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Oil Consumption

WE find that there is a great deal of uncertainty in the field as to what constitutes normal oil consumption for the current model motors.

In order to properly safeguard the cylinders and pistons it is necessary that a liberal supply of oil reach the cylinder walls, and during the seventh series production the size of the bleed holes in the connecting rods was increased, this change going into effect with 726 motor No. 299600 and 740 motor No. 185800. This change resulted in a considerable increase in oil consumption, as was its intention.

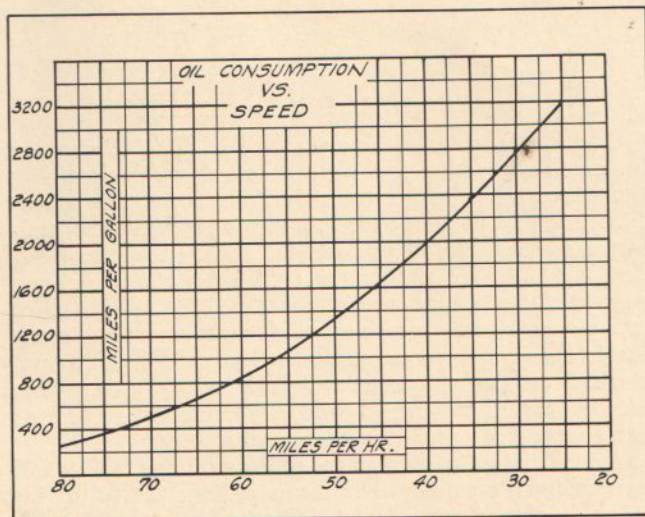
Few people realize the manner in which oil consumption is affected by motor speed. Figure 1 shows a typical curve illustrating this variation. The actual oil consumption will vary somewhat with different motors, but the character of the curve remains the same, and in every case the oil consumption will increase very rapidly as the motor speed increases. The curve represents a comparatively new motor with standard fits and clearances, and the consumption will naturally increase as the clearances increase.

If a customer complains of excessive oil consumption it is first necessary to determine the character of his

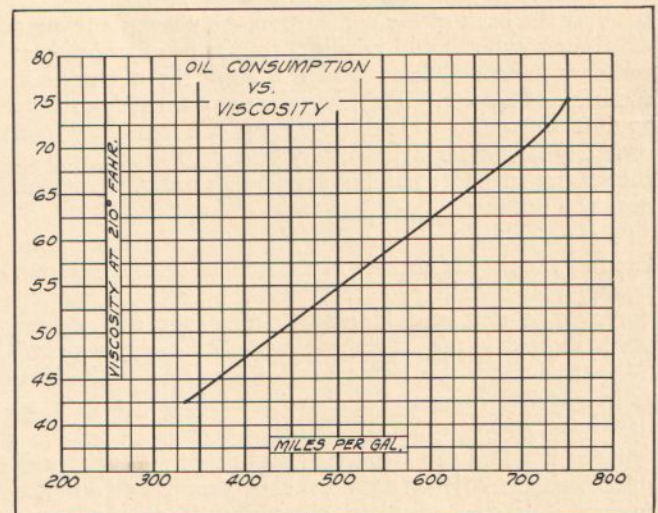
driving, because it is quite possible that a consumption of 400 or even 300 miles to the gallon represents a normal result for his particular operating conditions. For average speeds of 40 to 45 M.P.H. an oil consumption of 400 to 450 miles to the gallon may be considered normal, and no attempt should be made to reduce the lubrication unless it varies considerably from this figure.

The viscosity of the oil also affects oil consumption very materially. This is illustrated in figure 2. During the winter months it is customary to use light oil to assist in cold weather starting, and if a car is driven hard with an oil of this character the oil consumption will be greatly in excess of that which would be obtained if oil of a summer viscosity were used. This, of course, is something which cannot be avoided.

It will also be found that if a new motor is in normal condition the oil consumption will be very much higher at the beginning than at the end of 4,000 miles. This is due to the fact that several thousand miles of operation are required to permit the piston rings to seat themselves in the cylinders, and until the rings have seated in this manner the normal oil balance will not have been reached.



NUMBER 1



NUMBER 2

Leakage of the piston lubricator valve may give an entirely incorrect picture of the condition of the motor. The valve should be tested only after the oil has been thinned by heat, and the motor should be run at a sufficient speed to develop the maximum oil pressure. Leakage at this valve is sometimes of an intermittent character, and the first test may not definitely prove that the valve is perfectly tight.

If an owner complains of excessive oil consumption the first step is to determine just how much oil the motor is using. It may be found that he does not realize how much oil it is necessary to burn if the motor is driven at fairly high speeds, and even if he reports a consumption which appears to be excessive, it is advisable to make an accurate check in order to determine the facts of the case. Here again it must be borne in mind that your own check must be conducted at a motor speed equivalent to that at which he himself drives.

The motor should not be torn down until you have first made sure that the piston lubricator valve is tight and that the oil consumption is actually excessive, based on the motor speed and the viscosity of the oil used.

If the crankshaft bearings, connecting rod bearings, cylinders and pistons appear to be in good condition it seldom pays to change the fits at these points, and if the piston rings are replaced it must be borne in mind that a considerable mileage will be required in order to seat the new rings in the old cylinders.

The owner must be cautioned that during the first period of operation he may find an increase rather than a decrease in oil consumption.

Notes on Repair Orders

Explanatory notes on repair orders are to be commended, such notes, however, should be definite and explicit. This is especially important on repair orders covering work done on tourists' cars.

For instance, a car comes into the service station, which is well over a year old, the customer seems to think he is entitled to credit on parts requiring replacement; you explain to him tactfully that he is not entitled to any credit, but he insists upon having the parts so you write a note on the bottom of the repair order, "Place parts removed in car," or words to that effect. What usually happens in a case of this kind is that the customer upon arriving at his home city drives into the service station and the service salesman, noticing the parts in the back of the car, immediately starts cussing a distributor who would handle a tourist by charging him for new parts and labor and throwing the old parts in the back of his car. This, he tells the owner, is entirely against the policies laid down by the company and probably he writes a few hasty and caustic remarks to the service manager handling the repair order, where this notation occurred.

The point is that in a case of this kind where you have handled the matter entirely in accordance with the tourist policy, you should protect yourself by a very explicit note. The note should read "Credit not allowed on parts removed, placed in car at customer's request." With this note, the home service manager will know exactly what happened and will be in a position to handle the customer.

Keep in mind the fact that notes made on customers' orders, particularly on tourists' cars, should be complete in every detail and plain enough so that the home service manager will know exactly what has occurred.

Credit on Standard Cylinder Heads and Standard Gears Discontinued

In General Letter G-277 dated October 17, 1930, the use of high altitude cylinder heads and axles with gearing other than standard was explained very thoroughly and since that time, we have been extending credit on these standard cylinder heads, standard differential carriers and gears and pinions removed and replaced in the field.

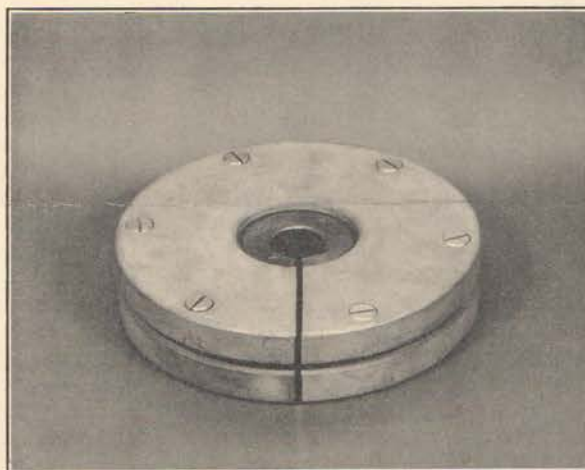
We now feel that sufficient time has elapsed to have enabled you to change any cars you had in stock to meet special requirements, also to have enabled you to change your new car specifications to the factory so that before shipment, these could be equipped to your requirements.

Therefore, effective February 1, 1931, there will be no credit allowance for any of these standard units removed in the field when replaced with optional units.

Spark plugs removed from either standard or high altitude cylinder heads should not be returned to the factory as there is no credit allowance on these.

Eighth Series Damper Re-assembling

In dis-assembling the Eighth Series Vibration Damper, make sure to mark the three major parts before dis-



assembling as shown in the illustration, as this damper has been balanced and unless it is re-assembled in the same position, you will throw it out of balance.

Speedometer Gearing

The speedometer gearing on the 826 and 833 cars has indicated a speed and a mileage considerably less than the actual figures. We have used a speedometer pinion containing twenty-four teeth, and the fact that the gearing is on the "slow" side has led some people to think that the 826 is a slower car than the 726, while as a matter of fact the reverse is true.

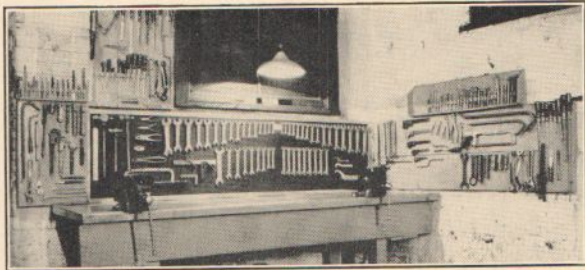
This error in the gearing is being corrected, and starting in the neighborhood of motor No. 329961 a twenty-three tooth speedometer pinion is being used. The pinion bearing is stamped 8-33, while the pinion bearing carrying the old gear was stamped 8-24.

If it is desired to change the gearing on any 826 or 833 cars using the twenty-four tooth pinion, the following parts should be ordered:

1—175442 Speedometer Pinion, 1—175441 Bearing.

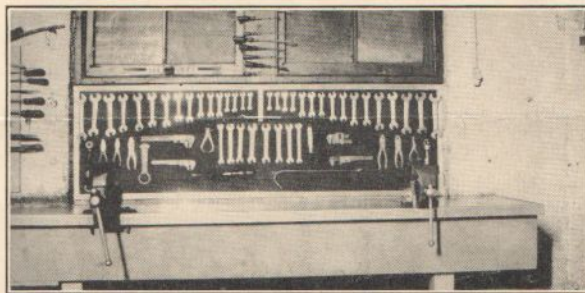
Tools As An Asset

In dealing with service problems, we often think along the lines of distributor and branch buildings and equipment, whereas after all the largest number of distributing points throughout the country and Canada are to be found in dealers' organizations. We are, therefore, always glad to hear from dealers and especially at this time are glad to show you some views from the Hamilton, Ontario, Service Department. Mr. T. H. Feather-

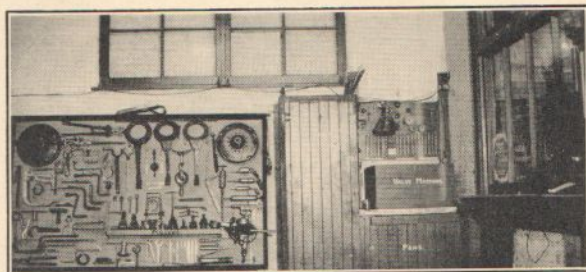


stone, Service Manager in Hamilton, sent these views in with a notation that it has long been recognized that special time saving tools are essential in every Service Department, if it is intended to operate a shop and show profits and increase efficiency.

He says that the thought occurred to him that it was useless to have a lot of money tied up in this sort of equipment unless the tools could always be found and



were in usable condition. He feels that the solution to this problem in his department has been found and is explained in these views and we certainly agree with him. He further states that in addition to efficiency, which this arrangement gives to the Service Department, it represents quite a talking point for the Sales Department, when after closing a deal the customer is shown



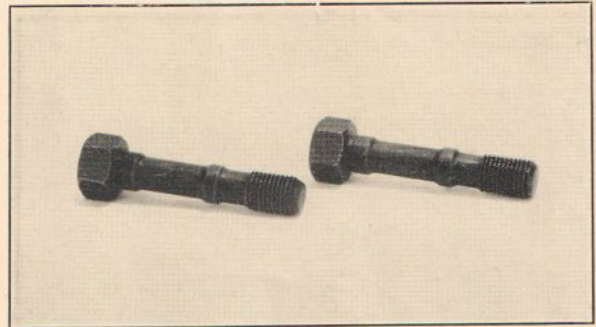
through the Service Department and has an added interest in the fact that the shop is interested in having available for their mechanics the latest time saving devices.

Two views show the mechanics' benches, displaying their own tools, the other view a corner of their Special Tool Room, each tool has a place and is kept clean and in condition for immediate use. The idea is well worth copying.

Motor Connecting Rod Screw

The motor connecting rod screw now used in 826-33 motors is shown in the accompanying illustration.

The new screw is made of a special Alloy steel and is so designed as to prevent the load on the screw from localizing at the base of the thread as was formerly the case. The new screw is covered by piece No. 184578



superseding piece No. 158217. The change went into effect with motor No. 326962.

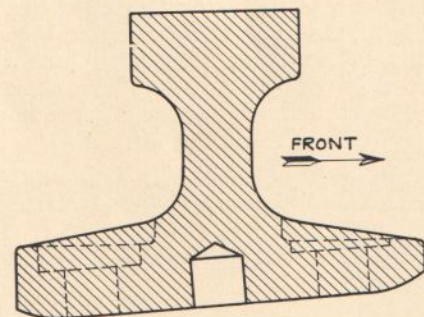
All service orders are being filled with the new screw and it should be used for all replacements in 626, 726 and 826 motors.

If certain cars are known to be driven at extremely high speeds it may be found advisable to see that the new screws are installed at a convenient opportunity. This can be done simply by dropping the crankcase bottom cover without the removal of any other parts.

The Front of Front Axles

At first glance the front axle appears to be absolutely symmetrical, but this is not the case and extreme care should be taken to ascertain which is the front side of the axle before installing.

An axle installed backwards would set up a reverse caster action and cause the car to wander badly and be extremely hard to control on the curves.



SECTION OF FRONT AXLE SPRING PAD.

The eighth series axles carry the serial number stamped on the front face between the spring pad and the knuckle.

To make doubly sure, check the thickness of the I-beam at the spring pad. You will note from the illustration that the forging is nearly twice as thick at the rear as at the front side.

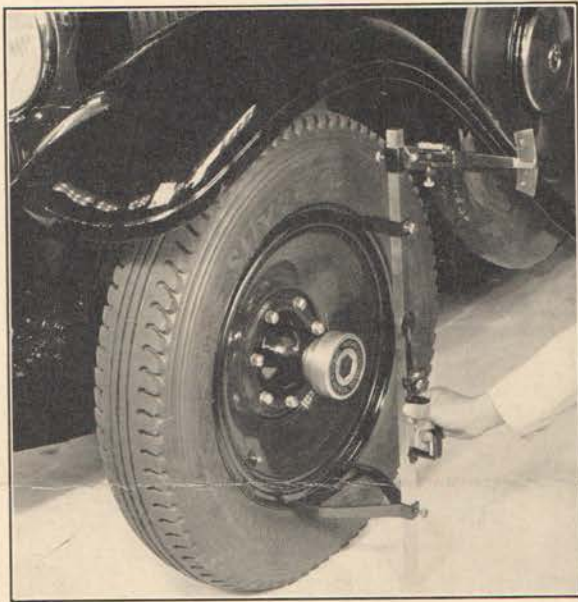
All replacement front axles furnished through the Service Division will be stamped "Front" in the serial number location.

Safety Lanes Mean More Work

In various sections of the country safety lanes will be conducted through the spring, summer and fall months. It is already planned to hold these in about five hundred towns and probably more will be added to this list.

Safety lanes consist of an accurate test of brakes; lights, wheel alignment, steering, horn, windshield wiper and rear view mirrors. These lanes are held on convenient city streets and are free to the motoring public.

These are held as a result of an increase in the number of automobile accidents, unquestionably due in large part to defective safety equipment. Drivers whose cars fail to pass the test are given a duplicate of the official test card showing the various corrections necessary to



the safe operation of his car. By having these corrections made and properly certified by a dependable local Service Station, the motorist, on presentation of this card, will receive a sticker for his windshield, indicating that the car is in safe condition.

These lanes disclose a vast market for the correction of a large number of cars being operated on our streets. In each city where these lanes have been conducted, several thousand dollars worth of immediate service work has been created. Why not go after your share of this work?



ST. 794 \$15.00 NET

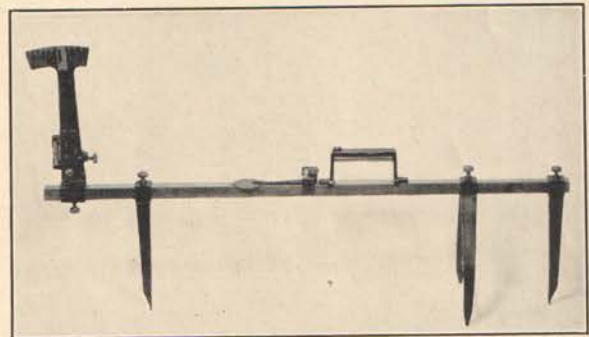
The lanes also tend to educate the public to the vital necessity of constant care of the safety equipment on their cars. Your community will be no exception to this. To obtain your share of this corrective work, however, it may be necessary to add to some of your equipment. It will certainly pay to co-operate fully with the conducting of these lanes.

In order to help you get your share of this work, the Special Tool Department has made a special effort to standardize on some of the best safety equipment that is obtainable. They are in a position to co-operate with you fully in the supplying of the necessary equipment for this work.

Equipment of the best type, at the higher prices and for the smaller shops, at lower prices, is obtainable. The Special Tool Department is recommending the brake tester made by Musgrave, price \$475.00. It is a power machine and tests the four wheels at one time.

There is also the Badger machine, which is a hand operated device and sells for \$17.75.

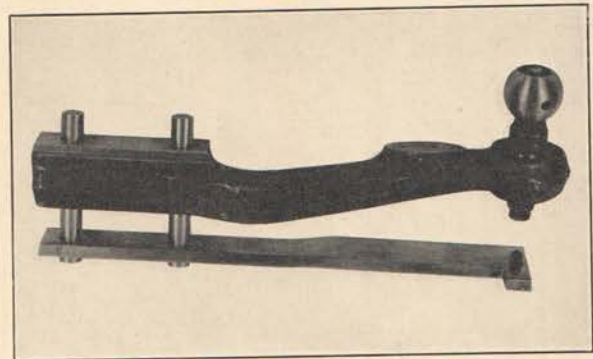
For focusing, adjusting and pointing the head lights, the Stump Da-Tyme headlight adjuster is recommended at \$15.00.



ST. 810 \$65.00 NET

For steering alignment, the 3-way aligner at \$65.00, or the Duby caster and camber gauge at \$16.00 is recommended. They also have the steering lever arm gauge for checking levers at \$2.00.

It would be well at this time to check over your equipment and make certain that you are in a position to take care of any work which may be created as a result of the



ST. 804 \$2.00 NET

Safety Lanes. It is also advisable to notify your owners in advance of these plans, selling them on the idea of having their cars ready for these tests. If you are looking for more work in your Service Department, here is an opportunity to get some real profitable work.

We Welcome Suggestions and Inquiries from Packard Service Men. Address All Communications Care Editor, Packard Service Letter.