# PACKARD SERVICE LETTER

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## Facts Relating to Cold Weather Lubrication

### MOTOR

"Cold weather does three things which together, make engine starting difficult at low temperatures.

(a) It decreases the battery output, thus reducing both engine cranking speed and ignition efficiency.

(b) It retards fuel vaporization, thus making it more difficult to get a satisfactory mixture for starting.

(c) It increases the viscosity or body of the oil, thus reducing the cranking speed.

"The cranking speed of an engine, other things being equal, is dependent upon the viscosity or body of the oil in the engine at the starting temperature. If the oil is too heavy at the starting temperature it may be impossible to start because of dragging effect of the oil. The car owner should make certain that the oil will allow starting at the lowest temperature expected to be encountered. Failure to have in the engine an oil sufficiently low in viscosity, may make starting impossible.

"The safe low limit of viscosity or body to lubricate the engine is very low, if the engine is in good mechanical condition and provided an adequate supply of oil is maintained in the crankcase and supplied to the bearing surfaces. Light-bodied oils satisfactory for cold weather starting are sufficiently heavy to prevent burned-out bearings or worn cylinder blocks, even in warm weather. Worn cylinder blocks are often due to using too heavy an oil rather than too light an oil, because of inadequate distribution during the warm-up period.

"Present gasolines with good volatility and low end-points, used in cars equipped with crankcase ventilation, jacket water temperature control, etc., result in less crankcase dilution than in the past. These conditions allow the use of lighter-bodied oils without excessive oil consumption or noise. Crankcase dilution is no excuse for using heavy oils.

"In an effort to meet this cold-weather situation, the S. A. E. has published two classifications for winter oils, 10-W and 20-W. To obtain the most satisfactory engine performance the lubrication recommendations given in the car manufacturers' instruction books should be followed.

"Oil consumption increases if the viscosity or body of the oil in the engine is decreased, but usually to a less extent than is generally expected. However, when using low-viscosity oils it is desirable to check the level of the oil in the crankcase more frequently than when using oils of lighter viscosity.

"Oil consumption is largely dependent upon speed of driving. For example, road tests comparing winter grades of oil with heavy summer grades show that the difference in oil consumption is no more than that obtained by reducing driving speed from 3 to 10 m.p.h. at high speed.

"While the use of lighter-bodied oils may slightly increase oil consumption, particularly on warm days, the saving in cost made by using the heavier oils will usually be offset by increased gasoline consumption due to greater drag of the heavier oil.

"Heavy-bodied oils are sometimes used to reduce engine noise in cars in poor mechanical condition. This practice has some merit but not with cars in good mechanical condition.

"If light oils are properly selected when the car is new, the car mileage obtained before noise develops will be greater than when abnormally heavy oils are used."

### REAR AXLE

Change rear axle lubricant at the approach of cold weather and use only S. A. E. EP lubricants as approved by Packard engineers.

Now is the time to cover your owners' list very carefully, because attention given to this feature will prevent gear trouble at a later date.

We wish to emphasize again the importance of this warning.

## Cowl Illumination

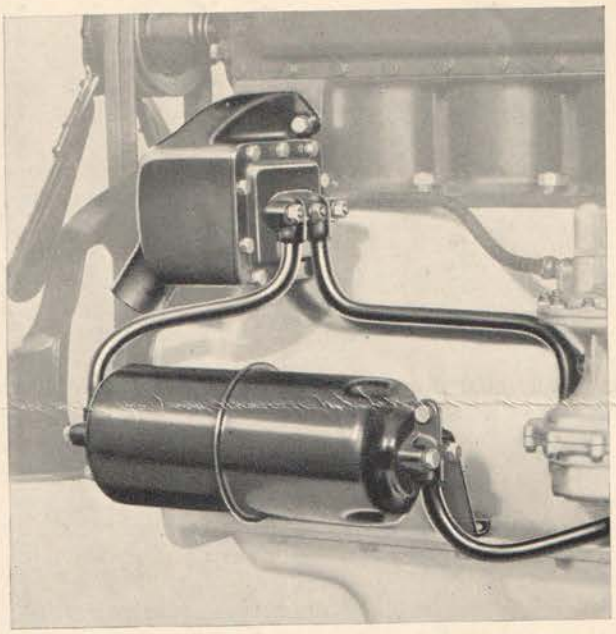
12th Series

When it is necessary to perform any work under the cowl, no outside illumination is necessary. Simply pull one of the instrument board lights out of its socket and reverse the socket so that the light illuminates the under side of the cowl instead of lighting the instrument board.

This is the quickest and the simplest way to accomplish the result. On current model cars it is not advisable to strike matches underneath the cowl because the insulating material is inflammable.

## Oil Cooler and Filter Installation

6-7-8 and 9th Series



You have undoubtedly noted the excellent results which have been obtained from the oil cooler and filter used on the Eleventh Series cars. These results will be duplicated on the Twelfth Series.

The oil cooler is particularly valuable in the case of cars which are driven hard and fast, because it is in these motors that the connecting rod bearings take the greatest punishment and the control of the oil temperature greatly increases the life of the bearings.

This is an item which should be borne in mind when major motor work is performed on motors prior to the Eleventh Series. In the case of cars which are driven at high speeds an effort should be made to sell the customer on the installation of the oil cooler and filter equipment.

This equipment was made up a number of months ago, and has already been used by many of our service stations with very good results. We are anxious, however, to increase the number of installations, and for this reason we are fixing a new net price based upon our actual cost, and are suggesting that our Distributers and Dealers eliminate their parts profit as we have eliminated our own.

Our net price to our Distributer will be $28.48, and we suggest a Dealer's price of $30.15, and a customer's price of $33.50. These prices give you 15% for handling, and we suggest that the installation itself be sold on a cost basis.

This equipment includes the oil cooler, the filter, the relief valve assembly, a new oil manifold, and a new oil pump assembly. You can readily see that these prices represent our own factory cost. We feel that at the old prices the number of equipments sold would be limited, and the establishment of new minimum prices on our part and upon yours will greatly increase the number of installations. It will improve the performance of the cars and the satisfaction of your customers, at no expense either to yourself or to us.

In the case of cars driven slowly, it is unnecessary to consider the installation, but we urge that an effort be made to sell this equipment to the owners of cars which are driven fast, particularly at the time when connecting rod bearings are replaced.

The equipment covered by piece No. 98215 is used on the 726-33, 826-33, 901-2, 900, 1001-2. Piece No. 98216 is used on the 640-5, 740-5, 840-5, 903-4, 1001-2.

The installation time is approximately eight hours, and detailed instructions will be included in the shipment of each equipment.

## Robe Rail Attaching Screws

12th Series

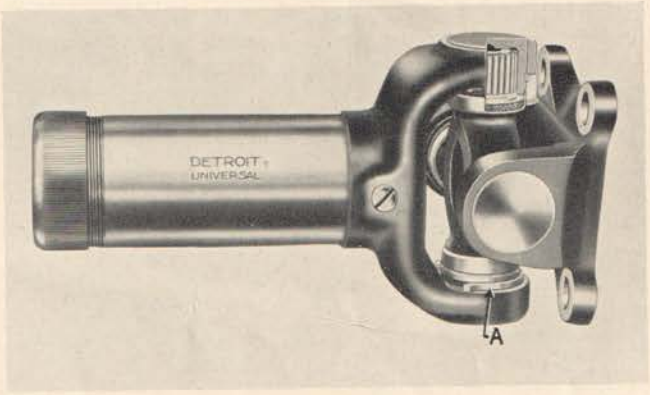
In some of the early 12th Series cars the robe rail attaching screws were not properly secured in the back of the front seat, and these screws may have pulled out.

A new type of self-tapping machined screw has just been adopted, which goes through the wooden back and into the metal panel on the inside. This screw can be used in securing robe rails which have become loose.

A No. 28 drill should first be used, running it through the wood and through the interior metal panel. The self-tapping screw, piece No. 222399 can then be inserted. It will thread itself into the inner panel and will provide a secure lock for the robe rail.

## Universal Joint Inspection

12th Series 1200-1-2




On the new type universal joint an inspection should be made on all cars which left the factory prior to October 3, 1934 to determine the condition of the spring lock (A) which holds the spider bearing in place. In the event any of these are found broken, or loose a new one—piece No. 22557 should be installed.

# Shock Absorbers

## 12th Series—Packard Eight

THE Twelfth Series cars were designed to provide a softer ride than the Eleventh Series. This was accomplished by a change in weight distribution and the use of a lower rate of action in the front springs.

There is a very definite trend toward a softer ride by all car manufacturers, and the motoring public is being rapidly educated to expect this type of riding result. We must, therefore, revise our estimate of riding qualities, as represented by our previous series cars.

We have introduced somewhat more swing to the rear seat, but have eliminated most of the objectionable jerk which accompanies a firm control of spring action.

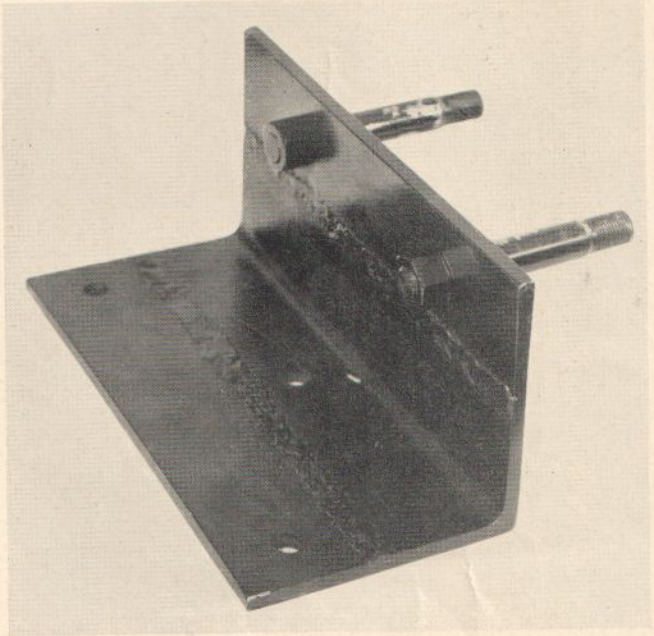
Before judging the riding qualities of the Packard Eight, Twelfth Series cars, the following check should be made to make sure the shock absorber equipment is up to date and functioning properly:

Some of the shock absorbers on the first few hundred Packard Eights shipped from the factory carried too much clearance between the cylinders and pistons, which caused a loss of control after the shock absorbers had become warm.

New limits of clearance were established for the shock absorber manufacturer to follow and those having the new limits of fit may be identified by the letter "S" stamped on the shock absorber arm where it is attached to the cross shaft.

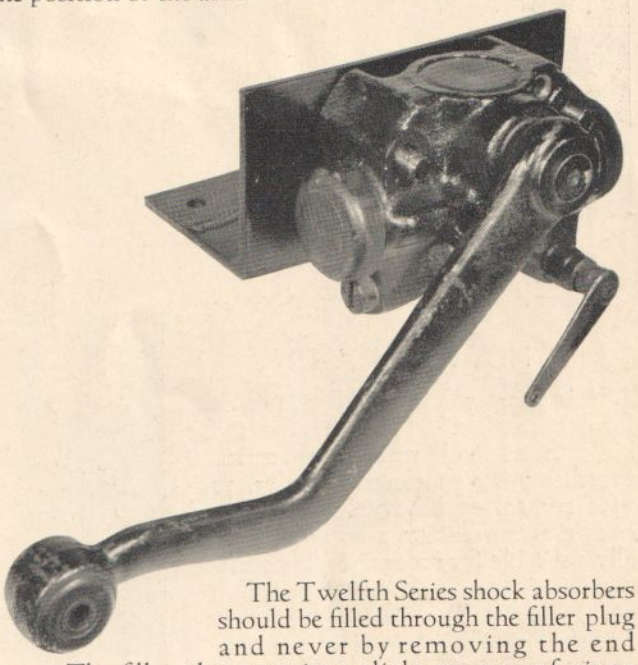
Any Twelfth Series Packard Eight which is not providing the desired riding result should be checked to make sure it is equipped with shock absorbers marked in this way. They may be replaced if they are not so marked.

In checking the action of any shock absorbers, it is first necessary to make sure that there is no air in the working passages. The shock absorber should be disconnected from its link and with the ride control in the firm position the arm should be rocked back and forth through the full limit of its travel in each direction. If there is any air in the working passages, lost motion will be detected in the movement of the arm.



It is especially important that the arm be rocked at each end of the travel because this is where the presence of air is most likely to be noticed. The same procedure should be followed when filling the shock absorber through the filler plug.

When a shock absorber is mounted on the car, the last step should always be to expel the air from the working passages. If the instrument is laid down for several minutes in an upside down or sidewise position, air is apt to enter the working chamber, depending on the position of the arm.



The Twelfth Series shock absorbers should be filled through the filler plug and never by removing the end cap. The filler plug permits a slight amount of air to remain in the top of the shock absorber in order to take care of expansion through heat, and thus prevent the damage which may follow if the shock absorber is absolutely full of cold oil.

The shock absorber should not be clamped in a vise for filling or changing valves as there is danger of distorting the cylinders by this procedure. The illustration shows a simple fixture which may be used. Two bolts 35/64" in diameter should be mounted 4" apart in a steel plate. The plate may be clamped in a vise or bolted to the bench.

The shock absorbers on the Packard Eight as they are now being shipped from the factory are equipped with the following valves:

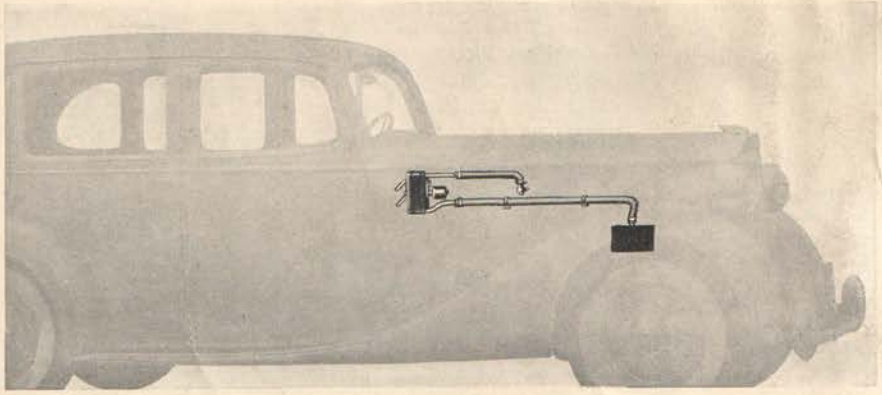
| | Rebound | Compression | Static |
|---|---|---|---|
| Front | 5GR | GO | O7 plus |
| Rear | 5L | GO | OA plus |

## Parts Men — Notice

So that the Factory Parts Department may take as accurate an inventory as possible, it will be necessary for us to completely stop all parts shipments and operations during the time the actual physical count is being taken and check is being made. We are planning to take the inventory of our active stock on Friday, November 30. This will mean our parts shipments will stop on Wednesday night, November 28, as we will be closed Thursday, November 29, for Thanksgiving day, taking our actual inventory on Friday, November 30, and resume shipments again on Monday, December 3.

We will therefore be unable to make shipments from Wednesday night, November 28, until Monday morning, December 3.

# Winter Accessories

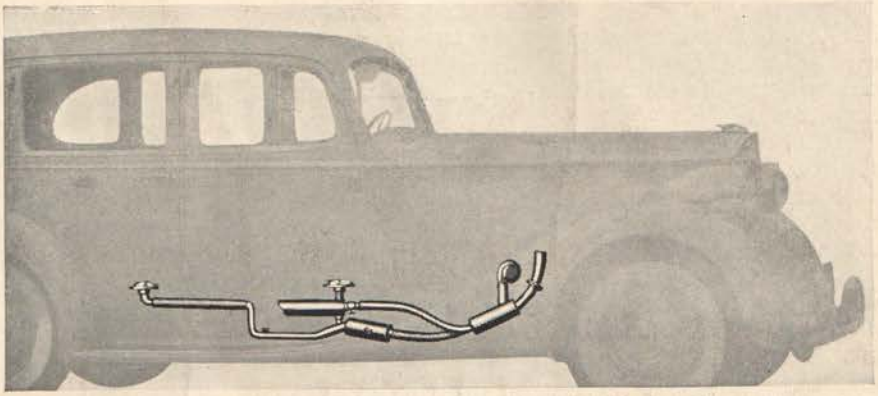


## HOT WATER HEATER

Its efficiency has been increased, and a new type switch, equipped with a rheostat, has been incorporated. This type heater is most popular in coupes or short coupled body types.

## HOT AIR HEATER

It is more efficient and quieter than former models. Floor registers for both front and rear compartments, together with an electric blower, provide control of heat volume under all conditions. This type heater is especially desirable for sedans and limousines.



Old Man Winter is just around the corner, and right now is not a bit too soon to start selling heaters. This year, we can offer you the most attractive line of heaters we have ever merchandised.

## THE PACKARD BATTERY CHARGER

Each fall we caution you of the necessity of making sure that the generator charging rate is set up to take care of the increased demands created by winter driving.

Each year this becomes more necessary because of the increase in current consumption. Our lights are drawing more current than before, and an increased proportion of cars are equipped with heaters and radios.

In spite of the length of time our generators have been equipped with voltage regulators, we still find cases in which the third brush is set up, but no attention is paid to the regulator adjustment. If the regulator cuts out before it should, it will be impossible to obtain a full battery charge.

Although we have increased the size of the generator in order to take care of additional demands, there will be instances in which cars are operated during the winter months under such conditions that the battery will not remain charged. Such cars are not driven far enough or fast enough to put back into the battery that which is withdrawn by the lamps, ignition, starter motor, radio, heater, etc.

In such cases it will be necessary to bring up the battery from an outside source. We now have available a battery charging outfit which may be installed in a garage or on the car, drawing current from the lighting circuit. This is plugged into the battery line when the car is in the garage. We believe many owners will find the Packard Battery Charger very desirable.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