it safe.

There's a thousand tricks up the man's sleeve. Passed on to the driver, they'll help him, saving hands. For although once upon a time we heard that the driver was a good off, we don't have it so much anymore. Living in the hell of the lowest class has turned the hat off off our heads.

Any driver that has had it is an "A" mechanic, no longer however, a solid scholar.



The prime time for him to pick up those little water runnings is the time of the meeting of the Great Muds—the regular scheduled PM meetings.

AND TODAY FROM A READER IN NORTH KOREA . . .

Dear Editor:

Our biggest trouble lately has been water in wheel bearings. During the past few weeks things have quieted down, so we've been cleaning and trying to get vehicles in top shape.

Drivers seem to think they can't wash a vehicle without getting into water that's way up over the hub. Our rule is not to get a vehicle in water in excess of water when washing it in dunes or streams.

WE HAVE FOUND IT GOOD TO LET DRIVER REPAIR ALL WHEEL BEARINGS THEMSELVES UNDER SUPERVISION OF A MECHANIC[]

Col. Sherman H. Harris
1st Bn., 1st A.S.B.



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Combat Maintenance Stories

JEEP MOUNTED TV's

Cpl. Don R. Apple

All the way from Inchon up to the present time I've spent most of my time in Korea behind a mountain ridge or top of the Incheon river, either on a jeep or on the ground, depending on our situation.

For a while we had a peak of trouble with the ridge running clear about every eight weeks of two days. . . and before we knew where we were we'd be back in sight down the mouth of a narrow 50 feet.

At first we didn't understand the trouble and we'd be in a heavy rain waiting for the planes to land so we could take a heavy shell. Sometimes took four or five minutes.

Then we found the trouble and went around looking each other's back for not catching it soon. Some that got us above a great unknown force would be back along with the shell and with us

LESSONS FROM 2 YEARS BY MAINTENANCE
MEN WHO WERE THERE . . . AND CAME BACK



the lifting loads, which is about all it takes to keep that propeller from crashing home.

Some crews are called to danger because a jam cleared after the gas cooled, that the trouble was from barrels expanding from heat of fire, firing, for they'd pull out the stack itself, and that they'd use sand or empty paper on the lifting loads. Or some of them would try to make a gas burner by wire-bonding.

We didn't feel around with any of that kind of stuff because we didn't think that was the trouble, and mostly because we knew that if we took any material from barrels, the way that gas works, the propeller gas could blow right into the frame and change the whole velocity of the thing.

The real reason the shells'd go home after a few minutes could have been because that plastic would get dry and hard when it cooled and move on out of the way even time the shell was fired. We don't know too much about that, and we didn't care now we know what was causing the trouble. Because after we learned to pick those pieces of junk off the loads, they'd take a shell every time.

Then that was, the matter here made of a rule we were in to find them. It's, we'd knock down and up the barrels every couple rounds and if we saw anything on the barrel that didn't belong there, we'd take another round or two in with a little rock and that's it.



QUEUED RADIATOR AND UNEXPECTED BACKING

Sgt. R. C. Milford

Now I can't say for sure about this, because my radiator may travel long enough to find out for certain whether it was empty, clogged, or old enough "for maintenance".

But, as how we lost those M4's up on Tapah Ridge because one of 'em was jammed. Like I said, I can't tell you if the radiator was shot up or just clogged up. Could have been either one because at the time we were taking a line of enemy machine-gun fire, and for a long time before that, there wasn't much time for preventive maintenance.

Anyhow, when that lead tank had to stop, we got orders to back down the so-called trail because I think they wanted to try and bypass the so-called tank and go another route.

As we started backing we felt the tank going apart on the side of the road, then the next thing I know we had slid down a steep slope and into a gully about fifteen feet deep. We tried to pull out but the tank wouldn't move either forward or backward.

Next thing you know the tank that had been second in line was right there beside us, almost full in on top of us. And they couldn't move either. And the fire getting hotter all the time.

Nothing to do but leave 'em there.

We managed to crawl out without getting anybody hit, but it was going through my mind that if that one tank hadn't of jammed, and if one of the crew had been sitting in either where it was while we were backing, we'd still be operating all that equipment.



NEW LIGHT SWITCHES



AND OTHER INSTRUMENTS ON THE PANEL

How they operate—
and why they won't
if you break 'em—
and ask for trouble.

That safety light switch on the dash panel of your new vehicle was not designed to irritate you, it was made before the war, probably. It may annoy you on all major cities' main thoroughfares just as much as it does, and get some lights—how long using the rear handle anyway.

The mechanical lock switch is there for only one reason, but it's a mighty important reason: To keep you from being a big target in a blow-out. As long as that mechanical switch is on the job, one and done that of the state switch lighting to keep you riding like a duck.

The mechanical switch that is the safety and hold switch safety panel has a little pin on the end to catch the light switch—also the mechanical lock switch. That is, it should do it.

Unfortunately, though, such a switch is not always the same because you in the car with many broken down lights, and even by accident switching the main switch before turning it. But it can be fixed. It's only a switch, how strong should it be? What happens then is that the holding pin behind the switch has gone out of line a quarter, leaving your switch as useless as all day, the mechanical switch between the mechanical and main switches gets damaged, and your light switch no longer has a protecting lock.

Which means you may be an up for some future trouble.

You've started if you'll buy the idea that the switch is the way to a safety's sake . . . and the good idea.

Hand-Tool CLINIC

SPECIAL PURPOSE
AND WOOD-
WORKING FILES



IF THESE THINGS
HAPPEN



CRACKING TOOL



POUNCE TOOL



SHARP



SHARP

KEMEROY

More long, steady, even stroke
It lifts in new shock-off lightly
of flat and soft workpiece slowly
in rise.

LEE PROPER TEE

First up or back down at the
pressure ... Stop dragging on
the bottom stroke and leave under
stroke ... Check it's good to
avoid glancing or sliding and
about the work with a flat spot
and finish those you're not using
in early flat

LEE PROPER TEE

If you're back knocking the big
against workpiece ... Stop
with back stroke and finish.

LEE PROPER TEE

If the material you're filing is too
soft or given like aluminum or
lead etc. use up on the pressure.
Use a little sand or beads to
keep them.

HERE'S A LOT OF THE BEST FILE
FOR SPECIAL JOBS



ALUMINUM

Made in flat and half round, is also
used on flat and half round.



BRASS

Made in flat and half round, is also
used on flat and half round, also on
rough work on the other side of the
work.



CARBIDE

Made in the flat and half round, both
designed for rough, heavy work on
rough work.

FLAT LATHE, D.C.

These files are flat for filing on an
edge of a larger edge than needed
for the flat edge work. Made in
flat and half round.



FLAT LATHE, D.C.

These files are flat for filing on an
edge, also on a larger edge than
needed for the flat edge work. Made in
flat and half round.



LEAD-FLAT

Made in the flat and half round, they come
rough on rough work on the flat
edge and very strong. Made in
flat and half round.



GENERAL PURPOSE FILE

Made in the flat, both on the
edge and on the flat, for very fine,
medium, and rough work.



SMALL CURVED TOOTH

Small files, curved both on the flat
edge, flat and half round.



WOOD WORKING FILE

CARBIDE RASPS

Made in flat and half round, both
for rough work and rough work.
Designed for the best removal of rough
work.

WOOD RASPS

Made in flat and half round, both
for rough work, medium, and rough
work, medium, and rough work.
Designed for the best removal of rough
work.





Need any shades?

If you're one of those small bugs operating in a businesswise corner of the globe and more often than not wallowing in death up to your eyeballs—crawling won't help, the situation will. In this case Ed Supply Bulletin says (in April '64) explain how you can get a pile of chains about your car. Not much to it—merely a good purchase that your local mechanic will be glad. Write your nearest law-making chain as a regular replacement and gain a through regular research. If your jurisdiction rules you'll get the chains.

Where were you when the cap hit the fan?

What good is a cap if you're not going to cap something with it? I am speaking,

at the moment, about radiator caps, oil filler caps—caps that should be tight in their places under the hood.

This means you gentlemen who keep the motor, leave the radiator cap sitting on the engine's atmosphere, and go on your merry way. One good bump, the cap becomes into the fan and takes off like a flying saucer, right through the radiator. You stoop your back, screaming, "What is the fan was that?" Now you know.

If you're that desperate fellow, when you take off caps—hold them in your teeth.

Keep that fan

There's something I am aware in the Canadian if you're maintenance manager, C&M, looks like the first best yet when

It comes in slipping up a steel bar under the back end of the $\frac{1}{2}$ -ton jeep, which is something many a jeep driver has been waiting for for years.

H. B. H. B. Tom's idea is to wedge a plate into the dashboard as the front edge of the rear seat and another across the back, to keep the seats from rolling out. The seat lifts up as it tilts out, with a pinlock attached, forms a rock-able bed for your improved road compartment.

The drawing below shows you the whole setup. All you need is about one inchboard each.

1 inchboard plate, 30 1/2" x 31 1/2" x 1/2".

1 inchboard plate, 30 1/2" x 31 1/2" x 1/2".

1 strap and buckle, 2'

1 pinlock

Washers and washers, and you will want to be having your tools.



Here's what it takes to make a handy make-the-back-seat-bed-for-your- $\frac{1}{2}$ -ton.

What happens at passenger

A check on all three elements in storage showed that some of these wrapped in green-painted wrapping and then slip-

pered with nothing wrapped but in a thin layer of wax on the element, before using any of these elements, thoroughly remove any wax skin or anything that looks like wax... even clean-tech and dry-cleaning solvent.

Unless the wax is completely removed it'll be dissolved by hot oil passing through the element and be carried into all compartments where it'll likely plug two drilled passages in bearings and shaft. Oil's gonna keep flowin' to do good.

How do you change your front?

There you stand at working if you're opening a Commercial Truck (1-171) 2 1/2-ton International 8000-series dump truck. Here you dump whatever it is you're dumping rather a lot of difference in the rear spring, double.

It is better to shake loose the washers and don't still slipping in the wash, but if for you're changing the back of the load, you do what is as natural as the rear your truck forward folds the bed up and that breaks her with a solid jerk—you'll empty the bed line, but what you do in the rear spring stands in considerably less good. They're been using something else. And that's a fact.

You won't know it until you've gone on your merry way, and when you find out is when it's too late. By then there, you've maybe ruined your prop-shaft bearings or something.

For a few rough moments, it seemed that the only solution for this was a shock. But I have tell that if you reverse the gear/chain—break up and break—nothing happens except you dump your

back.

The radiator is now more coming through with a fix for this trouble, and will take care of all trucks out the road they catch up with you, make sure you don't see a broken radiator and the leader with the lead up for dumping.



Small parts further south

Just because leather will not grow south as dry and will doesn't mean they're strictly for the south, yep. Unless they're made to the point of cracking, they can be replaced.

If the dry south has needed a repair, all JCR-10 is perfect for those repairs — make them overnight — they'll grow out of their holes as good as new.

When you're back you'll get some out of work wearing, wear should be around as a hot oil-bath. Make them for you to show them in the house to show 100% on 100%. You can judge temperature fairly close without a thermometer by keeping in mind that your hot bath water is around 110°F, and that water bath is 21°F.

And whether or not the water is dry and still, leather will not grow south should always be checked in the house to have an hour before you install them.

Small parts magnetic

Here's some let's about standard magnets for Ford Model cars — engines that'll work without too much in repetition.

Magnets under manufacturer's part numbers (M) 1-11-107, M) 1-11-108, and M) 1-11-109 through M) 1-11-110 are identical. There isn't any other, PCT, replacement parts for these magnets any or may not be available, depending on what your Repair happens to have left over.

For your own protection (when ordering service parts that your PCT says are used on these standard models only) ask that in the event parts are not in stock, they send you a replacement magnet assembly — instead of just a magnet. Please don't forget to indicate whether you're interested in a right or left-hand magnet (clockwise or counterclockwise).

Now magnets M) 1-11-111 and M) 1-11-112 are also identical — but as the service parts, there's no more. The new magnets (M) 1-11-111 and M) 1-11-112 are identical with the 111 and 112 jobs except for the location of the mounting bracket. Which means that replacement parts for the new ones will be 111 and 112, too. Now PCT says and my right hand that this will work — but you go ahead and order what's listed for the new magnets, and you'll find the parts will fit 111 or 112 and 111 or 112.



QUICK FIX FOR JEEP BATTERY TROUBLE

It'll take care of the Willys M38 and Ford GPW's with the Thump over-temperature-discharging feature.



You wouldn't think, since you installed the electrical system on your old Ford or Willys M38 in the early, and now have new batteries instead of you, that you'd have as much trouble. Even with the Jeep loaded down with radio equipment, you shouldn't be getting dead batteries every three or four days.

This is how. You know that conduct on the cable running from the master switch to the battery? Well, it's holding water like a sponge. And when it does so the insulation on that cable, being soaked in moisture all the time, you can guess. The insulation just runs away. And there you are—no only are you losing juice, but your battery's actually being discharged.

The problem is to get rid of the water so soon as it forms, and this can be done by providing the conduct with a drain hole.

You make sure of it by drilling a hole, about 3/16" in diameter, in the breaching-point of the conduct (Fig. 1). Mark

the correct point before you remove the conduct and cable to do your drilling. This can be fairly sure it'll go back into place with the same shape as it. You're going to check it, anyway, aren't you?

Most probably the cable will need replacing. G. M. D-300-17 CABLE, having 10 strain wires, 10 TERMINALS, is exactly. This new cable should last—and so should your batteries from now on.



**JOE
DOPE**

HOW TO BUILD, OPERATE AND MAINTAIN AN ORGANIZATIONAL SPACE PARTS SUPPLY ROOM

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2

BUILD A SUPPLY AND PARTS ROOM



AND MAKE SURE
FOR YOUR PARTS
AND TOOLS



MAKE A
SPECIAL ROOM
FOR
YOUR TOOLS
AND
MATERIALS

USE ANY
DOOR, THE
BEST DOOR
IS THE BEST



MAKE SURE
IT IS THE
BEST DOOR



MAKE SURE IT IS THE BEST...
BUT MAKE SURE THE DOOR
IS THE DOOR, THE
DOOR, THE DOOR...



MAKE SURE
IT IS THE BEST
DOOR, THE DOOR
DOOR, THE DOOR...

3

REQUEST PARTS FOR YOUR SUPPLY ROOM

USE THE ADD FORMS IN THE

Did you ever use this paper
form for any of these types
of requisitioning...

COMPANY
[Illustration of a company requisition form]

DEPARTMENT
[Illustration of a department requisition form]

SECTION
[Illustration of a section requisition form]

INDIVIDUAL
[Illustration of an individual requisition form]

...or for any other type of
requisitioning form you
may wish to use.



4

MAKE UP A HEADFORM AND LOCATOR AND INVENTORY CONTROL CARD

HERE'S A
FLASK AND
CARD...

NAME		DATE		TIME		LOCATION		ITEM		QUANTITY		REMARKS	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
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771	772	773	774	775	776	777	778	779	780	781	782	783	784
785	786	787	788	789	790	791	792	793	794	795	796	797	798
799	800	801	802	803	804	805	806	807	808	809	810	811	812
813	814	815	816	817	818	819	820	821	822	823	824	825	826
827	828	829	830	831	832	833	834	835	836	837	838	839	840
841	842	843	844	845	846	847	848	849	850	851	852	853	854
855	856	857	858	859	860	861	862	863	864	865	866	867	868
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883	884	885	886	887	888	889	890	891	892	893	894	895	896
897	898	899	900	901	902	903	904	905	906	907	908	909	910
911	912	913	914	915	916	917	918	919	920	921	922	923	924
925	926	927	928	929	930	931	932	933	934	935	936	937	938
939	940	941	942	943	944	945	946	947	948	949	950	951	952
953	954	955	956	957	958	959	960	961	962	963	964	965	966
967	968	969	970	971	972	973	974	975	976	977	978	979	980
981	982	983	984	985	986	987	988	989	990	991	992	993	994
995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008
1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022
1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036
1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050
1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064
1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078
1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092
1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106
1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120
1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134
1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148
1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162
1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176
1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190
1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204
1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218
1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232
1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246
1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260

5

PUT THE
SORTED PARTS
INTO YOUR BINS



6

HOW YOU'RE OPEN FOR BUSINESS





**DON'T HOARD
SPARE PARTS**
THERE ARE OTHER
UNITS WHO ARE
IN BAD NEED OF
THE 'EXTRAS' YOU
KEEP IDLE



JOE'S

Dope Sheet



WE HAVE THE WORLD'S BEST EQU

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There's a G.I. truck unit we know
Staffed solely by Dopes name of Joe
With gas tanks a brimmin'
Their gear cases swimmin'
And tires too high or too low.



EQUIPMENT... *Take care of it*

A Few Hints From The Readers

MR. BRANFLORENZ DIP-STICK

Dear Staff-Head,

It's about the oil dip stick in the M46 transmission . . . two kinds in use might have different marks . . . one has a stick with the "full" mark about 1" lower than the other. M46 74194 (see book No. 424470000) is the stick that's standard. It's "full" mark is 23-42.56" below the collar. The "new" stick that has popped up has its "full" mark 2" below the same collar . . . I was found in an Allison 42-434-4 transmission. We can't find any stock number. It's an RPO covering this new stick. The "standard" dipstick was found in an Allison 42-434-1 transmission . . . nobody but nobody around here knows why the difference in the sticks became regardless of the modification between the 1 and 4 transmissions, the oil capacity of both are the same . . . so it is a change, what's the sense?

Respectfully,
J. H. S.
TOM Supply, Ltd.

Dear Engineer,

You've got things right . . . after "new" dipsticks have only recently come out in the new Allison 42-434-1 transmission, the oil capacity is found to be the same as the M46 transmission, the oil capacity unchanged from 24 quarts or roughly, there is operator better with right hand. The "new" dipstick (full mark 2" below collar) takes care of this change in oil level . . . it's now standard with Allison 74194. The old stick's full mark is 23-42.56" below the collar and it's found only in Allison 42-434-1 transmissions — the stick is now obsolete. When the 4 transmissions are converted into the 4 type, you'll have no worry. In the meantime, when you're using only 24 quarts of oil this is easy to follow (M 42 74194). Just watch new marks on the old stick to match the markings on the new stick (Fig. 1). You can take off the old markings around every 4 quarts, and following on old marks (also). To remark, use a laser pencil, which gives an exact mark.

John F. Smith

ON THE M46



Dear Editor,

Young Mike running around where their transmission all filter-pipe covers are just running in empty space and get no play there, with the transmission gears, they're being locked by doing the grill door with the cover left open.

I know sometimes can happen . . . that's why I made out a little insurance policy to keep them in one place.

I designed a flip spring to snap the cover shut so it couldn't be left alone long (Fig. 1). The spring tension isn't made, just enough to get the cover down where it belongs and not too

much when it's held open for checking and adding oil (Fig. 2).

Make the spring from an eight inch piece of hard wire blade, heated, and bent to a 90 degree angle and lock from the rounded end. The blade's placed flat behind the cover's hinge with the tip toward and 1/8" above the filter cover. Then along the blade right to the filter-pipe with a 1-1/2" hex clamp around its bottom.

Little pointers usually pop nice dividers.

Ed. E. L. Peters
P. O. Box 141



EXHAUST DEFENDER FOR LITTLE JOE

Dear Editor,

Some guys are squawking about their little welding generator keeping them awake right beside going away their hiding place. My brother liked the position by mounting a jump muffler on the tank's header and piping into Joe's exhaust line. Other guys liked our exhaust-chamber and suggested welding the idea to Joe to get that personal satisfaction, and to let other little guys in on how we make one.

Here's how we made ours along with some pictures to help make the job clear to you.

We got together a welding torch, a cutting torch, a hack-saw, two pieces of $1\frac{1}{2}$ " round $16\frac{1}{2}$ lb., a jump exhaust pipe (3446 GPAC-54408) and a jump muffler pipe (3446 GPAC-54409).

Then we started on Little Joe. I took off the lifting handle and flame-cutting leg tube, and then cut off both ends from the muffler with the acetylene torch. The same position I covered out (see Fig. 1), is the angle compartment ball (dead corner between the tank storage box and

muffler and Joe above the tank header) I cut a $1\frac{1}{2}$ " hole (see Fig. 1).



Now, from the jump exhaust pipe I cut the flange elbow at the weld line in the double welding. This elbow was the other end of the flexible tubing I cut to only 12" from the weld. On the remaining piece of pipe I measured 12" from the elbow and cut it; across the center of this elbow I cut down three half-way through the pipe so the elbow could be bent without kinking. The hack-saw blade came in handy for all this cutting. (See Fig. 2 for all pipe cuttings.)

From the cut pipe to now, I made the elbow attached to the flexible tubing and



strapped it through the hole in the hull as the flexible tubing would extend out of the tank and until the other end is over Linde Joe's manifold opening. Then I welded the elbow to the manifold (see Fig. 4). Now I have the 12" elbow secure

except for I mounted the Jeep muffler. From the piece of 1/4" metal I made two U-shaped hold-down brackets one inch high and welded one under each end of the muffler and to the tender (see Fig. 4).



elbow around the corner of the tank's storage box. When I got the right bend I welded the elbow under the elbow and then fitted the elbow to the flexible tubing and welded them together (see Fig. 5). On the pipe's open end around the



That's how I went about making our Linde Joe water strider, and before we show us're building in for the right this rig keeps Joe's pump from drawing water for and bringing waterless gases.

Sgt. A. R. Greenman
Saves



Joe's Man: When absolute quiet is the order of the day, this is it. It's amazing you've got the C-9's conductivity so high.

But just a word before building or using in the engine compartment with an airplane crash, turn off the fuel tank shut-off valves and run the engine (and Linde Joe) till the radiators are dry. Check the cooling air out of the blower and insulate around the engine compartment with sheets of asbestos. Keep your M-9's engine profile from looking like a water polo. (That personal subscription to PS is now in the mail to Sgt. Greenman.)

CONTRIBUTIONS



MIL RADIATOR BLEADS

Dear Editor,

Working up with the M4, M tank light speed tractor, we found that if a good soldering job on the radiator system leaks about only a few hours, it's usually caused by the blow on the radiator or cross-pipe becoming clogged and building up pressure in the radiator core.

**E. A. Olson, GCT
Camp Stewart, Ga.**

(Ed. Note—If you're talking about the M4's engine-cooler interlocking radiator, we've seen a point—dry-fitter put dry-fitter down coffee in a hurry—we will improve mounting, careful assembly, and oil lubricate. Practice care for more pressure inside full strength, probably first inspection.)

Another important point to remember when soldering engine-cooler fluid radiators: The alloy must be cleaned after solder. (GNEP, which call for special soldering technique. EN 3,000/1 June 1941 covers the subject.)

OIL PAN TOOL

Dear Editor,

Here's an idea I'd like to suggest for replacing the oil pan on the new M4's as a saving of gas, grease, time and wear while towing, pushing, etc. and when.

Frequently when a mechanic is trying to replace the oil pan on these M4's, he finds that one pair of hands isn't enough—the job is too heavy to hold with one hand and start the screws with the other.

Now then, if a pair of screwdrivers could replace the hand on the right side of the engine on the M4's, you could really save time in each job which would temporarily hold the pan up. This would leave both your hands free to put in the rest of the screws. Then take out the screwdrivers and put in the last two screws. You could use these tools in jobs with different size-top screws on any vehicle.

**Cpl. John M. Phillips, Jr.
210th Airborne Cdn. Co.**

(Ed. Note—According to John says, they're not pulling the power plant.)

HEAT PATCH STORAGE

Steve Edlin.

For heat trouble with hot patches getting wet and rusty, the stakes drop. They lose patches faster, and keep them in to loose, so we found that storing them in ordinary newspapers just works best.

For your hot patches in the jet along with a little bag of cotton-gel or absorbent material. The crystals can be removed from time to time by heating them with a blowtorch. This method works out okay in Key West, Florida, and there couldn't be a drier climate anywhere.

Cpl. Herman Van Thun
Earl Taylor

(Old Man—after gel isn't used or used in packaging anymore, that using a desiccant is a good idea when you've got more. After gel appears as a light blue color when they're fresh and turn brown when they get to the right place.)

EEP ACCELERATOR PEGAL

Tom E. Lane.

The small rubber wheel should make a jump's acceleration pedal as much as the accelerator linkage when split and left off and you find yourself with a double-jump. (Don't a simple but I designed to carry one jump through until a new part arrives.)

From a tin can, empty knowledge to any kind of shape (not like a barrel, but better) cut out a small cross design (Fig. 1) —cut the same about 2" long and 1/2" wide and punch or drill a 1/8" hole in the center of the circle. Because the old cross and rivet the cross in the underside of the accelerator pedal. After the cross gets

lost the four arms around the hole at the end of the accelerator linkage (Fig. 2). That's all there is to it, and it works fine.

SPC John E. Cross.
Hq. Co. 10th Regt.
A. Leonard Wood, Mo.



(Ed. Note—Perfectly workable idea, except, on the other model jump. They're equipped with a hard rubber under that is often split by a sudden pedal engagement or just plain hard use. But if you take a look under the accelerator pedal of the new jump (A-10, Kelly Tank), you'll find that the rub-

the roller has been replaced with a slightly-shaped metal roller, which is permanently attached near the ball on the end of the mechanical linkage.

Thanks for the contribution. I just need subscription to it's a piece for Jan, for two year.

FOUR-ORBIT DRIVE

Dear Fellow,

We've put together a simple device which does away with the gear work when cutting round holes with an average hand stock. It can be made out of scrap metal and works fine as a drill/cut-down.

The dimensions for the attachment will vary depending on the type of work with the lathe. We made ours for a Cornell cutting circle, W.C. 15 (Fig. 1).

FIG. 1



It allows from 1" to 4 1/2" and accurately guides the cutting tip for holes of from 1/2" to 1 1/2" in radius. (The center attachment point is from the work cutting up the wider the cutting wheel can fit).

A deep patch made in the corner of the tool to be cut keeps the piece from slipping.

Unmanned out to hole the (Fig. 2).

MC Allen, Memphis
R.D. 1, E.E.
MC Nelson, N. Dallas
The Engineer, Invent, 1910

FIG. 2



(Ed: Note—Good deal more. The same idea gets good results for as on the wheel. Handboard, remember? It's even better for them and a piece of chalk on a string.)

FOUR-ORBIT DRIVES

Dear Fellow:

Here's a little tip for expanding narrow lathe circles, then should be of more help in maintaining shape when one dealing in hard-to-shape parts for the Army's new vehicles.

On the lathe it happens frequently that the four plunger will no longer make contact because of the mechanical swing and in time the object will distort the shape spring by looking the in left. We have solved this problem by welding a 3/16-inch nut near the bottom of the plunger, in this way lengthening the plunger enough so it can do its job.

On the Bridge lathe the plunger sometimes will slip off the linkage and jam. We have solved this by putting two 1/16-inch washers between the nut and four links under the two bottom links. This will keep the plunger around the corner of the linkage so it will not slip.

Sgt. John B. Barkley, Jr.
Field Engineer, 1st Co.

You've Got A Lot To Learn About

THE NEW M37



Like with the masses of new trucks, big new things, they've got to be tested and evaluated, with failure they're normal operation. Like you, when you started or you bumped around on your tractor before you walked. And so it is with the New Hot Dodge, M37.

Until all the bugs are out of here, you'll probably have a lot of chills and shivers and a lot of getting yourself in the machine. Here are some things you should know about and some you can even do something about.

WARM STEERING

It really shouldn't take two men and a hog to wheel the M37 around a corner or a flivver to steer her around a hole in the road. What happened to the steering mechanism is that the adjustments

got all hooked up somewhere along the line. Some were caught and readjusted, some weren't.

If you have one that's been working before on your hands, don't put up with it any longer. Re-adjust the steering gear, using the instructions in your Tilt Valve (see 1945). Don't miss anything, see the end play or correct mesh, wear-bearing (if you need more done, get them or wear and wear adjustment, or the steering gear alignment.

It's all of this, or you keep torturing your aching back.

FUEL LINE

A good idea would be for you to do something about that cheap fuel in the flexible fuel line between the fuel pump and the main fuel line (Fig. 1) before

the supply of gas gets cut off. You'll be much relieved to know the "fix" is just a small bend in another pipe.

Take a few minutes, a half minute, and put a bend in the main fuel-line. Bend is just enough to loosen up that tight angle in the flexible line (Fig. 1).



Fig. 1.—This tight angle bend isn't good for the flexible fuel-line—it's chafing.



Fig. 2.—Bending the main fuel-line, like the flexible line of its run along pipes.

CRACKED WINDOW

Before there's any door slamming done on your M31, it'd be safer to check the weatherstripping at the top of the window frames (upper sills), as they're called (Fig. 3).



Fig. 3.—This is the weatherstripping that cracks the glass when the door's slammed.



Fig. 4.—With the weatherstripping seal removed, the glass gets no more cracks.

if the door gets banged shut when the window's open, you'll hear not only the big fan, but maybe also the deep crackling of glass. This happens on earlier models but here Unisplap weatherstrips—the window rolls up into this channel-like weatherstrip and the sides of the "U" the lips) keep the window in a fixed position. One lip on the inside, one on the outside. I like it more. 1/2

It's the same lip that you're getting a lot of—it's making the trouble. When the door is opened with the window up, the window forces it way past the water lip. And after being exposed to this water a few times, the window lip is all right up. When the door is slammed shut with the window up, the situation is worse. You know what they say about

an incredible story and an incredible subject. This is it. The window isn't always square just and under the top, so it can be twisted. Sometimes it can be given

It can be fixed, though. You can change the top membership to look like what's up and down the side, and like the new top membership. The new staff (*Griffiths*) is L-shaped—the water bar is no more.

You wouldn't want the weatherstripping to perform the operation, just take your window out of your window or a sharp razor blade and slide about 1/4" off the weather lip (Fig. 4). Both window frames, naturally. And in order to keep the relatively cost of the weatherstripping from getting ragged and frayed, here's about another 1/4" of the weatherstripping to be removed.

1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809 2810 2811 2812 2813 2814 2815

PLANTING IN THE WINTER

A few requests before this issue went to press. *PM Magazine* had a letter from GUY D. H. PHILLIPS, that drives another ray of light on the Hirschvogel controversy raised about in the article on page 152. And you'll thank him too.

John Pomeroy says that the charge indictment may not register CHAMPA if the publicly known happens in the before 1999 and the existing 20th Century Technology

www.pearsoned.com

The two P_2 ions, fed, 2000 + channel backscatter—100% registration numbers increased through 000000—check the basic nature of the difference (p. 11) of the single-bottle type, the basic fluid gain as the change, the same time the register is changed while you're running along. When it comes time to use, you can

My dear — our leaders. What you should say on the 50th birthday is the double-belly, you know.

Wash your neck in the caps— you could get cloth caps under DVI 343-44. Wash each of the single-bottle caps with a cap that goes on the double-bottle caps on these tanks, or have them on until you do. Monitors under Allevap (37-42-734) cap, except (34) having been identified for clean 24 hrs. It has no bottle on it, and you shouldn't use it.

[illegible]

Figure 1

**How To Hook Up Safety Chains
And A Few Other Facts**

ABOUT YOUR M36

M36 TRUCK — M360 TRAILER

For those units that are using the trailer, cargo, tow wheel, 15-ton, 18-ton and the truck, 15-ton, that did not use a truck-trailer combination, here's a few tips.

Our unit went that the safety chains on the trailer were not there and no place on the rear of the jeep to hook them if they were long enough. They kept the situation by adding a set of shackles to each chain—enough to allow the vehicle and trailer to move without snapping the chain, yet not enough to drag and snag. Then they removed the run-up hooks that help hold the plate especially on the rear of the jeep and replaced them with eye-bolts. The same eyebolts used on the pin-chamber of the Ford Model GPW in the Wrecks Model M3 did the job. The eyebolts had to be secured with chains looking out on the side of the jeep and none of them were just a chain one chain in the shack to use the lock washer and still get a full nut on the shack. What they did was to find some self-locking nut with the same type of thread as the eyebolt shack. When they ran down at shore they pulled the nut right on the

shack until they felt the shack counter-screw half-way on the nut and the nut locked tight.

They found these bolts and nuts listed in GDS in 501, G-305 in bottom:

ROCK, eye, 1/2 in. 10 eye, 1/2 LUNC. 1 in

1/2 inch safety chain, Stock No. GDS.

1940101

WET, bolt, light, 1/2 in. 1/2 in. 1/2 in. 1/2 in.

1/2 inch eye, Stock No. 1940101

WHEEL, lock, nut, 1/2 in. 1/2 in. 1/2 in. 1/2 in.
in, Stock No. 1940101

Another unit said they made a piece of chain about 4' long, looped it through the bumper and fastened each end to safety chains on the trailer. Oh, they tightened the chains so they could be opened and run over in the tie-down chains found inside the bumper. Some thing gave for these lines in the run above. You've got to be sure chain's enough slack so the you go around corners, but not so much that it acts as a road weapon.

CLIPPING WINDSHIELD

How tight do you tighten the canvas hold-down strap on your jeep's (M36)

windshield? Not tightly enough will let the windshield bounce all over the place, and maybe crack. Not too tightly won't let



Fig. 1. Rubber rollers push on wind block, hold glass snug. Don't crack windshield.

the strap "give" when the head hits over a bump, and then the pressure can be the windshield.

Now you can't alter position when you know how right it is, what you can do is put the wooden hangers the windshield goes on. Get something like a piece of old rubber-foam, cut it the length of the wooden blocks, and then cut it again through the center.

Now you can open it up and use it to put the wood (Fig. 1). Tuck it on each side of the block, cut another length of foam, and cover the other block the same way.

Now you provide these cushions for

ICE SPEEDOMETER CABLE

Dear Editor,

In checking the odometer on our A50, we had to lift the entire instrument cluster out of the instrument panel. Job completed, we started the cluster back in the panel and back off. We expected the vehicle about 700 miles and things—speedometer stopped working. Didn't take long to find out what happened.

When we pulled the instrument cluster out, to work on the odometer, we pulled the speedometer cable free the firewall. When we shoved the cluster back in the panel we had all of that steel speedometer cable linked between the firewall and the instrument panel. That link bowed up the cable.

The next time we took the cluster out, we made sure that our men guided the cluster back in the panel and another soldier pulled the speedometer cable back through the firewall when putting it back.

There's a link past under the dash to keep your feet off the instrument. Because of this link you are unable to reach the cable from under the dash, so we had to pull the cable back from the upper side of the firewall. There's a rubber grommet in the firewall that the cable goes thru, and it's a pretty tight fit. We had to put some muscle to work—our two men. We stopped pulling at the point where our little steel cable was left between the dash and firewall.

Sgt. W. B. Jordan

the inspectors, you can replace that hold-down strap for all you've worth and not worry about cranking the windshield.

AGE 4,000 MILE CHECKUP

Come time for the 4,000-mile checkup on your M88, and a few items we have to do in order might not be so obvious. Take for instance the fuel filter. On the old type the fuel filter was located between the fuel tank and the pump and was mounted on the right front side of the dash—as if you didn't know. But chances are you've been finding your constant fuel, so, these many months, trying to find it on the M88 and have concluded the fuel filter must be the little one that isn't there.

The fact just is there all right!

This new filter is a canister-type job and is supposed to be cast-iron, non-corrosive, and generally trouble-free. It's placed on top of the battery of the engine compartment, not changing, no cleaning. So it's been tucked away close to inside the gas-line tank where it's hard to get to, and a "do not disturb" notice has been posted. All you have to do on the 4,000-mile checkup so far as the fuel filter is concerned, is take the drain plug out of the fuel tank and let run any water that might be in it.

REAR-AXLE BEARING

Another thing that could cause a lot of trouble, and very often does, would be the improper lubrication of the rear axle bearing. The ideal measure is so small that it's easy enough to overlook. So check to see that the rear inspector, after lubricating sparingly its seal and seal

leader damage. Use a hand gun, if possible, to control the amount of lube. If an air gun is used it should never be allowed more than one click of the lubricator.

REAR WHEEL HUB

If you find you have trouble removing the rear wheel hubs, there is a wheel puller set (#100-200-00) constructed for technicians, engineers, and anyone else, besides that performs their own 4,000-mile or semi-annual check.

BRAKE DRUM REMOVAL

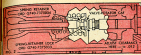
When it comes to removing brake drums, there's been some confusion as to just how the work is done on the M88. There are those who attempt in which not too much by these loose flange. But this design becomes approach always fails because they just aren't that kind of work. Easy does it. Carefully remove the wheel and the three retaining screws which will release the brake drum from the hub, leaving the hub and bearing assembly intact on the axle.

FRONT AXLE-DRIFT

Now a word about the front axle shaft. If you've had trouble finding the shim pack specification for the Sumpco type joint, the proper specification is double-shim.

TAPPET TAP

Would you like to quiet the noisy valve-tappets on the M88? Union carbide has already developed the valve-tappet-adjustment specification in T20 7400 and on the regular cylinder-head, the valve adjustment set that figure is probably set as .001 for both intake and



exhaust valves. It's the oil on the breasting exhaust-valves that makes the big movement.

The new clearance specification is equal to the same in oil on the exhaust valves. This is clearance between the valve stems up and the tappet (Fig. 4).

That adjustment, and for the intake valves and oil for the exhaust valves can be made with the engine warm or cold, and of course you know that's a primary rule in TMO-100-1A on page 101, paragraph 19, that says the intake-valve clearance is .010. Change it right on the page to .012 and decrease valve oil a bit.

Here's another tip that's easy to know, and for those of us engineers who are not fooling around with the exhaust valves, you find it necessary to measure the valve clearance as per the new in part is back when you get it. The valve-in-oil clearance could vary a few thousandths of an inch on the different valves, and everything else around will really screw up your clearance. Instead of going yourself a trouble, put the engine caps back on the same valve you took them off of.

THE NOMENCLATURE

And while we're on the subject of valves and tappets, let's straighten out

the business of their spring retainers and locks. The retainers and lock for the intake valves are not similar to those used on the exhaust valves. And ORD 1 on this vehicle, for example, does not specify "intake" or "exhaust" on the retainers — ORD 1, if you happen to be using one, isn't specific about either the Retain or retainers.

Here's your data: Retainers, valve spring (ORD 2740-177000) and Lock, valve spring retainers (ORD 2740-177000) are for the exhaust valves. Retainers, valve spring, lower (ORD 2740-177000) and Lock, valve spring retainers, lower (ORD 2740-177000) are for the intake valves.

The lock for the intake valves is a wedge type, and the retainers, of course, is angled lock is (Fig. 4). On the exhaust valves, the lock is the seal and is used in the exhaust (Fig. 4).



FIG. 3

FIG. 4



QING SPRING

Dear Half-Mast,

The other day I heard some (just mean, that) if you'd spent some \$10.00 right at the bottom of the spring leaves on the 11/10/10 (the number's right as best I thought I'd better get some advice on the deal before I tried it).

Sgt. G. I. D.

Dear Sergeant,

My advice is to lay off. Guess you where you're supposed to and let it go at that. Pass the information through to those other joes. Don't pull your position in snapping it, Sergeant, or it'll run over up the works.

Tell 'em that these springs are designed and put together with just the right amount of friction, and they make use of it. When you repeat 'em with all your strength that friction, get you much heavier, and break a spring.

This, to quote a quote, is asking for trouble.

Half-Mast

ONE BRASS PIECE-TRAVEL

Dear Half-Mast,

I disagree with my Ordnance Corps Technician about brake-pedal (overhaul on the GMC Heavy Gun. His says it should be $1\frac{1}{2}$ to 2". I say $1\frac{1}{2}$ to $1\frac{3}{4}$."

Please tell me who is right.

Sgt. R. F.

Dear Sergeant,

You and your OTC could be talking about a few different things when you mention free travel of a brake pedal, and I'm kinda leery about making any such statement here, you see.

Depending on the real technical side of things, if all the brake parts were shiny-new and the brakes were adjusted correctly, the only free travel you'd get in the pedal would amount to approximately $1\frac{1}{2}$ ".

This would come from the 120° clearance between the stop screw in the master-cylinder bracket and the inner-brake arm. The clearance at the stop screw is measured with the return spring disengaged.

raised. When the spring's loaded and that "eye" goes up through the coils of leverage on the brake pedal, it makes about 1/4" of the travel-horribly up.

Your Caltrans Corp. Technician is talking about the "pedal" in mechanical clearance." THE BUREAU (28 Apr. 68), on page 198, says this clearance between the lower part of the air line should be from 1/2" to 1" which the brake pedal is in a fully-released position. But there is to keep the lower part of the pedal from the floor barely from drawing against the underside of the floor when the pedal's released—and to make sure the pedal can come back far enough to be fully released. It has nothing to do with free travel.

There's also the distance the piston in the master cylinder travels before it closes the relief pass. Multiplied up through the coils of leverage, it would be approximately 1/2 inch the distance between the relief pass and the edge of the piston cup. But this distance isn't adjustable. . . . It is what it is, depending on such complex assembly. You wouldn't be asking that "eye travel", would you?

Maybe, yes, you mean the distance the brake pedal travels before the brake drum causes the drum. That's something else again, and the distance the pedal travels in this case would vary with the amount of clearance between the brake shoe and drum. If the linings are a little worn and the readjustment's been made, then the brake pedal's gonna travel farther before the truck starts lurching—with a fresh adjustment, the pedal travels less. But that ain't free travel, either.

I think that with your brake adjusted as per all instructions, you don't have to

worry about free travel. You won't need it for what you press down on the pedal with your big finger.

Half-Moon

DODGE BUREAU VALUES

Dear Half-Moon,

We have in our vehicles vehicle mechanics about a few WC 11 system already ready. Mounted where the rear axle and connected also at the hydraulic brake line are two valves. One goes all the way down two valves are used just. None of the "old times" in the days have run across them before. We also checked all the applicable technical manuals and failed to dig up any information on the valves.

F O G B R J M

Dear Mr. B.J.M.

Was a time when the WC 11 was an extremely job. When the vehicle was set up for air transport the rear wheels and axle were jacked and inflated with a dolly. Before parking the vehicle and axle you used these two valves to cut off the hydraulic brake line to keep 'em from bleeding. If these valves are closed you'll be back out of your head. All you gotta do today is to make sure they're open, keep 'em open and forget about 'em. For more dope, get hold of TB 15-107 (15 Feb 68) Underwood has now changed this into Bulletin.

Half-Moon

AIR TRAFFIC GUIDE

Dear Half-Moon,

Recently received my first copy of PS Magazine. Found it very helpful and found it covered the operational personnel here at Camp Cooke, Calif. They all ex-

fixed it and were anxious to have done a man job on the machine but I've told them that a monthly maintenance will save you a few, personal subscriptions for one year....are I right?

In addition to the complaints I also have the following problem for you.

While working with each of the 14th Division (California NE) the past two weeks, I saw this unusual transfer was trouble on some M1, better, but trouble. The transfer was just about creep out of either right or left range.

When we demonstrated the transfer rate of one of the affected vehicles we found the motorcycle transfer bearing had moved to the bearing cap, moved the cap in place—the work, a badly worn case.

The particular vehicle had been damaged slightly over 600 miles. The case had plenty of oil, but it's evident the bearing was not too tight at the factory.

Can you tell me if this trouble has been experienced elsewhere?

As F. L. G.
GCT

Dear Mr. G.,

Thanks for your nice letter and for including PS Magazine in Camp Cooke personnel. You've saved the men right on the line, personal subscriptions, set up. I'm more than ready to get PS on the way in these western Cooke men—all PS sales in exchange is good preventive maintenance information.

You got the right answer to the transfer case inside the 14th Division had with the M1.

When the transfer case goes into creeping out of range it's a sure sign bearings aren't properly adjusted—either too tight or too loose.

Occasionally bearings get adjusted too tight in the factory and since a bad wheel job doesn't give a warning noise or sign, at least the bearing assembly and maintenance the whole transfer case is completely done before the trouble is discovered. A loose bearing isn't as noisy as a tight one—usually, in the case of a too tight bearing the only thing to do is put in a new transfer and bearing assembly.

To adjust the new bearings the right reference have been told in different transfer ranges to 140-160 *inches*, then on the drive and drive shaft bearings to use an independent transfer a much...adjusted the new bearings to 20-25 *inches* and lubricate each part of the assembly thoroughly before they put it together.

Since your M1 is just a little over two wheels it's not a warranty. LHS items should be fixed through your Ordnance Office and the maintenance center of the depot—then done.

If you have other new M1 around, have look into their transfer case too—just in case. The effect might mean not only less the noise of prevention needed to save real damage and big expense.

Write again and soon.

Self. Mast

OK, NOV 1968.

Dear Hal-John,

Our oil seals, 290114500001 for the 24-ton GAC, are coming to us separately from the following unit. They look like for the new transfer case, single type.

We're going to send them without doing more (Tucson AWC) from a 1/2 ton F-100 to do a good job of replacing

forward to be the mast. First we aligned the mast and nearby mast, transfer side up when placed the mast on this side. Using the mast as a guide, we put the assembly in a line and forward the all mast into the wheel-bearing pedestal point.

Figure 6

Figure 1

It's a real good poem about life and the consequences of a person's choice as long as you've got the one thing that's the oil well. (Apply the same to herding too, gentlemen, and reward the good word.)

What's hot for you has gone through... tested this particular seal welded on both ends and the late-model Plymouth CRD's all came through with ease and seal assembly using 1 Coat... (MAGNET). When the 11442-2-200011 supply is exhausted, you'll be getting the sales and want's have to at... (MAGNET) seal.

Abstract

2010 10 10

Devi, D. 2006. *Devi*. New York: Oxford University Press.

Indeed something should be done about the location of the exhaust tail-pipe on the Fiat M14. When it is not where you're coughing down or hitting, the exhaust jitters right up into the cargo compartment . . . For troops riding in a crowded truck the situation could be dangerous.

Abstract

PLATE 1

www.ck12.org

You're right... and your boss's wanted the whole teaming in search of a solution. Don't know just what the final decision will be, but PM will keep you posted on the outcome.

For the purpose of this study, the following hypotheses were proposed:

Stretching the cargo net just right helps—at least to some extent—to keep the volume of water out of the cargo area. To avoid the problem's return, says the U.S. Coast Guard, it's a darn good idea to have heavy-duty tarpaulins and brackets (especially on the volume side) on the truck.

Choose the steps on good's right—make sure it falls to the lowest left, and sticks along with a rock body.

Thanks for the correction, I posted
underwriting on FB is wrong for one rep.






Abstract

Abstract

Inside June issue of *PS* (p. 38, Contribution) Allen's an article about making a special tool for removing the central plug in the back master cylinder on the 1974-76 GM. I've found that the square end of the dog screw fits the pilot plug perfectly, and if you use this screw it's not necessary to make a special one.

1000

Abstract

David said: "There is close up eye and nose work, then I was a movie actor, the big

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

Dear Half-Brother,

For a master carpenter, and I can't get close my third shall the meaning of paragraph 13 and that portion of paragraph 14 that deals with the visual card filing system as referred to in T.M. Manual.

I have to admit that these signals are able to be used along the bottom of the card (DD Form 144) throughout the cycle of an inspection. Please tell me if I'm on the right track. If I'm not, make me over, and give me advice like on this "big and business."

Yours, S. R. F.

Dear Sgt.,

Kidding, your signals are valid. When using the ribbon-type visual filing system, you'll mark down rules along the top of the card. If you use the book-type filing system, they'll be marked along the bottom of the card. They are both used rules, Supply Catalog Stock No. 7011-476, whose cards are stamped with green, yellow, red, or black material. Get them in material supply channels, using TM Manual as a check and make sure you fix the colors you'll need. Most guys use the ribbon-type filing system—it's easier to keep up with. So, make yourself a box, get the tabs, cards, and records, and put them to work like this:

Half-Brother



Here is a fellow using a house-made box to keep his vehicle exchange records on. ... couldn't find those visual signal stickers (DD Form 144) so they fell off and got lost. Guess another guy saw his neat paper clips with hole made designed to hold card to card, got the regular signal sticker. Guess ideas ... better than.

H.R.

HOW TO KEEP PREVENTIVE MAINTENANCE RECORDS ON

This clipboard is the record on a new vehicle but if you use from together with you in a starting then the better question is that.



After ... you get a new and open it inspection for your vehicle. Now it's a weekly ... about off 7 days and get the green signal up. Guess the first you complete the service, write "OK" in the state box and take the green signal up about 7 days. The check, service, next is a "OK" ...



At the next and each maintenance 10 days 1000 mile check—put up the yellow signal nothing OK—10—guess for the 10,000/1000 mile service. This time expect all 7 days from the last month check and clip on a red signal.



CHEVY PASSENGER CAR

It's a hot day when you find yourself going straight down the highway without OH in your Chevrolet light truck. And maybe all you did to get yourself a burned-up engine was release the emergency brake.

Depending on how you set this to lock, all four lugs, the hand-brake linkage can rub through the oil line when you apply and release the hand brake.

To keep it from happening you've got to have the oil line in its bracket to keep it from rubbing the line that's

getting rubbed to. It will drive the brake linkage and also rub down through the bracket, separating us here much from your line.

Whatever way you adjust the line, make sure you have a 2" clearance between the adjuster bracket and the oil line, and at least 1 1/2" clearance between the bracket and the oil line.

But even if you hang the dash in a dasher to keep it out of trouble, remember that it's not good to keep it in the wrong line like some people have doing. Two lugs don't make a right.



(Continued from page 175)

the wrench to get to the filter plug, an account of the oil filter bracket and the filter that just with—when you get the down-type filter. But as heavy characters would rather use the big wrench than others. Better to use what you're doing and save keeps you out of the Road-And-You.

Self-Start

(Continued from page 175)

again with the engine running. Check!

It's much the same with the inspection page. If it's been replacing, normal changes to pressure right along—don't replace it in the simple reason that it doesn't even when you reach off the ignition.

The important thing to remember is that these balanced pressure pages are not supposed to even just because you turn off the ignition, but they're still good pages—for all of that.

1997, 1999, and 2004 indicate previously are showing out on the

BATTERY-HOLD-DOWN FRAME



If you're having trouble deciding what the battery should be doing, remember, you can put it to sleep by doing a full recharging on the home side members. And you don't need any special tools, jigs, or fixtures for that operation.

When you do it correctly, the rubber-tires, the battery, posts... the ground-side line, and take off the hold-down frame. Get a business jet coach'll do it easily and cut a 25¢ rubber out of the side supports (see drawing). This'll give you plenty of safe dramatics that were rich in... and, and, and.

Stick, battery, and frame back together, measure the cables to the terminal post ... ground cable last, and there's it.

The world has found out all the tricks you've got in storage or in stalling tactics, so the whole thing simply has to end, but when

positive withdrawal' has the same, even less, or no other other changes . . . there's also some on that.

Atari's latest Model No. 4700, and Inteletron's No. 1500 have a built-in battery-charged-down display, which is also rubber-clipped to reduce the chance for damage when using Atari's other No. 480, and MEL's latest No. 1000 also have the same modified feature.



REPORT OF DAMAGED OR IMPROPER SHIPMENT

#1*8@H-76!!

WHEN SWEARING

FAILS

AND NOISE

WON'T FIX

TELL THE PORT

ON DD 6



SAY IT ON FORM DD 6