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## AN ORDER OR A HIEROGLYPHIC

By "A MAN WHO OWNS ONE"

I have a very good friend who has devoted his entire life to hieroglyphics, which in plain every day American means translating the ancient sacred writings of the Egyptians into understandable modern language.

My friend, like most scientists, would rather do his work than eat . . . all of which is well and good. Every man has a right to his own hobby. But, I sincerely doubt if even my learned friend could have deciphered a service order that I saw not long ago. And, if he couldn't . . . well, I wonder about the poor mechanic who finally got it!

Now, this is not the first time I've thought of my friend in this connection. I've seen some masterpieces of scribbling which would have driven a veteran hierologist to despair.

I know that it isn't a service man's job to go in for fancy penmanship or literary description, but, as an interested bystander, I *do* know that it is up to him to give the mechanic a clear idea of what the customer wants done. He's the one who contacts the customer and who diagnoses the car. It is his job to write orders that will not only be understood but also will not possibly be *misunderstood!*

Of course, it's only one small detail in the daily routine of a service department, but a detail that's worth while considering.

In the first place, a neat, clearly understandable service order automatically creates confidence on the part of the customer. He immediately feels that the job he wants done *will* be done completely and done right.

Next it guides the mechanic in his work . . . simplifies the job for him . . . enables him to start working right away. He doesn't have to waste time checking back with the service salesman or guessing at what really needs to be done.

Later on, it serves as a self-explanatory invoice which prevents misunderstandings when the customer is given his invoice copy. If he has seen the order written up, understands the service salesman's instructions, and has signed his name in agreement . . . he has no recourse except to cheerfully pay his bill. And even after the bill has been paid, such an order serves as an invaluable record should any question of complaint happen to arise.

Practically every service man who has been on the job any length of time knows the importance of a carefully written order. He knows too, that to make matters completely satisfactory and safe, it is best to explain each item to the customer before asking his O. K. on the work . . . and then to follow the order up in the shop by amplifying his written instructions to the mechanic by word of mouth.

# GENERAL MOTOR TUNE-UP— PACKARD 120

There seems to be quite a little variation in the results obtained from engine tune-ups. A standard procedure is, therefore, suggested.

Improperly tuned motors can often be traced to the omitting of one or more important steps in the tune-up procedure. Engines perform no better than your ability to adjust them correctly. When the job is not done right it may cause:

- Low Gas Mileage
- Excessive Carbon
- Burnt Valves
- Burnt Spark Plugs
- Burnt Distributor Points

## 1. SPARK PLUGS:

Remove spark plug, check for condition and proper type, if defective, replace them; use Spark Plug Cleaner and Tester. The gap adjustment should be from .028-.030, use Feeler Gauge ST-657 and bend the side or ground electrode, avoid breakage of the insulator tip, use Spark Plug Gap tool ST-927. Attention should be given to ignition cables and spark plug wires as the life of the ignition cables depends upon the conditions under which they are operated. Ignition cables should be replaced at least every 25,000 miles.

## 2. COMPRESSION:

Test motor compression with motor hot. The maximum compression is determined when the gas throttle is wide open. If compression on one or more cylinders is less than the others, grinding valves is the usual remedy. Use ST-193 Compression Gauge.

## 3. DISTRIBUTOR POINTS AND SYNCHRONIZING:

Clean distributor if it is in a dirty condition on the inside. Test condenser with ST-945 Neon Tube Tester. The condenser should always be tested for slight or bad leaks before any work is done on the ignition system.

Clean and adjust breaker points or replace with new points. Set contact gap at .020 with thickness Gauge ST-657. Check breaker arm spring tension, it should be from 16 to 21 ounces, measured at tip of contact breaker arm.

Synchronized breaker points are essential for a smooth running motor. To secure satisfactory results, distributor which has two breaker points should have the points accurately synchronized. Use synchronizing tool having 360 degree graduated circle for checking movable breaker points independent of the other.

## 4. IGNITION TIMING:

Loosen the fuel compensator thumb screw and place the compensator at zero. Press the button at the starter to turn motor over, use Neon Timing Light. Attach one wire to a live wire at Generator or Starter. Attach the other wire to the primary lead wire (at the distributor). Turn engine over on compression stroke until the marking on the flywheel appears in line with the pointer. The spark advance should be 7 degrees. After the marks on the flywheel line up with the pointer, the distributor cap should be removed to check the rotor for being in line with No. 1 spark plug wire. Turn the ignition switch on, then loosen clamp

and move distributor as needed just enough to open breaker points until the timing light is just flashing on. The operation should then be rechecked.

## 5. CARBURETOR:

Remove carburetor, dismantle and clean, make sure that none of the parts are worn or damaged, if they are they should be replaced. Cleanliness is very essential for proper carburetor operation, as a very small piece of dirt or lint will affect the carburetor adjustment. Use standard carburetor tools ST-5007 for servicing.

The float level is a very important adjustment and should be set accurately by using Float Level Gauge ST-5011, designed for the particular carburetor, to  $\frac{1}{32}$ -inch from the top of float chamber to the gasoline level. The position of float arm may be changed by bending to obtain the proper level.

The service mechanic will find it to his advantage to bring all carburetor adjustments to standard. The idle adjusting screws are set from  $\frac{1}{2}$  to  $1\frac{1}{2}$  turns out until the smoothest position is found. Tighten all fuel line connections. Tighten intake and exhaust manifold.

Cylinder head and manifold nuts should be tightened with engine hot.

## 6. AUTOMATIC CHOKE:

Check for proper operation.

## 7. FUEL PUMP:

Clean fuel pump screen, do not alter gasket thickness. Fuel pump stroke variation, due to gasket changes, affects carburetor performance.

## 8. AIR CLEANER—OIL FILLER CAP:

To service an air cleaner and oil filler cap, wash thoroughly in clean gasoline and dip in S.A.E. 50 oil. Allow the oil to drain before installing.

## 9. VALVE TAPPETS:

Adjust intake valve tappet to .007 and exhaust valve to .010. Use Feeler Gauge and Holder ST-153 and Tappet Wrenches ST-216. Tappets must be set while the motor is running and hot. Make sure that the lifters rotate.

## 10. FAN BELT:

Adjust fan belt to  $\frac{1}{2}$ -inch deflection between generator and water pump pulley.

## 11. BATTERY AND GENERATOR:

Check battery terminals for dirty or loose connections. Tighten all connections in the charging circuit, including Battery, Generator, Ammeter, Ignition Switch, Starter Switch, and particularly see that there is a good ground to the chassis frame. Also see that there is a proper ground at motor.

Adjust generator charging rate and clean commutator.

In cases where the radio is used a great deal, the owner may experience some difficulty in keeping his car battery fully charged. It is, therefore, most important on radio-equipped cars that the battery be tested regularly.

## 12. WATER PUMP PACKING NUT:

Tighten.

## 13. GASOLINE:

Clean out gasoline tank and lines if necessary.

## 14. ROAD TEST CAR.

## IF I WERE A SERVICE MANAGER

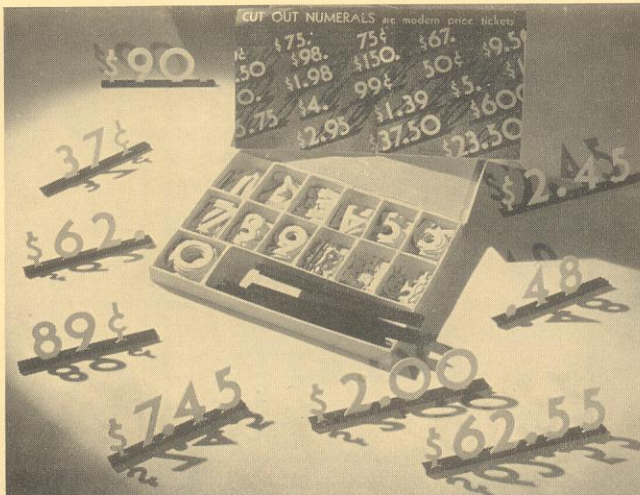
If I were a service manager I would give special attention, during the next thirty days, to accessories. I would try to remember the things that I had read or the things that I had been told should be done in order to get a proper volume of accessory business. I would not be so much interested in attempting to develop a new plan that nobody else had ever heard of or tried, as I would be in making certain that all of those things which have worked and which really are fundamentals were in effect.

For instance, the first thing of importance is the fact that you can't sell something that you do not have. So I would check our inventory to make certain that we had an *adequate supply* of accessories for the current series cars. Then I would find out what accessories were on hand for older series cars. If I found an oversupply, I would fix up a bargain counter table with a large, attractive sign. I would make a real effort to move any of the accessories for older series cars. I would talk to the boss about lowering the price in order to get at least our cost out, while there was a chance of moving these older items.

The second thing that would come to my mind would be *display*. I would know from past experience that accessories well displayed are half sold. Displays, of course, should be of a seasonal nature. They should be in a prominent position, well lighted and clean. Accessories that can best be demonstrated in use should, as far as possible, be hooked up. This should include radios, heaters and spot lights. Also, as far as possible, have display items in their proper positions.

For instance, chromium-plated rings should be installed on wheels, complete with tires. This display might also include a tire cover and a tire cover mirror. Implements can be attached to radiator shell and grille assemblies, to which may be added grille covers.

Displays should be colorful. Show cases should have either cloth or paper background of pleasing color combinations. Too many signs and posters are not advisable unless you have a dirty wall to be covered up.



It seems to help the sale if the items are neatly and clearly priced. A neat device for this purpose is a set of figures with dollar and cent signs and little metal holders supplied by Herald Reproduction Co., 397 Bridge St., Brooklyn, N. Y., at \$4.00 or we suggest that you try your local stationery store.

There are three places in which accessories are sold. First, the showroom. Therefore, there should be an

accessory display in the showroom. Second, in the closing room. Therefore, a display should be available in the closing room, and third in the service department. Either your display may be a definite part of your waiting room or it may be designed to improve the appearance of your receiving space, and if you have the space available, by all means, equip a current series car with a complete line of accessories and put it in a brightly lighted space, preferably on a newly painted round spot. Special signs and flood lights should be used in this connection. Such cars in the service department rightly produce results.

I would then go over the available literature supply and make certain that it was clean, and as much as possible, what should be used. I would undoubtedly find a large quantity of accessory folders. I would sort these out and mail them with invoices for the next thirty days, using judgment as to which folders should go to each customer. Customers who have already bought heaters will not be interested in reading about them. Then I would make sure that every new car salesman had a One Twenty and Fourteenth Series accessories catalog in his kit, and that he had an up-to-date price list.

The next thing I would make sure that every service salesman, including the cashier, was well posted as to the advantages of every item. Every day I would pick out one or two separate items and make a drive on these. The smart thing and the thing that works best is, as far as possible, to pick out an item that fits the day. If it is a bright, sunny day, try for that extra sun visor. Check every car that comes in for this one feature on the next bright day. On a rainy day, when the pavements are not so safe, specialize on bumper guards or even an item as small as windshield blades build up into a nice volume. If you know from your morning paper of a cold wave, start work again on the heaters or battery charges. In other words, fit your selling efforts to the weather, and concentrate on a few items at a time. Be sure after you have picked out the item on which you are going to make a drive, that everyone is familiar with its construction and its advantages.

What have we done but go back to the three selling fundamentals on accessories? First, we have them on hand; second, we display them; and third, we ask them to buy. We do these three things intelligently, and we get results.

## OIL CONTROL—8 AND SUPER 8

In cases where you wish to reduce the oil consumption of a Packard 8 or Super 8 which is using too much oil, the result can be obtained by changing the piston ring combination.

The standard combination calls for a plain ring in the top groove, No. 70 rings in the second and third grooves, and a No. 85 oil ring in the bottom groove.

A replacement may be made using No. 70 rings in the first and second grooves and No. 85 in the third and fourth. When the  $\frac{1}{8}$ -inch oil ring is installed in the third groove the piston should be drilled with twelve  $\frac{3}{32}$  inch oil return holes, locating these holes directly above those in the bottom groove. The holes should not be staggered because this will result in the weakening of the piston head.

The installation of the new ring combination will be effective if the bearings and the cylinder walls are in reasonably good condition, but this correction can not be expected to prove satisfactory where the bearings should be fitted or the cylinders reground.

# 14TH SERIES TWELVE WIRING DIAGRAM

*Handwritten notes:*  
 1033  
 1033  
 1033

