

Sales Facts

PACKARD
LIGHT EIGHT



Published and Copyrighted
January 1932

PACKARD MOTOR CAR COMPANY
DETROIT, MICHIGAN

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General Body Construction

In the new line of Packard Light Eight model bodies is found the same high standard of material, design and workmanship that has marked Packard bodies as outstanding in the automobile industry. The design of many features of construction has merited widespread imitation; the materials have proved their quality by years of satisfaction to our owners; a high standard of workmanship is the creed of the Packard shops.

The body framework is built of carefully selected and treated hard woods. The individual parts are fitted, glued, and screwed together and important points reinforced by metal braces. At all points of contact in the body where road shocks might produce squeaks or rattles, some form of insulating compound is employed. Rubber compound, friction tape, rubber coated fabric, and cotton wadding all perform an important part in keeping these bodies free from annoying sounds. The metal panels of the bodies are stamped from normalized sheet steel by accurate steel faced dies. Electric butt welding at the joints produces even continuous surfaces.

Before assembling the panels to the wood frame, the parts are treated to impregnate the wood against moisture and to prevent the metal from rusting.

The enduring exterior finish is the result of years of experience. Each body receives a metallic sand blast to produce a uniform surface to which the paint is applied. The first or primer coat is

followed by five synthetic oil type surfacer coats which are oven dried and water sand rubbed to an even finish. Before the eight full coats of color lacquer are applied the bodies receive a black sealer coat. After all these coats have oven dried, they are oil sand rubbed and two thin coats of the color lacquer applied. These air dry while the body is being upholstered. The final processes consist of a light sand rub followed by clay polishing.

All Packard bodies are thoroughly insulated against noise, heat, and cold. The body panels below the belt line are covered on the inner surfaces with an elastic sound deadening material which very effectively prevents panel vibration with the resulting resonance known as body rumble. The front compartment toe board and dash are heavily protected by insulating material. A thick hair felt pad, finished on the top with washable enameled drill, covers the entire floor and also the seat pans. The inner face of the metal dash is finished with a waterproof fiber board with leather grained surface in colors to harmonize with the interior of the car.

Body Types

The Packard Light Eight is presented in four body types on a wheelbase of 127 $\frac{3}{4}$ inches.

Type 553—Five-Passenger Sedan

Type 563—Five-Passenger Coupe-Sedan

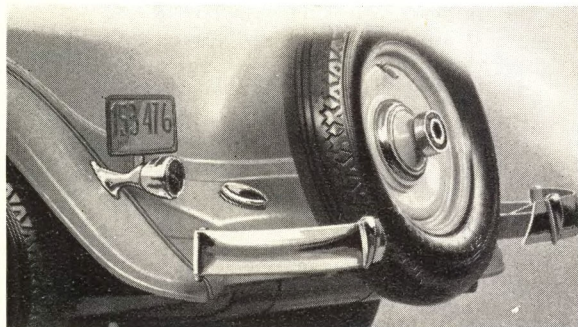
Type 568—2-4-Passenger Coupe

Type 569—2-4-Passenger Coupe-Roadster

These new cars will immediately be recognized as members of the Packard Family, although the bodies have been lowered

and the entire car stream-lined in the most approved modern fashion. Matching the sloping curve of the radiator and front end, the windshield inclines at an angle of 19 degrees.

The curve of the rear quarter also blends into the new style. A narrow moulding extends from the rain gutter down to the rear body moulding and follows around the back of the body.



A rear apron, made as a part of the body, covers the entire gasoline tank and makes an extremely clean, neat appearing rear end.

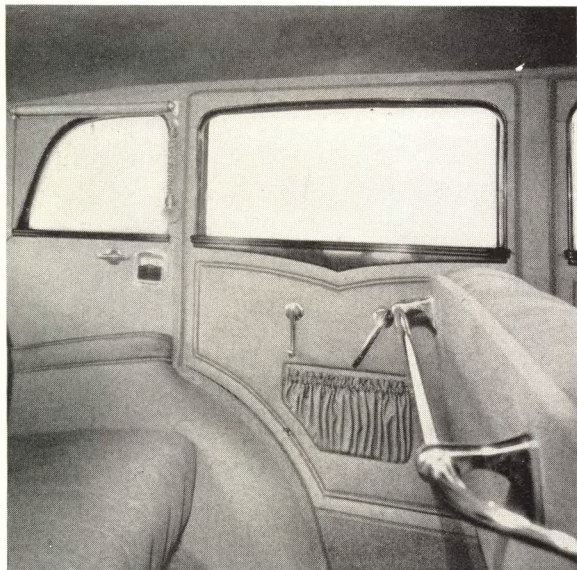
The interior of the car presents an appearance of attractive elegance.

The seats, shaped to carefully designed comfort contours, employ a pleated and tufted style of trim. In the enclosed bodies figured wool broadcloths are used, while the coupe-roadsters are finished throughout in Colonial grain leathers. The floors are covered by a heavy wool carpet material which also is used to protect the lower portion of the doors from scuffing. Neat pockets are provided in each rear door of the Five-Passenger



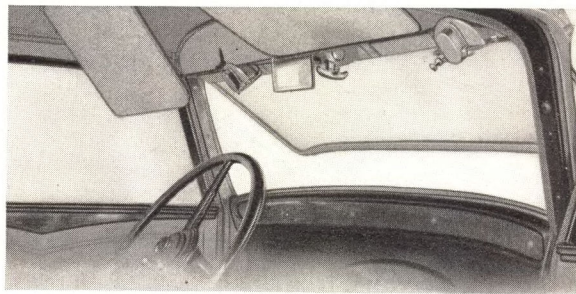
Packard Light Eight Sedan—Five Passengers—Interior

Sedan and in each door of the two-door models. In all body types, except the Coupe-Sedan, the entire front seat is easily adjustable through a range of four inches. This feature, in conjunction with the adjustable steering wheel, provides the utmost in comfort and convenience. The exterior door handles, as well as the interior door handles and window regulator handles, are finished in bright polished chromium and carry out the radiator design in miniature. On the inside, the door handles are of the remote control type by which a small upward movement operates the door locks. The right front door may be locked from the outside by a key, although the locks on all doors will release if closed after the inside door handle has been set in the locked position.



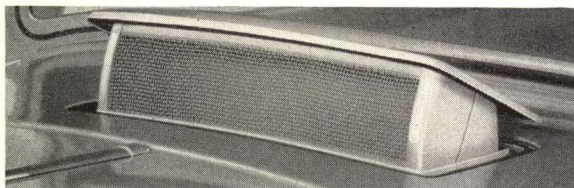
It is, therefore, necessary to lock all doors except the right front door from the inside. This combination makes it impossible to inadvertently lock the keys in the car.

The window regulator mechanism is very easy to operate and incorporates two lifting arms under the glass. This causes the glass to rise evenly without binding in the runways. These runways are lined with a heavy Mohair which insures smooth, easy operation of the glass and provides a perfect weather seal without any possibility of rattle. The window mouldings are all metal, finished in a dark walnut to match the instrument board.



The windshield has the Mono-control type of adjustment on the enclosed bodies. With this type of control it is possible to open or close the windshield with only one hand by turning a handle located near the rear view mirror on the header bar. The bottom and sides of the windshield are provided with a live rubber weather strip and the concealed hinge at the top is embedded in sponge rubber. This provides a wind and water-tight seal under severe conditions.

Two independent radial type windshield wipers are installed in the header bar. The wiper blades are automatically held in a horizontal position when not in use.



Efficient ventilation for the front compartment is provided by a large cowl ventilator and two side cowl ventilators. All three openings are protected by screens to exclude insects and dirt. The cowl ventilator is adjustable to several

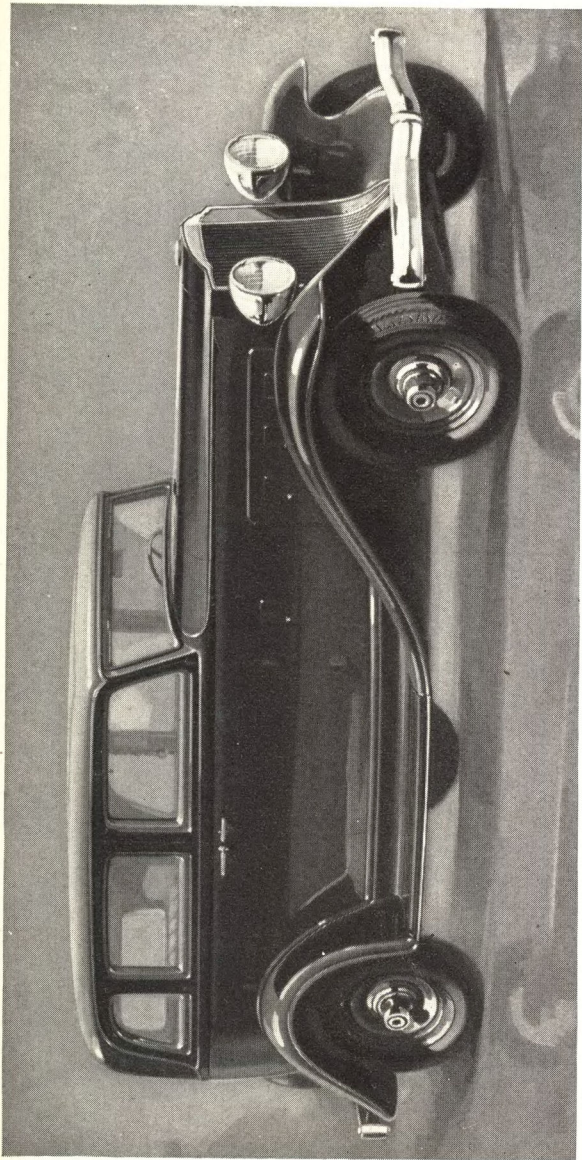


positions. The side cowl doors may be closed or opened with the foot. In addition to the comprehensive system of body insulation, all bodies are protected against annoying drafts around doors. Tapestry covered rubber tubing is used around all door jambs to make these points weather-proof. Moulded rubber pads are fitted to the openings through which the control pedals and levers enter the front compartment and effectively exclude drafts and dirt.

The door sill scuff plates are chromium finished and slope toward the outside of the car, which helps prevent water being blown in during severe storms.

All enclosed bodies are provided with adjustable sun visors for both front seat passengers.

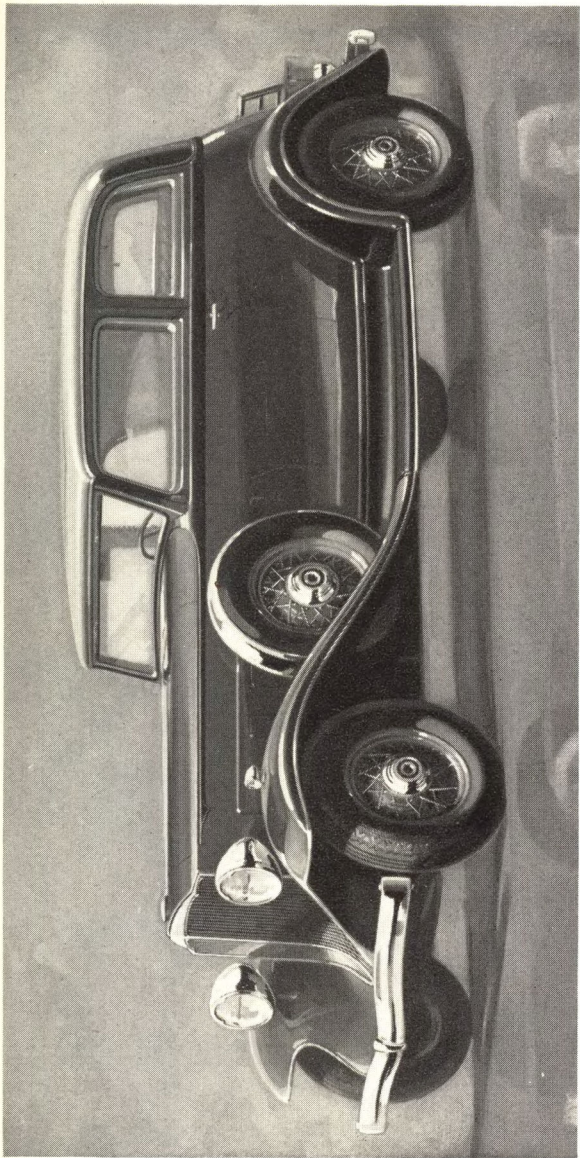
Shatterproof glass is standard throughout all body types.



Packard Light Eight Sedan—Five Passengers

Details of 5-Passenger Sedan

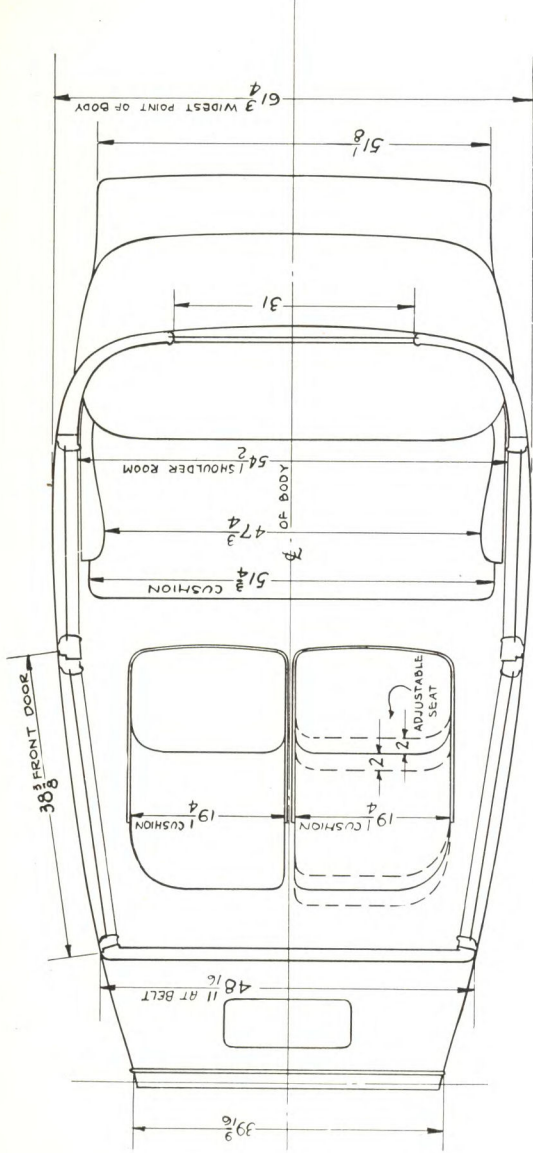
The standard Five-Passenger Sedan combines a degree of luxury and utility usually expected only in a much higher priced car. The wide rear seat accommodates three passengers with utmost comfort. The arm rests on each side of the rear seat are formed over sponge rubber blocks which permanently retain their shape. A substantial chromium finished foot rail also adds to the comfort of the rear seat passengers. To assist passengers leaving the car, convenient toggle grips are secured to the rear door pillars. Silk curtains to harmonize with the upholstery material are installed on the rear windows and the rear quarter windows. In addition to the cigar lighter on the instrument board, a smoking set consisting of ash tray and wireless cigar lighter in a neat walnut finished case is attached on the right side of the rear compartment. A large ash receptacle matching the smoking set is attached on the left side. The dome light is operated either by a switch on the right center door pillar or automatically by a concealed switch whenever either rear door is opened or closed.



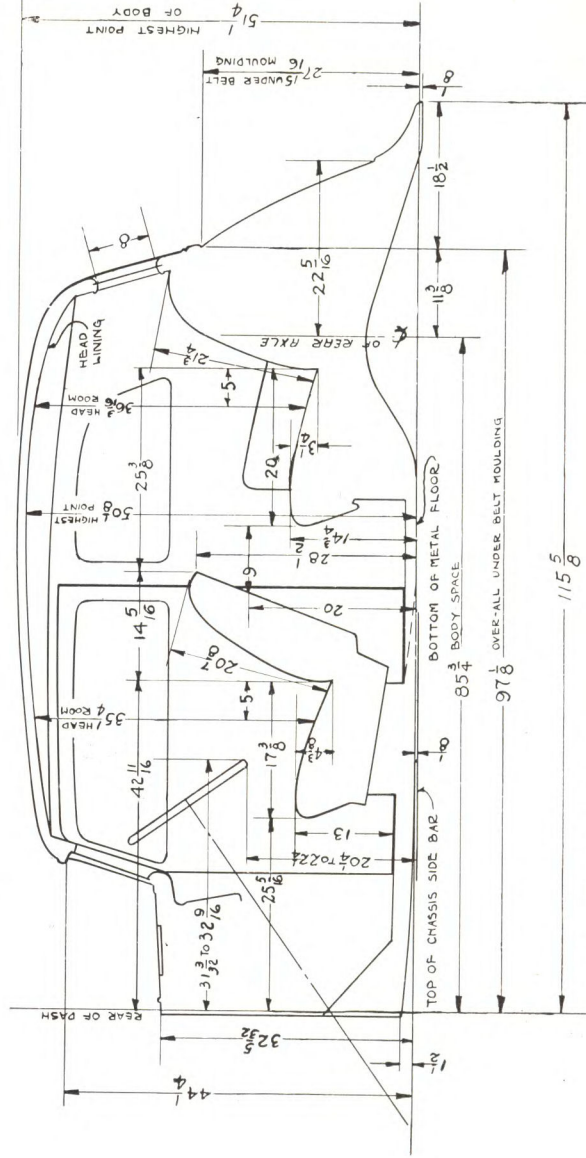
Packard Light Eight Coupe-Sedan—Five Passengers

Details of 5-Passenger Coupe-Sedan

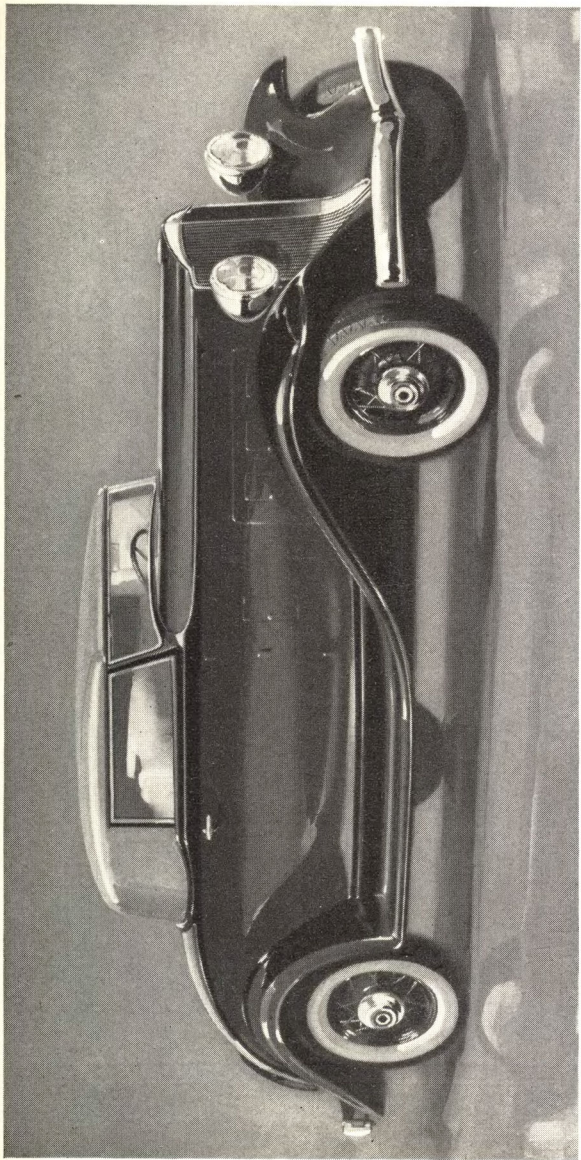
While easily accommodating five passengers, this new close coupled body has the appearance of a sport car. The slope of the rear quarters and rear deck matches the slope of the radiator and windshield and provides a pleasing symmetry. The front seats are of the bucket type, fully upholstered, with driver's seat adjustable and passenger's seat counterbalanced so that it may be tilted forward to provide easy access to the rear seat. The rear seat is of the same generous proportion as in the standard Five-Passenger Sedan. The arm rests, toggle grips, dome light and smoking set are also to be found in this model. The back of the rear seat is hinged at the bottom and swings forward to give access to a spacious luggage compartment under the rear deck.



Packard Light Eight Coupe-Sedan—Five Passengers—Plan View



Packard Light Eight Coupe-Sedan—Five Passengers—Sectional Diagram

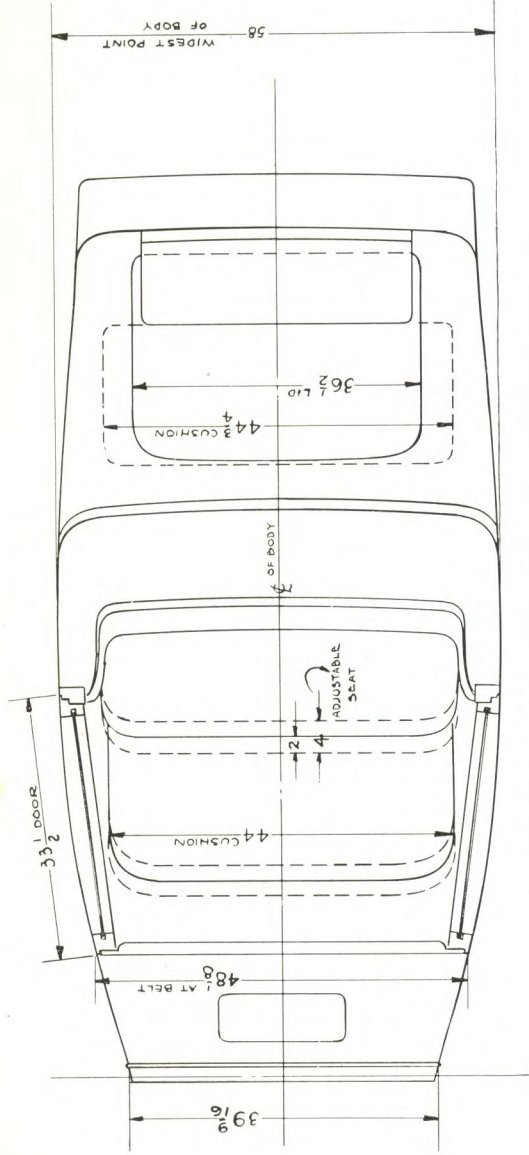


Packard Light Eight Coupe—Two-Four Passengers

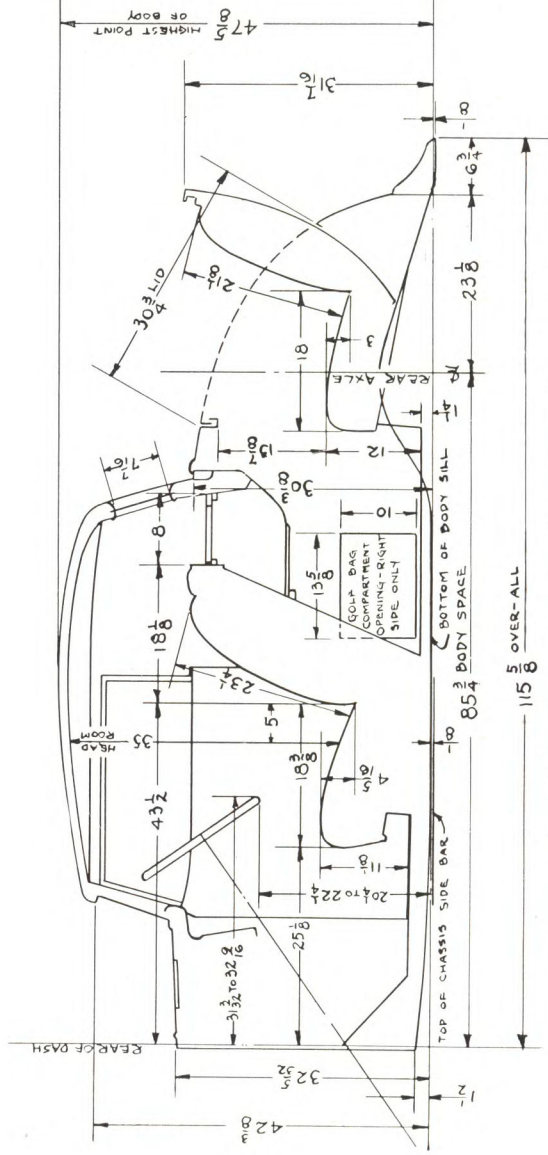
Details of 2-4-Passenger Coupe

This two-door coupe has a stationary top covered with waterproof fabric. The front seat and interior fittings are of the same proportion and design as the Five-Passenger Sedan. Provision is made for two additional passengers in a disappearing rumble seat. The rear deck lid is large, which allows the rumble seat back to be made of such generous proportions as to insure perfect comfort for the passengers. A luggage compartment is located back of the front seat and is easily accessible to the driver. In it are found the lever to release the rear deck and the window regulator for the rear window which may be lowered if desired.

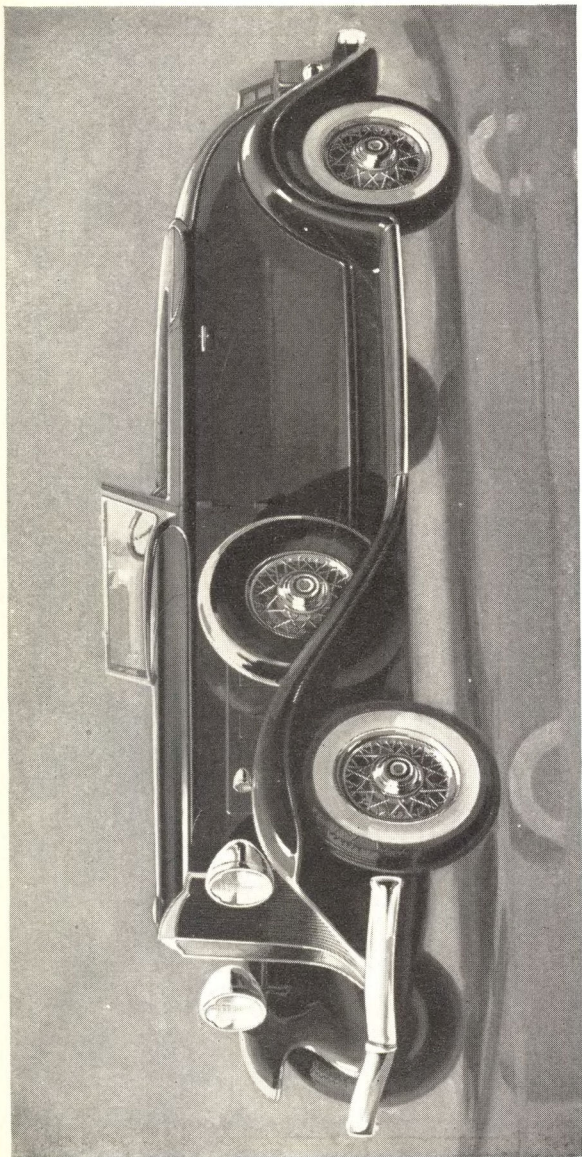
A golf bag compartment extends across the floor back of the front seat and is reached through a door on the right side, fitted with lock and key. The rumble seat compartment is large and roomy and is fitted with a light, carpet and foot rest.



Packard Light Eight Coupe—Two-Four Passengers—Plan View



Packard Light Eight Coupe—Two-Four Passengers—Sectional Diagram

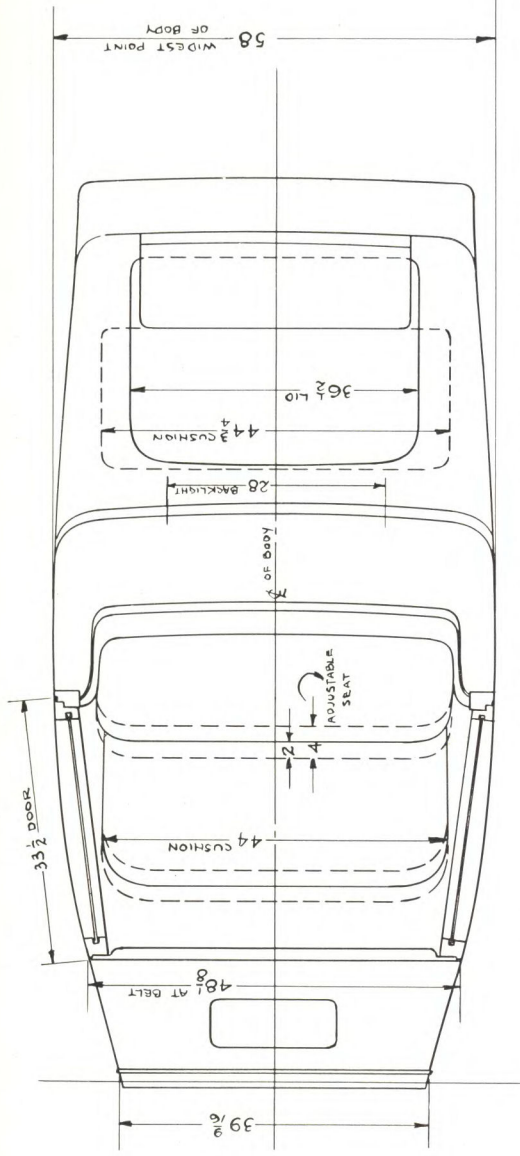


Packard Light Eight Coupe-Roadster—Two-Four Passengers

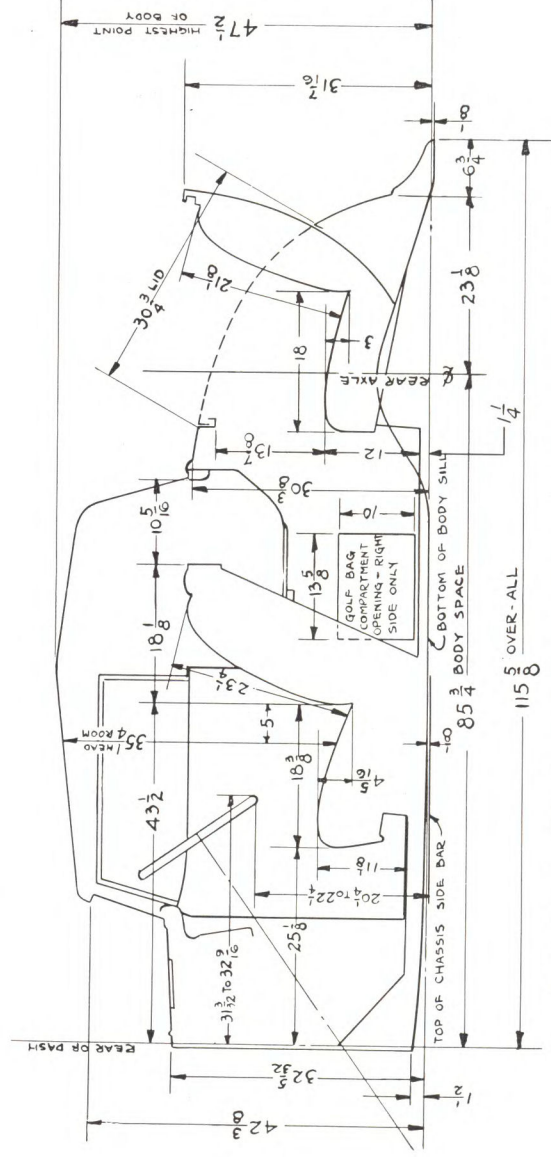
Details of 2-4-Passenger Coupe-Roadster

This body incorporates the low sports roadster lines with the utility of the convertible coupe. The doors are fitted with windows which are easily raised or lowered whether or not the top is in place. The top is fully collapsible and disappears inside a compartment back of the front seat. This compartment is covered with a neat fabric flap which does not break the straight sweeping lines when the top is down. The seating arrangement of the front compartment and rumble seat is exactly similar to the Stationary Coupe, the only difference being that the car is upholstered throughout in Colonial grain leather.

The windshield on the Coupe-Roadster is operated by a finger grip control which locks the windshield in the desired position through concealed sector arms.



Packard Light Eight Coupe-Roadster—Two-Four Passengers—Plan View



Packard Light Eight Coupe-Roadster—Two-Four Passengers—Sectional Diagram

Mechanical Features

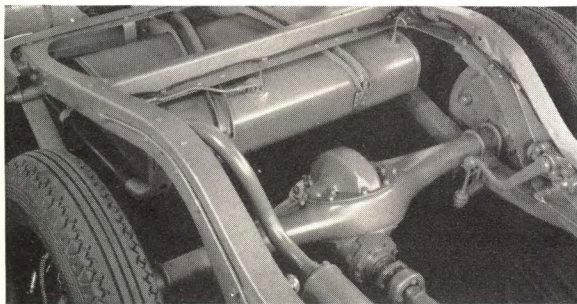
Axle—Front

The front axle performs two essential functions: acting as a carrying agent and providing, in conjunction with the steering gear, a means for guiding the car easily and safely. The axle is drop-forged, I-beam construction, of carbon steel. Correct proportions and proper heat treatment give this important part a large factor of safety.

The tread is 58 inches.

Axle—Rear

The rear axle employs the Hotchkiss drive and is of the semi-floating type. With this arrangement all the driving torque is transmitted through the rear springs without the necessity of using a torque tube or some other device which would hinder proper spring action on rough roads.



The hypoid form of gearing which was pioneered by Packard is brought to a further stage of development in the Packard Light Eight model. In this design, because of the fact that the driv-

ing pinion is mounted below the center line of the ring gear, the entire steel housing has been inclined at an angle.

This greatly reduces the riding height required at the rear end and permits the overall height of the car to be reduced without sacrificing any of the clearance between body and axle or reducing the road clearance. With the hypoid construction the length and strength of the spiral gear teeth are materially increased.

The number of teeth, as well as the area of teeth in contact with each other, is increased.

The driving pinion is supported at each end on double row ball bearings, and the differential and ring gear are mounted on taper roller bearings. This design provides a rigid construction that very seldom requires adjustment.

The rear axle shafts have ten driving splines and are mounted on taper roller bearings.

The standard rear axle gear ratio is 4.35 to 1. Ratios of 4.06 to 1 and 4.69 to 1 are furnished on special order.

The tread is 59 inches.

Battery

The battery is of the high level type, having 19 plates and is mounted on the inner side of the frame directly under the driver's seat. It is rigidly supported in heavy steel brackets and fully protected by the frame and cross members. The positive terminal is grounded to the frame.

Unlike the ordinary battery, it is only necessary to fill the cells with distilled water at intervals of from three to four months because of the large quantity of electrolyte carried over the plates. The capacity is 152 ampere hours at 6 volts.

Bearings—Camshaft

The eight camshaft bearings are carefully hardened and ground. Lubrication is secured from the crankshaft rear main bearing which meters the oil in the correct amount. The oil is distributed through a rifle bored passage in the camshaft.

Bearings—Crankshaft

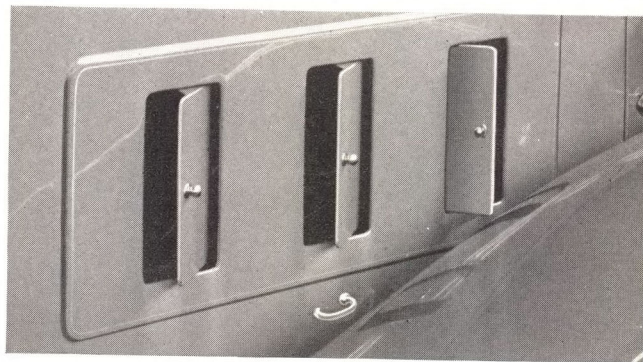
The crankshaft is supported by nine main bearings carried in heavy webs cast in the upper half of the crankcase. On the crankshaft each bearing surface is lapped in a special honing machine to produce a perfect finish. The maximum distance between any two main bearings is $2\frac{1}{2}$ inches. This, in conjunction with a total main bearing length of $12\frac{9}{16}$ inches and bearing diameters of $2\frac{5}{8}$ inches, gives such torsional stiffness that vibration periods are practically imperceptible in the speed range of the car.

In the crankcase the main bearings are of the airplane type, steel shells, babbitt lined. The bearing caps are cast iron. By using these materials, the contraction of the main bearings on the crankshaft is reduced to a minimum during cold weather driving and easier starting is provided.

Each main bearing receives oil under pressure direct from the oil pump.

Body Mounting

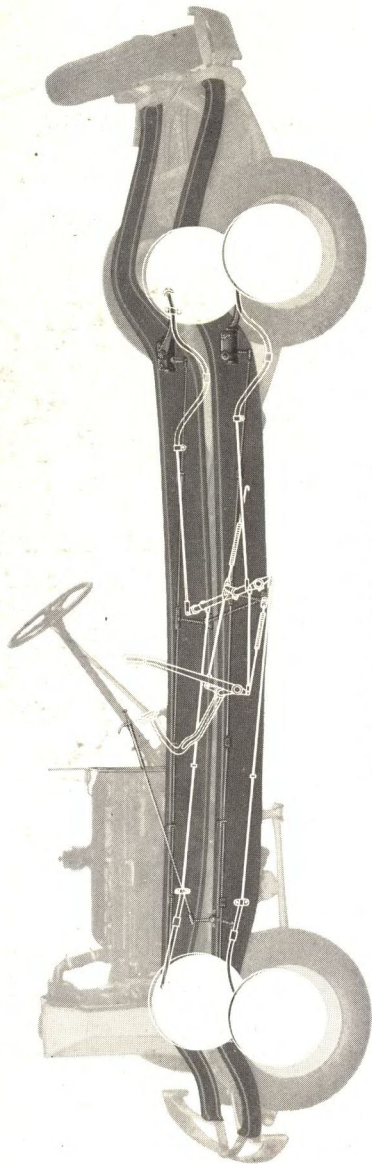
The bodies are attached to the frame at 10 points. Heavy fabric shims impregnated with graphite are used to secure a mounting which is free from annoying squeaks.



Bonnet

The bonnet is of the louvre door type with three doors on each side. The doors may be opened or closed by a neat chromium plated knob on each door. This type bonnet presents a clean, neat appearance and also is an aid in controlling under-bonnet temperature in cold weather. The front door on the right side opens in the opposite direction to the other doors. This is for the purpose of diverting cool air to the carburetor during warm weather driving. The plain chromium bonnet hinges are designed to prevent the lacquered surfaces from contacting when the bonnet is opened.

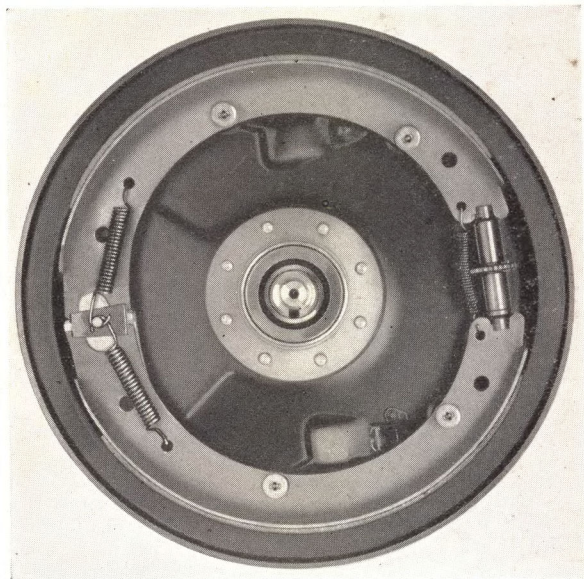
A single handle matching the other exterior hardware operates the bonnet fasteners.



Packard Light Eight Brake Diagram

Brakes—Hand

The hand brake lever is mounted on the outside of the frame, which places the lever in a convenient position, yet out of the way of passengers in the front seat. This lever, operating independently of the pedal, applies the brakes on all four wheels.



Brakes—Service

The service brakes are two-shoe Duo-Servo type, 15 inches in diameter by $1\frac{3}{4}$ inches wide, providing an effective brake area of 212 square inches. By the use of steel cable and conduit controls the entire brake linkage has been greatly simplified. Only one brake cross shaft is used. It is rigidly mounted in oilless

bearings and transmits pedal pressure without any noticeable "spring." The over-lapping back plate design protects the brakes from dirt and water. Brake adjustments are simple and easy to make. The large area of moulded lining gives perfect brake action over long periods of time.

Bumpers

The bumpers are heavy single-bar type, chromium plated. The spring hangers in the end of the frame are recessed so the bumper can be attached directly to the frame by attractive chromium finished clamps.

Rear bumperettes are furnished when the spare wheel is carried at the rear. With custom equipment the full bar rear bumper is used.

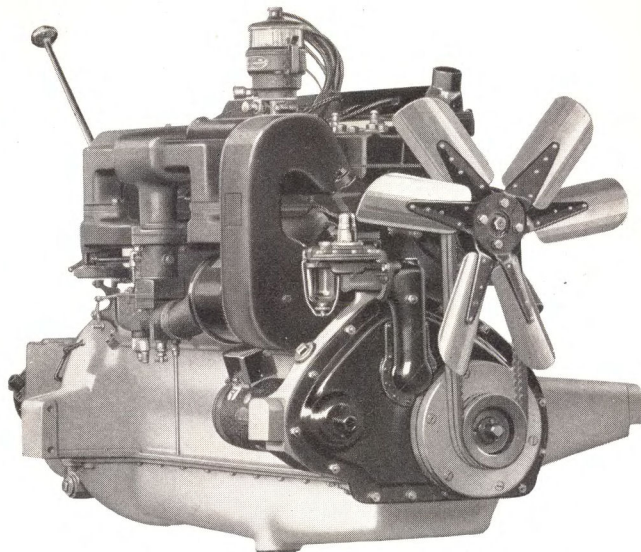
Camshaft

The camshaft is of conventional design with particular attention given to securing the most efficient valve action for maximum speed and power. A spiral gear machined in the center of the shaft furnishes the drive for the oil pump and ignition distributor.

Carburetor

The carburetor is of Packard design and is of the expanding venturi type which automatically proportions the fuel and air throughout the entire range of motor speed. A single adjustment compensates for all variations in driving conditions.

The outstanding feature of our design is the method by which possibility of vapor lock has been practically eliminated with even high test gasoline, and a smooth running motor obtained under the most extreme conditions. This is accomplished



by using an aspirating tube of the diffusing type which utilizes the air rushing through the throat of the carburetor to break up any bubbles of vapor which might form at the mouth of the jet. In addition to this, a tube leads from the top of the float chamber to the main body of the carburetor above the throttle valve. Any vapor escaping from the gasoline is thus drawn off before it can cause trouble in the jet.

A metal jacket through which air is drawn surrounds a portion of the exhaust manifold. This warmed air is fed to the carburetor through a thermostatically controlled valve. The carburetor is also able to draw in cool air directly. The automatic valve, however, controls the proportions of cool and warm air so that the carburetor is always at the most efficient operating temperature.

Chassis

The Packard Light Eight model has a wheelbase of $127\frac{3}{4}$ inches.

Clutch

The clutch assembly is mounted in the flywheel where it is thoroughly protected from dirt, oil and water. The clutch shaft is mounted on ball bearings at both ends.

A balanced single plate clutch driven through a series of cushioning compression springs is employed. The cushioning effect provides a smooth engagement and dampens out any vibrations that might be set up in the clutch at high speed.

The friction discs are of material specially treated to incorporate exceptional wearing qualities. A metal, noted for its resistance to heat without warping or cracking, is employed in the clutch plate.

The whole clutch assembly has the ability to withstand an unusual amount of abuse without any harmful effect.

The clutch throwout is of the walking beam type and operates the clutch through a large ball thrust bearing. Ample provision has been made for any extra load that might be imposed on this bearing.

Connecting Rod

Connecting rods are designed to give maximum service and yet have as low a weight as possible. Light weight is desirable to cut down the total weight of the reciprocating parts and reduce the possibility of motor vibration. The Packard rods are steel I-beam sections, drop forged and heat treated, which makes them exceptionally light in weight but possessing strength much greater than is actually necessary. In each motor the

complete set of connecting rods is selected so there is a variation of less than $\frac{1}{4}$ ounce between any one rod and its mate.

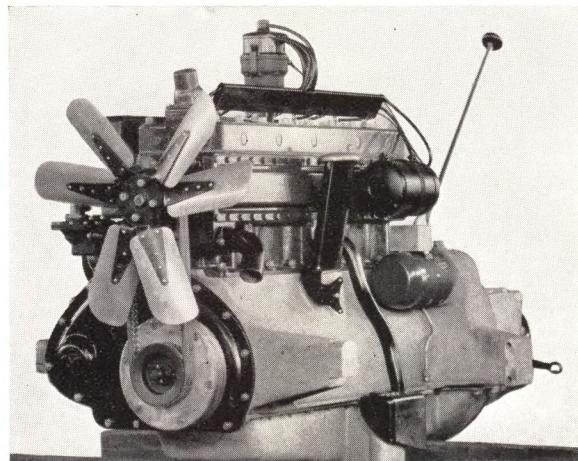
The lower bearing is babbitt lined, while the upper one carries the piston pin in a brass bushing. Both bearings are diamond bored to a perfectly true surface parallel with each other.

Each rod is rifle bored lengthwise to provide a passage for oil, which is forced to the piston pin bearings under pressure.

Cooling System

The cooling system of the Packard Light Eight model has been designed to produce perfect results under all driving conditions.

A thermostatically controlled by-pass valve in the cylinder head causes the



water, which completely surrounds the cylinder and valve chambers, to reach an efficient operating temperature in a mini-

imum of time. When the water exceeds this temperature, the by-pass valve opens and permits a quantity of water to circulate through the radiator. Unusually large inlet and outlet ports in the cylinder block and cylinder head allow the water to circulate easily with practically no restriction at these points.

The radiator core is of tubular construction with an effective cooling area of 466 square inches and a normal rate of flow of 40 gallons a minute. With this type and size of radiator the motor is insured of having a reserve supply of "cooling effect" under the most difficult conditions.

The water pump is built into the front end of the cylinder block which makes the cooling system a model of simplicity, only one packing gland and two hose connections being required. The water pump shaft is mounted on two ball bearings which are lubricated through an oil reservoir that requires replenishing at 2,500 mile intervals through a conveniently located oil cup.

The radiator capacity is $4\frac{3}{4}$ gallons.

Crankcase—Ventilation

Water and gasoline vapors which might cause rust and corrosion in the crankcase are allowed to escape through three outlets.

The oil filler cap is constructed with a wire gauze screen which prevents dust and dirt being drawn into the crankcase and also acts as a ventilator.

A breather is also installed on the crankcase over the front end chain.

Vent holes in the valve chamber side of the cylinder walls also permit vapors to escape. These vapors pass across the

center of the block and down a vent tube which projects below the level of the motor pan.

Crankcase

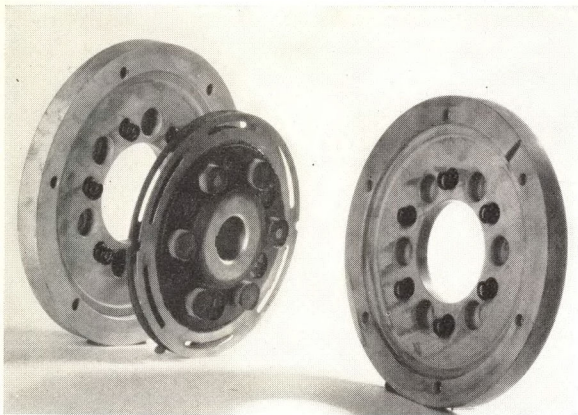
The crankcase is a barrel shaped casting of aluminum alloy. Heavy webs carry the main bearings and camshaft bearings and provide exceptional rigidity. The whole is designed to possess a maximum of strength required for this important part with a minimum weight. Four point rubber mounting effectively insulates the car from any motor vibration.

The lower part of the crankcase is a separate casting and forms the oil pan. It may be removed without disturbing any other parts. To prevent surging of the oil, baffles are cast crosswise. The excellent heat radiating properties of the aluminum crankcase keep the temperature of the oil within desirable limits without the need of an oil cooler.

Crankshaft

The Packard designed crankshaft is manufactured from a steel drop forging and carried in the crankcase by nine main bearings.

The peculiar arrangement of crank pins and the complete counterbalancing reduces bearing loads to a minimum and greatly prolongs the life of the bearings. A refined type of vibration damper (page 40) fitted to the front end insures smooth operation. Oil ducts are drilled from each main bearing to each adjacent connecting rod bearing to supply oil to the connecting rod and piston pin bearings.



Cylinders

The motor is of the "L" head type, the cylinders being cast from hard grey iron mixed with 20 per cent steel.

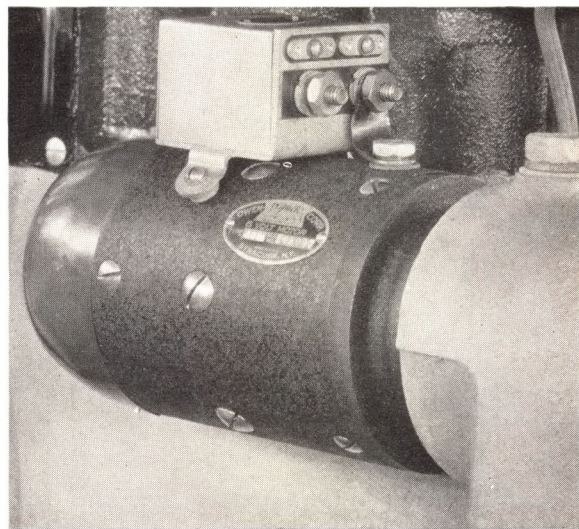
The cylinder head is a separate casting with carefully proportioned water jacket. The combination chambers are fully machined to accurate limits and promote high turbulence of the gas mixture. The design is such that the possibility of detonation is greatly reduced even with a standard grade of gasoline. The compression ratio is 6 to 1.

The cylinders are machined, ground and honed to a perfect finish under close limits for roundness and taper. Excellent water circulation is obtained through large passages completely surrounding the cylinders and valve chamber. One entire side of the block is cast open for the purpose of cleaning and inspecting the water chambers. This opening is covered by a tapered steel plate which promotes an effective distribution and flow of water around the cylinder barrels.

Electrical System

The electrical system is of the single wire or grounded return type.

The generator is located in the right front corner of the crankcase and a three-point mounting provides adjustment for the front end chain. The generator is equipped with a voltage regulator of exclusive design which compensates for the wide range of current consumption between summer and winter driving, and also for low motor speeds encountered in city driving. No adjustment is necessary to protect the battery from overcharge or undercharge.



The starting motor is mounted on the left side of the crankcase and is attached to the flywheel housing by a long pilot with one dowel screw. Contact with the flywheel is by means of a standard Bendix drive. The starter switch is attached

directly to the top of the starter motor with a remote control on the instrument board convenient to the left hand of the driver.

The ignition unit is mounted on the cylinder head between number four and five cylinders. It has two breaker points and incorporates full automatic control of spark advance. The spark coil is attached to the instrument board. To prevent electrical induction each high tension wire is carried in a separate compartment of a rectangular steel housing on top of the cylinder block.

The lighting system includes:

Headlamps with double filament 32 c.p. bulbs

Parking lamps in headlamps

Tail lamp combined with stop light

Two lamps for indirect lighting on instrument board

Front compartment reading lamp

Dome light in sedan models

The lighting system is protected by a fuse and resistance unit. Should a short circuit occur and blow the fuse the resistance will pass enough current to prevent the car being left in complete darkness.

The standard horn is mounted on the left hand side of the motor.

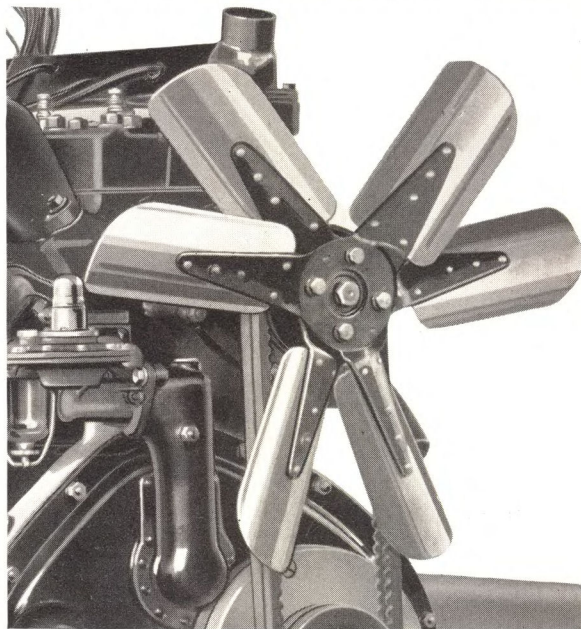
Exhaust System

Special attention has been given to the design of the exhaust system to reduce "power-robbing" back pressure and also to obtain the most silent discharge of exhaust gases. This is accomplished by using a muffler with a thick wall of light sound absorbing material surrounding a perforated tube. The exhaust gases thus

pass directly through with no resistance and yet with all explosive noises dampened out.

Fan

The fan is a built-up six blade type with the blades grouped in pairs to increase the efficiency and reduce noises. The fan



is attached to the water pump shaft and the unit is driven from the crankshaft by two belts running in V shaped grooves. The dual drive permits the use of more flexible, long-life belts, each operating at lower tension than would be necessary with only one belt.

Fenders

The fenders are stamped in one piece from 19 gauge sheet steel. A particularly

clean appearance is obtained for the front fenders by stamping the entire fender, bonnet ledge, and front-end splasher in one piece. Several joints are thus eliminated which with ordinary construction accumulate moisture and dirt and eventually start rusting and squeaking.

Flywheel

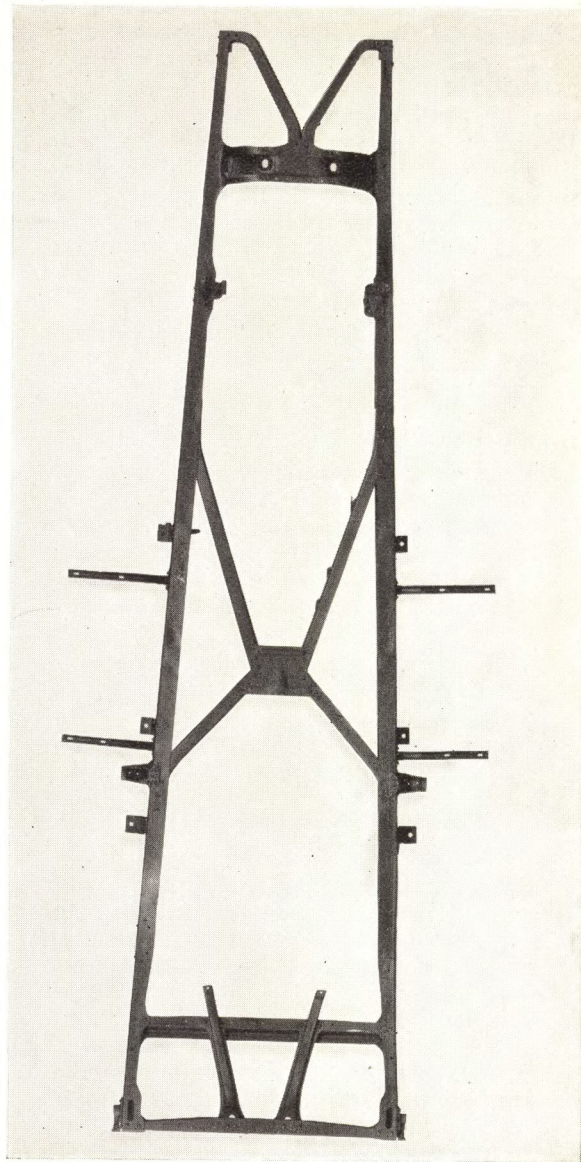
The flywheel is machined from an iron casting. It is carefully balanced to prevent vibration. The teeth for the starter are cut in a steel ring which is shrunk onto the outer side of the flywheel.

Frame

The Packard Light Eight model double drop frame is an entirely new design which for strength and rigidity cannot be surpassed by even a much heavier frame of conventional design having only straight cross members. The channel sections are constructed of $\frac{5}{32}$ " steel with side members 8" deep. These are tied together by a large center X member extending from the rear motor supports to the front of the rear springs. At the front end, a K shaped member extends across the frame at the front motor supports and forward to the front spring hangers. Two cross members at the rear end are tied together with two braces running fore and aft. This construction provides a perfect foundation for the body, protecting it from the weaving stresses that result in squeaks and rattles.

Front End Drive

The camshaft and generator are driven by a silent chain through a sprocket on the front end of the crankshaft. Although the chain is exceptionally short, it seldom requires adjustment. The three point



Frame

mounting of the generator makes this adjustment a simple, quick operation.

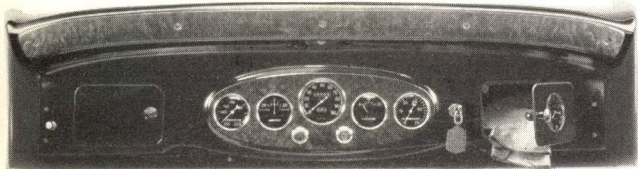
Fuel System

A 20 gallon gasoline tank is mounted under the two rear members of the frame. The quantity of gasoline in the tank is indicated by an electric gauge on the instrument board. The pipe line to the fuel pump is carried outside the frame which protects it from the exhaust heat with the possibility of gasoline boiling.

A mechanical fuel pump operating from the camshaft supplies fuel direct to the carburetor through a glass sediment bowl.

Instrument Board

The instrument board is finished in dark walnut. A raised panel in the center carries the instruments. These are of the round faced airplane type, very easily read in daylight and by indirect lighting at night. The speedometer is placed in

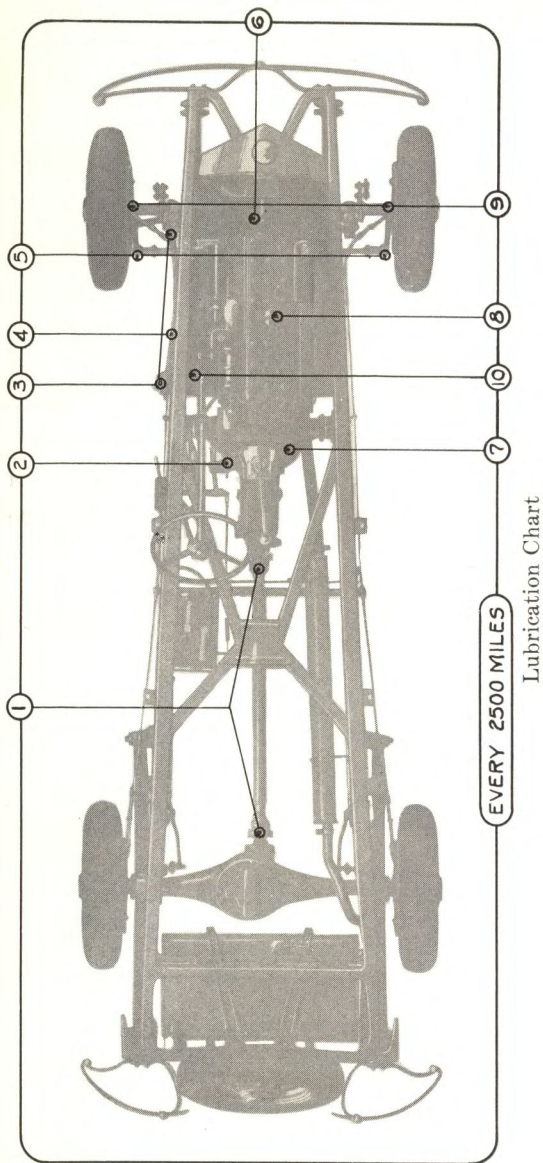


the center of the panel with gasoline gauge and oil pressure indicator on the right. An ammeter and motor thermometer are on the left. Below these instruments are found the choke button and cigar lighter. The ignition switch is just to the right of the panel. On the lower edge is the two-way switch for the instrument board and reading lamps. Convenient compart-

ments are built into each end of the instrument board. Within easy reach of the driver's left hand is the starter button.

Lubrication—Chassis

One of the most outstanding features of the new Packard Light Eight model is the simplified system of chassis lubrication. New advanced design, a result of ingenious Packard engineering, has produced a lubrication schedule which requires attention to only ten points at 2500 mile intervals. It should not be thought that lubrication of the forty-odd points usually taken care of by a central automatic system of chassis lubrication has been given up simply by elimination of any lubrication whatsoever to those points. The design and construction of those parts are such that a central lubrication system would be unnecessary.



Lubrication Chart

A comparison of the points lubricated by a central system with the new design will make this clear.

Central system lubrication points.

Light Eight Model Lubrication Points.

Spring bolts—front and rear.
Shackle bolts—front and rear.

No lubrication—rubber spring mounting used.

Front axle brake shaft bearings.

No lubrication—flexible shafts and cables used.

Intermediate brake shaft bearings.

No lubrication—oilless bearings—single shaft.

Brake rear connecting rod levers.

No lubrication—new brake design.

Steering cross tube ball joints.

Alemite fittings—every 2500 miles.

Steering connecting rod ball joints.

Alemite fittings—every 2500 miles.

Clutch pedal.

No lubrication—oilless bushing used.

Brake pedal.

No lubrication—oilless bushing used.

Clutch throwout bearing.

Oil reservoir—refill 2500 miles.

Clutch shaft bearing.

Alemite fitting—every 2500 miles.

Steering sector shaft.

Alemite fitting—every 2500 miles.

Gasoline pump.

No manual lubrication—lubricated from motor system.

Alemite fittings steering knuckle bearings.

Alemite fittings—every 2500 miles.

Alemite fitting on spring trunion bracket bolt—every 2500 miles.

To these ten points are to be added the following three points which are present with each system:

Water pump shaft oil reservoir.

Distributor shaft grease cup.

Universal joints.

Lubrication—Motor

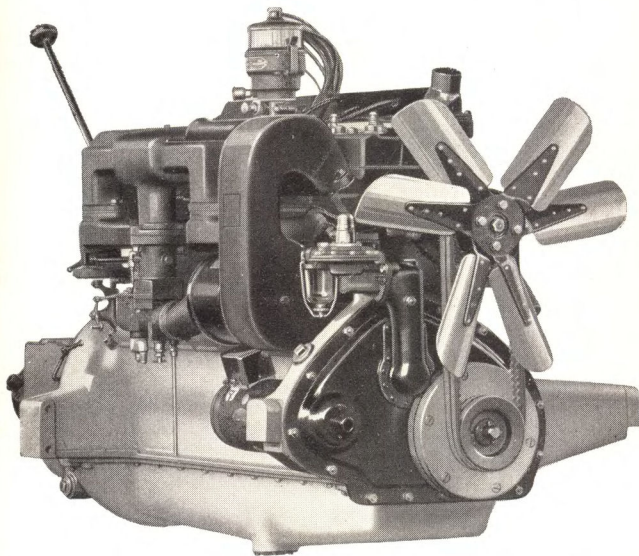
In the motor the oil is circulated under pressure by a gear pump submerged in the oil supply in the bottom of the crankcase. The pressure is automatically controlled through a spring loaded check valve. The oil is distributed through a manifold direct to the nine main bearings. It then passes to the connecting rod bearings, the piston pin bearings, the camshaft and valve rocker arms. The overflow from

the camshaft lubricates the front end chain before the oil returns to the crankcase. Positive lubrication of the cylinder walls and pistons is secured by drilling the crankshaft so that with each revolution a column of oil is shot upward into the cylinder. The oil on the cylinder walls is controlled by a special oil ring in each piston.

An oil filter is attached to the left side of the motor and effectively removes any carbon and grit which may have been picked up by the oil.

Motor

This Packard eight-in-line L-head motor is a model of compact, clean-cut design,



possessing maximum efficiency and power with a minimum of weight—the result of

experience gained by years of careful engineering and manufacturing.

The simplicity and accessibility in the design of all parts are at once apparent. Starter motor, generator, carburetor, water pump and distributor can each be removed and serviced without disturbing any other unit. Even the oil pump can be cleaned and serviced without removing the crankcase oil pan.

This motor develops 110 brake horsepower at 3200 r.p.m.

Manifold

The exhaust and intake manifold are cast integrally and have a rust-proof finish. In this design particular stress has been laid on securing a short warming up period. The intake passages are proportioned so as to distribute the gas mixture in exactly the same volume to each cylinder.

Pistons

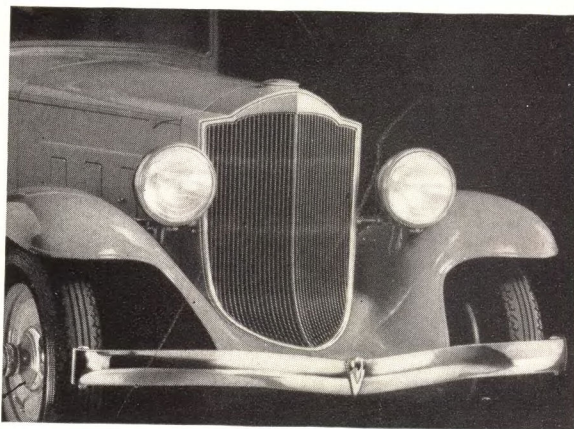
The pistons are aluminum alloy with "Invar" struts which effectively control expansion. A heavy web is cast in the bottom of the skirt to give long life and insurance against piston slap.

Each piston is equipped with four rings located above the piston pin. The upper three are compression rings, while the lower one is a special oil control ring. This ring returns surplus oil to the crankcase through a series of holes drilled in the bottom of the piston ring groove.

The piston pin "floats" in both connecting rod and piston, which prevents excessive wear on any one side. Spring clips hold the piston pin from contacting with the cylinder wall.

Propeller Shaft

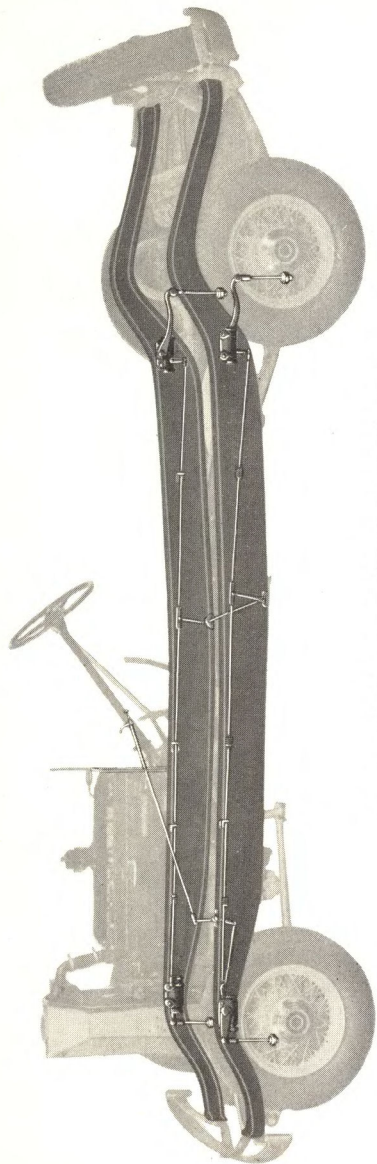
The propeller shaft is a hollow tube tapered to give proper balance and smooth operation. The two universal joints are of the all-metal self-lubricating type. It is necessary to refill with grease at 2500 mile intervals.



Radiator

The radiator design will at once give the impression of smooth, sweeping speed. The historic Packard radiator, outlined in chromium, forms a crest from which the sides curve inward and forward to meet in a sharp point in the front splasher. The center extends forward in a sharp V, set off by a chromium strip. The radiator core is protected by a heavy screen and a vertical bar grid. The shell and grid are painted to match the color scheme of the car.

The radiator core is mounted to the frame on rubber and tied to the body dash by a V brace. To give greater stability the



Packard Light Eight Ride Control Diagram

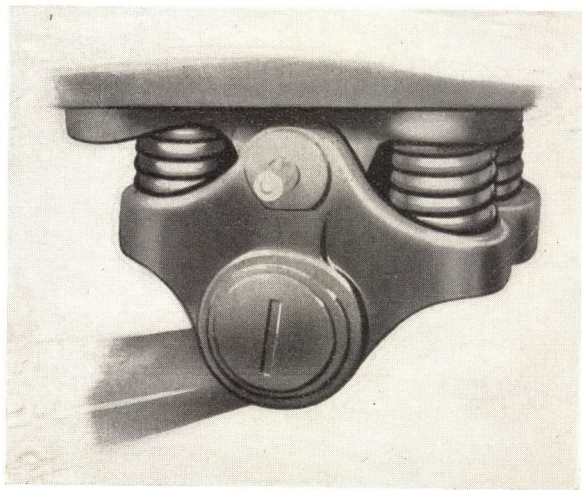
headlamp brackets tie the fenders and radiator together. The construction is such that radiator and headlamp wobble is greatly reduced without introducing harmful stresses into the radiator core.

Running Boards

The running boards are a steel stamping with rubber mat vulcanized in place. A narrow chromium moulding binds the outer edge. The forward end of the running board curves upward to blend with the sweep of the front fender.

Shock Absorbers

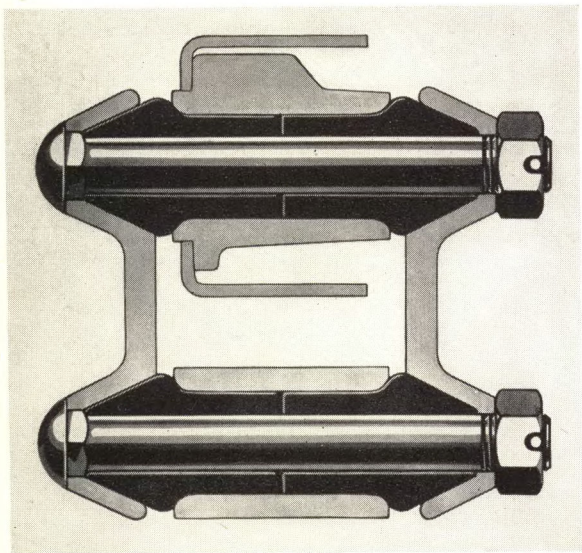
The four double acting hydraulic shock absorbers incorporate the famous Ride Control pioneered by Packard. This combination gives the driver the best selection of riding qualities under all conditions of load, road and temperature. The shock absorber connecting links are of the oilless type that require no attention.



Springs

The front springs are semi-elliptical 40" long and $2\frac{1}{4}$ " wide. These are mounted on the under side of the front axle and shackled at the front end. The Packard design of front spring trunnion bracket (page 55) is found at the rear of the left spring. This device corrects steering difficulties common to low pressure tires. Rear springs are semi-elliptical 56" long and $2\frac{1}{4}$ " wide and are shackled at the rear end.

Both front and rear springs are mounted with compressed rubber bushings on the spring shackles. This type of shackle provides a quiet, flexible mounting that does not require lubrication or adjustment. All springs are fitted with metal covers



which retain the lubricant indefinitely and protect the springs from dirt and water.

The spring capacities are:

Front— 825 lbs.

Rear— 1175 lbs.

Steering Gear

A worm and sector type of steering gear is used because we believe that to provide the proper factor of safety in this important part it is necessary to have as much tooth contact as possible. Three adjustments make possible assembling the parts in correct relation to each other and compensating for wear. The worm and sector, which are made of hardened nickel steel, are lapped together and mounted on taper roller bearings to obtain smooth, easy operation. The steering action has a reduction of 17 to 1.

A simple adjustment makes it possible to raise or lower the steering wheel one inch in either direction.

The steering wheel, $18\frac{5}{32}$ " in diameter, has three spokes and is made of hard black rubber over a steel spider. The horn button is located at the center of the wheel with light and hand throttle control knobs adjacent.

The turning radius is 21 feet 6 inches.

Timing

The proper valve timing may be set by aligning the two teeth marked "O" on the camshaft gear with the two teeth similarly marked on the crankshaft gear when the No. 1 cylinder is at top dead center. With the two gears in this position the front end chain may be put into position and tightened.

The spark timing is set by lining up the marks on the flywheel with a pointer on the flywheel housing. This pointer may be seen by removing the starter motor.

Tires

Straight side non-skid six-ply tires 17 x 6.50 are used for both front and rear wheels.

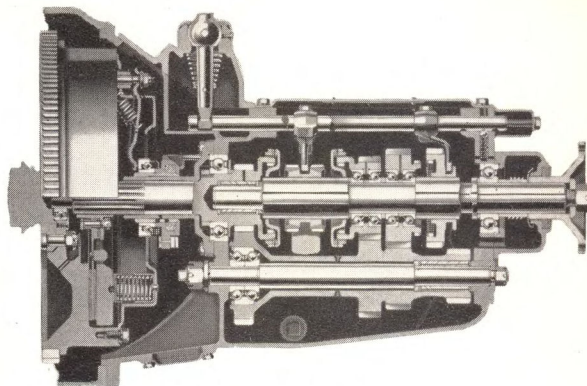
Tools

A complete set of tools including a 1-ton jack is standard equipment. The tool compartment is under the front seat.

Transmission

The Packard Silent Syncro-mesh Transmission in the Light Eight model employs three selective forward speeds and one reverse with positive interlocking control. All forward speeds have spiral teeth on the gears and are quiet in operation. The shift into forward speed is accomplished through sliding members which, in conjunction with the synchronizing mechanism, provide a sure quiet shift that requires no skill on the part of the operator to avoid clashing.

Both the main shaft and countershaft are of rigid construction and are mounted on annular ball bearings. All gears are made of 5 per cent nickel steel, carefully carburized and hardened, which insures maximum strength and wearing qualities.



Transmission Gear Ratio

First speed.....	10.71 to 1
Second speed.....	6.65 to 1
Third speed.....	4.35 to 1
Reverse speed.....	12.56 to 1

Valves

The valves are made of a steel especially selected to withstand high temperatures without distorting. The maximum in service may be expected in Packard valves.

Interposed between the valve stem and the camshaft are the valve rocker arms and adjustable push rods. The rocker arms are drop forged and contact with the camshaft through rollers. This mechanism receives forced feed lubrication. The adjustable push rods are actuated by the rocker arms.

This system of valve control provides the best operating characteristics for the valves and aids in securing a powerful, alert motor. Another valuable feature is that the valves themselves do not receive any of the side thrust from the

cams and consequently the valve stems operate quietly with little wear.

The valve springs are Packard designed and are composed of two separate springs held together at each end by caps which secure the coils rigidly in relation to each other. At higher speeds, this type of spring eliminates spring vibration which would produce valve clatter. Because each spring is operating at a lower stress than would be found in a single coil spring, spring breakage is prevented.

Wheels

Steel disc wheels are standard equipment on all models. Wood or wire wheels, which are interchangeable on the same hubs and spare wheel carriers, are furnished at additional charge.

All types of wheels have drop center rims. The wheel bolts are concealed by



an easily detachable chromium finished hub cap.

Special Equipment

Additional equipment at extra charge may be specified as follows:

Custom equipment.

Trumpet horns.

Clock.

Wood wheels.

Wire wheels.

Rear double wheel carrier.

Fender lamps.

Right hand tail light.

License Data

Number of cylinders.....8

Cylinder bore..... $3\frac{3}{16}$ "

Stroke.....5"

Piston displacement.....320 cu. in.

Horsepower (N. A. C. C.

rating).....32.5

DIMENSIONS OF PACKARD LIGHT EIGHT CARS

(All dimensions are in inches)

Type Number	Body Models	Length Over All—Bumper to Bumper	Width Over All At Front Fenders	Height Over All (Loaded)
553	5-Passenger Sedan.....	195 ³ / ₈	71 ⁷ / ₈	68 ⁷ / ₁₆
558	2-4-Passenger Coupe.....	195 ³ / ₈	71 ⁷ / ₈	64 ⁵ / ₈
559	2-4-Passenger Coupe-Roadster.....	195 ³ / ₈	71 ⁷ / ₈	64 ¹ / ₂
563	5-Passenger Coupe-Sedan.....	195 ³ / ₈	71 ⁷ / ₈	68 ¹ / ₄

DIMENSIONS OF PACKARD LIGHT EIGHT BODIES

(All dimensions are in inches)

	553 Sedan (5 Pass.)	558 Coupe (2-4 Pass.)	559 Coupe-Roadster (2-4 Pass.)	563 Coupe-Sedan (5 Pass.)
Length over all (at belt) except coupes.....	111	115 ⁵ / ₈	115 ⁵ / ₈	97 ¹ / ₂
Length—dash to front of front seat.....	25	25 ⁷ / ₈	23 ⁷ / ₈	25 ³ / ₁₆
Length—back of front seat to front of rear seat.....	21 ¹ / ₂	21 ¹ / ₂	21 ¹ / ₂	19
Width overall (at belt) panel to panel.....	42 ³ / ₈	58	58	61 ³ / ₄
Height, inside.....	48 ⁵ / ₈	44	44	50 ¹ / ₄
Front door width.....	33 ¹ / ₄	33 ¹ / ₂	33 ¹ / ₂	38 ³ / ₈
Rear door width.....	30 ³ / ₄			
SEATS:				
Front:				
Depth.....	17 ³ / ₈	18 ³ / ₈	18 ³ / ₈	17 ³ / ₈
Width.....	44 ¹ / ₂	44	44	19 ¹ / ₄
Height (floor to top of cushion).....	13	11 ¹ / ₂	11 ¹ / ₂	13 ⁴ / ₄
Height of seat back.....	21 ³ / ₄	23 ³ / ₄	23 ³ / ₄	20 ⁷ / ₈
Rear:				
Depth.....	20	20	20	20
Height (floor to top of cushion).....	13 ¹ / ₂	13 ¹ / ₂	13 ¹ / ₂	14 ³ / ₈
Height of seat back.....	47	47	47	51 ³ / ₈
Rumble:				
Depth.....	22	18	18	14 ³ / ₈
Width.....		44 ³ / ₄	44 ³ / ₄	21 ³ / ₄
Height (floor to top of cushion).....		12	12	14 ³ / ₈
Height of seat back.....		21 ¹ / ₂	21 ¹ / ₂	21 ¹ / ₂
Head Room (from point 5" ahead of seat back cushion)				
Front.....	35	35	35 ¹ / ₄	35 ¹ / ₄
Rear.....	36 ¹ / ₂			36 ¹ / ₂

Printed in U. S. A.