

Data Book



P A C K A R D

SIX • ONE TWENTY

SUPER-8 • TWELVE

for 1939

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PACKARD MOTOR CAR COMPANY

DETROIT, MICHIGAN

1939

P A C K A R D

SIX • ONE TWENTY

SUPER-8 • TWELVE



Copyright September, 1938

**P A C K A R D
M O T O R C A R
C O M P A N Y**

D E T R O I T - M I C H I G A N

PACKARD
SIX & 120

PACKARD
SIX & 120

INTRODUCTION

THIS Data Book covers the 1939 Packard Six, Packard 120 formerly called Packard Eight, Packard Super Eight, and Packard Twelve. Its purpose is to give the Packard salesman complete product information, so that he can present the new cars interestingly and intelligently.

The book will be found to contain complete descriptive information and mechanical data. All engineering facts have been translated into practical sales advantages, and presented in simple, non-technical language, easily understood by both salesman and prospect. Illustrations are used profusely.

Even though the book is very complete and well arranged for quickly obtaining information, it will have served no useful purpose until you, the Packard salesman, are familiar with every detail of design and construction, and every sales advantage, so that you can use them freely at any time in presenting the car to the prospect.

It is, of course, obvious that no salesman will ever be called upon to present all of the features and sales advantages found between the covers of this book. Some people are interested in one thing, while others are interested in things entirely different. One person thinks in terms of economy; another is particularly interested in features of safety; others become enthused principally over the performance characteristics of the car; and again others are influenced by appearance

DATA BOOK

and comfort. The salesman, not knowing just what features will appeal to different prospects, must know the car from bumper to bumper, and be ready to emphasize the salient points that are of interest to the different tastes of the many people he contacts.

To meet these conditions we urge every Packard salesman to become familiar with the product information as quickly as possible. To best do this call for a reading of the book, not once, but several times, and a constant review as time goes on. After all, one of the most essential requirements of a successful salesman is his knowledge of the goods he is trying to sell, and any labor involved in obtaining this information is always most profitable.

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PACKARD HISTORY IN BRIEF

IN 1898 J. W. Packard, a wealthy young electrical equipment manufacturer of Warren, Ohio, bought an automobile manufactured by Alexander Winton of Cleveland. The Winton was considered the best of its day.

After a few weeks' experience with his new car, Mr. Packard saw several ways in which the machine could be improved. He returned to Cleveland and suggested improvements to Mr. Winton, who evidently did not relish the constructive criticism. Mr. Winton's reply to young Packard was: "If you think you are so smart, why don't you build a better machine yourself?" Mr. Packard accepted this challenge by stating that he believed he would do just that.

On November 6, 1899, the first Packard car, model A-1, was completed, and for those days it was a masterpiece of engineering. This same car is now enshrined in the engineering rotunda at Lehigh University, a gift of Mr. Packard to his Alma Mater.

Noting the success of the first machine, friends of the two brothers, J. W. and W. D. Packard, insisted on duplicates with the result that six were produced in 1900. So successfully did these machines perform that the Packard brothers began building motor cars on a larger scale.



The first Packard car, model A-1, completed Nov. 6, 1899.

In the meantime a small group of young Detroit men had the vision to see the possibilities of the "horseless carriage." They became interested in the Packard machine, and were led to invest their money with the Packard brothers. The new company was called the Packard Motor Car Company. In 1903 the plant operations were moved to Detroit.

The year 1904 was an important one in Packard history. The famous Packard, "Old Pacific," crossed the continent for the first time. The Packard "Gray Wolf" raced over the sands at Daytona Beach, covering a mile in 46 seconds—the first car to break the mile-a-minute record.

Of greater importance, however, was the introduction in 1904 of the now long familiar radiator lines and hub cap design which gave to Packard cars a permanent identity and distinctive individualism—and this is true of no other American motor car.

In those early and hectic days when the new industry was growing to giant size, Packard grew and flourished. Blessed with ample capital, Packard never felt the pinch of want, never was tempted to transgress its basic policy of "Quality First." The company was early acclaimed as the leader in production of fine motor cars.

Public recognition of the Packard Company and the Packard car leaped in appreciation in 1915 with the introduction of the famed Packard Twin-Six. It rose more prominently before the whole world when Packard engineering made possible the Liberty Aircraft Motor and gave this wonderful wartime engine to America during the World War.

Following the war another cycle in Packard engineering took place with the introduction of the Packard 126 and 146 in 1921. These sleek new sixes and

eights immediately caught the public fancy and ushered in a greater era of Packard expansion. The demand for these new cars in succeeding series was such that in one year Packard produced more than 50,000; each selling for well over \$2,000.

Realizing that there was a great public demand for a quality car in the lower price field, Packard, as far back as 1929, began a study to see what could be done to produce such a car.

After working intensively for several years and applying all the engineering and manufacturing skill accumulated in more than three decades of fine car building, Packard, in 1935, introduced the Packard 120. Packard had at last brought into being a quality small car fully worthy of an old distinguished name. Quickly catching the attention of a public long noted for discernment of value in motor cars, the Packard 120, in less than a year, won its way from last to first place in registrations of all motor cars in its immediate price range. This was the greatest tribute ever given a first-year car.

Following up the phenomenal success of the Packard 120, Packard farther penetrated the lower price field in 1936 by the introduction of a companion car, the Packard Six. This new car built to the same high quality standards as the Packard 120, met an equally enthusiastic reception, and gave Packard a well rounded out coverage of the motor car field. With the Packard Six, Packard 120, Packard Super Eight and the famous Packard Twelve, a line of cars is offered that will meet the most discriminating tastes and will fit almost all pocketbooks.

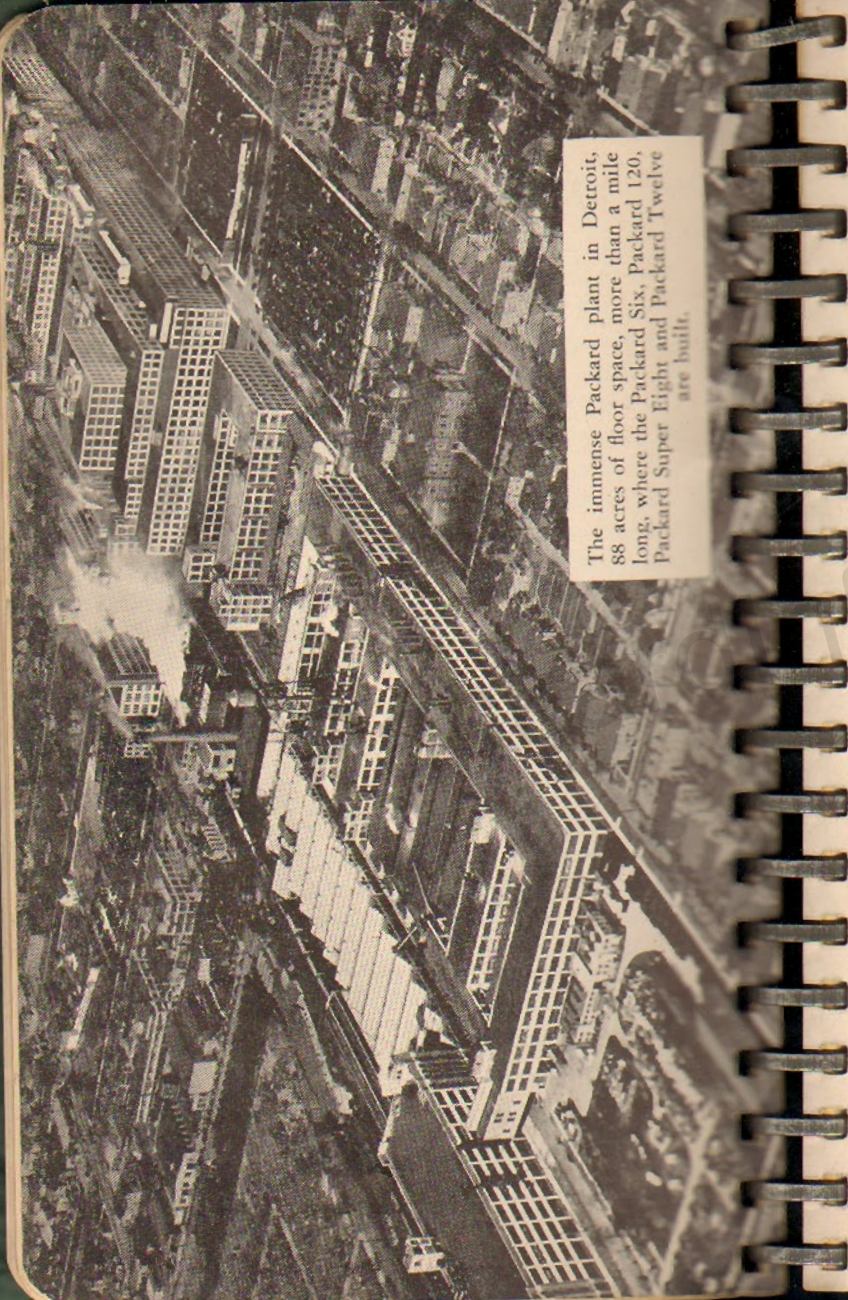
The Packard Six and Packard 120 share the full benefit of Packard prestige and reputation which has for years made Packard cars the decided choice of America's fine car buyers.

THE PACKARD FACTORY

EXTENDING a full mile from end to end, the huge manufacturing plant of the Packard Motor Car Company is the largest, most compact and self-contained fine car factory in the world. In its 88 acres of floor space are many diversified activities, for Packard builds more of its parts and assemblies than do other fine car builders. In these great factories are forge, foundry, heat treating and stamping mills, besides acres of floor space devoted to machine shop and assembly work. Here Packard builds its own bodies, engines, axles, transmissions, front wheel suspensions and other major units of its cars and in so doing Packard controls quality from raw material to finished product. When the opportunity presents itself to improve quality and lower prices through the use of new machinery or more efficient methods, Packard can move faster and change plans quicker than other large companies with numerous outside small subsidiaries and independent suppliers.


Constant plant extension and year by year modernization—the latest manufacturing methods and up-to-the-minute machinery all combine to maintain Packard quality and fair price. It is worthy of mention that in the last five years Packard has spent well over thirty-one million dollars in new production facilities.

In the knowledge that reputation is never completely earned but is a constantly growing thing, and realizing that the record of the past is but the promise for the future, Packard, true to its policies and ideals to build only the finest cars in any price class, goes on building better and more beautiful cars each



The immense Packard plant in Detroit, 88 acres of floor space, more than a mile long, where the Packard Six, Packard 120, Packard Super Eight and Packard Twelve are built.

year. The final judgment and appraisal of its products and achievements are in the hands of the people best qualified to judge—the hundreds of thousands of Packard owners. And it is to these “satisfied customers” that Packard has confidently directed its prospective buyers since the early beginnings of the company. In all sincerity Packard points and says, “Ask The Man Who Owns One.”



The only Proving Grounds devoted
to improving one make of motor
car—504 acres in extent.

PROGRAM FOR 1939

FOR 1939 Packard presents the finest selection of cars in Packard history. Four complete lines are offered, each of which represents unparalleled motor car value in its particular price field.

Typically Packard in appearance and quality, the new cars embody many new features which add greatly to well established standards of beauty, comfort, driving ease and long-lived dependability.

The new Packard Six and 120 are smarter in external appearance, and have been given a new richness of appointments that adds greater beauty and warmth to the interiors. Refinements in engines and chassis promise increased economy, smoother operation and a new standard of riding comfort.

The new Packard Super Eight brings new sparkle and dash to the Packard line. Priced to meet a much wider price field, this superb car is bound to win thousands of new friends for Packard. Powered with a 130 horsepower motor, the new Super Eight has plenty of smooth reserve power to meet the most exacting demands. It is a car of generous dimensions and has been given every thought to provide the utmost in comfort and convenience for occupants. For those who want the power, performance and luxurious comfort of a large fine car on a shorter wheelbase, the Super Eight will meet these requirements fully.

For those who are satisfied with nothing but the finest in motor cars, Packard offers a new Twelve for 1939. This car, the "Flagship of the Packard Fleet," represents the ultimate in motor car transpor-

tation. With its powerful 175 horsepower engine, the Twelve rolls along the highways, hour after hour, at sustained high speeds with but little apparent effort—it seems to loaf along. It is smooth, silent but eager in its response to the accelerator pedal. It requires but little effort in its handling, and its rugged chassis and body offer unequalled safety. The richly tailored interiors with their distinctive appointments, reflect an atmosphere of luxury and refinement found only in the finest of drawing-rooms. The new Packard Twelve is a prestige car—a luxury car. Like its predecessors, it will continue to win the approval of America's most distinguished families and discriminating buyers.

In introducing the new Packard Six, 120, Super Eight and Twelve, with their many new features and appeals, Packard does so, secure in the knowledge that these new cars will add thousands of new names to an already long roster of loyal Packard owners.

ASK THE MAN WHO OWNS ONE

PACKARD SIX AND 120 MOTOR

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PACKARD SIX AND ONE TWENTY FEATURES FOR 1939

THE following list of features embodied in the new Packard Six and Packard 120 includes features new this year and as well those important features which have in preceding years combined to produce the efficiency, the performance, the riding comfort, the economy and the distinguished appearance for which Packard is justly famous. You will find this list, not only convenient for quick reference, but also a guide to you in your sales presentation. It will suggest a logical order in which to present the features of the car and at the same time help you avoid missing a feature as you talk. You will find complete descriptions of all and illustrations of most of these Packard features in the following pages of this Data Book.

Packard T & T Engine Features

1. Neutro-Poised rubber engine mountings
2. Completely balanced crankshaft with overlapping bearings
3. Removable precision type main and connecting rod bearings
4. Rifle-drilled connecting rods
5. Autothermic aluminum alloy pistons
6. Induction hardened camshaft
7. Non-reverse-bend timing chain
8. Full pressure lubrication system
9. Pressure lubricate valve tappets
10. Two-stage oil filter
11. Floating type oil screen
12. Crankcase ventilator
13. Improved down-draft carburetor

14. Improved integral automatic choke.
15. Automatic manifold heat control
16. Automatic radiator shutters
17. Fan-Blast cooling tunnels
18. Cylinders completely surrounded by water
19. Valve cooling tube
20. Air cooled generator with voltage control
21. Vacuum spark control
22. Semi-centrifugal roller bearing clutch
23. Unimesh transmission
24. Nine anti-friction transmission bearings
25. Carburized transmission gears
26. Handishift gear changing lever
27. Econo-Drive (optional at extra cost)
28. Permanently lubricated, ball bearing water pump
29. Neutro-tuned fan

Chassis Features

1. Double-trussed frame with tapered I-beam X member
2. Safe-T-flex front wheel suspension
3. Front transverse shock eliminators
4. Safe-T-flex rear wheel suspension
 - (a) Rubber-floated rear springs
 - (b) Opposed shock absorber mounting
 - (c) Integral roll control bar
 - (d) Rubber-insulated spring brackets and shackles
 - (e) Fifth shock absorber
5. Harmonized steering
6. Hypoid rear axle
7. Hotchkiss drive
8. Three-inch propeller shaft.
9. Roller bearing universal joints
10. Servo-Sealed hydraulic service brakes
11. Mechanical hand brake
12. Centrifuge brake drums
13. 48 ball and roller chassis bearings
14. 24 rubber bearings in chassis
15. Minimum points of lubrication

Body Features

1. All-steel body construction
2. One-piece steel roof with steel bows and braces
3. Comprehensive body insulation—15 materials
4. All-steel, electrically welded floor
5. Rear body X brace
6. Rubber impregnated body mounting insulators

Appearance—Features—Exterior

1. Enduring identity
2. Full-length automatic radiator shutters
3. Heavy bumpers with fender guards
4. Bullet-type headlamps
5. Massive, deeply crowned fenders
6. Ten-inch chrome hub caps
7. Divided sloping windshield
8. All-steel top
9. Attractive chrome trimmed louvers
10. Chrome trimmed full width running boards
11. Free wheeling right front door handle
12. Reflector type tail lights
13. Large trunk—14.75 cubic foot capacity
14. Concealed trunk hinges

Appearance—Features—Interior

1. Extra wide front and rear seats
2. Attractive upholstery and trim designs
3. Convenient and effective door locking system
4. Plastic trimmed interior hardware
5. Beautiful, walnut-grained, chrome-trimmed instrument panel
6. Attractive, easily read speedometer and gauges
7. Exceptionally large, locking glove compartment
8. Graceful and comfortable steering wheel
9. Adjustable front seat
10. Individual ventilation

PACKARD SIX AND ONE TWENTY MOTORS

IN the designing and building of internal combustion engines Packard has a wider experience than any other organization in the world.

It has designed and built engines of one, two, four, six, eight, twelve and twenty-four cylinders. In cylinder arrangement they have been "vee," parallel, "X," in line, inverted, radial, "W," single, and opposed. Packard has built overhead valve, and L-head valve arrangements. It has originated many of the features generally used in all motors today.

This rich background of experience extending over a 40-year period is squarely behind and reflected in the Packard Six and 120 motors. They are designed and built by the same organization, subject to the same rigid standards that have made Packard engines famous throughout the world.

This year Packard Six and 120 engines have been given the name of T & T engines. And as you suspect, there is a wealth of meaning behind these initials. T & T stand for Traffic and Travel and your own experience when you have driven the cars will prove to you how perfectly and completely these engines fulfill every demand of present day city and country driving. In heavy traffic, smooth, quiet power is provided, or a sudden burst of speed to carry you ahead when you get the breaks. For travel on the open highway where the pavement stretches

Printed in U. S. A.

out into the distance both engines give unsurpassed accounts of themselves. The miles slip past smoothly, effortlessly and with exhilarating speed.

Be sure, therefore, to give complete demonstrations. Lay out your route to prove the superb performance of the new Packard Six and 120 under all conditions. Give the engine a chance to sell the car for you.

With the exception of number of cylinders and horsepower the engines are basically the same in design. Both incorporate many features which make them superior to other motors of similar size and power. Both engines are built with generous reserve power to meet the most unusual demands for acceleration, hill-climbing or long sustained driving at high speeds.

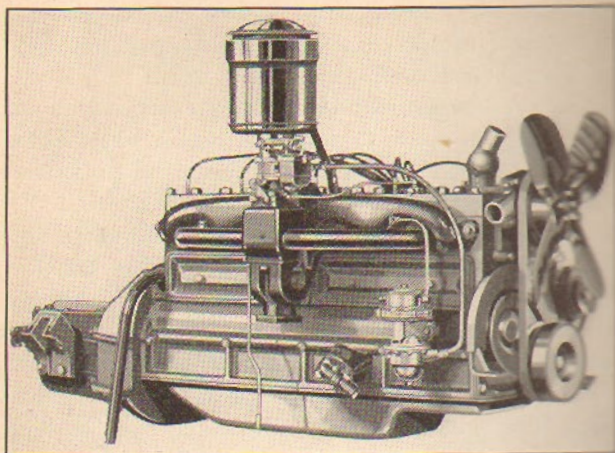
In addition to their excellent performance, the Packard Six and 120 engines are economical in operation. Both oil and gasoline consumption compare very favorably with cars even smaller in size. And the records of thousands of owners over millions of miles of travel prove that maintenance and operating costs are exceptionally low.

SPECIFICATIONS

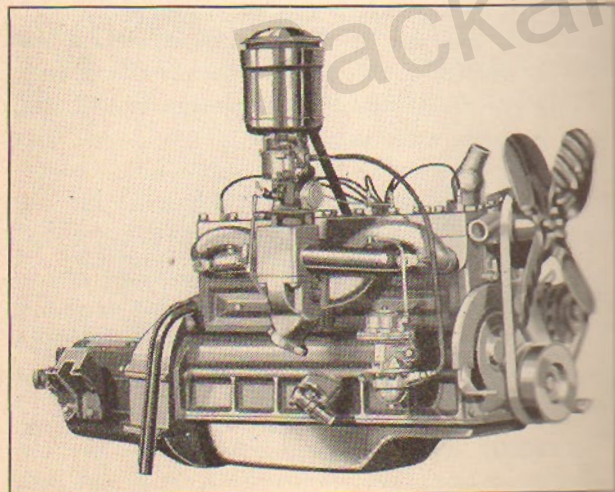
	Six	120
Bore and Stroke.....	3½ x 4¼	3¼ x 4¼
Displacement.....	245.34 cu. in.	282.05 cu. in.
Type.....	L-head 6 cylinders	L-head 8 cylinders
S.A.E horsepower.....	29.4	33.8
Brake horsepower.....	100 @ 3200 R.P.M.	120 @ 3600 R.P.M.
Compression ratio		
(standard).....	6.5 to 1	6.4 to 1
Compression ratio		
(optional).....	6.85 to 1	6.85 to 1

Sept., 1938

7



The Packard 120 Engine—120 Horsepower.



The Packard Six Engine—100 Horsepower.

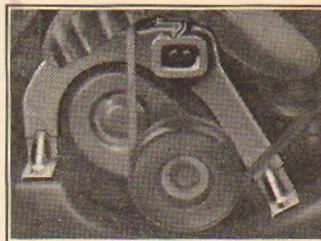
L-Head Design

For years all Packard automobile engines have been of the L-head design. This type of engine is free from any complicated valve mechanism. It does not require the use of long push rods, extra springs and rocker arms which are necessary in a valve-in-head engine. The greater efficiency of the L-head type of engine is proved by its wide use by the big majority of motor manufacturers. Angle-set valves and L-head design permit the use of a high turbulence, high-efficiency combustion chamber with the simplest, quietest and most reliable type of valve operating mechanism.

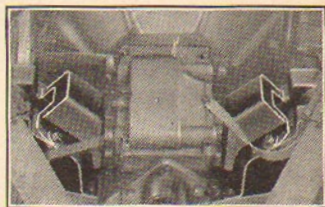
Neutro-Poised Motor Mountings

In every internal combustion engine there are certain power impulses that are normally transmitted to the body. In the Packard Six and 120 engines these power impulses are reduced to a minimum and effectively absorbed by the exclusive Packard Neutro-Poised motor mountings.

These mountings consist of large soft blocks of live rubber in which the engine is cradled at three points. A single high mount-



The front end of the engine is supported on a single, high rubber-cushioned mounting.



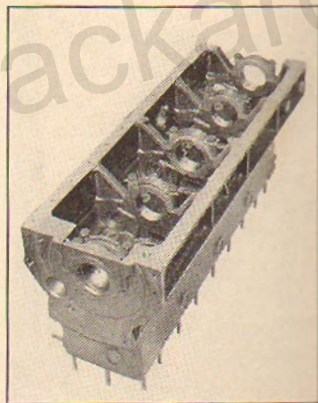
The rear of the engine is carried on two inclined rubber-cushioned mountings—one on each side of the transmission.

ing supports the engine at the front center, and two inclined mountings support it at the rear, one on each side of the transmission. They are so designed and placed that they absorb the power impulses that might otherwise be transmitted to the frame and they also protect the engine from severe road shocks. They provide unequalled smoothness and quietness of operation.

Cylinder Block and Crankcase

The Packard Six and 120 cylinder blocks and crankcase are cast in one piece from a tough alloy of chrome nickel semi-steel. This material provides maximum hardness and possesses unusual properties for resisting heat and wear. The exceptional hardness of the cylinder block makes it entirely unnecessary to resort to the use of steel valve seat inserts.

Both sides of the crankcase are heavily reinforced by ribs which run the full length of the engine and which form a rigid foundation for bearings and crankshaft. The main bearing supports formed in the crankcase are reinforced by multiple ribs. The lower edge of the crankcase extends well below the center line of the crankshaft, thus providing increased vertical rigidity. This sturdy construction prevents deflection and insures permanence of bearing alignment and long life.

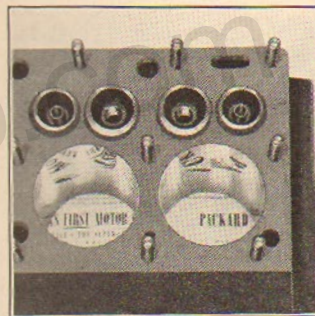


Five main bearings support the crankshaft in the Packard 120 cylinder block, four on the Six.

Built-In Oil Manifold

An oil manifold drilled in the right side of the cylinder block delivers oil from the pump under pressure through individual drilled passages in the crankcase to all main bearings. From here it passes through rifle-drilled holes in the crankshaft to the connecting rod bearings, to oil filter and back to the valve tappets and timing chain.

Precision Honed Cylinders



Cylinders are bored, reamed, honed and polished to a mirror finish.

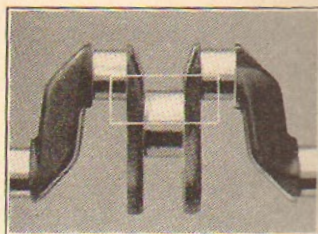
To insure velvety smooth movement of pistons on cylinder walls, the bores are reamed, honed and polished to a mirror-smooth finish. The most modern of honing equipment produces cylinder bores that are straight and round within the narrow limits of one-half of one-thousandth of an inch.

An extremely accurate method of fitting Packard pistons in these precision honed cylinders has just been developed and is now used in production. An electrical amplifying gauge is used to check each cylinder. The scale is marked with graduations, each of which represents one-quarter of one-thousandth of an inch. The gauge reads in letters—A, AA, B, BB, C and so on, DD being the last graduation actually used. If the gauge determines the size of the cylinder bore to be "A" it is so marked.

inches. It has six integral counterweights.

Another feature of the Six and 120 crankshafts is the overlapping of main and crank pin bearings by 17/64". This overlapping stiffens the crankshaft materially, insures long bearing life and also minimizes vibration. This design is made possible by the unusually large diameter of the bearings and the short stroke of the pistons.

Both crankshafts are, of course, rifle-drilled for the passage of oil under pressure from main bearings to connecting rod bearings.



Crankshaft main and crank pin bearings overlap more than a quarter of an inch.

Removable Precision Type Main Bearings

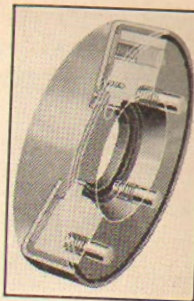
Crankshaft main bearings in both the Packard Six and 120 are of the removable precision type. The bearing consists of a steel shell lined with a special babbitt metal and is machined to such precision limits that extra long life is assured.

Vibration Damper

To neutralize the torsional (twisting) vibration that is inherent in the crankshaft of an engine, the Packard Six and 120 are equipped with the Packard vibration damper. Many other manufacturers attempt to control torsional vibration by using balancers with either rubber or spring tensioned friction members alone. The Packard damper is an exclusive develop-

ment combining both these methods into a single unit. It employs the combined action of a spring tensioned friction member with the natural damping of rubber when oscillated at high frequencies.

The Packard damper operates effectively at all speeds, providing maximum smoothness and quietness. Because the unit is sealed in rubber the adjustment is permanent and any possibility of entry of water or dirt is eliminated.



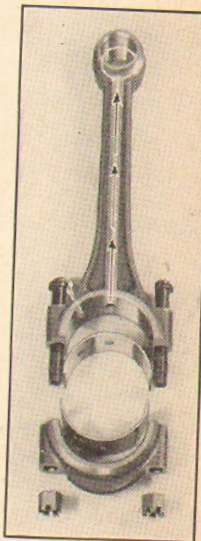
Both rubber and springs are used to absorb vibration in the Packard vibration damper.

Connecting Rods

Connecting rods are of drop forged alloy steel and are machined to closely held precision limits. Both the upper and lower ends of the connecting rods are machined to a smooth, mirror-like finish.

All Packard connecting rods have a rifle-drilled oil passage from the crank pin to the piston pin bearing. This insures a continuous supply of lubricant to the pin bearing under full pressure. This practice contrasts with some designs which depend upon splash for piston pin lubrication.

An additional oil passage runs diagonally through the crank pin bearing of each rod and spurts oil under pressure to the cylinder



Connecting rods are rifle-drilled to piston pin bearing.

walls. This spurt hole supplies copious lubrication the instant the engine is started and prevents wear that might otherwise occur following the starting of the engine.

Connecting rods are carefully selected in sets where any two rods cannot vary more than $\frac{1}{4}$ ounce in weight.

Connecting Rod Bearings

It will be noticed from the illustration that connecting rod lower bearings are also of the precision type. However, these bearings are of new design this year in both the Packard Six and 120. Instead of being formed from flat strips of rolled steel after the babbitt lining has been applied, these new bearings are made of heavy high carbon steel tubes. The babbitt bearing material is centrifugally cast and the bearing is then split to form the two halves. This new type of bearing is considerably more expensive than other types, but assures a substantially longer life.

Autothermic Aluminum Alloy Pistons

These special Packard pistons, used in both the Packard Six and 120, combine all the advantages of conventional aluminum alloy construction with other important advantages. They differ from other types in that the clearance between cylinder wall and piston is thermostatically controlled to insure the same fit at all temperatures. In other words, a more perfect balance of piston fit is attained in the engine when cold and also when warm. Thus, pistons may be fitted closer, piston slap in a cold engine is eliminated, wear in a warmed-up engine reduced and greater gasoline economy effected.

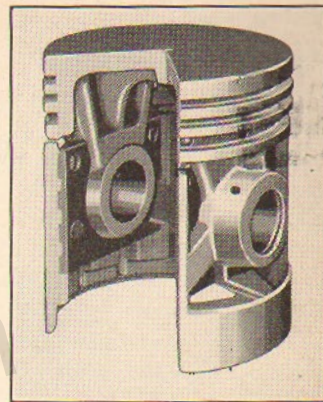
Aluminum Alloy Since 1926

Packard was a pioneer in the use of aluminum alloy pistons in automobile engines thirteen years ago. Now, most manufacturers have followed Packard's lead.

But all aluminum pistons are not the same — designs vary. Packard pistons have always had a thermostatic strut. But in Autothermic pistons the arrangement is such that constant clearance is provided for at all temperatures. In other words, Packard pistons attain perfect roundness during the warm-up period from heat alone. There is no high spot pressure and clearance remains constant.

Aluminum pistons lacking the struts attain perfect roundness during the warm-up period through pressure of the high sides against the cylinder walls. Expansion forces the low sides out to proper shape. Naturally, this high spot contact tends to produce very high bearing pressure, scuffing and undue wear. Such expedients as anodizing, electro-treatments and other means of hardening the surface have been only partially successful in preventing this wear and giving longer life.

With Packard Autothermic pistons, there is no undue wear on the pistons at any temperature, full compression is retained, new car performance is main-



This cutaway Autothermic piston shows the steel strut imbedded in the aluminum alloy.

tained much longer and greater gasoline and oil economy is assured.

Tin-Plated Pistons

Packard Six and 120 pistons are not only double heat treated to remove all internal strains and to harden the metal, but as well they are tin-plated so that they slide up and down on a coating of bearing material instead of having a direct aluminum to cast iron contact. This not only shortens the breaking-in period, but insures long life of cylinder walls, rings and pistons.

Packard pistons are held to very close limits in weight and are assembled in sets for each motor with never more than 14/100 of an ounce variation.

Piston Rings

Both Packard Six and 120 pistons are equipped with three rings—two special oil control compression type and one special damper type oil control ring. The damper type ring is provided with a damping spring member which insures the ring maintaining a constant and uniform contact with the cylinder walls even at high speeds. Thus, it is possible to provide copious quantities of oil to the cylinder walls for lubrication and with this special combination of rings to remove all surplus oil at each stroke—insuring long life and unusually low oil consumption.

Camshaft

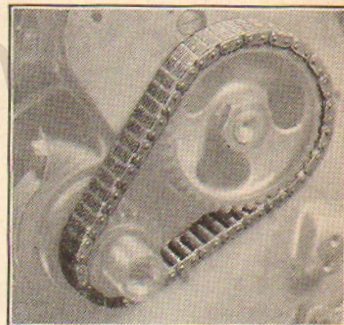
The camshafts of the Packard Six and 120 are hardened by the special induction hardening process that is used on Packard Senior cars. This is an electrical process—it's more costly than ordinary

hardening processes—and imparts an exceptionally hard case to every portion desired, while the rest of the shaft retains its ductility and strength.

Cams are of the quick opening type designed for maximum engine power and efficiency. There are four camshaft bearings on the Packard Six and five on the Packard 120. All bearings are pressure lubricated and are of the removable precision type.

Chain-Driven Camshaft

An important improvement has been incorporated into the timing chains on both the Packard Six and Packard 120 this year. All links are of the non-reverse-bend type. This prevents any sagging or whipping of the chain at all speeds. The new design remains permanently quiet and assures smooth, vibrationless operation of the camshaft. It is a fact that the chains used on the Packard Six and 120 are wider than on any other car in their price class. The chain is lubricated from the pressure oil system by a continuous oil bath.



A new non-reverse-bend timing chain prevents whip at all speeds.

Angle-Set Valves

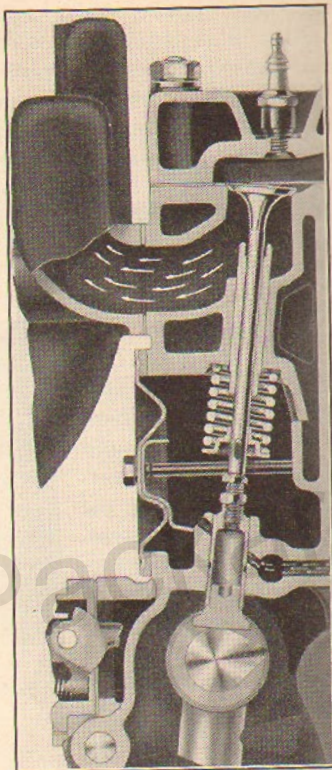
Set at an angle which brings the heads of the valves closer to the cylinder bore, Packard Angle-set valves provide maximum combustion efficiency and

free flow of intake and exhaust gases. Intake valves are of chrome nickel steel and exhaust valves are of Austenitic steel to resist warping and distortion under the extreme heat of the hot exhaust gases. As a result the gas-tight fit of valve and valve seat is maintained for long periods without attention.

Valve stems operate in valve guides that are counterbored at the top to shield the stem from hot gases. They are positively lubricated by oil from the camshaft.

Valve Tappets

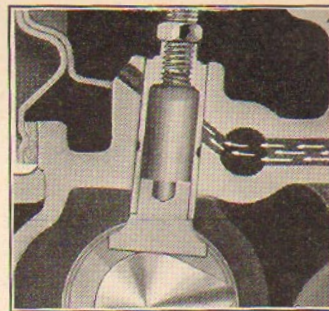
Both Packard Six and Packard 120 valve tappets are of the wide surface mushroom type and are pressure lubricated. They are literally floated in oil delivered directly from the oil distributing tube under full engine pressure. All oil delivered to the tappets is 100% filtered and as a result of this advanced Packard design, tappets operate more quietly and are free from wear in their guides.



Angle-set valves contribute to combustion efficiency.

Individual Exhaust Ports

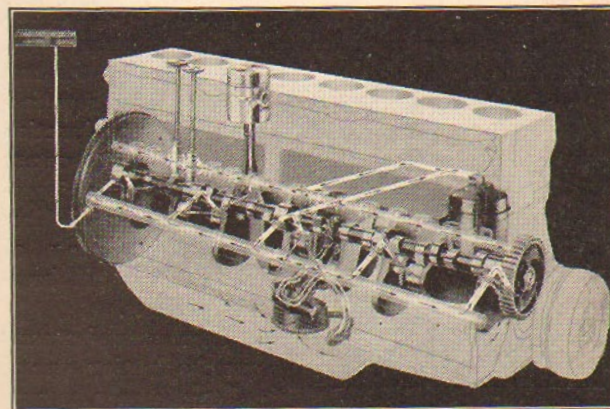
In Packard Six and 120 engines each exhaust valve has an individual port, assuring quick and complete removal of burned gases and excess heat from the combustion chambers of the engines.



100% filtered oil is delivered to valve tappets.

HIGH PRESSURE LUBRICATION SYSTEM

There is nothing more important to the efficient operation of an automobile engine than a high pressure lubrication system—100% complete. Some manufacturers claim complete pressure lubrication without



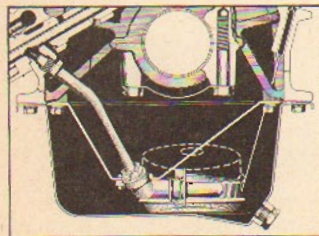
Pressure lubrication extends even to piston pins and valve tappets.

delivering a full bill of goods, but Packard goes the whole way and pressure lubricates even such parts as piston pins and tappets.

The oil manifold drilled in the crankcase—an expensive quality feature—conducts oil under full pressure from the accessibly located gear type oil pump to all main, connecting rod and camshaft bearings. From connecting rod bearings it is forced through rifle-drilled passages in the rods to each piston pin and through other drilled passages to each valve lifter. The front camshaft thrust bearing sprays oil on the timing chain and sprockets. A metered hole in the lower end of the connecting rod spurts oil under pressure to the cylinder walls, pistons and distributor drive gear.

Floating Oil Screen

This year a new floating type of oil screen and inlet pipe is used in the crankcase of both the Packard Six and 120. Hinged to the oil pump, this new screen floats near the surface of the oil in the pan and draws oil from the top surface. Only the cleanest oil is used because sediment and impurities sink to the bottom of the pan of their own weight. This new feature



A new floating oil screen assures a supply of clean oil from the top surface.

in conjunction with the constant cleansing of the oil performed by the oil filter assures a supply of clean oil to all bearing surfaces.

Some manufacturers use the floating type of oil screen only, to purify the oil, but Packard goes further and

uses not only this new oil screen but also a separate oil filter.

The oil pumps of both the Packard Six and 120 motors have the same capacity—7.1 gallons per minute; 2800 R.P.M.s. As engine speed increases, the rate of oil distribution also increases proportionately. The pump is located outside the crankcase, and the pressure regulating valve is readily accessible.

Metered Oil Flow Control

To insure an adequate supply of oil to each and every bearing at all engine speeds, the amount of flow is scientifically proportioned through varying sizes of oil passages—the correct amount of oil is metered to each bearing—all are uniformly flooded with oil at all times. Naturally, correct lubrication prolongs bearing life and assures trouble-free operation.

Oil Pan

To control the oil level on extreme grades, to prevent splash and insure an adequate supply of oil around the intake screen under all driving conditions, a system of baffle plates is arranged in the engine oil pan. It is depressed at the center so that oil is circulated through the engine so long as any remains in the oil pan. The drain plug also is located at this lowest point.

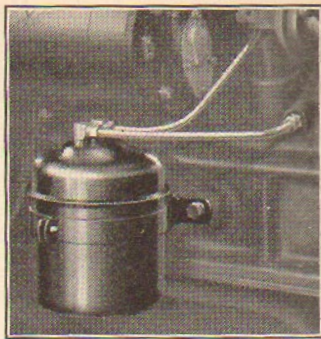
Oil Filter

Packard Six and 120 engines are standard equipped with oil filters which clean and filter the oil as it is circulated through the engines. These filters are of the two-stage type and remove fine—almost micro-

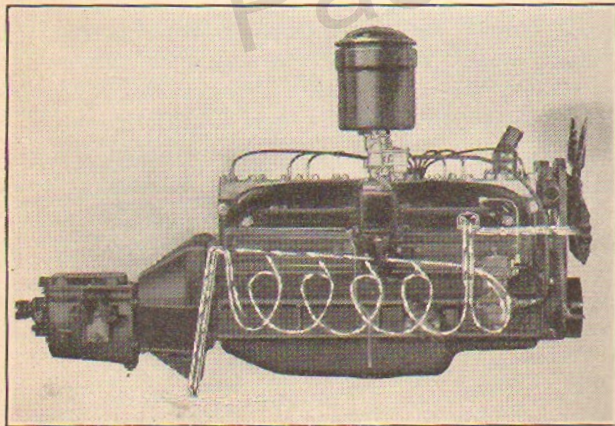
scopic—particles from the oil. The oil first passes through a cotton filtering element, then through a second of wood or cellulose elements and finally through a screen and felt pad.

Crankcase Ventilator

Certain elements in many of the fuels now being marketed produce gases in combustion which combine with water vapor to form corrosive gases in the crankcase. These must be expelled promptly from the crankcase to prevent injury to bearings and other finely finished surfaces.



A two-stage oil filter is standard equipment.



Crankcase ventilator—Packard Six and 120.

The Packard Crankcase Ventilator was designed to perform this service efficiently. Gases and water vapor are withdrawn from the crankcase through an outlet pipe at the rear of the engine by a vacuum produced by the forward movement of the car. At the same time clean air is drawn into the crankcase through an air cleaner on the oil filler pipe. The rotating crankshaft acts as a fan to help expel the gases. There are no moving parts in the crankcase ventilator and it is silent in operation.

FUEL SYSTEM

Fuel Tank

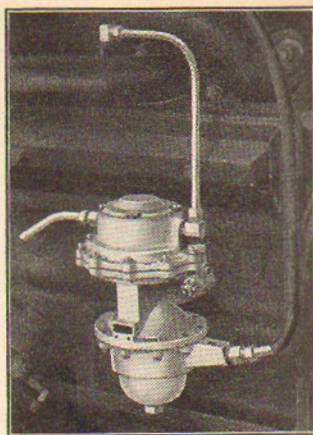
The gasoline tanks of the Packard Six and 120 differ only in size. Each is designed with a sump at the bottom to accumulate any dirt or water in the fuel. The filler neck of each has a flexible coupling between the tank and the filler in the fender to prevent damage in case of accident. Tanks are electrically welded from two single stampings of steel. They are heavily ribbed to insure quiet rigid construction.

Fuel Lines

Copper tubing, mounted outside the frame, conducts gasoline from gas tank to fuel pump. This location not only protects it from flying stones, but provides continuous air cooling, thus reducing the possibility of vapor lock. Flexible tubing between frame and pump prevents breakage from engine movement.

Fuel Pump

On Packard engines the fuel pump is mounted low down on the block as far as possible from the hot exhaust manifold and exposed to the cooling windstream. It has a built-in filter, is driven by an arm actuated by the camshaft and, therefore, is in operation as soon as the engine turns over. It supplies fuel at constant pressure to the carburetor at all engine speeds.



Fuel pump and windshield wiper vacuum pump are integrally mounted.

Vacuum Pump

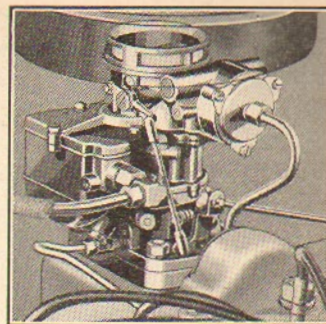
Integral, with the fuel pump, Packard builds a vacuum pump to operate the windshield wipers. That is why Packard windshield wipers operate at uniform speed regardless of engine speed or load—an important safety feature disregarded by many manufacturers who depend only on vacuum from the intake manifold.

Carburetor

New improved carburetors are used this year on both the Packard Six and 120, assuring even more efficient operation and maximum gasoline mileage. Both carburetors are of the down-draft plain tube type and only one manual adjustment is provided—for regulating idling speed.

Automatic Choke

Both the Packard Six and 120 are designed with new improved automatic choke mechanism. Being built as part of the carburetor itself, the automatic choke operates in exact and instantaneous accordance with manifold temperatures—greater reliability and engine efficiency are effected.



Improved carburetor and automatic choke.

The choke valve in the carburetor is controlled by manifold vacuum and a bimetal thermostat in the carburetor. When a rich fuel mixture is required in starting the engine, the valve chokes the flow of air through the carburetor. As the engine gradually warms up, the thermostat automatically opens the choke valve again. Thus, the air supply is accurately controlled at all times to produce the most efficient mixture.

Automatic Fast Idle

Operated in conjunction with the automatic choke, a special mechanism linked with the throttle increases the idling speed when the motor is cold, thus preventing stalling. When the engine reaches the proper operating temperature the throttle is closed and the engine idles normally.

Condensation Drain

The Packard 120 manifold is provided with a well which collects gasoline vapor from the manifold when the engine is stopped and which also eliminates flood-

ing of the carburetor when hot. The trapped raw gasoline is drained to the ground through a tube fitted with an automatic valve which is open only when the engine is stopped and which prevents air being drawn up into the carburetor.

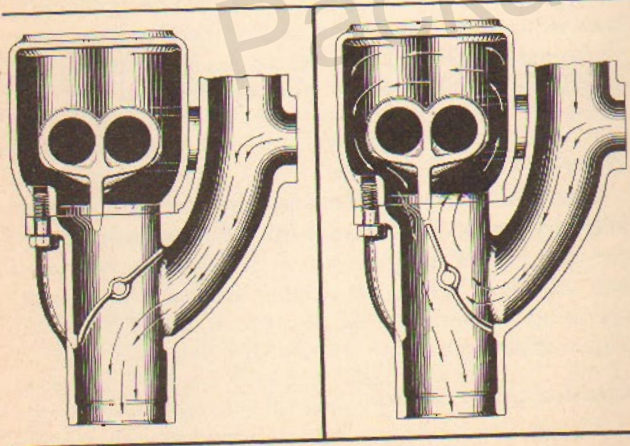
Intake Manifold

The special design of the intake manifolds of both the Packard Six and 120 engines assures equalized fuel distribution between the carburetor and all cylinders, thus producing maximum motor efficiency, economy and smoothness.

On the Packard Six the intake manifold has three ports, each serving two cylinders, and the 120 has four ports, each serving two cylinders.

Automatic Heat Control

To provide rapid warm up under all weather con-

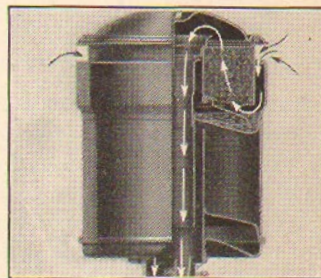


Automatic manifold heat control
Left—Valve open, heat to muffler.
Right—Valve closed, heat around intake.

ditions, summer and winter, both Packard engines feature built-in, automatic manifold heat control. This device—thermostatically controlled—diverts the hot exhaust gases and causes them to pass around the central portion of the intake manifold when the engine is cold, thus aiding in vaporizing the fuel mixture before it enters the combustion chambers. As the engine warms up the thermostat gradually releases its tension on the valve and the pressure of the exhaust gases pushes the valve open so that the exhaust passes out directly to the muffler.

Oil Bath Air Cleaner and Silencer

The new improved oil bath type air cleaner with which both the new Packard Six and 120 are standard equipped provides adequate protection even in those parts of the country subject to dust storms. The incoming air is drawn over an oil bath and also through a continuously wetted and constantly cleaned mesh, removing dust and dirt with almost 100% efficiency. Thus cleaning efficiency is maintained for much longer periods than with conventional type cleaners. As the air rushes from the air cleaner to the carburetor, the sound is neutralized and silenced. This Packard combination air cleaner and silencer also functions as a flame arrester in case of back-fire. There are no moving parts in the whole device to wear or require adjustment.



Oil-bath air cleaner

Exhaust Muffler

A long, single unit muffler insulated from the frame by flexible rubber brackets allows free passage of the exhaust gases directly through a single perforated tube surrounded by a series of resonators or sound neutralizing chambers. This reduces back pressure to a minimum yet effectively silences exhaust noise.

COOLING SYSTEM

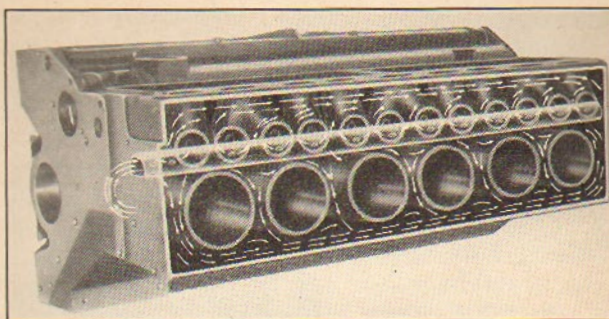
Packard "Desert-Mountain" cooling provides that extra capacity which assures smooth, efficient operation under the most extreme driving conditions—high altitudes, temperatures and grades. Engine heat is dissipated rapidly, the efficacy of the lubricating oil is maintained and the life of the whole engine is definitely prolonged.

Separate Cylinder Barrels

Unlike many motor car engines now manufactured, Packard engines—both the Six and the 120—have separate cylinder barrels, that is, each cylinder is completely surrounded by cooling water. Long water jackets completely surrounding each cylinder assure even cooling of the whole cylinder. As a result cylinders remain round, pistons retain their fit and oil is kept at a lower temperature, insuring long life of cylinders, pistons and rings.

Water Distributing Tube

Another important cooling feature of the Packard Six and 120 cylinder blocks is the special water distributing tube built into the block and extending from the water pump to the extreme rear of the engine. Through this tube cooling water direct from the pump



All cylinders are completely surrounded by water and a special tube carries water to each valve seat.

is conducted the full length of the engine and forced equally through orifices to all valve seats and around each cylinder. As a result, all cylinders and valves are effectively cooled, insuring long valve life and freedom from service attention.

Radiator

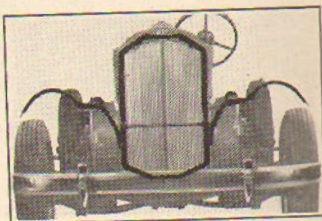
The Packard Six and Packard 120 radiators present an unusually large frontal area in comparison with those of many other cars now on the market. The new Packard Six has a frontal cooling area of 459.3 square inches and the Packard 120 an area of 464 square inches.

The core is of the high efficiency cellular type and is fabricated from copper with large capacity top and bottom tanks. Oversize connections provide free flow of the cooling water. The radiator drain valve is conveniently located at the lower forward side of the lower tank.

The core is completely baffled within the shell on sides, top and bottom to insure maximum air flow through it.

Radiator Mounting

The radiator and front fenders of the new Packard Six and 120 are mounted independently of the frame in a special metal cradle. This cradle is carried on a cushioned support at the center of the front cross member of the frame. Thus movement of the frame has no effect upon these parts, annoying front end vibration is minimized and the radiator is relieved of all stresses tending to produce leaks.



The radiator is carried in a rubber-mounted metal cradle.

Radiator Shell and Shutters

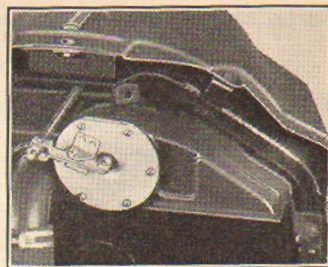
Constant improvement and refinement of the characteristic Packard radiator lines are culminated in the beautiful and distinctive appearance of the 1939 Packard front end. The vertical radiator, with its full length shutters of chrome, harmonizes perfectly with the long, sleek lines of the bonnet.

Thermostatically Controlled Radiator Shutters

Packard radiator shutters differ from the purely ornamental grilles used on most cars. Not only are they distinctively beautiful but they serve an important functional purpose as well. They are thermostatically controlled and replace the conventional thermostatic valve in the cooling system and perform all its functions with full efficiency.

Engine temperature controls these shutters by means of a thermostat built into the top of the radiator. They

remain closed until the temperature of the water reaches normal for efficient engine operation. Then they are gradually opened by the thermostat to permit just the right amount of cool air to pass through the radiator core to maintain an efficient engine temperature. The cold engine warms up quickly because cold air is excluded from the radiator, yet the radiator functions perfectly when the engine is warm because the shutters offer practically no resistance to the free entry of air to the radiator. These automatic shutters also eliminate the need for special winter fronts which so obviously detract from front end attractiveness.



This thermostat operates the radiator shutters.

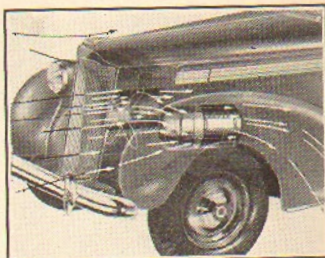
Moreover proper carburetion is attained more rapidly and the motor oil system reaches an efficient operating temperature more quickly with the radiator shutters closing out the blast of cold air which would otherwise rush through the engine compartment.

Neutro-Tuned Fan

New large 18" fans with four blades, used on both Packard Six and 120 engines, are driven by a V belt from a pulley on the crankshaft. Belt tension is regulated by adjusting the generator. Because of their large size these fans operate at slower speeds yet with full efficiency. Blades are unequally spaced and this, together with corrugations on the trailing edges of alternate blades, results in the neutralizing of fan and motor sounds.

Fan-Blast Cooling Tunnels

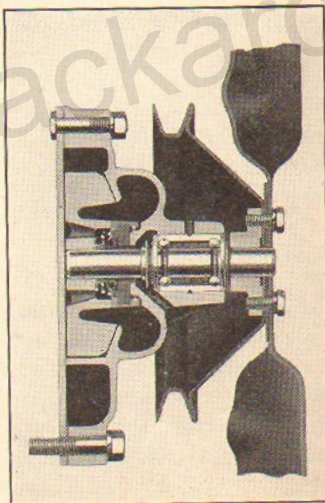
Special cooling tunnels built into the side walls of the engine compartment under the fenders permit a much more rapid discharge of air from the fan blades. This in turn causes a greater inrush of cool air through the radiator core, effecting much better cooling. They are designed to prevent the entry of dust into the engine compartment.



Fan-blast cooling tunnels under the fenders give greater cooling efficiency.

Water Pump

A water pump of large capacity—36 gallons per minute at 40 miles per hour—is used on both Packard models. Like the pump of last year, it is carried on a double row ball bearing and the fan is mounted on the front end of the shaft. The pump is self-adjusting and never requires attention for packing. This year it has been redesigned so that it can be packed with grease at the factory and never requires attention throughout its life.



The water pump is permanently packed and lubricated.

ELECTRICAL SYSTEM

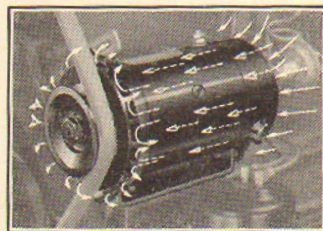
Battery

Big batteries providing ample capacity for all modern electrical requirements are provided for the new Packard Six and 120. In both cars the battery is conveniently located under the front seat where ample cooling is provided. The Packard Six battery has 15 plates and 95 ampere hour capacity. The Packard 120 has a battery with 17 plates and 114 ampere hours capacity.

Air-Cooled Generator

Packard provides a large capacity generator in both the Packard Six and 120 with ample capacity to supply adequate power under all conditions. Current output of the Six generator is 28 amperes at 8 volts and the 120 power output is 30 amperes at 8 volts. The generator is cooled by means of an inbuilt vacuum fan which keeps the output up to maximum requirements even on long, hard runs. The volume of air passing through the generator varies directly with engine speed so that cooling is always proportioned correctly.

The output of the generator of both engines is controlled automatically by a vibrator type voltage control. When power has been used from the battery in starting the engine, the generator delivers current at a high rate until the battery is fully charged.



Large capacity air-cooled generator.

Then the output is cut down

automatically. However, at all times full voltage is maintained for ignition, lights and accessories. Thus with the voltage controlled in direct relation to current requirements, overcharging of the battery is prevented.

Starter Motor

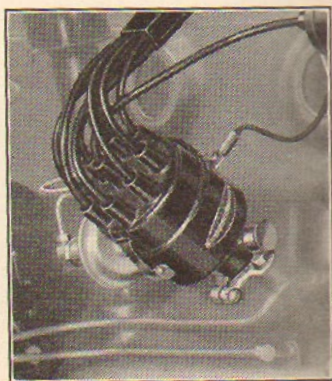
The new Packard Six and 120 are equipped with big, powerful starter motors in order to provide quick starting no matter how cold the weather may be. Both use the Bendix automatic engagement between starter and engine flywheel.

The starter button is conveniently located on the instrument panel. When this button is pressed an electric circuit is closed which energizes a solenoid on top of the starter motor, causing it to engage the Bendix pinion with the flywheel. No stretching to reach a pedal type starter is necessary and starting on grades is much simpler.

Distributor

The distributors of the Packard Six and Packard 120 are specially designed with an improved rigid type of drive, thus insuring accurate timing of the ignition at all times.

Automatic spark with vacuum control—for several years a feature of Packard engines—provides maxi-



Vacuum spark controlled distributor.

Printed in U. S. A.

mum spark advance at all speeds and under all loads. Naturally, this contributes materially to greater fuel economy.

Under normal conditions an automatic governor increases the spark advance as motor speed increases. The operation of the vacuum spark control, on the other hand, is entirely dependent on engine load. During sudden acceleration or on a heavy pull the vacuum in an engine decreases. This decrease in vacuum is used to retard the spark by means of a diaphragm and carefully calibrated spring. When the load on the engine becomes lighter the vacuum in the engine again operates the diaphragm and spring and advances the spark to the point of greatest efficiency.

Fuel Compensator

Because of the differing octane ratings of the various grades of gasoline now being marketed, Packard Six and 120 engines are equipped with manually operated fuel compensators. These devices permit the owner to advance or retard the spark to suit the fuel and so enable the engine to develop maximum power without knock.

Headlighting

The Packard headlighting system provides four different lighting beams which enable the owner to drive in safety and at the same time extend every courtesy to approaching drivers. The light control button is located on the instrument panel within easy reach and a supplementary foot control is placed in the floor just to the left of the clutch pedal. A red tell-tale signal light in the speedometer tells instantly whether the full country driving beam or the country passing beam is being used. The four lighting beams are as follows: With the light control switch—

- (1) ALL THE WAY IN—all lights out.
- (2) OUT ONE NOTCH—parking lights and tail lights only.
- (3) OUT TWO NOTCHES—city driving beam. If toe switch is depressed country driving beam is turned on. Under this condition the toe switch raises or lowers both beams alternately.
- (4) OUT ALL THE WAY—country driving beam. Brilliant illumination of the road for very long distance. When the toe dimmer switch is pressed, left hand beam is depressed, eliminating glare from oncoming motorist's eyes. At the same time right hand side of road is fully lighted.

Light Bulbs

Headlamp bulbs are of the pre-focused type with 32-32 C.P. filaments. Tail lamp bulbs are 3 C.P.—stop light bulbs—15 C.P.—Instrument panel bulbs are 1½ C.P.—Parking light bulbs are 1½ C.P. Dome light bulbs are 6 C.P.

Horns

All new Packard Sixes and 120s are equipped at the factory with dual tone horns, which are included as standard equipment. The horns of both cars have blended tones which make them a pleasing but at the same time effective signal. They are mounted on top of the engine on both cars.

Dual Protected Electrical Circuits

Packard protects all the beams of the headlighting systems of both cars with automatic circuit breakers instead of fuses such as are used on many competitive

cars. The tail light also is protected as it operates in connection with each headlight beam. In case of current overload, the heat generated quickly opens the circuit. When the temperature of the thermostat returns to normal the circuit breaker automatically closes the circuit and the lights are on again. In cars where fuses are used in the headlight system and the fuse is blown, all lights are out until a new fuse is installed.

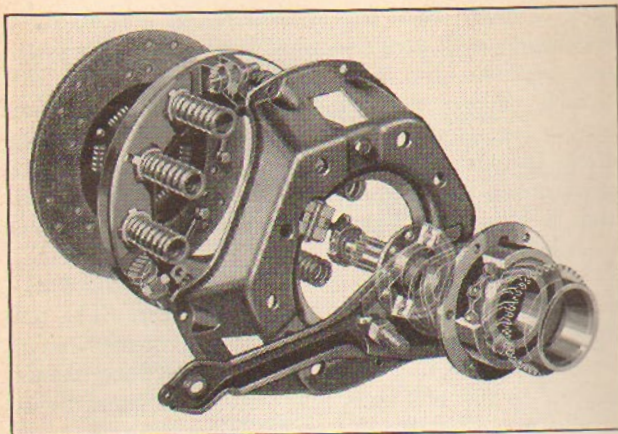
However, dual protection is afforded because Packard uses fuses as well as a circuit breaker. The tail light and instrument panel lights are protected by an instantaneous acting fuse. Thus, if anything should happen to the tail light, the instrument panel lights go out immediately and the driver has positive warning. The cigar lighter has a separate fuse.

Ignition Coil

The ignition switch located on the instrument panel is connected to the coil on both the Packard Six and Packard 120 by a cable encased in a metal conduit. When the switch is in the "off" position, the circuit is broken through the coils, grounding them, and making it impossible to start the motor by wiring around the switch. The coil is mounted on the engine—providing close coupled wiring arrangement and insuring high efficiency for the ignition system.

SEMI-CENTRIFUGAL CLUTCH

The clutch mechanism of the Packard Six and 120 remains unchanged for 1939. It has been proved in millions of miles of satisfactory service. Strong enough to withstand continuous driving and braking reactions, it is at the same time so soft and smooth in



Semi-centrifugal clutch assembly.

engagement that continuous driving is no longer uncomfortable or fatiguing.

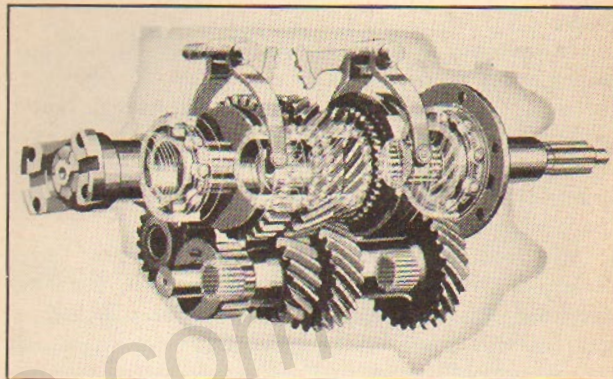
Both clutches are of the single plate dry disc type and of the semi-centrifugal design. This design increases pressure on the friction discs of the clutch plate as speed increases. Thus, lighter springs can be used which in turn mean lighter pedal pressure—a feature appreciated especially by women drivers.

The Packard 120 clutch is 10 inches in diameter with 9 pressure springs—the Six is 9½ inches with 6 pressure springs. All clutches are carefully balanced before assembly. A mechanical damper in the hub, cushions engagement and driving stresses and insures quiet operation of the clutch. Ventilating openings in the cover provide cooling and insure long life.

UNIMESH TRANSMISSION

The transmissions used on the new 1939 Packard Six and 120 have been entirely redesigned to provide

even smoother and quieter operation and greater durability. They are of Senior Car design and no expense



Unimesh transmission—constant mesh forward speed gears—nine ball and roller bearings.

has been spared in designing and manufacture to make them in every respect the finest transmission in any car costing less than \$3,000.00. Gears have been increased in width, providing greater capacity, and all gears, except the reverse idler, are now in constant engagement at all times. The engagement of all three forward speeds is made through separate clutch members. An improved synchronizer has been developed for second and high speeds. Lighter, clash-free shifting is the result. With 1st, 2nd and 3rd speed gears in constant engagement and the necessity of sliding these gears eliminated, silent, sure, non-clashing gear shifting is now easy for every driver.

Helical gears are used for all forward speeds and this design provides smooth, quiet operation in all gears.

All Packard gears are hardened by the carburizing process. This process imparts an extremely hard, high

carbon wearing surface on the outside of the gears while the interior metal of the gear retains high strength and toughness to withstand shocks and impact loads.

On the other hand, gears hardened by the ordinary oil tempering method are the same all the way through. Therefore, such gears must have a softer surface to obtain necessary strength and do not have comparable life. At the same time, the center is more brittle than that of carburized gears which increases the tendency for tooth failure.

All Packard transmission gears are lapped after carburizing to precision limits in special machines developed by Packard. They are then matched in sets before passing to the quiet room for inspection before assembly.

Transmission Bearings

But Packard transmissions are improved this year not only in the matter of gears and the process of the gear shifting but the new design also calls for an even larger number of anti-friction bearings. Many manufacturers still use only three such bearings in the transmission—others use five, but for 1939 Packard has added two more to its already exceptional number and now a total of nine ball and roller bearings is used.

The forward and rear ends of the main shaft are carried on large ball bearings. The 2nd speed gear is mounted on two heavy duty ball bearings and this year the 1st speed gear is also mounted on two high capacity ball bearings. Roller bearings are used at both ends of the countershaft and also between the clutch driving shaft and main driven shaft.

Gear shifting is smooth, quick and easy for any driver. He may shift from 1st to 2nd or either way

between 2nd and high at any speed because all forward gears are constantly engaged. Thus, the utmost in safety is provided on steep grades, ice and snow.

An important feature of the new Packard transmission is a unique device designed into the gears which supplies lubricant under pressure to both ball bearings on the 1st and 2nd speed gears on the main shaft. Moreover, this device also operates as a silencing damper to insure maximum quietness of gear operation.

Conventional Gear Shift

In order to provide additional knee and foot-room for the center passenger when three are riding in the front compartment, Packard designed the new transmission so that the conventional gear shift tower is moved $1\frac{3}{8}$ " toward the driver's side of the car.

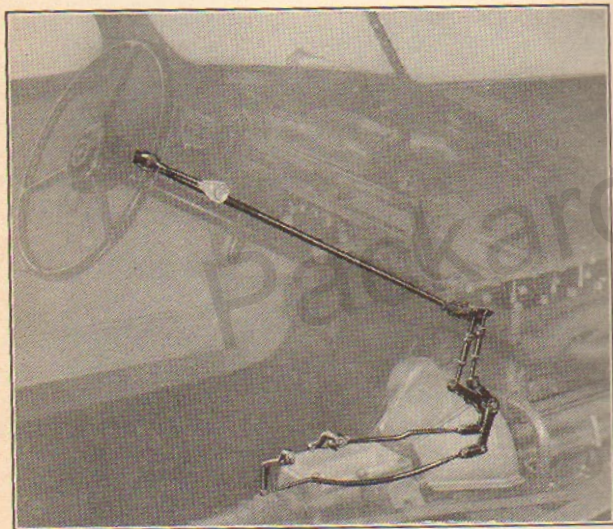
HANDISHIFT

A new gear shift with the operating lever located in a convenient position under the steering wheel is provided as standard equipment this year on both the new Packard Six and 120. This new gear shift meets every requirement of Safety, Simplicity and Convenience. The transmission proper is the same for Handishift as for conventional shift arrangement and no change in driving habits is required with this new Handishift. The driver has control of the shift at all times and he selects any gear wanted at will.

The movement of the lever in shifting gears is similar to the conventional type of floor lever. The movement is in the form of an imaginary H, but in the Packard Handishift the H is vertical while in the floor type the H is horizontal at the floor; that

is, with the shift lever in neutral position, it is moved up and down instead of sidewise as in the conventional. When the hand lever is moved up, it is possible to engage either reverse or low gear and when down either second or high gear may be engaged.

The advantages of the new Handishift are obvious. First, it leaves the front compartment floor free of any obstruction, thus providing much greater comfort for the center passenger when three ride in the



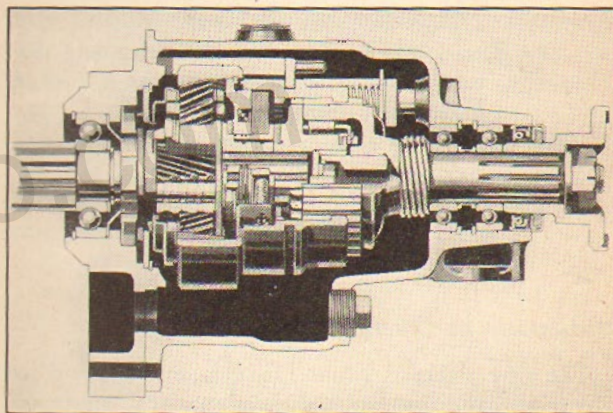
Handishift—makes gear shifting easier—clears the front compartment of all levers.

front seat. Second, it makes it possible and comfortable for the driver and passengers to enter or leave the front compartment from either side. Third, it provides perfect control at all times as the driver can shift gears more easily and quickly with the con-

trol lever at his very finger tips just below the steering wheel.

ECONO-DRIVE

A new standard of operating economy—of smoothness—of cruising comfort and pleasure has been established with the new Packard Econo-Drive Transmis-



Packard Econo-Drive.

sion available this year on the new Six and 120, at small extra cost. In a single step this modern feature makes possible a new measure of comfort, long life and economical operation.

Mounted at the rear of the standard transmission, the new Econo-Drive automatically provides a fourth speed or cruising ratio whenever desired—at car speeds over thirty miles per hour.

With the Econo-Drive transmission in operation there is a new smoothness and quietness. The engine speed is reduced 27.8% with real reductions in fuel

and oil consumption and a corresponding increase in engine life. Through its use new standards of motor car comfort and economy are set—there are six important advantages:

- (1) Important improvement in gasoline economy when Econo-Drive is being used.
- (2) Material savings in oil consumption at higher driving speeds.
- (3) Longer engine life because R.P.M. reduced 27.8%.
- (4) Better acceleration and hill climbing because Econo-Drive permits the use of a higher gear ratio in 3rd speed.
- (5) Greater engine smoothness, quietness and comfort for passengers.
- (6) Reduced gear shifting—low speed gear used less frequently—less gear shifting in traffic.

Automatic in Operation

The new Packard Econo-Drive is automatic in its operation, requiring no additional physical effort on the part of the driver other than the regular functions of car operation with which he is familiar.

When the car has been started and gear changes made so that it is running in high gear, it remains in this gear until a speed of approximately thirty miles an hour has been attained. At this speed, if the driver wishes to cruise in Econo-Drive, releasing the accelerator brings Econo-Drive into operation and immediately engine speed is reduced 27.8% while car speed remains unchanged.

An added feature of the new Packard Econo-Drive is the ability to shift from Econo-Drive back to 3rd speed automatically and instantaneously when extra

power for quick acceleration is required for passing cars, climbing hills, etc. This operation is just as simple as when Econo-Drive is engaged. The accelerator pedal is depressed slightly beyond the full throttle position to make this shift. The car is then in conventional drive and extra power and acceleration are available. The full range of accelerator control may be had without returning to Econo-Drive. When Econo-Drive again is desired it is only necessary to fully release the accelerator.

An important advantage of this design is that Econo-Drive is released with automatic return to third gear in slowing down when speeds below 30 M.P.H. are reached. In coasting down with the accelerator released Econo-Drive remains engaged to a speed of approximately 20 M.P.H. If the accelerator is depressed at speeds below 30 M.P.H. the conventional 3rd gear is automatically brought into action. This always insures satisfactory acceleration at these lower driving speeds.

Econo-Drive may be locked in or out of operation by moving a control knob located just below the instrument panel. The knob should be in the "in" position for general driving conditions. This makes Econo-Drive operative when desired. To lock out Econo-Drive, the car should either be stopped and the control knob pulled all the way out, or, with the car accelerating between 5 and 20 miles an hour the knob may be pulled out. The foot should not be removed from the accelerator nor the clutch released. It should be remembered that the Econo-Drive control knob should *never* be pulled out when the car is travelling faster than 20 miles per hour or when the car is coasting at any speed. When a return to Econo-Drive is desired the knob may be pushed in at any speed and without releasing the clutch.

WHAT PACKARD ECONO-DRIVE ACCOMPLISHES

Gasoline Economy

Because the Packard Econo-Drive Transmission reduces engine revolutions 27.8% whenever it is in operation, the first and most important result is greater fuel economy. Gas economy is increased up to 20% depending upon driving conditions. This proves logical when a comparison of the number of engine revolutions per mile with and without Econo-Drive is made. For example, the engine in a car with a 4.54 rear axle ratio would revolve 3,296 times in traveling a mile, whereas with the Econo-Drive the engine revolves only 2379 times in traveling the same distance. It will be obvious that this reduced number of engine revolutions will result in a substantial saving in fuel required.

Oil Economy

The 27.8% reduction in engine speed accomplished by Packard Econo-Drive not only effects material savings in gasoline but reduces oil consumption as well. It is a well known fact in automobile circles that oil consumption increases very rapidly in any engine as car speed increases. The Econo-Drive transmission by reducing engine revolutions at high car speeds reduces this oil waste as well as carbon deposits.

Engine Life

Engine speed has a very important bearing on engine life. At high speed the wear and stress on engine parts is many times greater than at the lower speeds because the internal friction bearing loads and

heat developed in every engine increases rapidly as engine speed increases. For example, doubling the car speed quadruples engine bearing loads. Naturally, then, an engine run at low speeds will last much longer than a similar engine operated at high speed.

Performance

The Packard Econo-Drive automatically provides an additional ratio that can be used to advantage for rapid acceleration or hill climbing. When accelerating from low speeds in 3rd gear, the car can be kept in conventional drive so long as the accelerator is not completely released. Thus car speed can be increased rapidly and when the desired speed is attained a momentary release of the accelerator automatically shifts to Econo-Drive. The change down from Econo-Drive to third speed when desired can be made just as quickly by depressing the accelerator momentarily slightly beyond the full throttle position.

Smoother Operation

There's a new thrill to driving a 1939 Packard Six or 120 with new automatic Econo-Drive transmission. At all speeds over 30 miles an hour there is a new smoothness—a new quietness. The nervous tension usually associated with high speed driving disappears because the engine operates so much more slowly and quietly. Even long trips at sustained high speed are not fatiguing.

CHASSIS

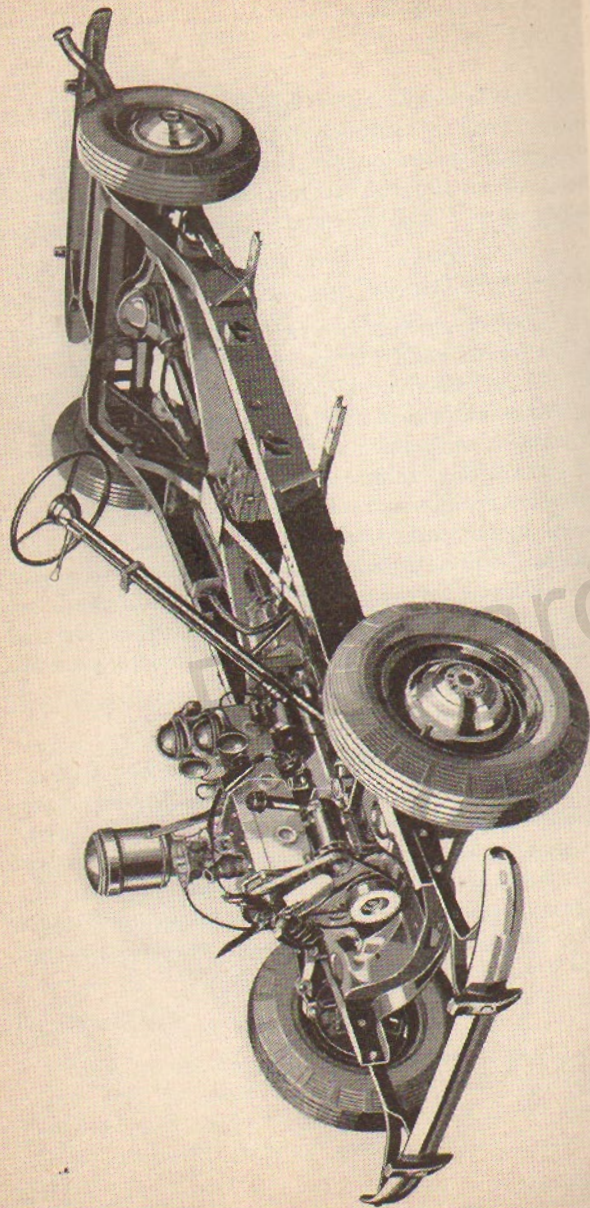
WITH the introduction of the new Packard Six and 120 chassis for 1939 a number of new and exclusive features are presented which contribute importantly to the satisfaction of ownership. From bumper to bumper the new chassis are harmonized units featuring not simply one or two advanced engineering developments but a combination of many special features each of which plays its part to produce the balanced result. Special attention has been given in designing every part and every unit to obtain the maximum in durability, long life, easy handling, comfort, quietness and safety.

Wheelbase

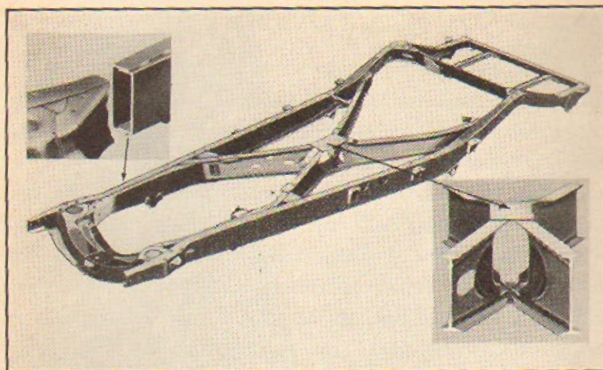
Both the Packard Six and Packard 120 are big, luxurious cars—comfortable to ride in—impressively long and sleek in appearance. Naturally they differ in size and wheelbase. The Packard Six is full 122 inches from hub cap to hub cap. It's big and it looks impressive on the road. The 120 is five inches longer in wheelbase, that is 127 inches. Each has a tread, front, of $59\frac{3}{8}$ inches; and rear, of 60 inches. Both cars are well proportioned—balanced in design—beautiful as only a Packard can be beautiful.

Frame

The rugged double trussed frames of the Packard Six and 120 have been redesigned for 1939 to give even greater solidity. As you know, structural rigidity of the frame is one of the most important characteristics of a passenger car and the Packard frame, with its scientifically designed double truss and I-beam



The Packard Six chassis—122-inch wheelbase.



The Packard tapered I-beam double trussed frame:
Upper—Front box section. Lower—I-beam X member

X member, has been tested and proved by millions of miles of satisfactory service in the hands of owners.

Packard frames are fabricated from rugged girders of heavy steel and are both welded and riveted into one rigid unit. Tapered I beams are used in building the X member instead of the conventional channel section because engineering tests have definitely proved much greater rigidity for the Packard type of I-beam construction. Packard was one of the first to use tapered I-beam, X-member construction and it is used on all lines of Packard cars.

In the Packard X member the girders taper from center to side members and vary in depth from 9 inches at the deepest point to 6 inches at the side rails. Thus strains are distributed more evenly and greater rigidity produced, which in turn reduces to a minimum any tendency of body weave. Moreover, the legs of the X member extend in straight lines from the center and intersect at the point where road shocks are centralized.

Front Cross Member

The front cross member of the Packard frame forms a solid foundation both for the front mounting of the motor and for the Packard Safe-T-flex front wheel suspension. It is a massive formed section of steel $11\frac{3}{4}$ inches wide and $6\frac{3}{8}$ inches deep solidly welded and riveted to the frame side members.

Box Section Side Members

The forward section of the frame, extending from the front cross member to the forward ends of the I-beam X member, is of box-section side rail construction. This type of frame construction provides maximum rigidity at the zone of greatest stress—forward of the body.

At the rear of the frame, new angle braces at the top and bottom of both side rails reinforce the joints between side rails and intermediate rear cross member. These new double braces effectively stiffen this vital part of the frame and prevent twisting strains in the body.

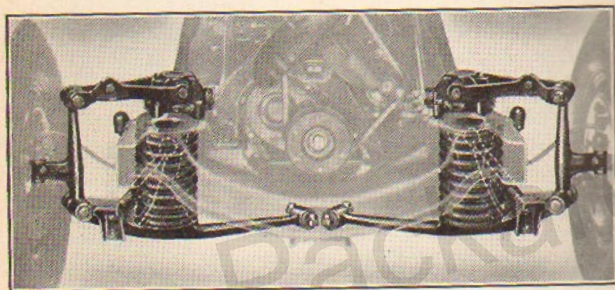
Additional strength and stiffness are given to the frame by four special braces which connect the arms of the X member with the side rails. Two cross members at the rear strengthen the frame and afford support for the gasoline tank.

SAFE-T-FLEX FRONT WHEEL SUSPENSION

Packard independent front wheel suspension—famous and exclusive Safe-T-flex—has been piling up millions and millions of miles of highly satisfactory service since it was introduced in 1935. Safe-T-flex was a vital improvement—an outstanding

Packard advantage then—it's just as important now. Every Packard salesman should be thoroughly familiar with the design and construction of Safe-T-fleX. He should be able to point out every advantage over competition quickly and understandingly.

Packard Safe-T-fleX is practically free from the need for service attention. There are only two places which ever need lubrication—every 10,000 miles and adjustment is unnecessary because wear on all parts is reduced to the absolute minimum.



Front view of coil springs, lower and upper lever Packard Safe-T-fleX front suspension.

Packard Safe-T-fleX Construction

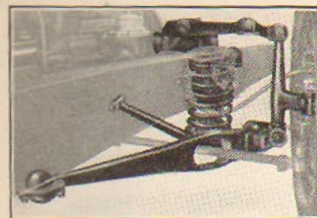
Each side of Packard Safe-T-fleX front wheel suspension consists of five parts or assemblies—

- (1) The lower lever and torque arm
- (2) The upper lever and shock absorber
- (3) The vertical wheel support
- (4) The coil spring and rubber bumpers
- (5) The rubber insulating bearings

The Lower Lever and Torque Arm

This assembly consists of two parts—the support

lever located crosswise at the front of the chassis



Husky torque arm—Packard Safe-T-fleX.

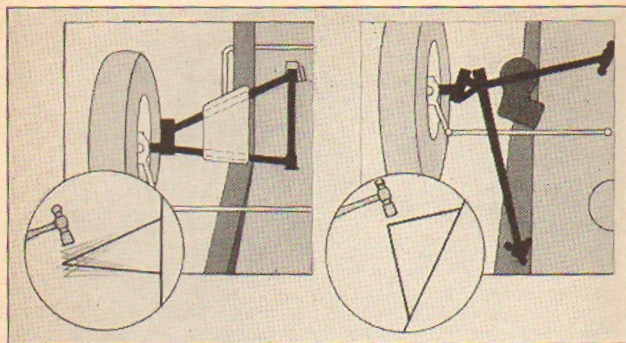
and the torque arm which is attached near the outer end of the support arm and extends backward to a mounting on the frame. The support arm is a heavy steel forging with an integral seat which supports the lower end of

the coil spring. At its end it is pivoted in a live rubber bearing to the frame front cross member and at the end it is yoked by a ball and roller bearing to the vertical support which carries the front wheel.

The long tubular torque arm is of heavy electrically welded steel construction. It is solidly bolted at practically right angles near the wheel end of the support lever and at the rear it is attached to the frame side rail at a point slightly forward of the dash. This rear mounting consists of a spherical bearing of live rubber which receives the ball at the end of the torque arm.

Note in the illustration the unusual length of the torque arm, the wide angle where the torque arm joins the support lever and also the wide distance which separates the rubber center bearings of the front support lever and the rubber rear mounting of the torque arm. These two bearings form the axis about which the lower lever of the front suspension oscillates. Now refer to the diagram comparing the lower lever and torque arm assembly of Packard Safe-T-fleX with the ordinary wishbone type.

With such wide centers of support, variations in wheel alignment are eliminated. At the same time



Lower Lever Construction:

Competitive front wheel support tends to vibrate under impact as a narrow angle bracket shakes from hammer blows.

Packard Safe-T-flex torque arm holding front wheel in alignment withstands road shocks just as a wide angle bracket resists hammer blows without vibration.

the long torque arm provides capacity for extra braking loads on the front wheels. This lower assembly, then, takes the spring load, the driving load, the braking load and the major part of all other reactions.

The Upper Lever and Shock Absorbers and Transverse Shock Eliminator

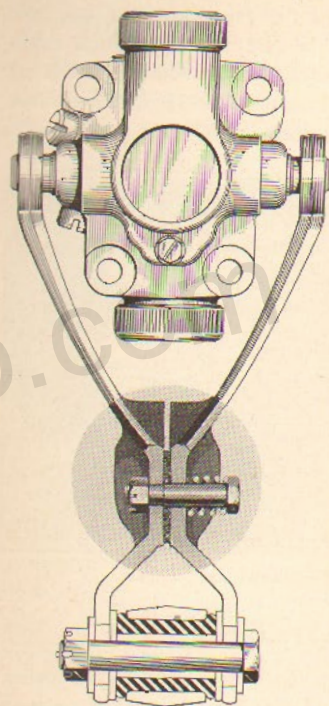
The upper lever, consisting of double steel arms connecting the vertical wheel support with the shock absorber, has been redesigned this year to provide an even smoother, more comfortable ride. A friction material under spring controlled tension called a Transverse Shock Eliminator has been interposed between these arms and serves to dampen out vibrations or harshness caused by certain road irregularities which otherwise would be observed in the ride.

At the outer end, this lever is attached to the vertical wheel support and movement provided for by

a new, improved rubber bearing. At the inner end the two arms are connected with the main shock absorber shaft, thus actuating the shock absorber. Substantial rubber bumpers are provided to limit vertical wheel travel in both directions.

Front Shock Absorbers

On the new Packard Six and 120, front shock absorbers are of the latest double acting type. Each unit has independent functions providing for complete control of the ride. They are quiet in operation and function efficiently under various weather condi-



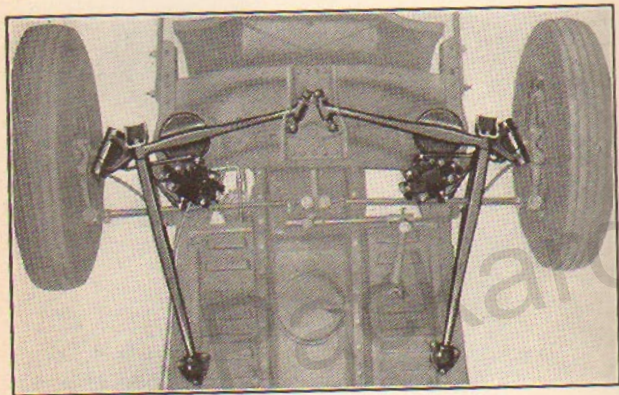
Transverse shock eliminator absorbs crosswise vibration.

tions. Each is securely attached to a reinforced portion of the main frame with four widely spaced bolts.

The Vertical Wheel Support

The vertical wheel support is a rugged steel forging which carries the front wheel spindle and to which

are yoked the upper and lower support assemblies. Since the load is carried largely by the lower support lever, this assembly is hinged to the vertical wheel support by a horizontal king pin mounted on two roller bearings and a ball thrust bearing which takes all driving and braking reactions. The upper lever bearing of rubber, as already described, effectively absorbs road shock and noise.



Worm's-eye view Packard Safe-T-fleX.

Coil Springs and Rubber Bumpers

In comparison with the coil springs used on other independent front wheel suspensions, Packard springs are exceptionally long and large in diameter. Naturally, they are luxuriously soft in action. The upper end of each spring contacts a rubber insulated seat in the front cross member of the frame—insulation is an unusual feature—and the lower end is supported on the integral seat of the lower support arm. The moulded rubber pad at the upper end of the spring effectively insulates the frame and body from road noises which would otherwise be transmitted from

the wheels. A large rubber bumper inside the coil supplements the spring under extreme road conditions.

Rubber Bearings

Besides acting as bearings for Packard Safe-T-fleX front wheel suspension, the rubber bearings used in the upper and lower levers provide other important advantages. They are:

- (1) Oilless—lubrication is never required.
- (2) Wear resisting—because there is no movement to cause friction on the surface of the rubber.
- (3) Shock cushioning—assist the springs to absorb shocks in direct proportion to the severity of the shocks.
- (4) Silencing—perfect noise insulation—no metal to metal contact.

When a wheel passes over a small road irregularity, these bearings offer practically no resistance to the movement of the front suspension. But for the greater wheel movements their resistance builds up very rapidly. In other words these rubber bearings assist the springs in absorbing road shocks in direct proportion to the severity of the shocks. Therefore, more resilient springs can be used with Packard Safe-T-fleX than in other types of independent front wheel suspension which use metal bushings. Moreover, these live rubber bushings have a pronounced effect in insulating or damping out road shocks which would otherwise be transmitted to the frame and body.

Jack Pads

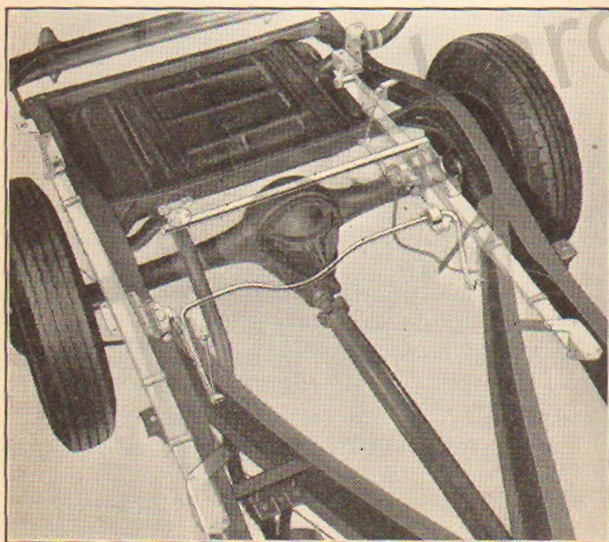
Convenient jack pads located at the front end of

the torque arm make it easy to jack up either front wheel.

No other type of front wheel suspension can claim all of these superior features and Packard salesmen have, in exclusive Packard complete Safe-T-flex design, the latest and most advanced type of suspension that has ever been offered to the motoring public.

SAFE-T-FLEX REAR SUSPENSION

With the introduction of the 1938 Six and Eight models, Packard prospects experienced a new ride sensation. Never before had they known such smoothness—such luxurious comfort even in the most expensive motor cars. The new Packard rear Safe-T-flex suspension was a revelation—an achievement of



Here are shown the opposed mounting of shock absorbers, new fifth shock absorber and roll control bar.

outstanding importance in the industry. In combination with the famous Packard Safe-T-flex front suspension, it created a new concept of modern automobile riding ease.

And now in the new Packard Six and 120 models for 1939 still other improvements and refinements are incorporated in the Packard Safe-T-flex rear suspension which in conjunction with important improvements in the front suspension produce an even steadier, smoother and more pleasurable ride.

Again this important development—this all-important sales advantage is exclusively Packard. So we urge that you make the most of it all through the year. Demonstrate it to every prospect. It's one of the most convincing sales points in the whole car. Remember it's yours and yours only. Competition has nothing that even approaches the results it produces.

Here are the important features of Packard Safe-T-flex rear suspension, all of which combine to produce in the rear the same characteristics, the same effects as are provided in the front by Packard Safe-T-flex front wheel suspension:

- (1) A new type of self-controlled rear spring.
- (2) Opposed shock absorber arrangement.
- (3) Integral roll control bar.
- (4) Fifth shock absorber.
- (5) Insulated spring mountings.

Self-Controlling Rear Springs

The revolutionary new rear springs introduced by Packard last year are continued without basic change for 1939. Soft, flexible, resilient, these special springs incorporate all the advantages of leaf spring design without any of the disadvantages—all the advantages of coil springs with none of their disadvantages. It's

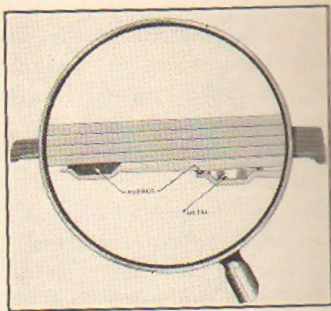
a new type of spring—nothing else like it on any other car—an exclusive Packard feature. And, equally important, the Packard rear springs give just the right degree of self-controlled resiliency to provide an ideal balance with the coil springs used in Safe-T-flex front suspension.

Except for the use of special control inserts in the ends of certain leaves, which serve a definite purpose, all spring friction is eliminated for normal road conditions. A special feature of their design, however, brings the damping effect of the middle portion of the spring into action on extremely rough roads. Frictionless inserts of live rubber, retained by depressions at the spring leaf tips remove all spring friction. These are used throughout all leaves except the three short ones where special metallic inserts are employed. The number of rubber and metallic inserts has been worked out scientifically to give just the proper flexibility or softness to the spring and at the same time the correct degree of controlled resiliency.

These new type springs accomplish results never before attained in any type of spring.

(1) Permanent flexibility—

There is no break-in period with these special Packard springs. Dirt does not affect them and the results produced are the same during all their life. Never has this been achieved before in any spring.



Left—Frictionless rubber insert.
Right—Metal control insert
sealed in brass cup.

(2) No temperature effects—

There is no grease used for lubrication between the leaves which would freeze in very cold weather and very noticeably affect the ride.

(3) Controlled ride flatness—

The metallic inserts used between the three short leaves have a peculiar characteristic which assures flatness of the ride by control of slow spring movement.

(4) Compensate for various loads—

The metallic inserts compensate for increases in the passenger loads carried, by increased spring control as the spring tip pressure increases.

(5) Unaffected by water and dirt—

There is no metal to metal contact at the tips of the leaves therefore dirt, mud and water have no effect. Leaves are specially treated throughout their entire length to give a hard graphited surface.

(6) Safe axle mounting—

Being securely mounted to the frame at both ends they give complete safety at all times. The axle is anchored at four points by the springs as well as by the lateral stabilizer bar or Fifth shock absorber.

(7) Noise reduction—

They supplement the rubber cored spring brackets and shackles in suppressing high frequency vibrations originating at the tire and road.

(8) Reduced lateral vibration—

Sidewise movement of the axle is absorbed by the rubber and metal inserts

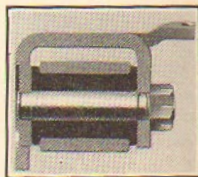
in the same manner as lengthwise movement.

(9) Self-adjusting control—

Although practically all static friction is eliminated under normal road conditions, a large measure of damping is brought into action in the center portion of the spring by extreme road conditions.

Experience has shown that the rubber will last the life of the car. There is no rubbing on the rubber, no friction and, therefore, no wear on the surface, only movement of the molecules within the rubber itself. Naturally, this movement keeps the rubber alive and makes it last longer. There is nothing to cause it to harden and depreciate and no grease or oil are ever required.

The metallic discs used between certain leaves to give correctly controlled resiliency are improved this year. Each disc is contained in a little brass cup with an oil proof composition seal around the top. When these inserts are assembled in the spring, the cups are filled with grease. The seal contacts the leaf above and the grease is sealed in permanently. Action is noiseless—lubrication is never required and spring covers to retain lubricant are unnecessary.



Front spring bolts insulated by live rubber bearing.

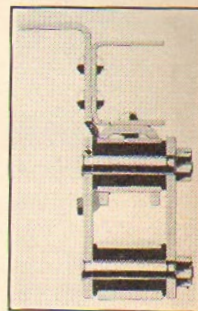
Spring Brackets

For several years the front end of each Packard rear spring has been attached to the frame in a bracket with the spring bolt enclosed in a live rubber core in the spring eye. This rubber core permits free movement of the spring eye around the bolt as the spring flexes

and at the same time effectively breaks the noise path between the axle and the frame and body. Naturally, lubrication is never required and squeaks are prevented.

Spring Shackles

In the shackle at the rear end of the spring, Packard also uses rubber cores around the top and bottom shackle bolts. These new rubber insulated shackles were introduced last year and have been proved eminently satisfactory in owner operation, both in improving the ride and in permanent freedom from attention. The cores are so designed that when assembled and the side plates drawn up tight, flanges of rubber prevent all metal contact between the shackle and spring. Perfect freedom of movement of the spring is provided in the flow of the rubber itself. There is no surface friction. Noise is insulated from the frame and greasing is unnecessary.

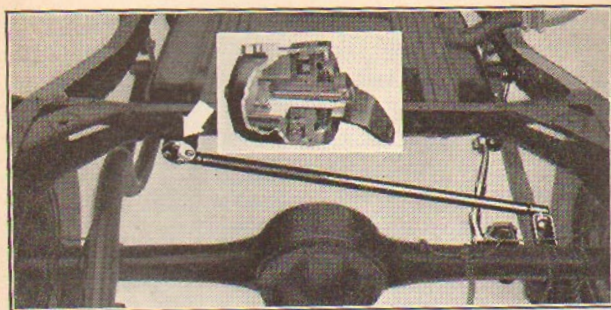


Both upper and lower shackle bolts are rubber insulated

The Fifth Shock Absorber

For 1939, Packard has incorporated an important new and exclusive improvement in the lateral stabilizer—introduced last year—and now called the Fifth Shock Absorber. As you know, this device has nothing whatever to do with the roll control bar which continues to serve its own different and separate purpose.

The Fifth Shock Absorber serves to suppress lateral or sidewise vibration of the frame with relation to the



New fifth shock absorber on lateral stabilizer bar.

rear axle. It is attached to the rear axle at the spring mounting on one side of the chassis and to a new hydraulic shock absorber mounted on the frame cross member on the other side. Thus, lateral movement of the frame is checked and through the action of this lateral shock absorber all road vibration or harshness is eliminated. This new device serves to suppress horizontal road vibrations in much the same manner as the four usual shock absorbers control vertical car movements. It also improves car handling and steering and gives a new sense of security and stability.

Roll Control Bar

When a car traveling at high speed rounds a curve or turns out of line to pass, there is a tendency for the body to sway or lean in the opposite direction. The same often occurs on rough or rutty roads. To overcome this sway Packard provides a roll control bar of spring steel mounted just in front of the rear axle. When one side of the car tends to rise, a twisting action is set up in the bar which reacts to bring both sides of the car to the same level.

Opposed Shock Absorbers

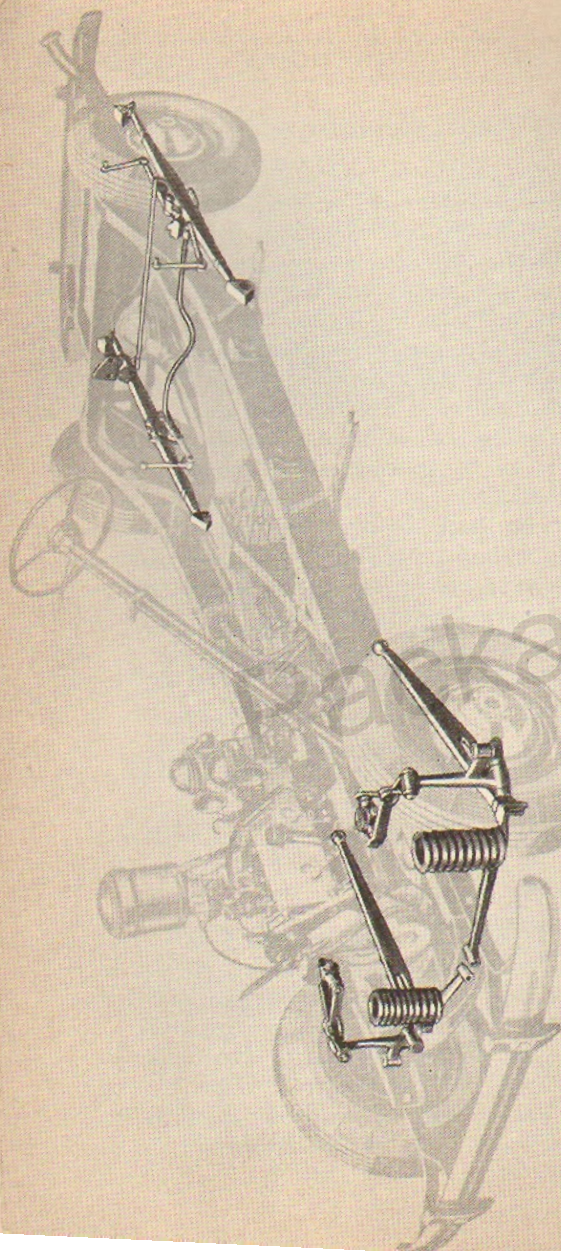
Both the Packard Six and Packard 120 are equipped with double acting shock absorbers to control spring and frame movements. Rear shock absorbers of both cars are mounted on the axle so that the arm of one shock absorber extends forward and the arm of the other to the rear. This mounting does not in any way affect the functioning of the shock absorbers but it enables them to act as hydraulic torque arms and supplement the resistance of the springs in keeping the rear axle in normal position in spite of the forces set up by starting and stopping which tend to roll the axle.

These rear shock absorbers and their special opposed mounting are important, for they not only control the soft, velvety action of the new Packard springs but also help control the movement of the front wheels with their Safe-T-fleX suspension. Clutch action also is smoother, motor sensation reduced and motor acceleration is softer.

ADVANTAGES OF COMPLETE SAFE-T-FLEX FRONT AND REAR SUSPENSIONS

(1) Riding Comfort

The exclusive Packard Safe-T-fleX front and rear suspensions produce a flat, pitch-restrained ride that might be best described as "mellow." There is ample control for a completely relaxed ride and to prevent fatigue even on long trips. The rear seat ride equals the front in comfort—no jolts or harshness. In fact complete Safe-T-fleX makes rough roads seem smooth and smooth roads smoother than they are.



Complete Safe-T-flex front and rear suspension—exclusive Packard features.

(2) *Safety*

Safety in unusual degree is assured by the long torque arm of Safe-T-flex front wheel suspension. Permanent front wheel alignment is attained, giving a new safety of handling, a sense of steering security and sure footedness under all road conditions. There is freedom from excessive side roll and the full safety of the four point rear axle mounting. Wheel bounces are minimized and much better traction assured.

(3) *Longer Tire Life*

Tires—both front and rear—last longer because wheel bounce is controlled and excessive front tire wear is eliminated by permanent front wheel alignment.

(4) *Better Steering and Handling*

The inherent stability of the complete Safe-T-flex front and rear suspension system produces positive, vibrationless steering and easy handling, under all conditions. The opposed rear shock absorbers and roll control bar contribute importantly to steering and handling efficiency.

(5) *Better Braking*

Because of the greater strength and solidity provided by the unusually long torque arm in the front Safe-T-flex suspension, a greater proportion of braking effort is taken by the front wheels. This materially improves car control. Opposed shock absorber mounting in the rear

suspension minimizes "stuttering" or skipping of the wheels when brakes are applied on rough roads or wet pavements.

(6) Long Life and Less Service

Long life to both front and rear Safe-T-flex wheel suspensions themselves is assured by the use of an exceptional number of rubber bearings. At the same time the whole car chassis and body is protected from road shocks by the cushioning of live rubber. Moreover, lubrication is practically eliminated. There are only two points in the complete Safe-T-flex front and rear suspension that *ever* require lubrication and then only at 10,000 mile intervals, approximately once every year.

(7) Silencing

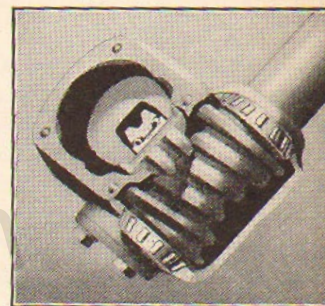
No other suspension built today, either front or rear, can use a full complement of rubber bearings and with them accomplish complete insulation of the frame from road noises. No other car offers the silencing of live rubber to anything near the same extent as the new Packard Six and 120 for 1939. The whole front suspension is completely insulated from the frame—no metal to metal contact except in the steering system, and the rear suspension is likewise insulated except for the parking brake cables. Obviously road noises are effectively insulated from the frame and body.

HARMONIZED STEERING

It's easy to steer a Packard because the whole Packard steering mechanism is designed to balance per-

fectly—each part functions with such perfect coordination that the least possible physical effort is required. It is of the cross steering type and is designed to harmonize with Safe-T-flex front wheel suspension.

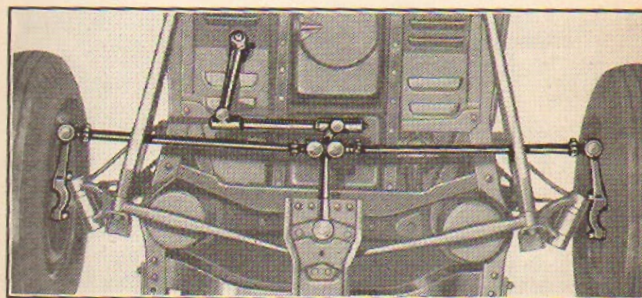
The steering gear is a worm and double tooth roller with the roller mounted on double-row ball bearings and the worm on two tapered roller bearings. A short drag link connects the steering arm and center steering lever.



Connected to the center steering lever

Double-row ball bearings and two tapered roller bearings in the steering gear.

by spring loaded ball joints and extending left and right are two separate cross tubes. The outside end of



Separate tie rods join the center steering lever and wheels.

each is attached to the steering knuckle at the wheel. Thus each wheel can follow any irregularity of the

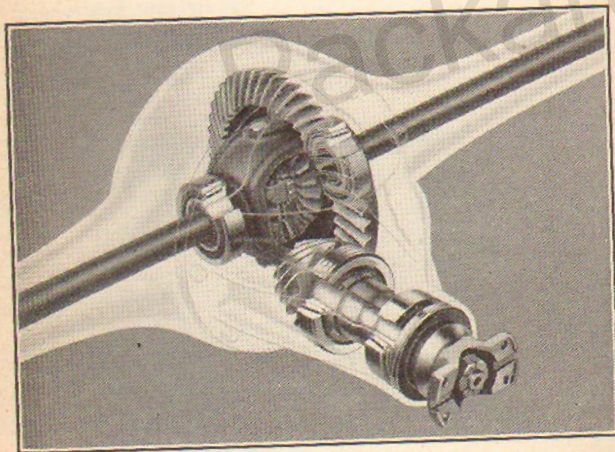
road independently and without transmitting road shocks to the steering wheel.

Packard design gives excellent straight line steering, an unusually short turning radius and after a turn the wheels return of their own accord to the straight ahead position.

The three spoke 18 inch steering wheel is of new design for 1939. It is more graceful and more comfortable in the hands. As before, it is made of hard rubber over a flexible but strong steel core.

PACKARD HYPOID REAR AXLE

Thirteen years ago, in 1926, Packard pioneered the hypoid rear axle, but it is only within the last few years that other manufacturers have finally followed



Packard hypoid rear axle.

Packard's lead and offered their owners the many advantages of hypoid design. Naturally, Packard engi-

Printed in U. S. A.

neers have done more research work and worked out more improvements in this type of axle than others who have just adopted it for the first time.

The Packard Axle Construction

Both the Packard Six and Packard 120 rear axles are semi-floating type. The axle shafts are made from carbon manganese steel and the housings are rolled steel with specially designed reinforcements. The driving pinion is mounted on two large tapered roller bearings and the differential and ring gear are also carried on tapered roller bearings. Special provision is made to insure continuous lubrication of gears, bearings and other operating parts.

Hypoid Gears

The gear teeth in the Packard hypoid rear axle are cut in such a way that the pinion is mounted considerably below the center line of the ring gear. This lowers the propeller shaft and makes it possible to lower the floor several inches without having to resort to tunnels or bumps in either the front or rear compartment.

The pinion is considerably longer in hypoid design, which means that the teeth are longer and have more tooth contact. Usually the hypoid gear has one more tooth in contact than the spiral bevel type of axle. Obviously hypoid gears are quieter in operation and longer lived than conventional spiral gears and hypoid gearing tends to improve in quietness with use.

Rear Wheel Bearings

Large tapered roller bearings are used at each rear wheel, and a special double seal—one on each side of the bearing—prevents any possible leakage of lubricant.

All Packard rear axles are machined to such precision limits that the pinion position is permanently fixed and backlash of only three to five thousandths of an inch between pinion and ring gear assures maximum silence in operation.

HOTCHKISS DRIVE

All Packard cars use Hotchkiss drive, that is, driving force is transmitted from the rear wheels and axle through the springs to the frame of the car. This is an obvious advantage, for the springs are used to cushion the inevitable strains of starting and stopping the car. As a result stopping and starting are more comfortable for the car occupants. Hotchkiss drive reduces unsprung weight and improves roadability under all conditions and the special arrangement of the Packard opposed shock absorbers provides a further refinement of Hotchkiss action not obtainable in other cars.

Propeller Shaft

The propeller shafts of both Packard Six and 120 are of tubular design with an extra large diameter—3"—for greater stiffness and to insure greater smoothness at all speeds. All propeller shafts are dynamically and statically balanced and roller bearing universal joints at the ends connect with the transmission and rear axle pinion.

Universal Joints

Packard universal joints are roller bearing in design, which in itself assures long life and trouble-free operation. An effective seal protects them from dust and dirt and prevents loss of lubricant.

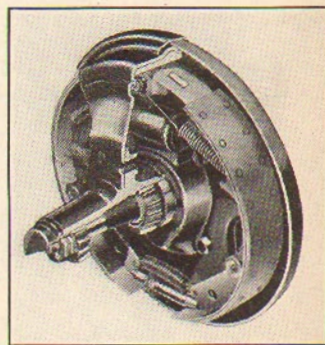
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PACKARD SERVO-SEALED HYDRAULIC BRAKES

Matching the power of the modern T & T motors of the new Packard Six and Packard 120, is the ability to control and stop the car quickly, safely and easily under all conditions. Reserve braking ability is provided so that frequent adjustments are unnecessary. Safety and confidence are perfectly combined with ease of control and effortless operation in driving the new Packard for 1939.

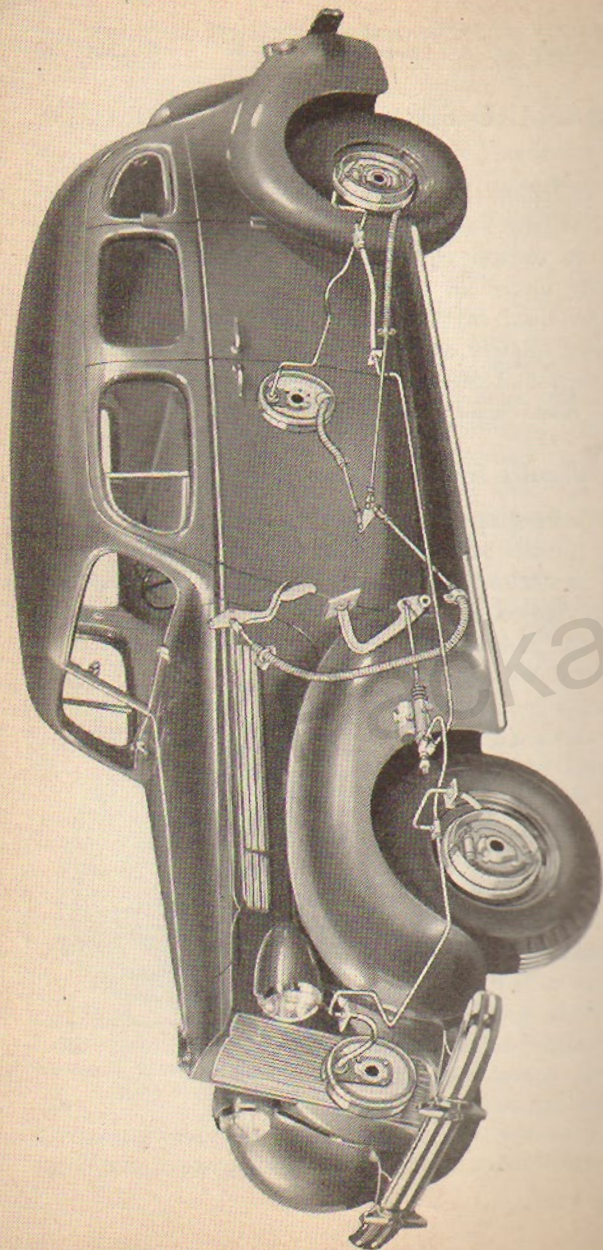
Hydraulic Brake Actuation

Packard service brakes are of the Servo-Sealed hydraulically actuated type. Because pressure applied to an enclosed fluid is transmitted equally and undiminished in all directions, the foot pressure applied on the pedal of a Packard car is immediately transmitted without loss to each wheel and all four brakes are applied with equal force. Braking pressure is always equalized when all four brake shoes contact the brake drums and as additional foot pressure is applied, it is transmitted to all four wheels, giving positive equalized brake energy and preventing most skidding and swerving.



Hydraulic brake, front. Showing section of brake drum and multiple seals.

Foot pressure on the brake pedal actuates a piston in the master brake cylinder, forcing the liquid



Packard dual braking system. Servo-Sealed hydraulic service brakes. Independent mechanical hand brake.

through brake tubing to each wheel. Here it operates smaller pistons in a small cylinder to which the shoes are attached.

Because of Safe-T-flex front suspension a greater proportion of braking effort is applied to the front wheels than to the rear, making Packard brakes more effective than those of many other cars. Stops in shorter distances are possible.

Servo Action Brakes

There are different designs of hydraulic brakes. Some cars depend entirely on pedal pressure to operate the brakes and disregard the self-energizing principle.

Packard brakes make full use of Servo or self-energizing action. The two brake shoes in each wheel are movably connected at the bottom by a coupling. When the brake shoes are forced against the drum, the turning of the drum tends to set up a similar turning motion in the shoes. This wrapping action of the brake shoes and drum uniformly increases pressure at every point around the braking surface. Thus, the movement of the car either forward or backward builds up braking pressure, increases stopping ability and decreases the amount of effort required of the driver.

Moreover, because braking pressure is distributed equally over the surface of both shoes, brake lining wear on front and rear shoes is more nearly equal and brake linings last longer.

In cars, with rigid mounted shoes, this self-energizing action is not developed and as a result more physical effort is required on the brake pedal, lining wear is unequal and frequent shoe adjustment is necessary.

Mechanical Hand Brake

Packard cars are also equipped with a mechanical parking or emergency braking system actuating the brake shoes in the rear wheels and operating independently of the hydraulic system. This type of hand brake is considered safer and more dependable than the propeller shaft type. First, because it provides about double the actual braking area. Second, because the car can be parked on a hill and a rear wheel jacked up without the necessity of blocking the wheels. Third, it imposes no stress on propeller shaft or rear axle.

Centrifuse Brake Drums

Packard uses centrifuse brake drums on both the new Six and 120. These drums combine the lightness of steel with the very desirable qualities of cast iron braking surfaces. Cast iron does not score as easily as steel and holds its shape better under severe braking loads. Centrifuse drums have a steel shell with a cast iron braking surface spun in while the metal is hot and fused to the steel of the shell. Not only do brake linings wear longer, but the drums themselves also last longer. Braking effectiveness on long grades is retained by the greater heat absorbing capacity of the heavier centrifuse drums, thus insuring against fade out.

To protect the brakes from water, sand and dirt entering the mechanism, an effective multiple seal is used on both front and rear drums. This is a special Packard design which assures long lining life.

Wheels

A new note of smartness is added to Packard steel disc wheels this year with the redesigned chromium

hub caps. Concentric flutes pressed into the metal lend sparkle to the big 10 inch caps. The whole wheel harmonizes more perfectly with the over-all styling of the car. The wheels are of the demountable disc type—16 inches in diameter and are slotted at the rim for individual tire chains. Rims are drop center design and each wheel is balanced to prevent road vibration and provide maximum smoothness.

On five-wheel cars, the spare wheel is mounted horizontally in the trunk. All Packard 120 models are available on special order with six wheels and fender wells.

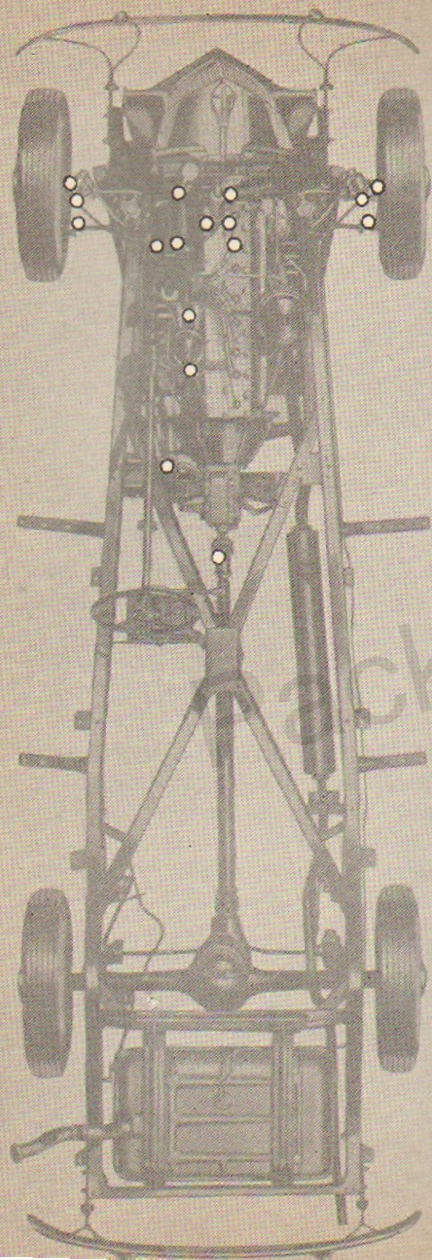
THE PACKARD SIX IS NOT AVAILABLE WITH SIX WHEELS AND FENDER WELL EQUIPMENT.

Tires

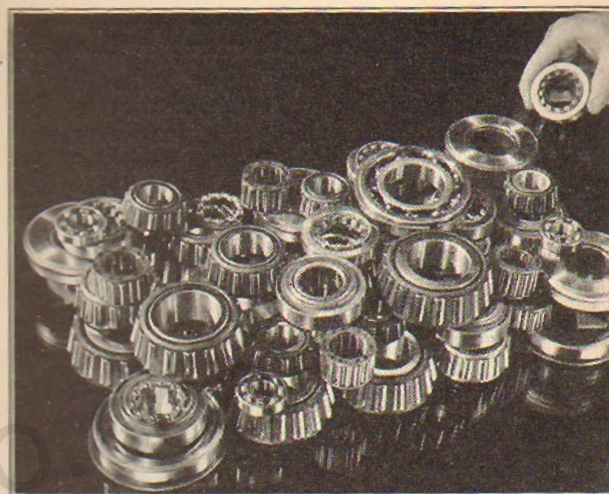
Contributing much to the wonderful Packard ride are the big low pressure tires with which both the Packard Six and 120 are equipped. On the new Six 6.50 x 16 four-ply tires are standard equipment and the 120 rolls on 7.00 x 16 four-ply tires. Packard uses larger tires for car weight than most competitors and so affords the Packard owner greater safety, longer tire life and a smoother, more comfortable ride.

ANTI-FRICTION BEARINGS

Packard realizes its obligation to build a car that is not only mechanically perfect, smooth in operation and efficient, but durable as well—with tens of thousands of miles of trouble-free service built into it. An important example of Packard's adherence to this principle is seen in the unusually large number of ball and roller bearings used throughout the chassis. No



Only 16 points on the Packard Six and 17 on the 120 chassis ever require lubrication.



48 ball and roller chassis bearings—an example of Packard quality.

competitor approaches Packard in this important feature.

Each car has a total of 48 ball and roller anti-friction bearings—5 extra anti-friction bearings when Econo-Drive is used—and in addition there are 24 rubber oilless anti-friction bearings used throughout the chassis.

CHASSIS LUBRICATION

Because there are 24 points on the Packard Six and 120 chassis where rubber bearings are used instead of metal bushings and because so many of the other chassis anti-friction bearings are greased for life and sealed at the factory, the number of chassis lubrication points has been reduced to the minimum—far

below competition. There are only 16 points on the Six and 17 points on the 120 that ever need lubrication at any time.

Two of these lubrication points on each car (at the lower end of the vertical wheel supports) need attention only every 10,000 miles. The remaining 14 points on the Six and 15 points on the 120 should be lubricated at 2,000 mile intervals. The crankcase should be drained and refilled every 2,000 miles.

PACKARD SIX AND PACKARD ONE TWENTY BODY FEATURES FOR 1939

THE eye-satisfying lines, the modern windstream design, the exclusive beauty of Packard styling which were received with such popular acclaim in 1938 have been continued with important improvements and refinements for 1939. The perfect symmetry of Packard design leaves scant room at any time for any startling improvement, and the distinctive beauty of the Packard Six and Eight made it difficult indeed for Packard designers to find ways to improve them without sacrificing any of their distinction and individuality.

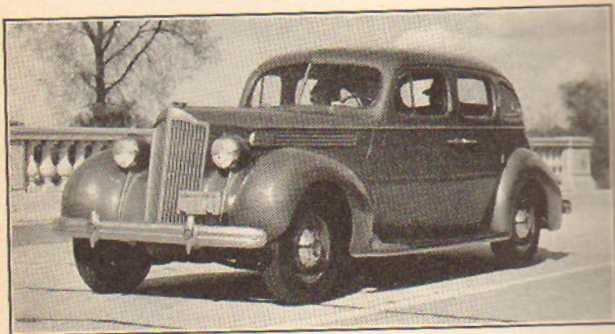
However, refinements have been embodied in the new Packard Six and 120 which contribute importantly to the satisfaction of Packard ownership and so expand the appeal of these beautiful, luxurious cars to potential Packard buyers.

The Packard Owner Has Always Been Protected

Again Packard adheres faithfully to principle and protects Packard owners from unnecessary and ruthless loss in depreciation through radical style change. Through the years the distinguishing lines of Packard styling have endured and Packard owners have watched the passing of whims and fanciful short-lived ideas. All of which, of course, have cost the car owner money. Packard styling is modern and attractive but at the same time it is consistent and logical.

In general appearance the Packard Six and Packard 120 are similar, but in size, trim and details of appointment they, quite naturally, differ. The long, tapering hoods, the modern body lines, the sweeping,

streamlined rear panels and trunks combine to give an effect of impressive length and size which definitely lifts them out of their modest price class.



A beautiful modern interpretation of Packard styling.

Front View

From the front the lines of the radiator are distinctively Packard—a beautiful, modern interpretation of those famous radiator and bonnet lines created by Packard designers far back in 1904. Radiator shutters of gleaming chrome that really operate, are unbroken by horizontal cross lines. A narrow band of body color divides the radiator front, and the well known Packard radiator ornament completes the assembly.

The bonnet has a fixed panel down the center in the style set by Packard Senior cars which not only improves appearance but makes it much easier to raise the bonnet for servicing the engine.

Large, high crowned fenders give a massive frontal appearance and in the very shallow valleys, bullet head lamps are mounted directly to the fenders. Heavy bumpers with decorative, as well as useful bumper

guards cut the bottom line of the fenders and radiator, giving a straight finished lower line.

The V-type windshield is exceptionally wide with narrow corner posts and is full 13½ inches in height. It is divided by a chrome bar. Twin windshield wipers are mounted on ornamental chrome brackets.

Side View

Pleasing lines in modern windstream styling distinguish the side view of the car from radiator to trunk. The bonnet is pleasingly proportioned without resort to extravagant length built up by an empty radiator shell and grille. The handsome chrome bonnet louvers of the Eight are continued in the new Packard 120, while an entirely new and more decorative louver design has been adopted for the new Six.

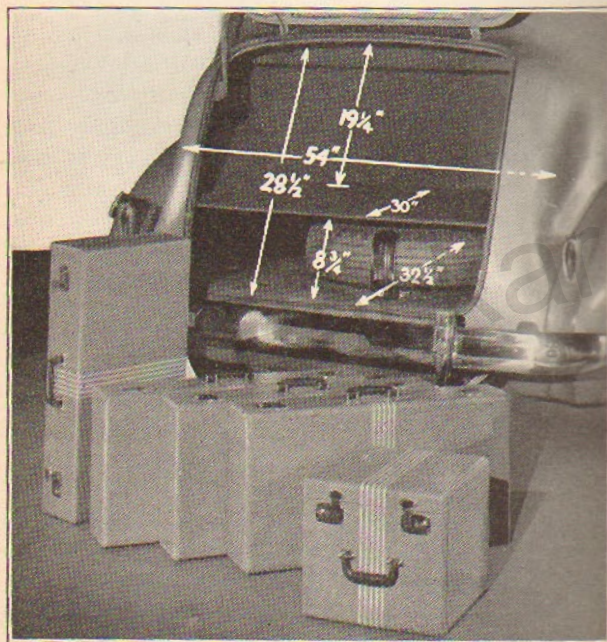
Gracefully contoured and modern to the last degree, Packard fenders enhance the streamline beauty of the side view of the car. They blend perfectly with the long bullet type headlamps and harmonize with the sweeping lines of the body. Running boards of heavy moulded rubber join front and rear fenders and a wide chrome beading gives an additional touch of smartness.

A new "free wheeling" door handle is used on the outside locking door. When the door is locked, the outside handle moves freely, making it very difficult for anyone to use a pipe or other implement to break the lock. This is an additional protection against theft of the car or its contents. A spring keeps the handle in horizontal position. Wheels are disc type with slots for individual tire chains and large, deeper 10 inch chrome hub caps of new design carry the familiar Packard red hexagon at the center. Tires are excep-

tionally large for cars of the size and weight of the new Packard Six and 120, contributing not only exceptional riding comfort but also to larger and more impressive appearance.

Rear View

In the rear, the lines of the body flow in smooth curves from the all-steel top over the rear panels,



Abundant luggage space—14.75 cubic feet.

fenders and trunk. Tail lights are built into each fender at the rear. A neat identification light in the center of the trunk lid spells the name Packard in

silver letters and also serves at night to illuminate the rear license plate.

The trunks of both models are large, with ample capacity for luggage for all passengers. The trunk is neatly trimmed and finished with a durable and attractive rubber mat. On the left hand side of the shelf is a space for carrying the tools, heavily padded with insulating material to prevent noise.

Trunk hinges are new this year and of the concealed type, giving a smooth, unbroken surface in the rear and making it much easier to keep that portion of the car clean.

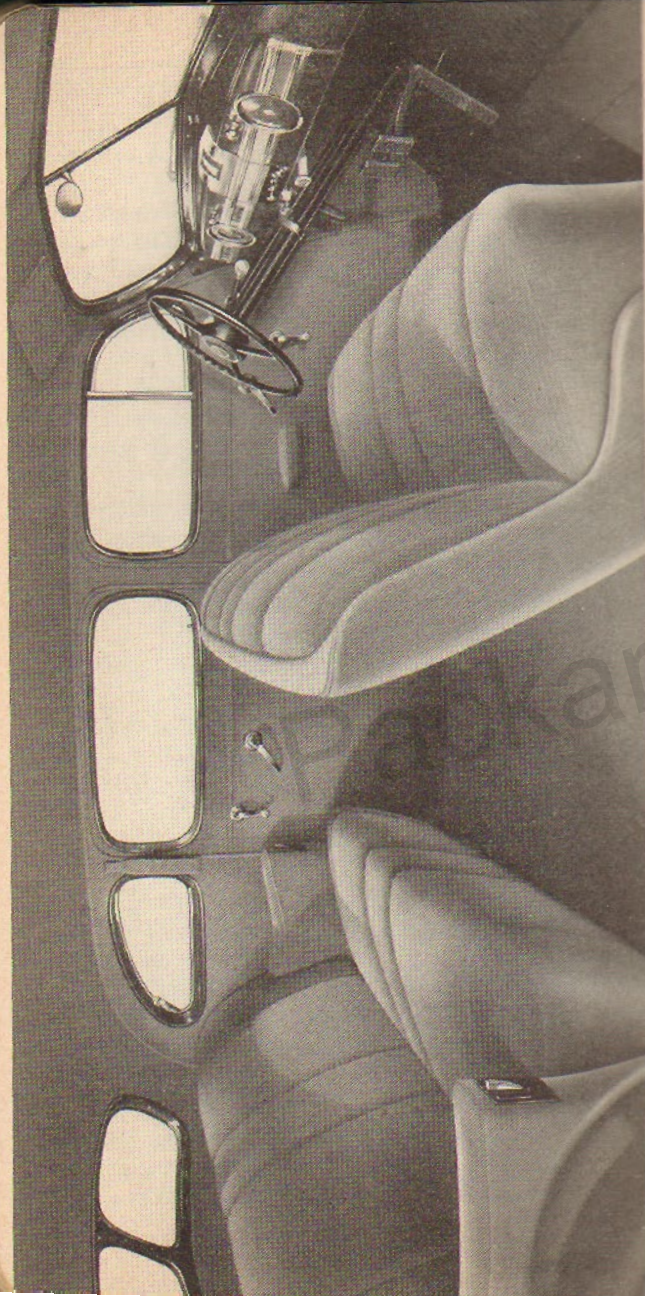
All coupes have immense luggage space under the rear deck in addition to the space within the body itself.

Interior Body Features

Spaciousness is the keynote of the newly appointed interiors of both the new Packard Six and 120. Seats are exceptionally wide, front and rear; leg-room is more than ample for even the tallest adults; head-room is generous. In every dimension there is abundant roominess for utmost comfort.

Both bodies offer the same spaciousness but, of course, the 120 is more luxuriously upholstered, trimmed and appointed. However, compared with other cars in or near its price class, the Packard Six offers the obviously superior quality and the refinement which is expected of a Packard.

The upholstery of both new cars is an easily seen example of the quality built into the new Six and 120. Material and tailoring are of the highest order. Two choices of material are available on the Six—a tan pin stripe broadcloth and a tan Bedford cord. A new upholstery trim scheme of even greater attractiveness features wide pleats for both seat cushion

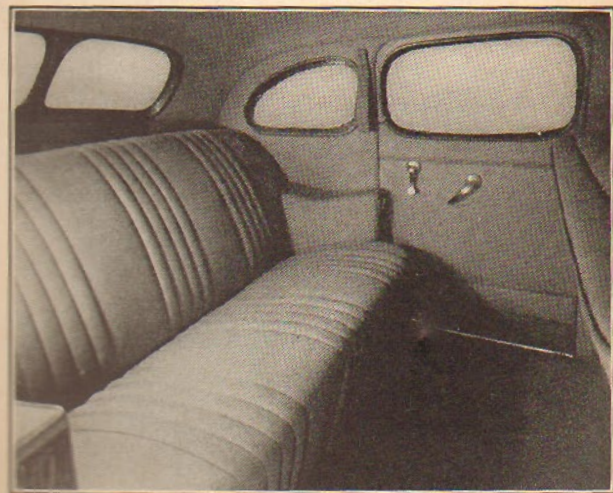


An attractive trim with wide pleats distinguishes the Packard Six interior.

and seat back, and door panels have been redesigned to match. New bindings and windlacings are used.

In the new 120, four upholstery selections are offered, three broadcloths—tan pin stripe, blue-grey pin stripes and a blue-grey mixture—and one Bedford cord. The new tailoring shows three groups of narrow pleats over the seat cushion and back. Doors are neatly trimmed and again new bindings and laces are used.

The seat back and cushion construction has also been improved. In the front seat a new row of coil springs has been added between the two rear rows and this in conjunction with a new more rigid foundation for the springs and a new better method of padding serves to retain the shape of the seat, prevent sagging even after long use and eliminate noise in the seat. At the same time the top row of springs in the seat



Luxury and refinement are obvious in the Packard 120 interior.

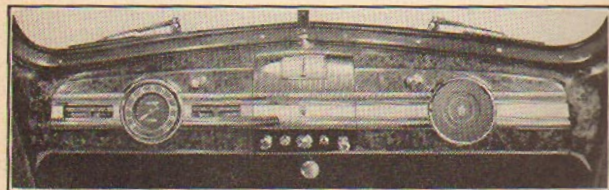
backs of both front and rear seats have been changed to Luxury type. This provides a soft yet firm top for the back cushion and removes any possibility of contact with the wire which holds the springs at the top.

Garnish-mouldings around the windows and the recessed ash trays in the ends of the rear seat arm rests are finished to match the new instrument panel. Again the convenient combination of door locks introduced last year is used in both the Six and the 120. The rear door locks are operated by rubber plungers of harmonizing color, extending through the rear door window mouldings. The front door locks are of the remote control type such as have been used for several years on Packard.

A modern motif of parallel flutes in sparkling chrome on the interior fittings is set off by colored plastic knobs. Dome lights are round and in all models are operated by a colored plastic switch on the center pillar. Assist straps are located on the rear door pillars of regular sedans.

Instrument Panel

Probably the first appointment to catch the eye as one enters any car is the instrument panel. It is most important from an appearance point of view. This year while the instrument panel retains the pleasing lines and general arrangement of the previous model



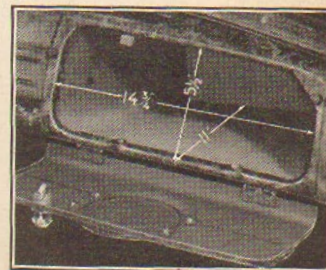
The instrument panel is finished in French burl walnut graining with fluted chrome trimmings.

(Packard Six and 120 panels are similar) it is strikingly finished in French burl walnut instead of plain lacquer. A wide band of chrome with vertical fluting above and below a plain central panel matches the motif of the fittings. On the left a new speedometer dial with easily read numerals is set into this band of chrome and gauges are grouped on either side of it. In the center a removable panel accommodates automatic tuning and push button control radio installations. While referring to radio, it should be mentioned that accommodation is provided in the back of the front seat for an auxiliary radio speaker.

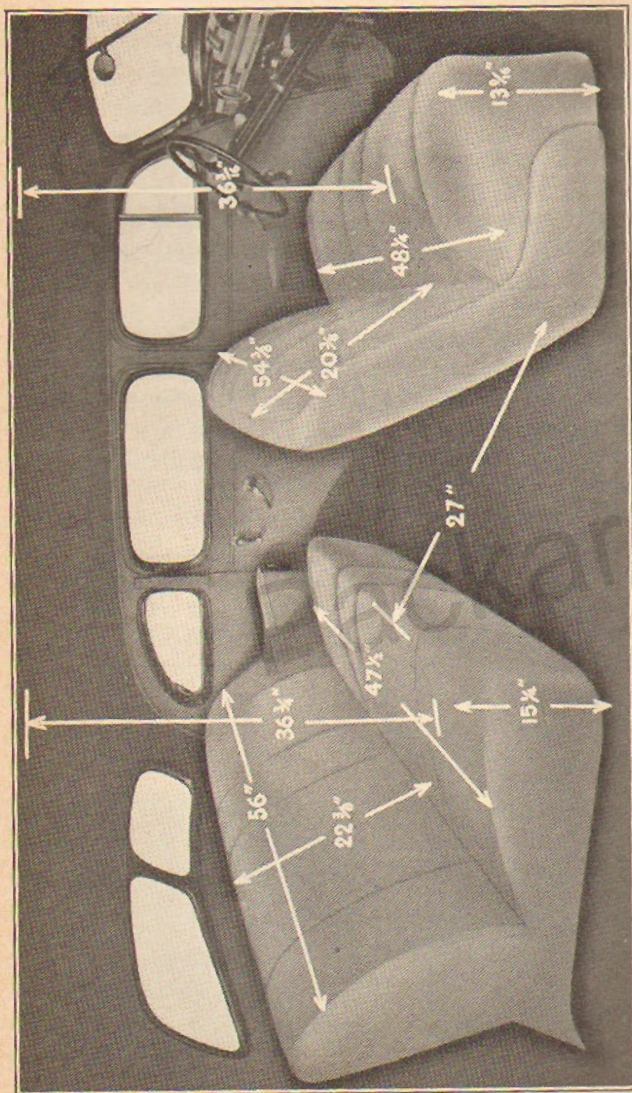
On the right of the instrument panel a medallion corresponding in size and appearance with the speedometer dial may be removed for the installation of an electric clock or tachometer.

In the center of the panel above the removable plate for radio controls and extending partially over the cowl is a wide chrome panel with parallel bar design in which is recessed an extra large ash receiver. A rheostat switch controls the degree of illumination of all the instruments and clock as well as the reading or map lights. All control buttons—starter, lights, ignition switch, throttle and cigar lighter (extra equipment) are located in a recessed portion in the lower center of the instrument panel.

The twin windshield wipers are controlled by a knob in the center of the cowl and wide defroster slots direct warm air across both sections of the windshield. The cowl ventilator handle lo-



Plenty of room in the large parcel compartment.



An interior of generous dimensions.

cated below the instrument panel is also equipped with a colored plastic handle. The glove compartment on the right side of the panel is exceptionally large—much larger than those of most cars and is equipped with a lock and a separate key which also locks the trunk.

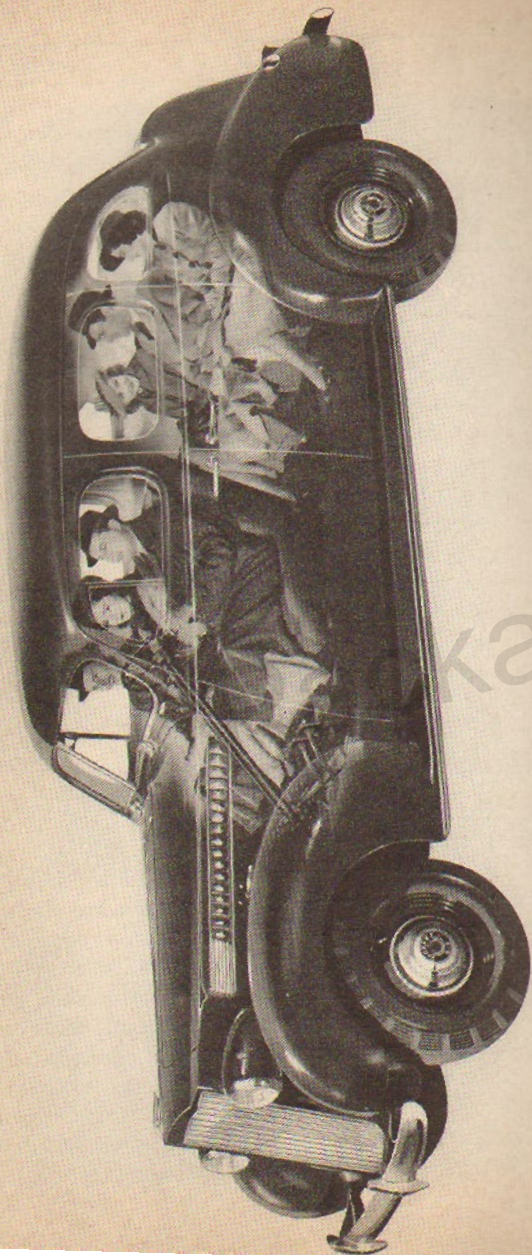
The steering wheel is new this year and not only more graceful in appearance but more comfortable in the hands. It is 18 inches in diameter and built of hard rubber over a rugged steel core. Two long, fully adjustable interior sun visors are standard as well as an adjustable rear view mirror.

A new reinforced rubber mat in the front compartment of both cars is backed with heavy jute to insulate against noise, heat and cold. In the rear a neatly tailored carpet of superior quality, also backed with a thick pad, completes the trim and protects the passengers. Newly designed door scuff plates neatly cover the edges of the floor coverings in both front and rear compartments, giving a trim, finished appearance to the interior.

Comfortable for Every Occupant

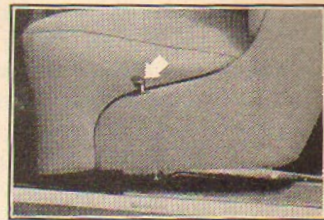
As already stated, the bodies of the Packard Six and 120 are luxuriously spacious. There is ample roominess in every dimension for six adults to relax and ride in perfect comfort. Front seats are slightly wider than the rear—48 $\frac{1}{4}$ inches hip-room and 54 $\frac{3}{8}$ inches shoulder-room. Rear seats are 47 $\frac{1}{2}$ inches wide at the hips with 56 inches of shoulder-room. This last measurement is important, for extra width at the seat is useless without corresponding body width to accommodate the shoulders.

Head-room also is generous—front compartment 36 $\frac{7}{8}$ inches and rear 36 $\frac{3}{4}$ inches. (Complete measurements are given in the Body Dimensions section.)



Ample roominess for six to relax and ride in perfect comfort.

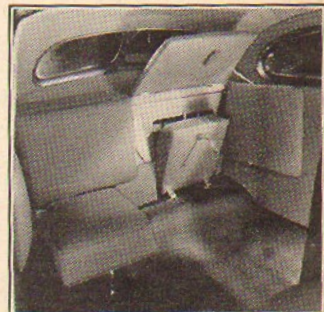
The front seat is adjustable, backward and forward and automatically upward to suit drivers of all statures. And with the front seat in any position there is abundant leg-room in the rear compartment.



A handy front seat adjustment provides upward as well as forward movement.

The two-door touring sedan and all coupes of both the Six and 120 lines have straight across front seats with divided backs that tilt forward, giving easy entrance and exit to the rear compartment. Doors of these models are unusually wide for passenger convenience.

The 2-4 passenger coupe and convertible coupe have folding occasional seats in the rear compartment providing ample room for two extra passengers within the car. When not in use they may be folded away into the rear of the body, leaving a huge space for extra luggage.

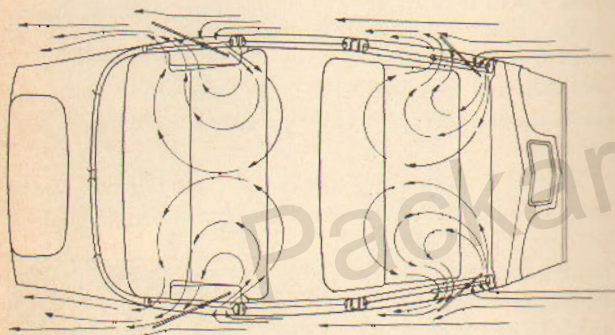


2-4 passenger coupes have two occasional seats inside the body.

The luggage space under the rear decks of all coupes is very large and the tire is carried in a separate compartment under the shelf. The business coupe on both chassis also provides an immense luggage space within the body.

Ventilation

Adequate but comfortable ventilation for all passengers is provided by the Packard system of individually controlled ventilation. The front compartment is ventilated by the big screened cowl ventilator in conjunction with the pivoting ventilators in the front of the front door windows. These ventilating wings act as baffles, forcing fresh, cool air across the inside of the windshield to remove steam and moisture. At the same time a vacuum is created at the



Individual ventilation is provided for each section of the body.

back of the wings which exhausts warm air, smoke, etc., from that part of the front compartment adjacent to the ventilator. The rear portion of the window may also be lowered.

To get a big supply of fresh air in the rear compartment, rear door windows may be lowered. For controlled ventilation, the whole rear quarter window of the four-door five-passenger sedan operates like the ventilating wings in the front door windows.

PACKARD ONE TWENTY SEDAN AND LIMOUSINE FOR EIGHT PASSENGERS

THE new 1939 Packard 120 is also built on a 148 inch wheelbase chassis to accommodate an eight-passenger sedan or limousine body. Eight adult passengers find ample roominess in every dimension of these commodious bodies for restful comfort. Not only are leg-room and head-room generous, but additional width is gained by the wider tread of the rear axle.

Center folding auxiliary seats are comfortable, for they not only meet at the center but are also wider than the regular rear seats of many five-passenger sedans on the market. An overhang space of several inches between the edge of the seats and the door gives extra roominess.

The chassis of these eight-passenger models are specially engineered and built not only to provide extra body space but extra load carrying capacity as well. Frame, rear axle, springs, brakes and tires are all specially designed for additional capacity.

Differing only in the features in the following list, this long wheelbase Packard 120 chassis embodies all the features of design, safety, comfort and economy which go to make up the 1939 Packard 120 and which are listed and described elsewhere in this book.

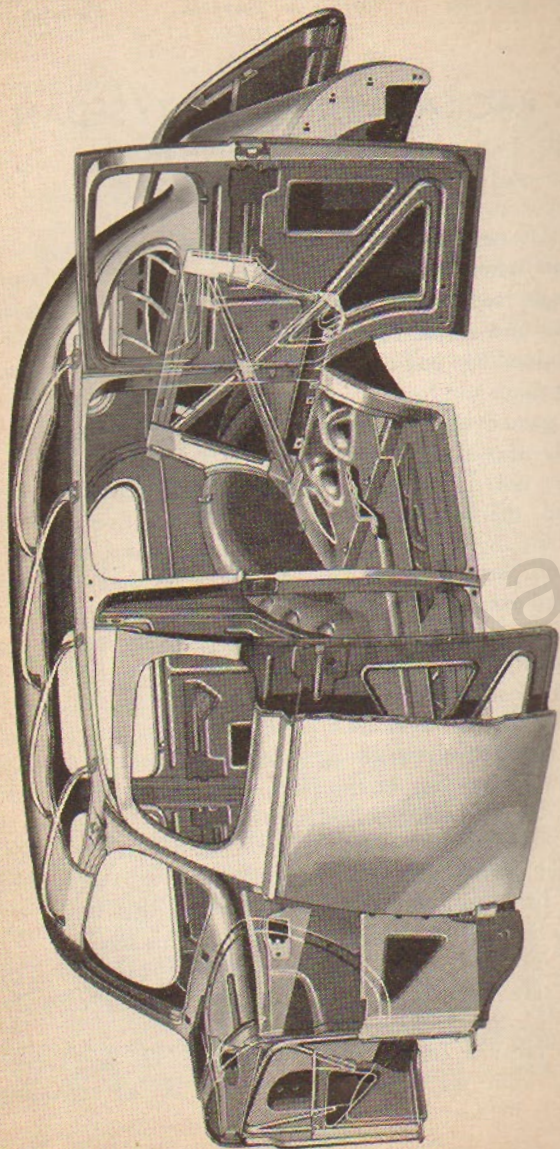
See illustrations pages 112, 113 this section.

For body dimensions see pages 115, 116, 117, 118.

Heavier rear axle assembly of greater capacity.

Larger brakes 12" x 2 1/4".

Heavier frame (5/32" thick, 7 1/32" deep) with one piece side rails and rear X leg extending to rear kick-up.



Packard all-steel body—notice steel roof bows and rear body braces.

Safe-T-fleX front springs designed for heavier loads.

Heavier rear springs (54" x 2").

Intermediate self-aligning propeller shaft bearing.

Rear axle gear ratio—4.7 to 1.

7.00" x 16" six-ply tires.

Full length running boards with one-piece moulded rubber mats.

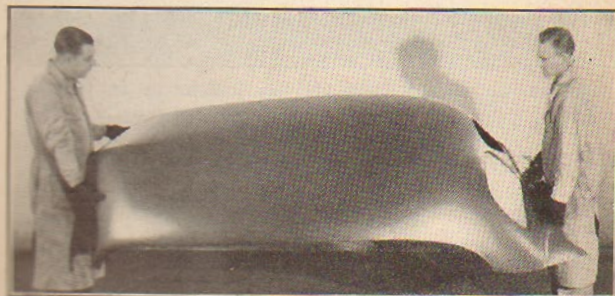
Wheelbase 148 inches.

Rear axle tread—62½".

Over-all length—221 13/32".

PACKARD BODY CONSTRUCTION

For more than thirty years Packard bodies have stood for all that is best in body construction. From the standpoint of safety, comfort, quietness and styling they have been unexcelled. They have consistently matched the engine and chassis in an enduring quality. The new Packard Six and 120 bodies are no exception to this record. With their roomy dimensions and rugged all-steel construction they offer true riding comfort and unsurpassed safety.



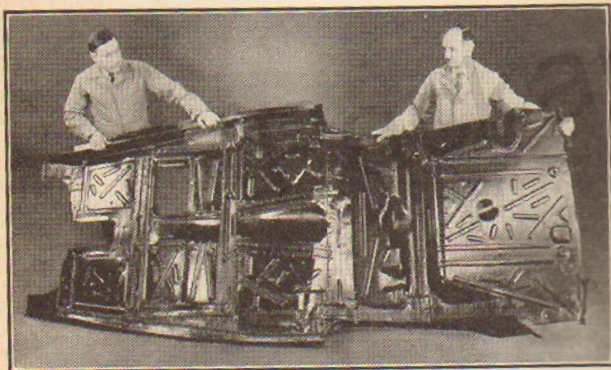
The steel top is formed from a single sheet of heavy steel.

All-Steel Roof

Formed from a single sheet of steel, the roof affords maximum protection and serves to bind the whole body structure into one rigid unit of steel. The top is reinforced by four cross bows and also four fore and aft rails at the rear. All are of steel and contribute greatly to the strength of the roof.

All-Steel Floor

Consisting of three heavy steel stampings solidly welded into one unit, the floor, like the roof, is a model of strength and rigidity. Die-formed braces and reinforcements welded to the underside at strategic



Note the flanges, ribs and reinforcements in this Packard steel floor.

points add even greater stiffness and solidity to an already exceptionally rigid floor. Reinforcing flanges and ribs together, with a slight arching effect in the rear, contributes to the exceptional strength and stiffness. The steel pan under the rear seat this year is made of heavier material which, together with an

improved method of welding to the wheel housings, makes this part effective as an additional cross member imparting still greater rigidity to the body structure.

Body Panels

Body panels are formed of heavy sheet steel over steel faced dies that give them a satiny smooth surface



Huge multiple electric welding machines fuse the sections of the steel floor into one solid unit.

for finishing. They are reinforced at every point of stress or strain and electrically welded to top and floor, forming a complete unit.

Pillar Posts

Center pillar posts are box section in design—two pieces of steel pressed into shape on huge presses and firmly welded together to form a steel pillar of great

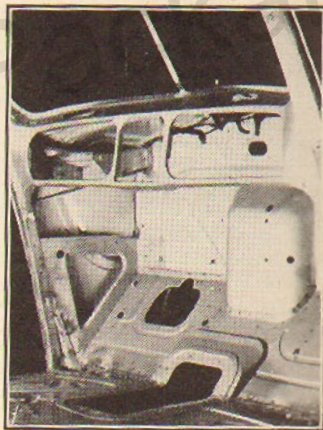
strength. It is firmly welded—top and bottom—to floor and roof rail. This year additional anchor bolts at the center and rear door pillars pass through the base of the posts, body floor and frame. Full advantage is thus taken of the greater rigidity of the Packard frame in reinforcing the body structure by this method of mounting.

Drip Moulding

Beginning at the belt moulding at the windshield, and continuing upward over the doors and rear quarter windows and ending in a graceful curve at the rear, is a deep drip moulding. It is built into the body between the roof and the top rail, not only serving its primary purpose of carrying off water, but also serving to stiffen the top rail.

Windshield and Cowl

The windshield housing and cowl are welded to the steel top to form a sturdy frontal unit which easily resists stresses and strains at this point. Back of the panels that form this part of the body is a solid bracing of heavy steel. This front end bracing takes the form of a block "A" and is securely welded into the front end of the body. This virtually forms a box type construction



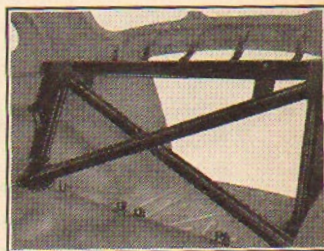
Rugged steel braces at top and bottom of each side of the cowl give extra strength.

and provides exceptional rigidity and strength. Rugged braces of steel connecting the front door posts with the dash at top and bottom on each side greatly stiffen the cowl. A further stiffening of the forward body section is accomplished by the instrument panel itself. Complete absence of cowl shake is a result of the rugged front end construction.

Rear Panel and Trunk

Firmly welded together and heavily reinforced, the rear panels and trunk form a most rigid and strong rear body structure. A steel X cross brace across the back of the rear seat and welded to the body panels at each side and to the floor, binds the rear end solidly together and prevents any twisting or weaving of the body at this point.

The trunk cover, hinged at the top with concealed hinges, is strongly reinforced to retain its shape and stiffen the whole unit. A water seal of hollow rubber effectively seals the trunk compartment against rain and dust.



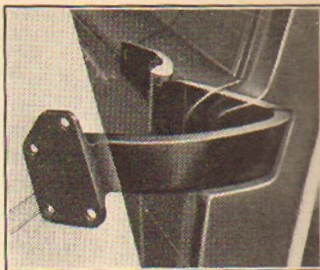
A sturdy steel X brace reinforces the rear of sedan bodies.

Doors

Front and rear doors are of two-piece construction. This design is obviously superior to that in which a number of pieces of steel are welded together. In Packard doors the outside panels are formed from one sheet of steel, and the whole inside panel of the door from another. Rugged diagonal reinforcements formed in the middle panels are an assurance against

sagging doors, and ribs or flanges pressed into the metal itself further strengthen and stiffen the doors.

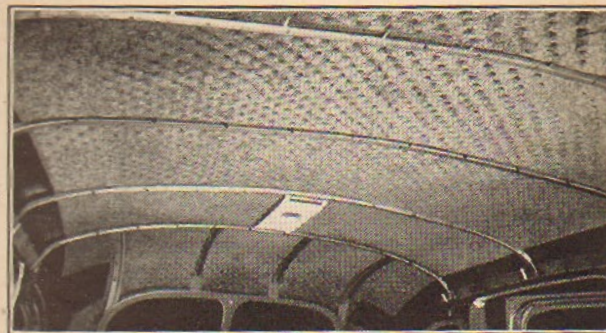
The front door upper hinge is of exclusive Packard design and differs from conventional hinges in that it is concealed and does not protrude. The hinge disappears under the cowl when the door is closed. It provides several additional inches of foot-room when the door is opened. This is an exclusive Packard development and contributes in marked degree to the ease and convenience of entrance and exit.



The special concealed door hinge adds several inches of door width at the bottom.

INSULATION

Great strides have been made in the last year in the art of insulating motor car bodies. In the study of body noises and their prevention it is safe to say none have gone further than Packard engineers in their investigation and improvements. Aided by university experts, months and months of research have produced numerous combinations of just the right materials to absorb annoying body noises. As a matter of fact, fifteen different insulating materials are used strategically throughout these bodies to blot out sound, heat and cold. The result is that Packard Six and 120 bodies are as noise-proof as modern engineering can make them.



A pad of insulating material, 17 layers thick, is cemented to the steel roof.

Roof

Overhead, beneath the smooth, all-steel panel of the roof with its braces and ribs of steel, is a thick padding of insulation made up of 17 layers of material. It is permanently cemented to the steel, and functions not only to absorb any vibration or sounds within the body, but also to insulate the interior from the hot summer sun and from cold in winter.

Panels

The same thick padding used on the roof is also cemented to the interior surfaces of the rear quarter panels. A plastic insulating compound is heavily sprayed on the panel above the wheel housings to silence effectively any vibratory noise which might originate there. At every point in the body a special material or combination of materials is employed to absorb or stifle rumble and noise.

Doors

The wide semi-flat surface of the door panels is another body location where noise might well be

expected to occur. On the inside of these panels, Packard sprays a thick viscous asphaltic compound that completely deadens drumming. It never hardens or deteriorates.

Cowl

The top and sides of the cowl are lined with heavy jute. The dash is insulated from the engine compartment with a full inch of special material before being trimmed with long-wearing, scuff proof leatherette. Toe boards are heavily covered with two thick layers of different insulating materials. Engine noise and engine heat are effectively kept out of the front compartment.

Floors

Like the roof, the all-steel floor of the new Packard Six and 120 presents a large surface of steel where drumming might occur. To eliminate any possibility of noise in this part and also insulate from cold, the floors of both front and rear compartments are double insulated. First with a thick layer of special sound-deadening asphalt impregnated felt. Second, with a heavy layer of jute cemented to the underside of the carpet in the rear compartment and to the underside of the rubber mat in the front compartment.

Trunk

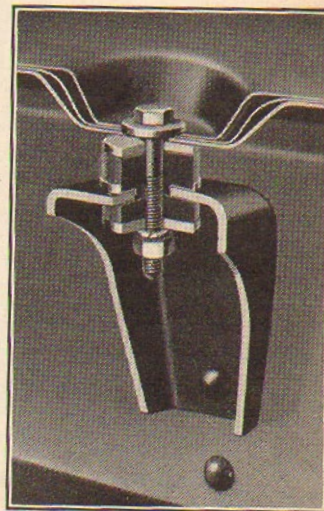
The interior of the trunk is heavily insulated first to absorb sound, second against extremes of temperature and third against entry of moisture. The lid of the trunk is sprayed with an asphalt compound to deaden any drumming which might originate in the metal parts. The sides are covered with thick jute

for silencing. The surface of this insulating material is printed with a conventional design to give a neat, attractive appearance to the interior. The forward wall is insulated with fibre board and finished with a layer of printed jute. The floor is insulated with an even heavier layer of asphaltic felt than is used on the floor of the body proper, and this in turn is covered and trimmed with a durable leather-like material.

Body Mountings

For 1939 Packard continues the new rubber insulated type of body mountings, but with definite improvements. Thus, the triple insulation against sound offered by Packard exclusively is perfected.

The first break in the noise path between road and body is, of course, the rubber tires themselves — common to all cars. Second, are the live rubber pads and bushings used in Packard Safe-T-flex front wheel suspension and new rubber floated rear suspension—positively no metal to metal contacts between either suspension and the frame except hand brake conduits and the steering mechanism—an exclusive Packard feature. Third, the newly de-



In this cutaway body mounting note how rubberized insulation prevents metal-to-metal contact.

veloped insulated body mountings which completely insulate frame and body—even the tie-down bolts are insulated—are used on Packard and only a few other makes of cars.

This year body and frame are securely held together by mountings on the side members of the frame only, to obtain greater quietness in the body. The insulating material used in these mountings (see shaded portions in illustration) is a new development this year. It is a special rubber impregnated material giving all the insulating properties of live rubber but sufficiently solid to prevent vibration of the body. This year these insulating pads are thicker, giving even better insulating results yet retaining their solidity and still preventing body vibration.

Safety Glass

Safety glass—one of the most important of recent safety developments—is now compulsory in all new cars on the highways in many states. Packard has used safety glass in windows and windshields for many years, affording every Packard owner this additional safety before compulsory by law.

Rustproofing

The deoxidine process of protecting against rust before painting produces a scientifically clean and dry surface that is untouched by human hands before being given priming coats.

In this process the parts are first washed with a phosphoric acid solution. Then they are scraped with steel wool to remove any rust or foreign matter. Finally, the parts are rinsed and thoroughly dried and then treated with two coats of high baked primer.

Painting and Finishing

Every step of body production from the raw plates of steel to the painting and finishing operations is completely controlled by Packard. The most modern equipment and methods are used, and body builders and finishers of exceptional ability and experience are employed. Therefore Packard production quality is not only unusually high, but always uniform. Other car manufacturers who buy their bodies complete from outside sources find it more difficult to control quality.



An additional coat of lacquer five times as heavy as an ordinary coat is applied to all door edges, trunk openings and trunk lid edges.

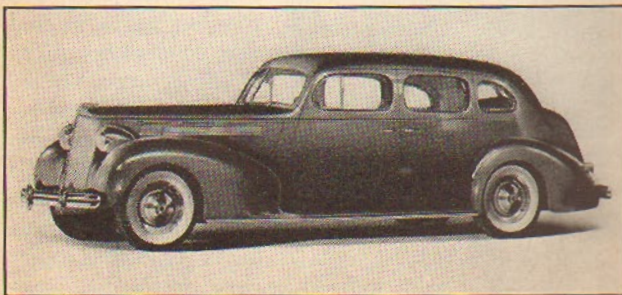
with a special paint gun—developed by Packard especially for this work—to all the edges of the doors, the

After the deoxidine cleaning process, each body is given three coats of surfacer, one black inspection coat and eight coats of a heavy type of lacquer color—12 coats in all. On light colored cars, additional lacquer coats are used to assure against color failure. In the lacquer operations all door edges and the body panels around rear fenders are given at least two heavy extra coats before being rubbed smooth. And at the end of the assembly lines, stripers give an additional extra heavy coat of lacquer

trunk lid and the trunk opening. Finally, at the end of the polishing line, another group of special painters inspects and touches up the most minute imperfections before final OK is given.

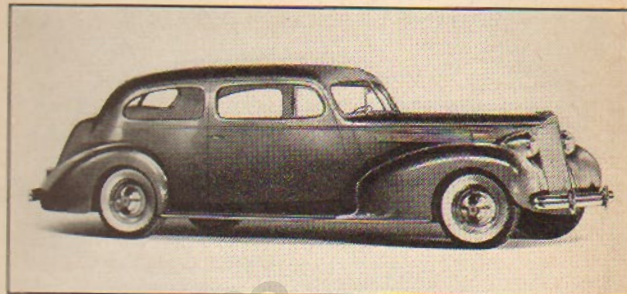
No. of Pass.	Body Style	Packard Six			Packard 120		
		Series	WB	Body Model	Series	WB	Body Model
5	Touring Sedan (4-Door)	1700	122"	1282	1701	127"	1292
5	Touring Sedan (2-Door)	1700	122"	1284	1701	127"	1294
2-4	Club Coupe	1700	122"	1285	1701	127"	1295
2-4	Conv. Coupe	1700	122"	1289	1701	127"	1299
5	Conv. Sedan	—	—	—	1701	127"	1277
2	Coupe	1700	122"	1288	1701	127"	1298
7-8	Touring Sedan	—	—	—	1702	148"	1291
7-8	Touring Sedan-Limousine	—	—	—	1702	148"	1290

PACKARD 120 AND SIX—BODY MODELS

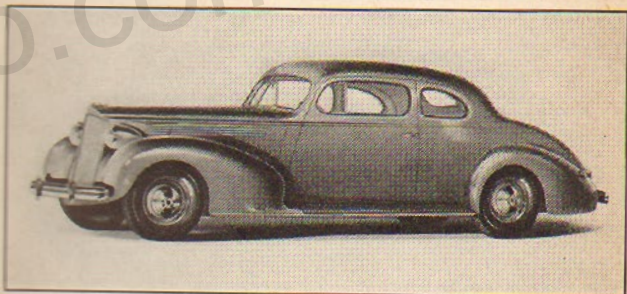


Packard 120—Four Door Touring Sedan.

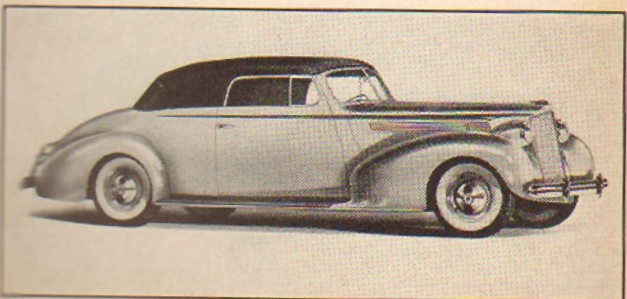
PACKARD 120 AND SIX—BODY MODELS



Packard 120—Two Door Touring Sedan

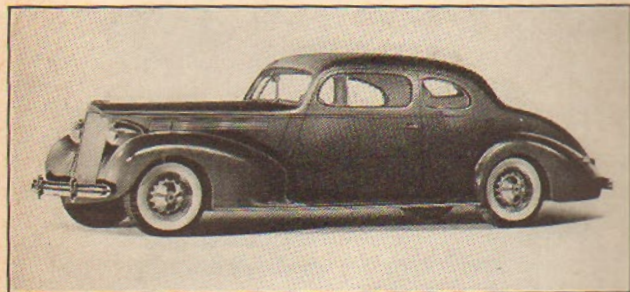


Packard 120—Club Coupe.

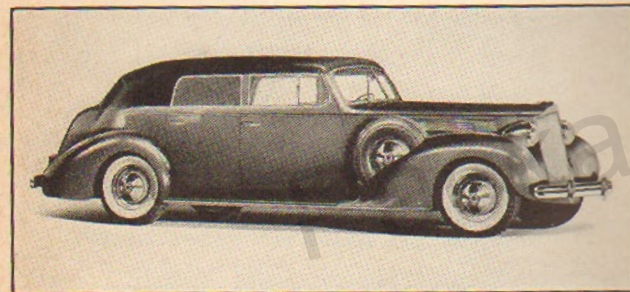


Packard 120—Convertible Coupe.

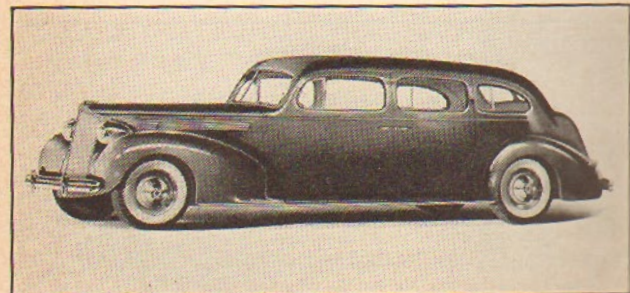
PACKARD 120 AND SIX—BODY MODELS



Packard 120—Business Coupe.

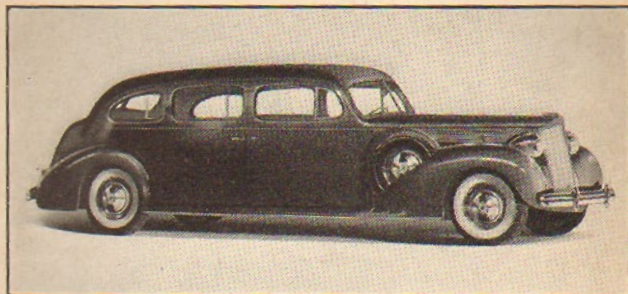


Packard 120—Convertible Sedan.

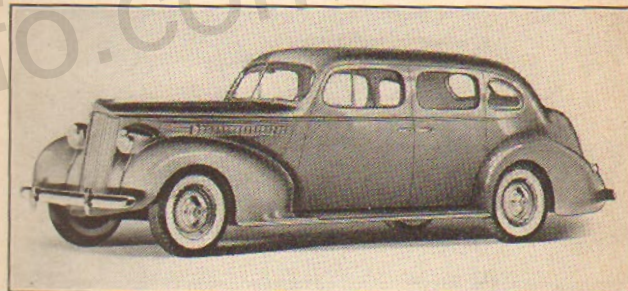


Packard 120—Eight Passenger Touring Sedan (wheelbase 148 inches).

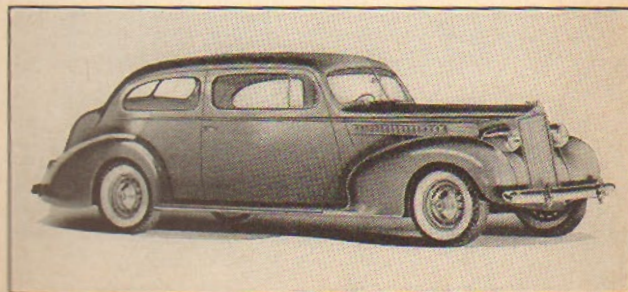
PACKARD 120 AND SIX—BODY MODELS



Packard 120—Eight Passenger Limousine (wheelbase 148 inches).

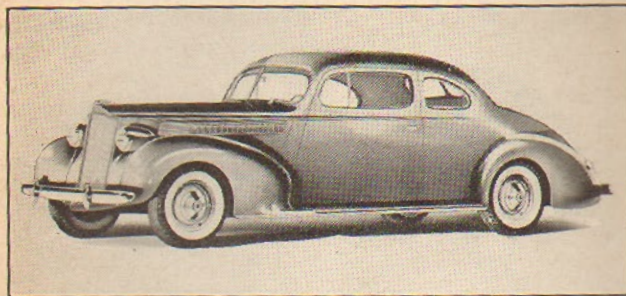


Packard Six—Four Door Touring Sedan.

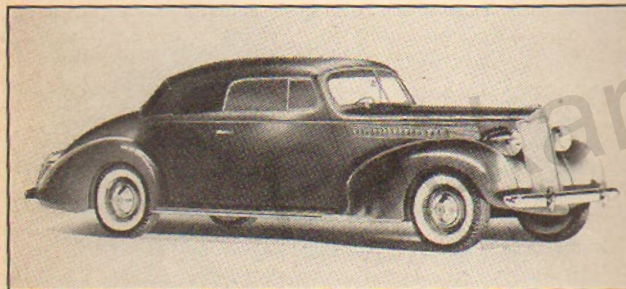


Packard Six—Two Door Touring Sedan.

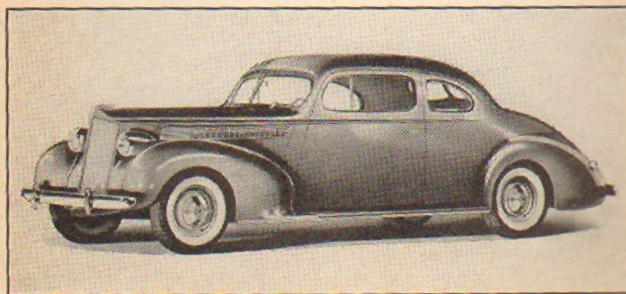
PACKARD 120 AND SIX—BODY MODELS



Packard Six—Club Coupe.



Packard Six—Convertible Coupe.



Packard Six—Business Coupe.

PACKARD 120 AND PACKARD SIX BODY DIMENSIONS
ALL MEASUREMENTS ARE IN INCHES

Body Models	5-Pass. 4-Door Touring Sedan	5-Pass. 2-Door Touring Sedan	2-Pass. Business Coupe	2-4 Pass. Coupe	2-4 Pass. Con- vertible Coupe	5-Pass. Con- vertible Sedan ★	8-Pass. Sedan ★	8-Pass. Sed.-Lim. ★
Seat Width								
Front—Shoulders	54 3/4	52 3/4	54 3/4	54 3/4	54 3/4	54 3/4	54 3/4	54 3/4
Hips	48 1/4	48 1/4	48 1/4	48 1/4	48 1/4	48 1/4	48 1/4	48 1/4
Elbow	56 1/2	56 1/2	56 1/2	56 1/2	56 1/2	56 1/2	56 1/2	56 1/2
Rear—Shoulders	56	56	—	—	—	55	57 3/4	57 3/4
Hips	47 1/2	47 1/2	—	—	—	47 1/2	49 1/2	49 1/2
Elbow	60	60	—	—	—	54 1/2	60	60
Folding Seat	—	—	—	2 seats 15 1/4 Wide	2 seats 15 1/4 Wide	—	2 seats 24 Wide	2 seats 24 Wide
Seat Height (Floor to top of cushion)								
Front Seat	18 3/4	18 3/4	18 3/4	18 3/4	18 3/4	13 1/2	13 3/4	12 3/4
Rear Seat	15 1/4	15 1/4	—	10 3/4	10 3/4	15 1/4	15 1/4	15 1/4
Folding Seat	—	—	—	—	—	—	12 3/4	12 3/4
Seat Depth (Front to back of seat cushion)								
Front Seat	18	18	18	18	18	—	18	19 1/4
Rear Seat	18 1/4	18 1/4	—	15 1/4	15 1/4	—	18 1/2	18 1/2
Folding Seat	—	—	—	—	—	—	17	17
Seat Back Height								
Front Seat	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4	22

★ Available only on Packard 120.

PACKARD 120 AND PACKARD SIX BODY DIMENSIONS—Continued

ALL MEASUREMENTS ARE IN INCHES

Body Models	5-Pass. 4-Door Touring Sedan	5-Pass. 2-Door Touring Sedan	2-Pass. Business Coupe	2-4 Pass. Coupe	2-4 Pass. Con- vertible Coupe	5-Pass. Con- vertible Sedan ★	8-Pass. Sedan ★	8-Pass. Sed.-Lim. ★
Trunk Dimensions (Cont.) Cu. Ft. Capacity (Usable) 6 Wheels	21.35	21.35	6.60 in. Wheel Compt.	6.60 in. Wheel Compt.	6.60 in. Wheel Compt.	17.60	21.35	21.35
Size of Trunk Door Opening Width	39	39	39	39	39	39	39	39
Size of Trunk Door Opening Height	33 $\frac{3}{8}$	33 $\frac{3}{8}$	41 $\frac{25}{32}$	41 $\frac{25}{32}$	41 $\frac{15}{32}$	33 $\frac{3}{8}$	33 $\frac{3}{8}$	33 $\frac{3}{8}$
General								
Front Door Width	35	45 $\frac{3}{4}$	39 $\frac{1}{2}$	39 $\frac{1}{2}$	39 $\frac{1}{2}$	35	39 $\frac{1}{2}$	39 $\frac{1}{2}$
Rear Door Width	28 $\frac{3}{8}$	—	—	—	—	28 $\frac{9}{16}$	34 $\frac{1}{8}$	34 $\frac{1}{8}$
Windshields—Width	44 $\frac{11}{16}$	44 $\frac{11}{16}$	44 $\frac{11}{16}$	44 $\frac{11}{16}$	44 $\frac{11}{16}$	44 $\frac{11}{16}$	44 $\frac{11}{16}$	44 $\frac{11}{16}$
Windshields—Height	13 $\frac{5}{8}$	13 $\frac{5}{8}$	13 $\frac{5}{8}$	13 $\frac{5}{8}$	13 $\frac{5}{8}$	13 $\frac{5}{8}$	13 $\frac{5}{8}$	13 $\frac{5}{8}$
Rear Windows—Width	37 $\frac{3}{4}$	37 $\frac{3}{4}$	37 $\frac{3}{4}$	37 $\frac{3}{4}$	23 $\frac{1}{2}$	23 $\frac{1}{2}$	37 $\frac{3}{4}$	37 $\frac{3}{4}$
Rear Windows—Height	11 $\frac{3}{4}$	11 $\frac{3}{4}$	11 $\frac{3}{4}$	11 $\frac{3}{4}$	5 $\frac{5}{8}$	5 $\frac{5}{8}$	11 $\frac{3}{4}$	11 $\frac{3}{4}$
Hood Length—120	50 $\frac{1}{2}$	50 $\frac{1}{2}$	50 $\frac{1}{2}$	50 $\frac{1}{2}$	50 $\frac{1}{2}$	50 $\frac{1}{2}$	50 $\frac{1}{2}$	50 $\frac{1}{2}$
Hood Length—Six	45 $\frac{13}{16}$	45 $\frac{13}{16}$	45 $\frac{13}{16}$	45 $\frac{13}{16}$	45 $\frac{13}{16}$	—	—	—

★Available only on Packard 120.

PACKARD SUPER EIGHT MOTOR SECTION

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PACKARD SUPER EIGHT BODY FEATURES CONSTRUCTION—DIMENSION—BODY TYPES

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THE PACKARD SUPER EIGHT FOR 1939

FORTY years ago, on the sixth of November, 1899, the first Packard rolled out of the electrical shop of J. W. Packard at Warren, Ohio, under its own power. Brilliantly engineered and far advanced in design for its day, this first Packard immediately and rightfully assumed the place of leadership among American fine cars—leadership which has been maintained through all the ensuing years.

Now on this fortieth birthday—in its ruby anniversary year, Packard presents a superb new motor car, a sparkling new Packard Super Eight. Style, performance, luxurious comfort, safety, dependability and economy are perfectly combined in this splendid new Packard offering. More sincerely than ever before in its history, Packard suggests "Ask The Man Who Owns One."

In appearance, the new Packard Super Eight displays masterful modern styling—graceful lines, sweeping curves, the glint and gleam of chrome judiciously used, proportions that are not only pleasing to the eye, but correct from every engineering angle.

Abundant power, for flashing acceleration, for breath-taking speed on the highway, for nimble performance in city traffic is developed by the big 130 H.P. eight cylinder motor. Yet this power is produced easily—quietly and at a surprisingly low cost per mile.

Luxury and comfort are words lightly used in describing modern motor cars, but one glance within the body of this new Super Eight—one mile on its soft cushions will convince the most sophisticated that

this elegant car really offers everything that the words luxury and comfort should convey.

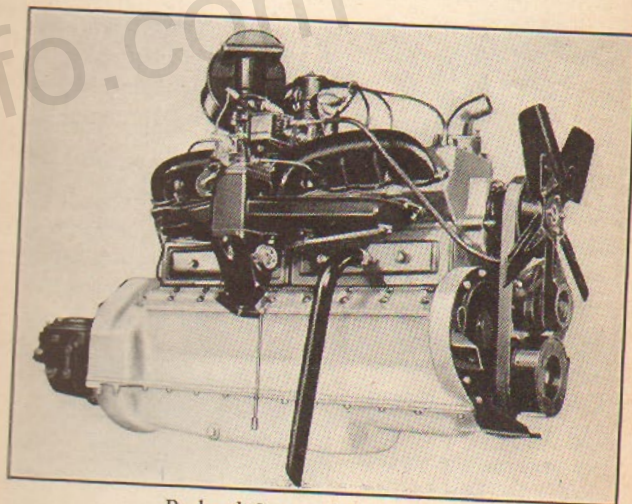
No car on the highway offers safety in greater degree than the new Packard Super Eight. Every feature known to modern automotive engineering has been embodied to promote the safety of its driver and his passengers. Steel surrounds one on every side in the body, a deep-membered rugged frame is further safety insurance, while positive, dependable Servo-Sealed hydraulic brakes give instantaneous and complete control of car speed.

Concerning dependability, it suffices merely to say that this new car is Packard-built—to the same high standards of fine car quality which have established the unassailable Packard reputation.

And, finally as to economy—advanced engineering, the adoption of every proved modern feature, the skill and experience of Packard motor builders assure minimum expense both in maintenance and in operation. Actual road tests have placed the economy of operation of the new Packard Super Eight up among the best.

PACKARD SUPER EIGHT MOTOR

Abundant power to drive the new Packard Super Eight is developed by the improved Packard Super Eight motor which has demonstrated its ability in millions of miles of owner service. High power output and silky smooth performance coupled with simplicity of design and proved maintenance economy make this motor one of the most outstanding power plants ever built. Now with its 130 horsepower in



Packard Super Eight Engine.

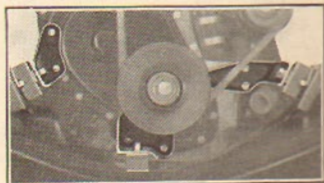
a new lighter car, this Super Eight motor provides unsurpassed performance. Constant refinement of the efficient basic design of this engine has brought it to an exceptionally high point of perfection.

Brief Specifications

Type.....	Vertical L-head
No. of Cylinders.....	Eight
Bore.....	3 $\frac{3}{16}$ "
Stroke.....	5"
Piston Displacement.....	320 cubic inches
Developed Brake Horsepower.....	130 H.P. 3200 R.P.M.
S.A.E. H.P.....	32.5 H.P.
Engine Mountings.....	Five in Rubber Six, with Econo-Drive
Compression Ratio.....	6.45 Standard 6.85 Optional

Rubber Engine Mountings

In order to absorb even the small engine tremors inherent in every internal combustion engine no matter how finely balanced, the Packard Super Eight engine is mounted at five points in soft cushions of live rubber—at the front, one center mounting which carries the weight of the engine and two control cushions at the sides especially designed to absorb normal power impulses. Two inclined mountings at the rear carry the rear of the engine and transmission. When Econo-Drive is installed a special additional rubber cushioned mounting is used at the rear. Unusual smoothness and quietness of engine operation is thus provided.



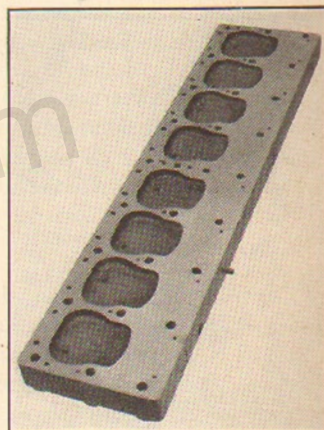
The engine is supported and steadied in five rubber mountings.

Cylinder Block and Crankcase

The Super Eight cylinder block is a single unit cast of close grain chrome nickel alloy semi-steel and is finished with great care and precision. A rib cast around the upper end of each cylinder reinforces the barrel and assures maximum permanent roundness. Each cylinder barrel is completely surrounded by a blanket of cooling water.

The crankcase is of cast aluminum alloy to save weight and provide a solid foundation for the nine main crankshaft bearings. It extends well below the center line of the bearing supports and is reinforced with longitudinal ribbing and rigidly braced cross members cast in the metal itself.

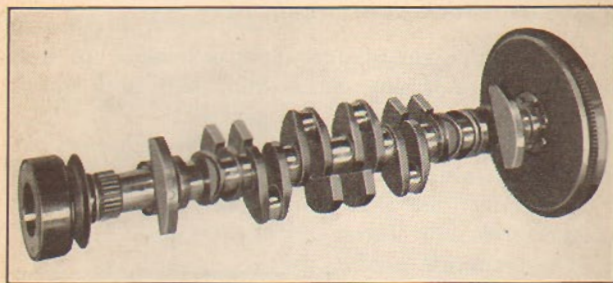
The cast iron cylinder head of the new Super Eight is of special design to produce a high turbulence of the fuel mixture in the combustion chamber.



Super Eight high-turbulence cylinder head.

Crankshaft and Bearings

Forged from steel of high tensile strength, the crankshaft is induction hardened, giving almost glass hard bearing surfaces while the full toughness and ductility of the center steel is retained. It is balanced 100% both statically (at rest) and dynamically (in



Nine main bearings support the crankshaft.

motion), The shaft weighs $97\frac{1}{2}$ lbs. and is supported on nine main bearings; that is, there is a main bearing on each side of each crank. Maximum support is thus offered the whole shaft.

Vibration Damper

The twisting action in the crankshaft known as torsional vibration and normally set up by the power impulses is eliminated by a special Packard vibration damper. It is exclusively Packard in design and combines both the advantages of spring tensioned friction members and the natural damping of rubber. It is sealed in rubber to prevent the entry of dirt or water and is effective at all motor speeds.

Connecting Rods and Bearings

Connecting rods for the Packard Super Eight motor are forged from high quality alloy steel and are machined to extremely close limits. Bearings are of the removable precision type—consisting of a steel shell lined with special copper-lead alloy instead of babbitt, as is commonly used. Copper-lead alloy bearings are the finest type of bearings known and are proof against

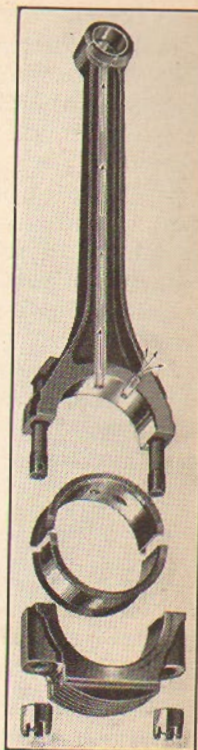
burn-out at any operating speed.

Each connecting rod is rifle-drilled from crank pin to piston pin to provide a passage for oil under pressure to the piston pin bearing. A small hole is located in the lower bearing so as to register with the oil passage in the crank pin. Thus oil is spurted continuously on the cylinder walls as the crankshaft revolves.

In manufacture, Super Eight connecting rods are held to extreme precision limits and each rod is carefully balanced for total weight and center of gravity. After piston, rings, pin and connecting rod have been assembled into one unit, it is again balanced to a variation of not more than $1/32$ of an ounce per set before being fitted into the cylinder.

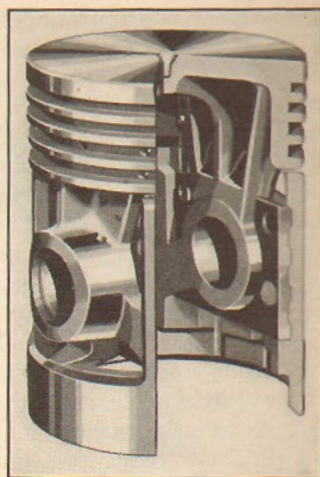
Autothermic Pistons

Autothermic pistons cast from special aluminum alloy are used in the new Packard Super Eight. These pistons combine all the advantages of light weight aluminum alloy with special advantages offered only by Autothermic design. While the pistons of the Super Eight motor differ in size and in some other respects from those in the Packard 120, the Autothermic design is the same in both. Therefore, we direct your attention to the full description given of Packard Autothermic pistons in the Six and 120 section of this Data Book.



Oil passage rifle-drilled in connecting rod leads oil to piston pin.

Packard Super Eight pistons have four rings—one compression ring, one combination compression and oil control ring and two special damper type oil control rings. All rings are carried above the piston pin. Piston pins are of the full-floating type— $\frac{7}{8}$ " in diameter. They are free to turn in both piston and connecting rod, thus preventing wear.



Cutaway Super Eight piston showing steel strut.

Camshaft

Drop forged and hardened by the carburizing process, the Packard Super Eight camshaft has almost glass-hard outside surfaces for long wear while the inside of the shaft remains tough and ductile for strength and durability.

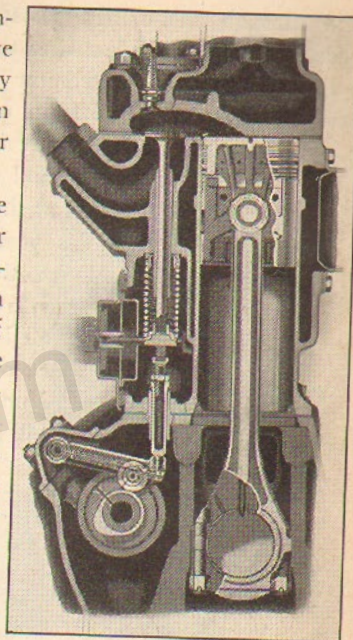
Cams are scientifically designed for extremely quiet operation. The shaft is drilled from end to end to form a gallery to conduct oil for the eight camshaft bearings and to lubricate the valve mechanisms and timing chain.

Valve Mechanism

The intake valves of the Super Eight are made from chrome nickel steel and the exhaust valves from Austenitic steel in order to resist the high exhaust temperatures and prevent warping. Valve guides are

pressed into the cylinder block, and valve stems are lubricated by pressure oil thrown from the valve rocker levers.

Instead of flat type valve lifters the Super Eight has special rocker levers—a much more costly type of construction. These rocker levers have roller cam followers operating between the camshaft and the valve tappets. Each rocker lever is drilled to conduct oil under full pump pressure to the rollers from the oil gallery in each set of lifters. They assure not only quiet valve operation, but long life without attention.



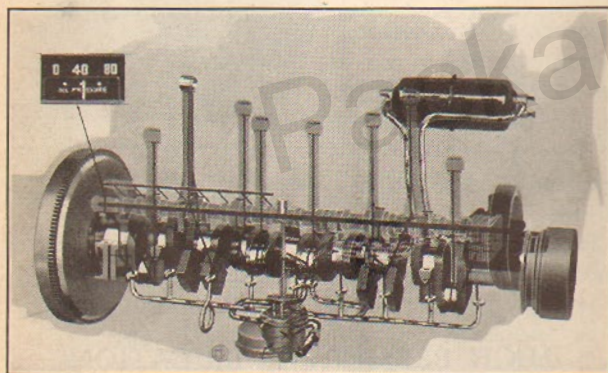
Rocker levers and cam followers make valves quiet and last longer.

HIGH PRESSURE LUBRICATION

The high pressure lubrication system of the Packard Super Eight engine is complete—every vital moving part is bathed in oil delivered under pressure from the gear type oil pump. Main bearings, connecting rod, camshaft bearings, rocker arms and timing chain receive a metered flow of oil direct from the pump,

and through rifle-drilled passages in the connecting rods, lubricant is conducted to the piston pins. Pistons, cylinder walls and distributor are lubricated by oil sprayed under pressure from oil bleed holes in the connecting rods. Oil pressure is controlled by a regulating valve at the left hand side of the crankcase.

The oil pump is located at the bottom of the crankcase and is equipped this year with a special new floating type screen. With the crankcase filled to the proper level the screen rests against an upper stop and even though the oil level lowers, the screen always floats on the surface of the oil. The intake pipe is, of course, submerged under all conditions. The advantage of this type of oil intake is that only the

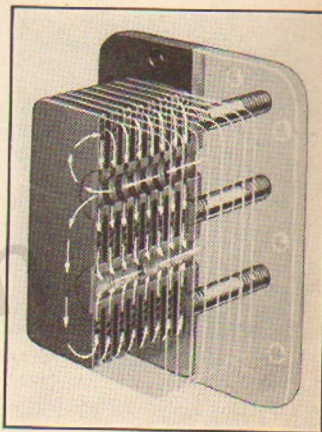


Complete pressure lubrication oil temperature regulator and full flow oil filter.

cleanest oil from the top is drawn into the pump while dirt, water or carbon that may have found its way into the crankcase is precipitated and remains at the bottom of the oil pan.

Oil Temperature Regulator

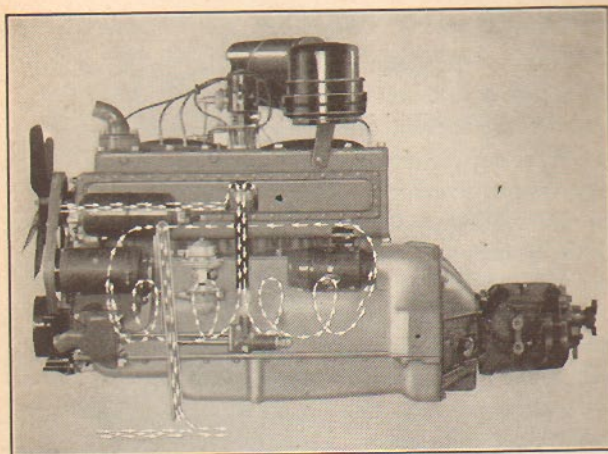
Motor oil temperature is controlled by being circulated through a small oil radiator located at the front outside of the motor and connected to the cooling system. This device not only maintains a proper oil temperature regardless of weather and driving speed but lessens the time necessary to warm up a cold motor—an important and exclusive Packard feature contributing to long life of the power plant.



Oil temperature regulator showing passage of engine oil.

Crankcase Ventilator

Every gasoline engine produces certain combustion gases and water vapor in the crankcase which should be expelled promptly to protect finely finished surfaces and precision fitted bearings from injury. The Packard Super Eight does not depend on a breather system with a single outlet pipe but uses a pressure suction method that pulls fresh air into the crankcase through a copper mesh filter in the oil filler pipe. It is forced through the crankcase by the fan action of the crankshaft picking up moisture and injurious gases and discharging them through a ventilator pipe from the valve compartment.



White arrows indicate operation of crankcase ventilator.

Oil Filter

All lubricating oil flowing from the pump to the motor is thoroughly cleansed of all carbon, sludge and other foreign matter by a full flow oil filter before delivery to the bearings. This reduces oil consumption and wear on engine parts.

FUEL SYSTEM

Fuel Tank

The fuel tank of the Packard Super Eight is designed for fast filling and has a capacity of 21 gallons. It is built with a sump at the bottom to accumulate dirt and water and a rubber coupling in the filler neck helps prevent damage in case of accident.

Important Note—To secure the best results in performance, economy and long life from the Packard Super Eight engine, it is recommended by the factory

to all owners that Ethyl gasoline, or other antiknock fuels of 76 octane or higher, should be used.

Fuel Lines

Fuel lines of heavy copper tubing are located on the outside of the frame where protection from flying stones is afforded. Here they are exposed to the cooling windstream, minimizing any tendency toward vapor lock.

Fuel Pump

The fuel pump, driven from the camshaft, is located on the outside, left of the engine where it also is protected from engine heat. All gasoline passing through the pump is first screened and any sediment or water is deposited in a visible glass bowl which may be emptied easily.

Vacuum Pump

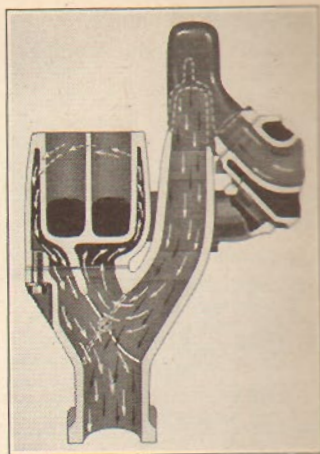
A vacuum pump mounted integral with the fuel pump supplies additional vacuum to that taken from the intake manifold to operate the windshield wipers. This is an important safety factor for it assures constant wiper speed in spite of varying engine speeds and loads.

Carburetor

The new Super Eight carburetor is of the duplex plain tube type with fixed main metering orifice and mechanically controlled economizer valve. It is mounted on the right side of the motor and insulated from the heat of the exhaust by an asbestos composition gasket.

Automatic Heat Control

Automatic manifold heat control—a feature of the Packard Super Eight fuel system—is a thermostatic device which directs the heat from all eight cylinders in a cold engine around the manifold hot spot, causing a rapid warm-up of the incoming fuel mixture. The thermostatic valve automatically cuts off the exhaust heat when the correct operating temperature has been reached and passes it directly out to the muffler. Thus a quick warm-up is effected under all weather conditions.



Automatic Heat Control:
White Arrows—Exhaust passing
around intake manifold.
Black Arrows—Exhaust to
muffler.

Automatic Choke

The automatic choke with which the new Packard Super Eight is equipped, entirely eliminates the nuisance, uncertainty and inefficiency of manual choking. It is operated by a built-in choke valve in the carburetor and a thermostatically controlled spring attached directly to the exhaust manifold. When the cold motor is started, the valve closes, reducing the air supply and thus enriching the fuel mixture. As the motor warms up the thermostat gradually opens the valve until the engine temperature reaches normal

for best operation. Quicker starting, quicker warm-up, smoother operation and greater gasoline economy are effected.

Air Cleaner and Silencer

A combination intake silencer, air cleaner and flame arrester is provided. It traps harmful road dust or other foreign matter from the air by passing it over a bath of oil and through a continuously wetted and constantly cleaned mesh before it reaches the engine. Thus, cleaning efficiency is maintained for much longer periods than with a conventional type cleaner. It also neutralizes the sound of the inrush of air to the carburetor and at the same time serves as a flame arrester in case of backfire. The device has no moving parts and requires no adjustment or service other than cleaning at 5,000 mile intervals (oftener in dust areas).

Exhaust Muffler

The exhaust muffler of the new Super Eight is designed to allow free passage of the exhaust gases and at the same time reduce the noise level to the minimum. Exhaust gases pass through a single perforated tube surrounded by a series of resonators or sound neutralizing chambers. Flexible mounting brackets on the frame insulate the passage of exhaust noises from the muffler to the frame.

COOLING SYSTEM

A combination of features found in Packard but in no other make of car provides cooling efficiency even under the most extreme conditions—high altitudes, temperatures and grades—which justifies its description as "Desert-Mountain Cooling". Engine heat is

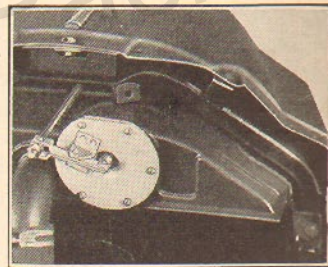
dispelled rapidly, the effectiveness of the lubricating oil is maintained and the life of all engine parts definitely prolonged.

Radiator

The Super Eight radiator core is of copper, tubular in design and the cooling system has a capacity of five gallons. Radiator core and front fenders are independently mounted in a metal cradle which in turn is carried on a rubber cushioned mounting on the front cross member of the frame. Thus the radiator is freely mounted and is relieved of strains which might tend to cause leaks.

Thermostatically Controlled Radiator Shutters

The full length, thermostatically controlled radiator shutters of the new Packard Super Eight afford positive control of cooling water temperature and eliminate any restrictions in the water circulation which are always present in cooling systems using a thermostatic valve in the cylinder head. Packard radiator shutters are operated by a thermostat in accordance with engine temperature. The thermostat is located in the top tank of the radiator where it cannot interfere with water circulation under any circumstances. The shutters start to open at a water temperature of 160° and



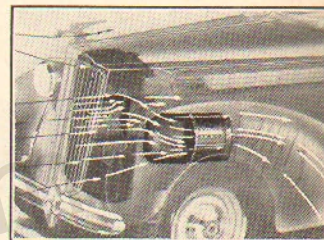
Thermostatic valve controls radiator shutters.

are fully open at 175°F. The cold engine warms up quickly, yet the radiator functions perfectly when the engine is warm because the shutters offer practically no resistance to air passage. Because the cold blast of air which would normally rush through the engine compartment is shut out, the engine oil system warms up more quickly and proper carburetion is attained more rapidly.

Fan-Blast Cooling Tunnels

Special tunnels built in under the front fenders are so designed that they permit a much more rapid discharge of air from the end of the fan blades.

This causes a greater inrush of air through the radiator and much more efficient cooling results.



Fan-blast cooling tunnels increase cooling efficiency.

Water Pump and Fan

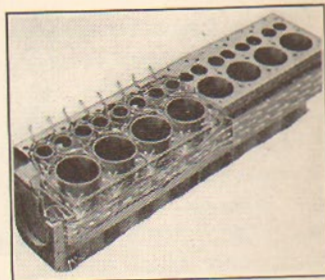
The water pump carrying the big eighteen inch fan is new this year. The pump shaft is shorter and is carried on double row ball bearings. It is self adjusting and never requires attention for packing. The new design makes it possible to seal in lubricant at the factory so that no further service is required for the life of the car.

Long Water Jackets Completely Surround Cylinders

The cylinder block of the Packard Super Eight engine is designed for the efficient cooling of cylinders

and valves. Each cylinder barrel is completely surrounded by cooling water. Many manufacturers have cylinders cast in pairs with a wall of cast iron joining them. This extra thickness of metal at one point in the cylinder wall not only affects expansion of the barrel as the engine warms up but makes it practically impossible to maintain bores that are truly round.

Water is distributed to each cylinder and valve by means of a water manifold running the length of the block from water pump to the extreme rear. Small orifices in the wall of this distributing manifold carry cooling water to each cylinder assuring even cooling of the entire block.



Separate cylinder barrels—
balanced cooling.

Large water volume surrounding every cylinder, an extra large radiator, large water pump capacity and Fan-Blast Cooling Tunnels give the Packard Super Eight for 1939 adequate cooling to meet any driving condition—^a high altitudes, torrid temperatures and steep grades. A pressure cap to insure cooling capacity at high altitudes reduces loss of water or anti-freeze solutions.

ELECTRICAL SYSTEM

Ample capacity is designed into the electrical system of the Packard Super Eight to meet the four major demands: 1. dependability of operation, 2. safety in night driving, 3. quick, positive starting and, 4. ample current for all electrical accessories.

Battery

The Super Eight battery is unusually large—17 plates and 114 ampere hours providing abundant capacity for all normal demands. Being of the high level type it requires attention only two or three times a year. It is accessibly located under the front seat for adequate cooling and easy service. Separators are rubber ribbed.

Generator

Air cooled by a suction type fan built into the belt pulley, the generator of the Super Eight has sufficient capacity to meet not only conventional car needs but the demands of a full complement of electrical accessories as well. This cooling of the generator assures full charging at all speeds—30 amperes.

A vibrator type voltage and current control automatically regulates the electrical output in direct relation to the demands of the electrical system and electrical accessories. When power has been used from the battery for starting the engine, current is delivered at the full rate until the battery is fully recharged again. Then the voltage control cuts down the output to the point where it handles only the present demands of the car electrical system and any electrical accessories. With voltage control regulating the output of the generator to actual requirements, overcharging of the battery is prevented and longer battery and generator life result.

Starter Motor

The new Packard Super Eight is equipped with a powerful six pole starting motor to insure a quick start even in the coldest weather. The starter is mounted on the flywheel housing and is engaged by a solenoid

actuated by a convenient starter button on the instrument panel.

Distributor

A distributor of the full automatic advance single breaker type is used. A combination of an automatic centrifugal governor and a vacuum spark control is used to provide maximum advance for full engine efficiency under all engine speed and load conditions. This naturally contributes to maximum fuel economy.

Fuel Compensator

Manual adjustment of the distributor to give an advanced or retarded spark setting to suit the various kinds of gasoline on the market in different parts of the country is provided by a fuel compensator incorporated with the distributor.

Headlights

Safety in night driving is obtained with Packard's latest improved system of headlighting. Four different headlight beams are provided by the manually operated control switch on the instrument panel as follows:

- (1) ALL THE WAY IN—Lights off.
- (2) OUT ONE NOTCH—Parking and tail lights, instrument panel lights.
- (3) OUT TWO NOTCHES—City driving beam both headlight beams tilted. Operation of the toe switch raises or lowers both beams alternately.
- (4) OUT THREE NOTCHES—Full headlights, country driving beams. Brilliant illumination for a very long distance. In the Super Eight headlight system the beams

of light cross in front of the car. Therefore, when the toe switch is operated the right hand beam is depressed for passing removing the glare from the oncoming motorist's eyes. At the same time the right hand side of the road is fully lighted by the left hand beam.

A red tell-tale signal light in the speedometer dial tells the driver instantly whether the full country driving beam or the country passing beam is being used. Instruments are illuminated at night by indirect lighting of the dials and the degree of illumination is controlled by a rheostat switch in the panel. In addition, two reading or map lights illuminate the ignition key switch and front compartment.

Light Bulbs

The following lamp bulbs are used in the new Packard Super Eight:

LOCATION	CANDLE- POWER	TYPE BULB (MAZDA)
Front Lamp—Right	32-32	2330L
Front Lamp—Left	32-32	2330L
Front Parking Lamp	1-1/2	55
Front Fender Lamp (Special Equipment)	1-1/2	55
Instrument Panel	1-1/2	55
Instrument Panel Reading Lamp	1-1/2	55
Instrument Panel Tell-Tale Signal	0.8	51
Rear Stop Lamp	15.	87
Instrument Panel—Radio Control Lamp	0.8	51
Rear Tail Lamp	3.0	63

Horns

Dual horns with matched tones give a strong pleasing yet effective long distance signal. They are mounted on the left front side of the motor under the hood.

Dual Protected Electrical Circuits

The electrical circuits of the Packard Super Eight have dual protection from overloads. The system is similar to that used on the Packard Six and 120 which is described in this Data Book.

Ignition Coil

The ignition coil of the Super Eight is located at the top of the motor close to the distributor and is connected with the ignition switch by an armored cable. When the switch is in the "off" position, the circuit is broken through the coil grounding it and making it impossible to start the motor by wiring around the switch.

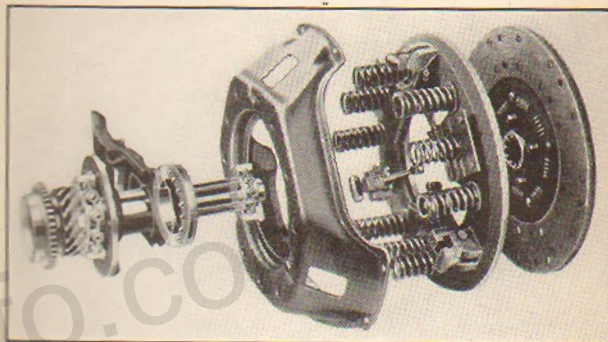
CLUTCH

The new Packard Super Eight clutch is eleven inches in diameter with ample capacity to transmit the power of the big motor. It is of the semi-centrifugal, single plate dry disc type and is well ventilated to reduce operating temperature. The semi-centrifugal design utilizes clutch release levers with weights to increase the pressure of the springs by centrifugal force. This centrifugal action and light springs permit light pedal action.

Nine pressure springs cushion the engagement of the plates and the ball release bearing is packed with lubricant for life, requiring no service attention. Ventilating openings in the cover provide cooling and insure

long life while a mechanical damper in the hub cushions engagement and driving stresses, insuring quiet operation and long life.

To insure utmost ease of operation, the Packard



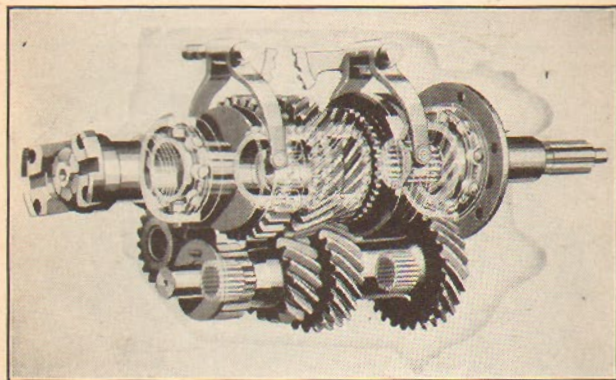
Packard Super Eight clutch assembly.

Super Eight clutch is equipped with three extra roller bearings in the pedal and throw-out lever which reduce pedal effort to a minimum.

UNIMESH TRANSMISSION

An entirely new transmission of the most advanced design is used in the new Packard Super Eight for 1939. Wide gears, helically cut assure not only quiet operation but long life as well and all gears except the reverse idler, are now in constant mesh at all times. All forward speeds are engaged through internal splined clutch members governed by a newly developed synchronizer for second and high speeds. With all forward speeds in constant mesh, clash-free shifting is the result and the danger of damage to gear teeth is eliminated.

All Packard Unimesh transmission gears are carburized hardened. Gears hardened by this special process have an extremely hard case to stand years



Packard Super Eight transmission—all forward speeds in constant mesh—9 ball and roller bearings.

of hard wear, while the inside of the gear remains tough and ductile to stand shocks and strains. Oil tempered gears used by other manufacturers cannot be made as hard because of resulting brittleness. Therefore, a compromise is made—the outside is not nearly as hard as carburized gears while the center of the gear is harder and brittle. Such gears cannot last as long or remain quiet as long as when carburized.

Every gear is lapped and held to unusually close limits and passes inspection only after the most severe tests for quietness in Packard sound test silent rooms.

Unimesh Transmission Bearings

Another contributing factor to the quietness, to the efficiency, to the long life of this new Packard Super

Eight Unimesh transmission is the unusual number of ball and roller bearings used—9 in all.

Both ends of the main drive shaft are carried on large ball bearings. The 2nd speed gear is mounted on two heavy duty ball bearings and the 1st speed gear is also mounted on two high-capacity ball bearings. Roller bearings are used at both ends of the counter-shaft and also between the clutch driving shaft and main driven shaft.

A special device in this Super Eight transmission supplies lubricant under pressure to the ball bearings on the 1st and 2nd speed gears on the main shaft. This device also operates as a silencing damper to insure maximum gear quietness.

Conventional Gear Shift

A new feature of this transmission is the mounting of the gear shift tower. It is located at the extreme left side of the gear case, $1\frac{3}{8}$ inches off center, thus providing extra knee-room for the center passenger when three are riding in the front seat.



Handshift mechanism is simple in design and sturdily constructed.

HANDISHIFT

A new remote control gear shift, conveniently located on the steering column, is incorporated this year

in the Packard Super Eight. While it is specially engineered for the Super Eight, it is similar in design to that used with the Packard Six and 120. This design is fully described in the Six and 120 section of the Data Book.



Handshift clears the front compartment floor of all levers.

AUTOMATIC ECONO-DRIVE TRANSMISSION

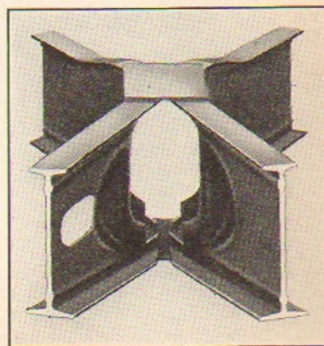
A new automatic Econo-Drive transmission also is available at small extra cost on the new Packard Super Eight. This is similar in design to that used with the Packard Six and 120 and a full description of the device and its many advantages is given in the Six and 120 section of this book.

PACKARD SUPER EIGHT CHASSIS

THE stability, the smoothness and comfort, the safety and long life of the new Packard Super Eight can be traced definitely to the combination of special advanced engineering features embodied in this splendid new chassis. The design has been carefully and scientifically balanced with each part and unit designed to coordinate in producing an harmonious whole. The Packard Super Eight is not dependent on one or two heavily advertised features with fancy, coined names to produce its marvelous ride. Safety is not a matter of one feature or set of features. Long life is built into every piece, part and assembly, from front to rear bumper.

Wheelbase and Tread

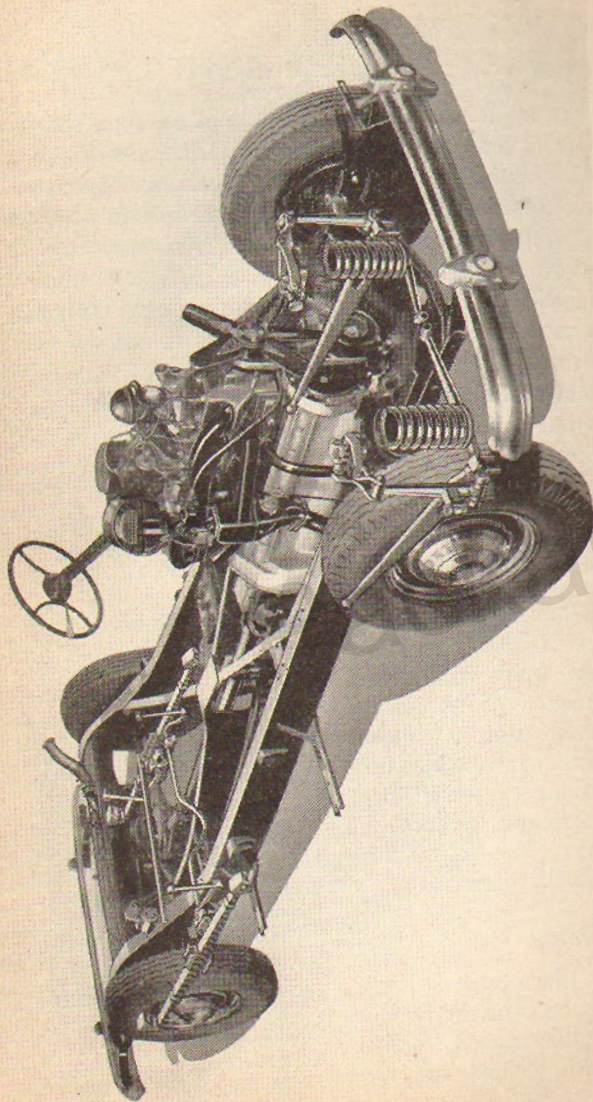
The new Super Eight has a wheelbase of 127 inches and is 200-13/32 inches from bumper to bumper without trunk rack. The tread is $59\frac{3}{8}$ inches front and 60 inches rear. It is a big, luxurious car—well proportioned, balanced in every line—a car full worthy of its name.



Frame

The Super Eight frame is of the famous double-trussed design with welded and riv-

Tapered I-beam girders are used in the frame X member.



Packard Super Eight chassis showing Safe-T-flex front and rear suspensions.

eted box-section side rails in the forward section ahead of the body, a tapered I-beam X member in the center and a heavily braced and reinforced rear end.

Many manufacturers still use channel steel in the X member of the frame but engineering tests have proved the tapered I-beam type to give much greater strength and rigidity. Arms of the X member taper from six inches at the side members to nine inches at the center giving unusual rigidity.

SAFE-T-FLEX FRONT WHEEL SUSPENSION

Every car in the Packard selection of models—from the big luxurious Packard Twelve to the smart new Packard Six—features famous Packard Safe-T-flex independent front wheel suspension. Of course, Safe-T-flex must vary from model to model to compensate for difference in weight, etc., but the Safe-T-flex design, result of years of research, testing and use in satisfied owners' hands, is the same for all.

The new Packard Super Eight for 1939 is equipped with Safe-T-flex, therefore, we direct your attention to the complete description, with illustrations, of Safe-T-flex as given in the Six and 120 section of this Data Book. Be sure you know every feature and every advantage and leave no stone unturned to impress on your prospect the many and important advantages exclusive to Packard Safe-T-flex front wheel suspension.

SAFE-T-FLEX REAR SUSPENSION

Introduced last year in the 1938 Packard Six and Eight models, the new Safe-T-flex rear suspension has proved its worth, its comfort, its safety, its de-

pendability in millions of miles of highly satisfactory service in the hands of Packard owners. Now, the manifold advantages of this modern and exclusively Packard rear suspension are brought to new Packard Super Eight buyers.

Rear Springs

Rear springs in the Super Eight are entirely new for 1939. They are similar in design to those used in the new Packard Six and 120 and a complete description of their construction and advantages will be found in the Six and 120 section.

Springs Brackets and Shackles

Both the brackets at the front and the shackles at the rear of the rear springs have cores of live rubber in the spring eyes. This permits free movement of the spring eye around the bolt as the spring flexes but there is absolutely no metal to metal contact and the noise path between the rear axle and the frame is effectively broken.

Opposed Shock Absorber Mountings

Double acting, hydraulic shock absorbers are mounted on the axle instead of the frame, with the arm of one extending toward the front of the car and the arm of the other toward the rear. Thus, shock absorbers not only function perfectly to control the action of the new softer springs but they also act as hydraulic torque arms assisting the springs in keeping the axle in normal position in spite of driving and braking reactions which tend to roll the axle.

Fifth Shock Absorber

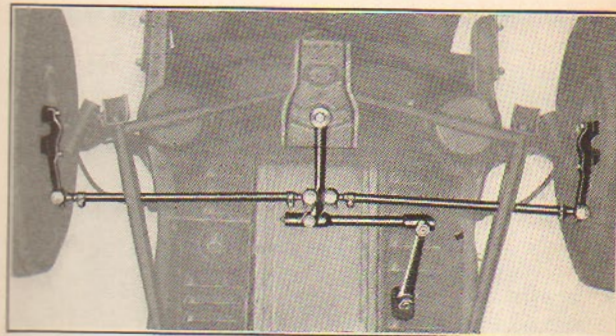
An important improvement has been incorporated in the lateral stabilizer for 1939. A fifth shock absorber of the same design as used in the new Six and 120 is used and accomplishes the same results as described in the Six and 120 section.

Roll Control Bar

A roll control bar is used at the rear axle to prevent excessive roll or sway of the frame and body when rounding a curve at high speed or when traveling on rough roads.

HARMONIZED CENTER STEERING

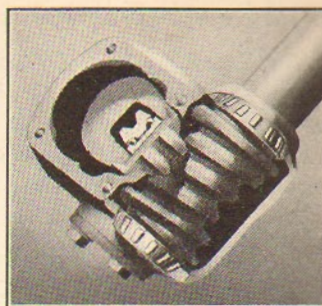
Easy steering is achieved in the new Packard Super Eight by a perfectly balanced cross steering mecha-



Worm's-eye view Packard harmonized steering.

nism. The steering gear is a worm and double-tooth roller. The roller is carried on a double-row ball bearing and the worm on two tapered roller bearings.

Two cross tubes with spring-loaded ball joints join the center steering arm with the steering knuckles at the wheels. Thus each wheel can follow road irregularities independently without transmitting road shocks to the steering wheel.

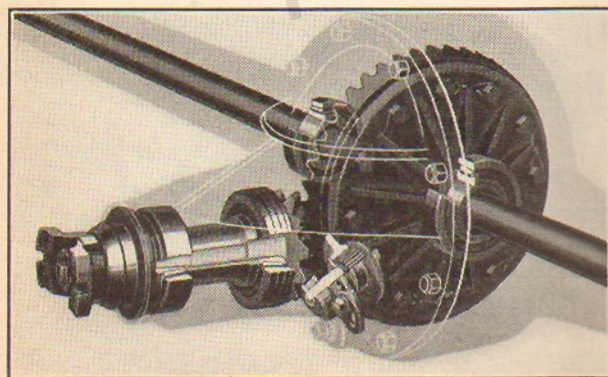


Worm and double-tooth roller steering gear.

Hypoid Rear Axle

Developed and pioneered by Packard thirteen years ago, hypoid rear axle design has been constantly improved and is used on every Packard from the new Six to the Twelve.

The hypoid rear axle used on the new Super Eight was specially developed to transmit the power of the



Packard Super Eight rear axle showing special roller bearing on the ring gear.

big Super Eight motor. Axle shafts are of carbon manganese steel and the housing is fabricated from rolled steel with special reinforcements.

The driving pinion is mounted on two large tapered roller bearings and the differential and ring gear are also carried on tapered roller bearings. A special roller bearing is mounted back of the ring gear directly opposite to the pinion. This serves to maintain proper alignment between the gear and pinion under the full power of the motor. Rear wheels rotate on large roller bearings and a special double seal, one on each side of the bearing, prevents loss of lubricant.

HOTCHKISS DRIVE

All Packard cars and the great majority of all other cars manufactured today use Hotchkiss drive. With the driving force transmitted to the frame through the springs, the shocks of starting and stopping the car are absorbed by the springs. Hotchkiss drive reduces unsprung weight and permits the wheels to follow road irregularities freely. The special arrangement of Packard opposed shock absorbers effects a new improvement in Hotchkiss drive action otherwise unobtainable.

Propeller Shaft and Universal Joints

The tubular propeller shaft of this new Super Eight is exceptionally large in diameter—3 inches—to give rigidity and eliminate the tendency to vibrate at high speeds. It is balanced both at rest and in motion and is connected to the transmission and rear axle by modern roller-bearing universal joints.

PACKARD SERVO-SEALED HYDRAULIC BRAKES

Packard engineers realize that good brakes are the most important safety factor on a car and the best insurance against accident. Therefore, the new Super Eight is equipped with Packard Servo-Sealed self-energizing brakes. Being hydraulic, all four brakes are applied with equal force and because advantage is taken of the self-energizing action natural between the brakes shoes and brake drums, less physical effort is required on the brake pedal to give quick, positive stops.

Moreover, because of the design of the brake mechanism in the wheels, this extra braking pressure is distributed evenly over all the surface of the brake shoe.

Centrifuse Brake Drums

The lightness of pressed steel and the excellent qualities of cast iron for braking surfaces are combined in Packard centrifuse brake drums. They consist of a steel shell into which is spun a lining of cast iron on the braking surface. These cast iron braking surfaces resist scoring, last longer and insure against fading. Naturally, linings also wear longer. Moulded brake linings are used, $2\frac{1}{4}$ inches wide, with a total area of 232 square inches. An effective multiple seal protects the brakes from water, sand and dirt which otherwise might enter the mechanism.

Hand Brake

A hand brake lever mounted under the instrument panel at the driver's left, operates the brake shoes in the rear wheels through a mechanical linkage. This

type of hand brake provides about twice the actual braking area of the propeller shaft type.

Wheels and Tires

Wheels are smart new steel discs with large 10 inch chromium hub caps. They are slotted at the rim for mounting individual tire chains. On five-wheel cars the spare wheel is carried in the trunk. All Packard Super Eight models are available with six-wheel equipment and fender wells.

In combination with these massive looking wheels, big 7.00x16 four-ply tires are standard equipment. On the eight-passenger sedan and limousine six-ply tires of the same size are used.

ANTI-FRICTION BEARINGS

In every motor car of the same general design there are approximately the same number of friction points in the chassis. At these points some sort of bearing must be used—ball bearing, roller bearing, metal bushing or rubber bushing and the type used is largely a matter of quality versus economy.

A total of 54 ball and roller bearings besides 26 rubber bearings are used on the Packard Super Eight—an important example of Packard fine quality.

CHASSIS LUBRICATION

The simplicity and quality of the Packard Super Eight, the liberal use of anti-friction bearings and the unusual number of rubber bearings all combine to reduce to a minimum the number of chassis points requiring lubrication. There are only 17 points that ever require lubrication service—15 at 2,000 mile intervals and 2 every 10,000 miles.

PACKARD SUPER EIGHT BODY FEATURES FOR 1939

Never before in Packard history has Packard traditional styling been interpreted with such a perfect blending of sparkling beauty and simple dignity as in the new Packard Super Eight for 1939. Beautiful windstream lines, graceful curves and contours, pleasing planes and panels acquire sparkle and modern spirit from a new and judicious use of gleaming chrome.

Fine car buyers will appreciate the modish smartness of this beautiful new Super Eight. They will like its grace and symmetry—its distinction and poise—and when they glimpse the tasteful luxury of the interior, they will sense at once, the same standards of style and quality to which they are accustomed in their own homes.

In the new Super Eight, as in all Packard-built cars for more than three decades, the well known Packard "life lines" lend beauty and distinction. The pleasurable motoring provided by Packard mechanical excellence is paralleled by the years of proud ownership which Packard enduring identity has assured.

Front Appearance

Distinctively Packard—the pleasing modern lines of the

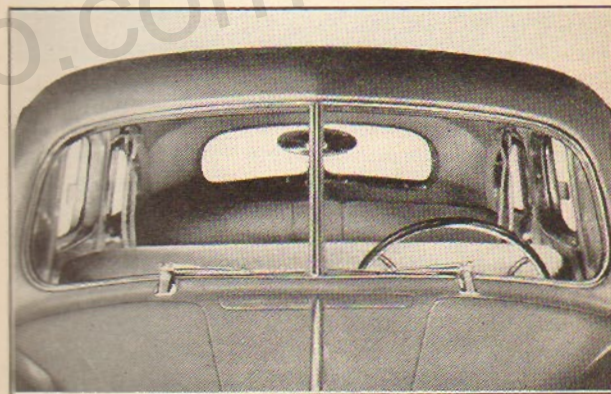


A new interpretation of Packard front-end styling.

Printed in U. S. A.

radiator shell of the new Super Eight are the modern development of those lines created by Packard a quarter of a century ago. Radiator shutters extend in unbroken lines from top to bottom, and the impression of depth—of massiveness is increased by the painting of alternate shutters in body color. The remaining shutters are finished in chrome and the whole effect is strikingly beautiful.

Fenders are high crowned and sweep downward in front below the heavy chrome bumper. Headlamps, long, tapering, and trimmed with horizontal bars of chrome, nestle in the shallow valleys between fenders and radiator.



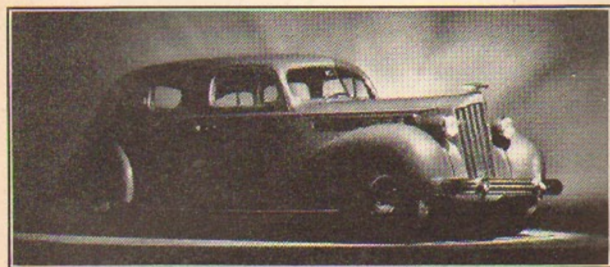
The windshield is divided and framed with chrome.

A fixed panel down the center of the hood gives a distinctive Packard fine car touch and leads backward to the rakishly sloping, chrome bordered V-type windshield. With a depth of 13 $\frac{5}{8}$ inches and its exceptional width, the windshield gives more than generous vision upward as well as sidewise. Twin

windshield wipers, hinged at the bottom, are mounted on ornamental brackets.

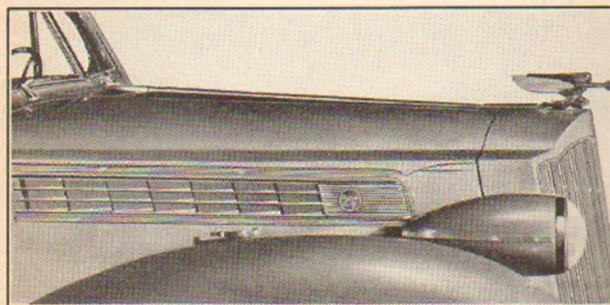
Side View

The broadside view displays from front to rear an attractive combination of windstream lines and curves. Over-all length is accentuated by the lines of the long



From the front, the Packard Super Eight is imposing.

tapering hood, by the flowing curves of the fenders and by the new chromium moulding extending from the front of the louvers to the rear panels of the body. The louvers are entirely new in design, suitably set off by chromium trim and given a new note of distinction

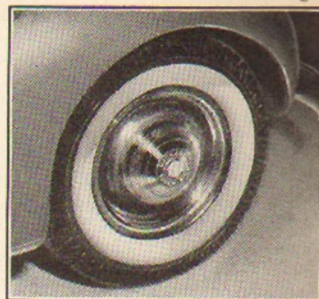


Louvers of chrome are decorated with a medallion of colored enamel.

by a medallion of colored enamel set into the front section of the louver.

As already stated the new headlamps are long and torpedo shaped and from the side view they also increase the impression of greater car length and add a note of fleetness to the whole design.

Hub caps are new and made even more attractive by a series of flutes

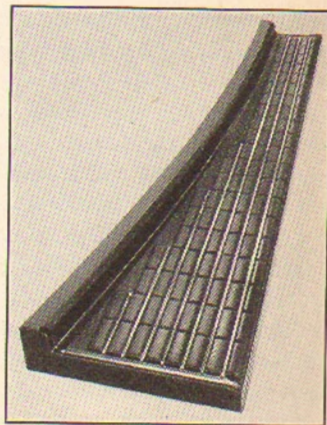


Concentric flutes lend sparkle to the hub caps.

which circle the Packard Super Eight name and the familiar red hexagon. Wheel rings of bright chromium are standard equipment.

The running boards are conveniently wide to permit safe, easy entrance and exit and this year a new

treatment of chrome strips notably enlivens the side view of the car. These beaded chrome strips run lengthwise of the boards, two inches apart while pads of moulded rubber between, assure secure footing and provide an unusual and attractive appearance. A wide chrome beaded strip trims the outer edge of the running board



and is carried across the front fender apron.

Running boards are unusual.

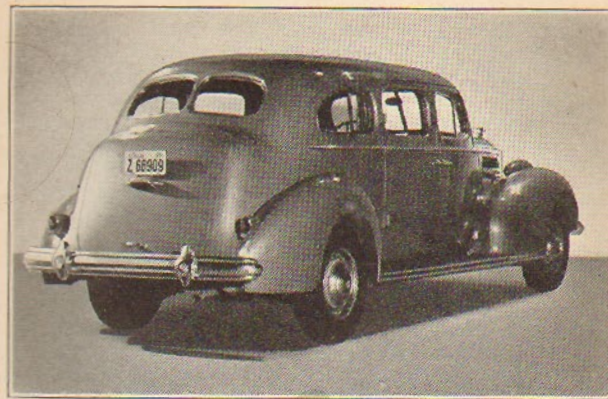
A new "free wheeling" handle is used outside on the right hand door. When this door is locked, the outside handle is free to turn, avoiding the difficulty of the would-be thief using a pipe or similar implement to break the lock. The handle is held in correct horizontal position by a spring.

The top of the windshield slopes gracefully toward the rear, blending with the smooth, sweeping lines of the big steel roof. Rear panels join the trunk lines in perfect harmony and the rear is finished by a heavy curved bumper with bumper guards. Incidentally the inside of the bumper bars, both front and rear, are finished in color to match the body.

Rear View

New rear body lines in the Packard Super Eight harmonize with the streamline styling of the other body and fender lines. The rear window, framed with chrome, is sloping V-type, reducing the glare from following headlights. It is divided by a vertical bar which is an integral part of the panel and strengthens the whole rear upper structure. The trunk is spacious—nearly fifteen cubic feet of usable space, and the trunk lid operates on concealed hinges, leaving the outer surface free from obstructions, better looking and easier to keep clean. A convenient storage space for tools is provided at one side of the trunk compartment.

Tail lights are attractive and besides housing bulbs for stop lights and tail lights, also have reflector buttons below—an additional safety feature. In the center of the trunk cover, an attractive identification lamp illuminates the license plate and displays the Packard name.

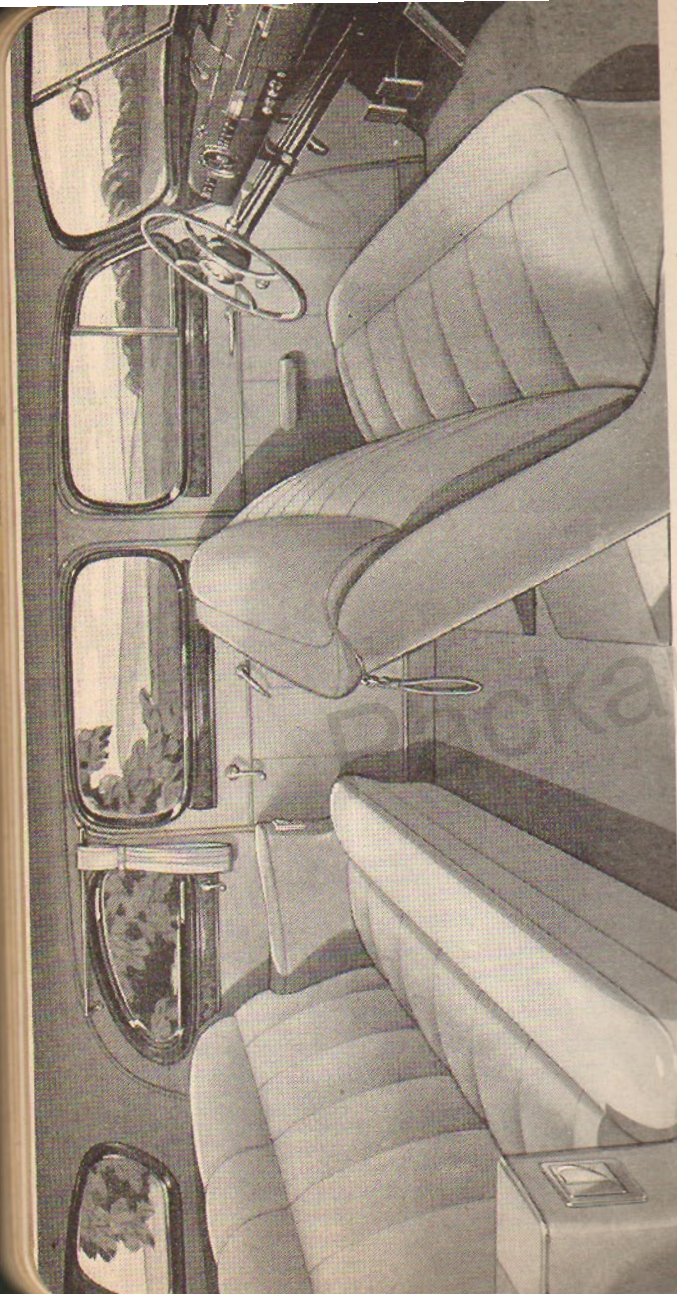


Fenders, trunk and tail lights add distinction to the rear.

The spare wheel and tire on five-wheel models are carried in a space below the shelf in the trunk. On all models with six-wheel equipment the two spare wheels and tires are carried in wells in the front fenders. In six-wheel cars, the shelf is omitted from the trunk, increasing usable trunk space to over 21 cubic feet.

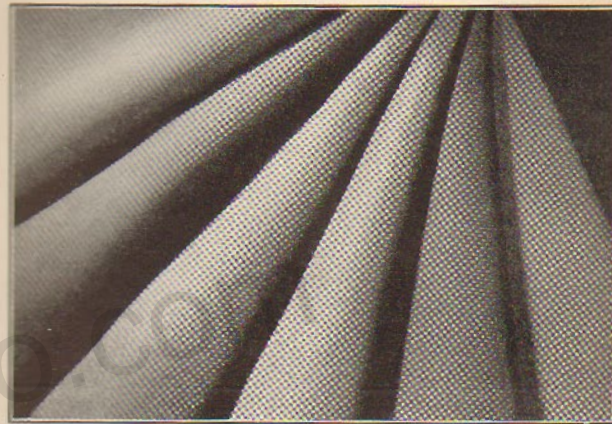
INTERIOR BODY FEATURES

The luxury, the taste, the refinement that so unmistakably characterize the homes of America's fine car owners are immediately evident in the interior of the new Packard Super Eight. Designed for restful comfort, the new body offers generous seat width, ample room for three adults in both front and rear seats. The front seat is 48¼ inches from edge to edge of the cushion, while the rear seat is 47½ inches from arm rest to arm rest. Leg-room is abundant for even the tallest to rest in comfort and head-room is pro-



Inviting luxury, refinement and comfort are evident in the Super Eight interior.

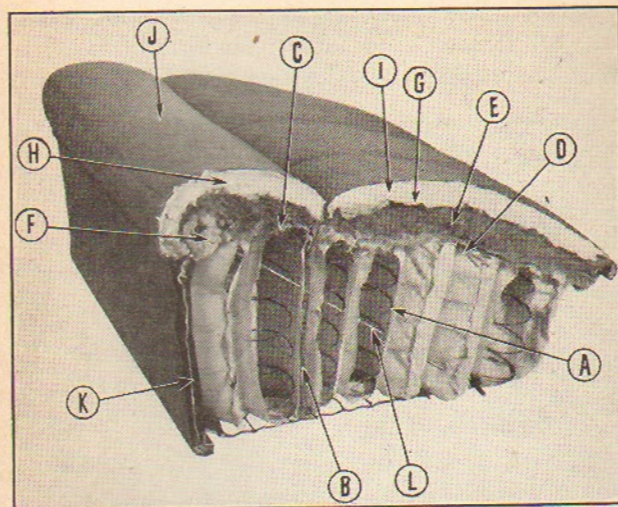
vided for those occasions when top hats are worn. And so through each interior dimension one finds generous provision for relaxation and riding comfort.



An upholstery selection of six superior fabrics is offered.

In the matter of upholstery and trim, quality and good taste are obvious not only in the materials used but also in the artistry and workmanship of the tailoring. A selection of four different patterns and textures of superfine broadcloth as well as two Bedford cords is offered in the closed models and in the convertible coupe and convertible sedan seven colors in leather are optional—gray, brown, blue, light green, dark green, black and red.

Packard cushions have a foundation of Marshall type, small diameter coil springs each enclosed in a separate cloth container to distribute weight evenly, prevent spring noises and provide utmost comfort. The finest quality cotton, wool and curled hair are sewn into thick pads and panels. Therefore, cushions are luxurious and comfortable and retain their shape



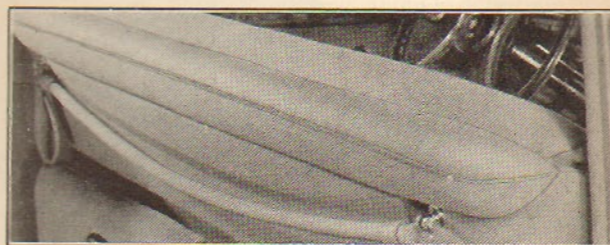
Packard Super Eight Cushion Construction:

- A. Coil springs of small diameter in separate containers distribute weight evenly.
- B. Burlap skirt to hold bolster wire even.
- C. Lateral spring runs the length of the cushion—allows freer action of coil springs.
- D. High grade cotton sheeting enclosing coil springs.
- E. Real curled hair interlaced on heavy fabric foundation.
- F. Cotton roll insures contour and knee support.
- G. White cotton drill foundation for curled hair pad.
- H & I. Finest grade of China cotton wadding between curled hair pad and upholstery fabric.
- J. Long wearing wool broadcloth or Bedford cord upholstery material.
- K. Front facing—blue wadding.
- L. Cross brace helps retain cushion shape.

without sag and stretch even after years of service.

The upholstery of the Super Eight is smartly tailored in a wide tufted design—luxuriously soft and comfortable—with a firm bolster across the front of the seat to support the knees. A folding arm rest in

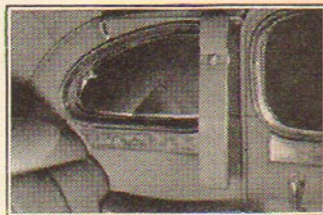
the center of the rear seat back is particularly restful for two passengers.



The top of the front seat back is padded with a roll of soft rubber.

At the top of the front seat just back of the cushion is a thick, soft roll of sponge rubber neatly covered and worked in as part of the upholstery design. In case of a forced sudden stop, if passengers are thrown forward, the soft roll top of the front seat protects them from injury.

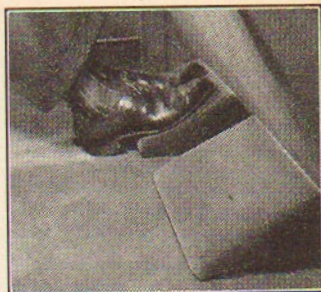
Arm slings in the rear compartments are generously long and softly padded with sponge rubber on the inside to form a comfortable handhold for rear seat passengers. They slide on a lacquered bar forward and backward so that the passengers may adjust them to the most comfortable position. Additional assist cords, to assist in entering the car, are located at the point where the robe rail is attached to the back of the front seat.



Arm slings are padded with sponge rubber.

Ash receivers are conveniently recessed into the front end of rear seat arm rests and the one on the

right side is equipped with an automatic electric cigarette lighter. Hassocks covered with fine mohair carpet are provided instead of the usual recessed foot rest in the back of the front seat, assuring greater comfort for each passenger.



Two hassocks replace the ordinary foot rest.

Window garnish mouldings are attractively finished in walnut graining to match the new instrument board. Even the little plungers in the window moulding that control the rear door locks are of soft brown rubber. Front door locks are of the remote control type similar to those previously used.

Interior hardware is new, gracefully designed and tastefully done with a satin finish. Floors in both front and rear compartments are covered with a beautifully fine mohair carpet backed with a thick pad of sponge rubber. Luxuriously soft to step on, these carpets also serve to insulate from sound, heat and cold.

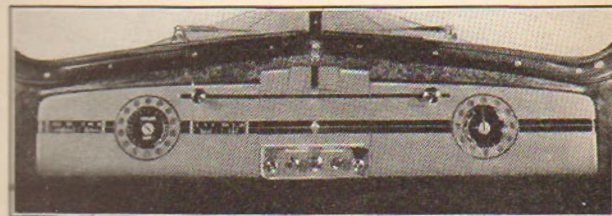


New hardware is done in satin finish.

Instrument Panel

Smartly modern in every detail of design, and blending pleasingly the sparkle of chrome with the satin

smoothness of moulded plastics and the richness of French burl walnut graining, the new instrument panel enhances the beauty and accentuates the good taste of the whole interior.



The instrument panel is finished in French burl walnut, harmoniously colored plastic and chrome.

The instrument board itself curves forward to the V-type windshield forming a shelf on which the windshield wiper control is mounted. Defroster openings at each windshield direct warm air from the heater across both halves. The instrument board, as distinguished from the moulded panels, is finished in beautiful French burl walnut graining. The color is light in the modern mode and the whole effect very attractive, very pleasing.

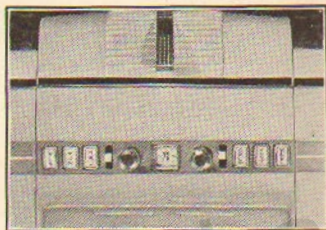
The three panels which carry the instruments, gauges, etc., are moulded of colored plastic in a tone that harmonizes perfectly with the shade of the walnut graining. Across the center of the face of these panels a band of bright chrome is inset, forming a foundation for the instruments, clock, etc. The top of the central panel is carried upward, rounding part way over toward the windshield. This curved panel is decorated by a series of parallel flutes and in it is recessed an unusually large and very convenient ash receiver. A modernistic handle of chrome gives a note of sparkle.

The left hand panel carries a new and very attractive speedometer dial and a full set of gauges. The speedometer consists of a round central portion set flush in the plastic and showing the mileage pointer. This opening is set off by a double beading of chrome. Speed figures are shown on inserts of contrasting color set into the plastic panel and are illuminated with a diffused light when the headlamps are turned on. The central portion as well as the gauges is softly lighted from the sides.

In the central panel, the horizontal chromium band carries an attractive dull silver and red Packard crest. When a radio is installed, this chromium band is replaced by a panel containing the radio controls. Below in a recessed portion, which may be brightly illuminated, are the car controls—ignition switch, throttle, lights, starter and thermostatically controlled cigar lighter.

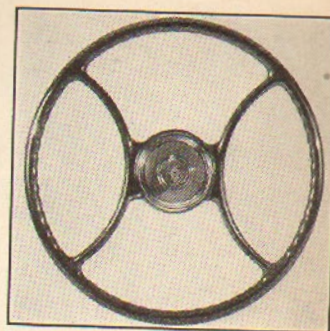
An electric clock of the same design as the speedometer is carried in the right hand panel and is illuminated in like manner. This right hand panel is also the door to an exceptionally large glove compartment. It is equipped with a lock and separate key which also locks the trunk.

The steering wheel in matching color is of new and graceful design this year. Instead of a conventional spider, the new wheel has two curved spokes connecting the rim with the hub at four points. This new design is not only better looking, but is much more comfortable in the hands. Just below the steer-



A removable panel provides accommodation for radio controls.

ing wheel is the new Handishift remote control lever—unobtrusive and convenient to the driver. A complete description of Handishift is given in the Six and 120 section of this Data Book.



The new 18-inch steering wheel is of attractive design.

Comfortable Roominess

As previously shown, this beautiful new Packard Super Eight affords even greater roominess for relaxed comfort than preceding models. Seats are much wider and shoulder-room is ample to make this wider seat room practical and usable. Leg-room is generous and luxurious comfort is provided by the movable foot hassocks. Complete body dimensions are given in full detail in the Body Dimensions section.

The front seat is, of course, fully adjustable and as it is moved forward, it also moves upward automatically.

Straight across front seats with divided backs are used in the coupes, and tilting seats and wide doors give easy, comfortable entrance and exit to the rear compartments. The club coupe and the convertible coupe have two inside occasional seats which fold away into the rear of the body when not in use.

Floors in all compartments of all models are practically flat, not only improving interior appearance but also assuring greater comfort in entering and leaving the car.

Ventilation

Comfortable, controlled ventilation to suit the individual needs and wishes of each passenger is provided by the Packard proved ventilation system which is fully explained and charted in the Six and 120 section.

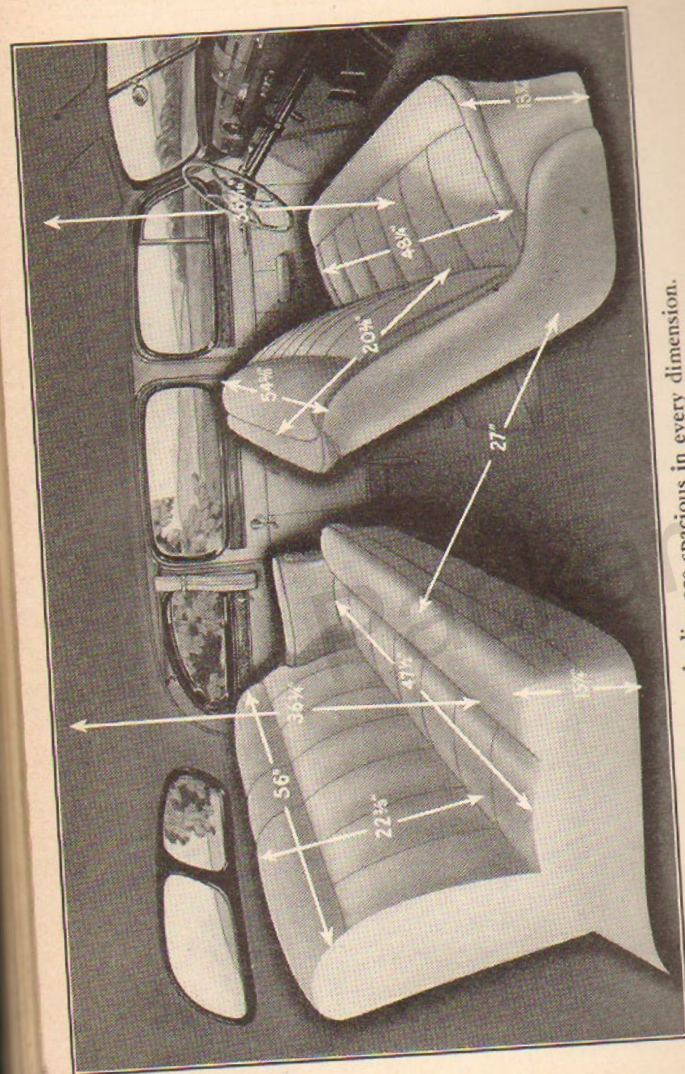
The whole interior of the new Packard Super Eight displays a charm and luxury which represents the best efforts of Packard engineers and stylists. Beauty, safety, luxury, durability have been achieved, all in equal measure and all without sacrifice of good taste. Rather it should be said that refinement is more apparent than ever before. Fine car buyers will find the new Super Eight a de luxe car in every respect—a truly fine car in a convenient, practical size.

SEDAN AND LIMOUSINE FOR EIGHT PASSENGERS

THE new 1939 Packard Super Eight is also built in two eight-passenger body models—the sedan and limousine. Every dimension of these commodious bodies provides ample roominess for complete comfort for each of eight full sized adult passengers. In addition to plentiful leg-room and head-room for all, additional seat width is possible because extra body width is available from the wider tread of the rear wheels.

Folding auxiliary seats are comfortable for two passengers. As a matter of fact, together they are actually wider than the rear seat of many sedans. The chassis are specially designed and engineered to provide extra strength throughout to care for the additional length and weight of these larger cars. Frame, rear axle, springs, tires, etc., all have extra capacity.

This long Super Eight chassis is similar to the regular Super Eight in all the features of safety, com-



The new bodies are spacious in every dimension.

fort and economy already described in this section of the book with the exception of the following:

See illustrations, page 59.

See body dimensions, pages 61, 62, 63 and 64.

Heavier rear axle assembly.

Heavier frame (5/32" thick, 7 1/32" deep) with one piece side rails and X member leg extending to rear kick-up.

Safe-T-flex front springs designed for heavier loads.

Heavier rear springs—54" x 2", 10 leaves.

Intermediate self-aligning propeller shaft bearing.

Rear axle gear ratio 4.54 to 1. Optional 4.7 to 1. 7.00 x 16 six-ply tires.

Wheelbase 148 inches.

Rear axle tread—62 1/2 inches.

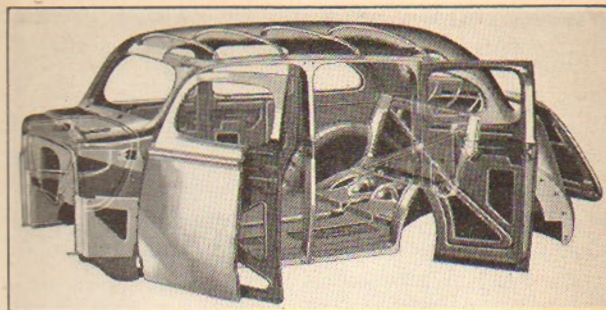
Over-all length, 222 21/32 inches.

PACKARD BODY CONSTRUCTION

Built entirely of steel from end to end, the new bodies of the 1939 Packard Super Eight are unexcelled from the standpoint of safety, comfort, quietness and modern styling. In every detail they measure up to the quality and engineering excellence of the new chassis and famous power plant.

Roof and Floor

The roof is formed into one single unit of seamless steel over huge dies. There are no seams—no welds from front to rear and it is reinforced in every direction with cross bows and fore and aft braces. Underfoot, three large stampings are solidly welded together to form a steel floor of unusual strength and rigidity. Flanges and ribs are pressed into the metal



The whole steel structure of the body is solidly welded into a single unit.

itself to further stiffen the floor pans and additional braces are welded to the underside at strategic points to give even greater rigidity.

Panels

Body panels, formed of heavy steel over steel-faced dies, are reinforced at every point of stress and solidly welded to steel roof and floor to form a box section of exceptional strength. Pillar posts are also box section in design and are electrically welded top and bottom. A deep drip moulding from windshield to rear quarter not only carries off the water from the roof but also serves to further stiffen the top rail.

Windshield and Cowl

Windshield and cowl are also welded to the roof and the floor to form a sturdy front end. A bracing of solid steel is welded to the inside of these panels to form box section of this part in the form of a large block "A". Two other large braces on each side of the cowl make this important part one of the strongest sections of the body.

Doors

Only two pieces of steel are used in both front and rear door construction. The outside panel is formed from one piece of steel and the inside panel from another. Diagonal braces assure against sagging and ribs and flanges pressed into the metal of the door strengthen and stiffen it. The upper front door hinge is of the same disappearing design as is described in the Six and 120 section.

Rear Panels and Trunk

Rear panels and trunk are firmly welded together and to the steel top and floor. A sturdy steel X member across the back of the rear seat is firmly welded to the body panels and floor, binding the rear end solidly together. Trunk hinges are new and of the concealed type.

INSULATION

The important discoveries and improvements which have come during the past year in the science of automobile body insulation are embodied in the new Packard Super Eight for 1939. Many different kinds of insulating materials—fifteen to be exact—are used throughout the body. Each has been developed to serve a particular purpose in a particular location in the body of the car. As a result of this scientific insulation, the Packard all-steel body is noise proof and a model of modern quietness.

The roof is insulated against sound, heat and cold by a special material 17 layers thick which is cemented in place. The same padding extends down the rear quarter panels, while the panel above the wheelhousings is heavily sprayed with plastic insulating com-

pound. Door panels are sprayed on the inside for silencing with a thick viscous asphalt compound that never hardens or deteriorates.

The top and sides of the cowl are heavily insulated with jute to keep out engine heat and noise. The floor is thoroughly insulated with a layer of asphaltic felt and thick pads of sponge rubber securely cemented to the carpets of the front and rear compartments. The toe board has in addition to this, a thick board of special insulating material. The trunk, too, is thoroughly insulated with printed jute to insure against noise and against extreme temperatures, as well as to form a neat, attractive trim for the interior. The trunk lid is sprayed with asphaltic compound to prevent drumming.

Body Mountings

Body mountings with insulating pads of special rubber impregnated material are used to bind body and frame together. They are similar to those used in the new Six and 120 and are described in that section of this Data Book.

Safety Glass

Safety glass—now compulsory in many states—is used in all door windows and windshields, affording the Packard owner additional safety. The glass is crystal clear and is specially manufactured to preclude any chance of discoloration.

Rustproofing and Painting

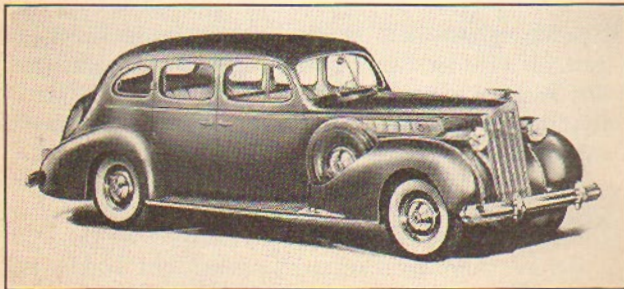
Before painting, Packard Super Eight bodies are protected against rust by a deoxidine process which produces a scientifically clean, dry surface for paint-

ing. After being thus thoroughly cleansed, each body is given three coats of surfacer, one inspection coat and eight extra heavy coats of a new and durable type of lacquer. Light color cars receive additional lacquer coats to assure against color failure.

The edges of all doors and rear fender openings are given two extra coats of lacquer and still another exceptionally heavy coat is given the edges of the doors, the edges of the trunk lid and the edges of the trunk opening with a gun especially developed for this work.

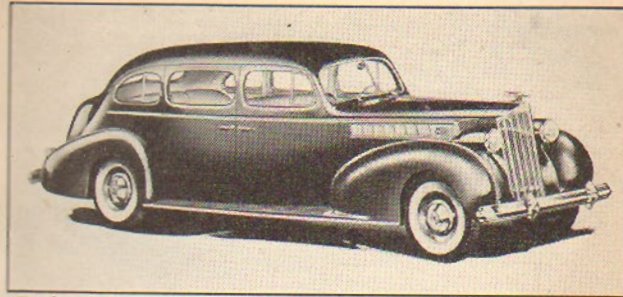
No. Pass.	Body Style	Series	WB	Overall with Rack	Body Model
5	4-Door Touring Sedan	1703	127"	206"	1272
8	Touring Sedan	1705	148"	227"	1271
8	Touring Sedan-Limousine	1705	148"	227"	1270
2-4	Club Coupe	1703	127"	206"	1275
2-4	Convertible Coupe	1703	127"	206"	1279
5	Convertible Sedan	1703	127"	206"	1277

PACKARD SUPER EIGHT—BODY MODELS

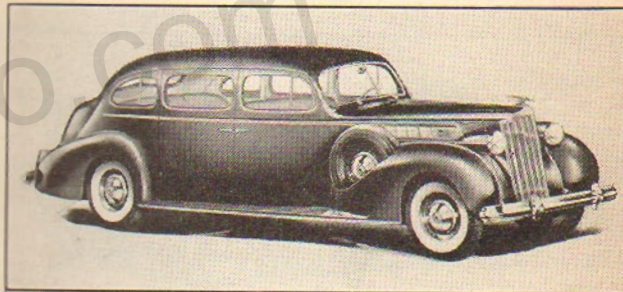


Packard Super Eight—5-Door Touring Sedan—127 inch wheelbase.

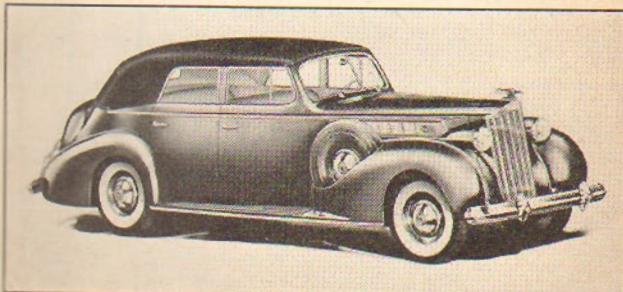
PACKARD SUPER EIGHT—BODY MODELS



Packard Super Eight—8-Door Touring Sedan—148 inch wheelbase.

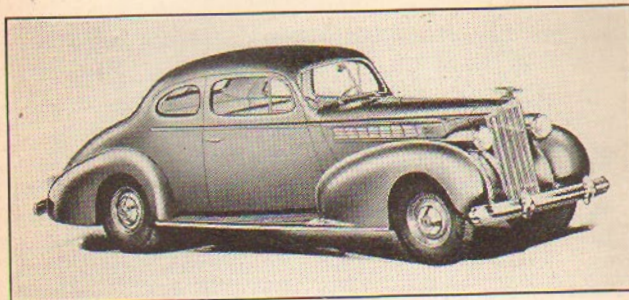


Packard Super Eight—8-Door Limousine—148 inch wheelbase.

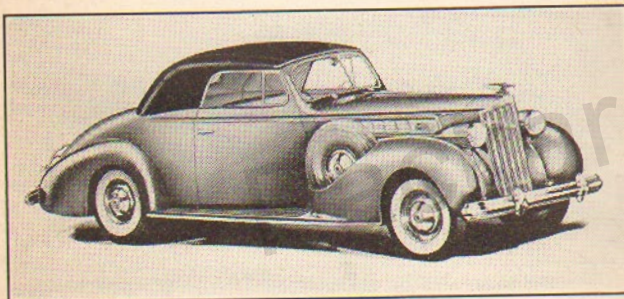


Packard Super Eight—5-Door Convertible Sedan—127 inch wheelbase.

PACKARD SUPER EIGHT—BODY MODELS



Packard Super Eight—2-4-Passenger Club Coupe—127 inch wheelbase.



Packard Super Eight—2-4-Passenger Convertible Coupe—127 inch wheelbase.

PACKARD SUPER EIGHT BODY DIMENSIONS
ALL MEASUREMENTS ARE IN INCHES

Body Models	5-Pass. 4-Door Touring Sedan	2-4 Pass. Club Coupe	2-4 Pass. Con- vertible Coupe	5-Pass. Con- vertible Sedan	8-Pass. Sedan	8-Pass. Sed.-Lim.
Seat Width Front—Shoulders	54 $\frac{3}{4}$	54 $\frac{3}{4}$	54 $\frac{3}{4}$	54 $\frac{3}{4}$	54 $\frac{3}{4}$	54 $\frac{3}{4}$
Hips	48 $\frac{1}{4}$	48 $\frac{1}{4}$	48 $\frac{1}{4}$	48 $\frac{1}{4}$	48 $\frac{1}{4}$	48 $\frac{1}{4}$
Elbow	56 $\frac{1}{2}$	56 $\frac{1}{2}$	56 $\frac{1}{2}$	56 $\frac{1}{2}$	56 $\frac{1}{2}$	56 $\frac{1}{2}$
Rear—Shoulders	56	—	—	55	57 $\frac{3}{4}$	57 $\frac{3}{4}$
Hips	47 $\frac{1}{2}$	—	—	47 $\frac{1}{2}$	49 $\frac{1}{2}$	49 $\frac{1}{2}$
Elbow	60	—	—	54 $\frac{1}{2}$	60	60
Folding Seat	—	2 seats 15 $\frac{1}{4}$ Wide	2 seats 15 $\frac{1}{4}$ Wide	—	2 seats 24 Wide	2 seats 24 Wide
Seat Height (Floor to top of cushion) Front Seat	18 $\frac{3}{4}$	18 $\frac{3}{4}$	13 $\frac{1}{2}$	18 $\frac{1}{2}$	13 $\frac{3}{4}$	12 $\frac{3}{4}$
Rear Seat	15 $\frac{1}{4}$	10 $\frac{3}{4}$	10 $\frac{3}{4}$	15 $\frac{1}{4}$	15 $\frac{1}{4}$	15 $\frac{1}{4}$
Folding Seat	—	—	—	—	12 $\frac{3}{4}$	12 $\frac{3}{4}$
Seat Depth (Front to back of seat cushion) Front Seat	18	18	18	18	18	19 $\frac{1}{2}$
Rear Seat	18 $\frac{1}{2}$	15 $\frac{1}{2}$	15 $\frac{1}{2}$	18 $\frac{1}{2}$	18 $\frac{1}{2}$	18 $\frac{1}{2}$
Folding Seat	—	—	—	—	17	17
Seat Back Height Front Seat	20 $\frac{3}{4}$	20 $\frac{3}{4}$	20 $\frac{3}{4}$	20 $\frac{3}{4}$	20 $\frac{3}{4}$	22

PACKARD SUPER EIGHT BODY DIMENSIONS—Continued

ALL MEASUREMENTS ARE IN INCHES

Packard DATA BOOK Super Eight

Body Models	5-Pass. 4-Door Touring Sedan	2-4 Pass. Club Coupe	2-4 Pass. Con- vertible Coupe	5-Pass. Con- vertible Sedan	8-Pass. Sedan	8-Pass. Sed.-Lim.
Seat Back Height (Cont.)						
Rear Seat	22 $\frac{3}{4}$	—	—	22 $\frac{3}{4}$	22 $\frac{3}{4}$	22 $\frac{3}{4}$
Folding Seat	—	17	17	—	15	15
Head Room						
Front Seat to Roof	36 $\frac{3}{4}$	36 $\frac{3}{4}$	35 $\frac{3}{4}$	35 $\frac{3}{4}$	36 $\frac{3}{4}$	36 $\frac{1}{4}$
Rear Seat to Roof	36 $\frac{3}{4}$	34 $\frac{1}{2}$	34 $\frac{1}{2}$	36 $\frac{3}{4}$	36 $\frac{3}{4}$	36 $\frac{3}{4}$
Folding Seat to Roof	—	—	—	—	38	38
Floor to Roof (Center)	49 $\frac{1}{4}$	—	—	—	50 $\frac{1}{2}$	50 $\frac{1}{2}$
Leg Room—Rear Seat						
Front of Rear Cushion to Back of Front Seat at 20° height from floor (intermediate position)	15 $\frac{3}{4}$	10 $\frac{5}{8}$	10 $\frac{5}{8}$	15 $\frac{3}{4}$	36 $\frac{13}{16}$	34 $\frac{1}{16}$
Front of Folding Seat to Back of Front Seat at 20° height from floor (intermediate position)	—	—	—	—	9	7 $\frac{3}{8}$
Leg Room—Front Seat						
Front of Seat Cushion to Dash Pad	25 $\frac{1}{2}$	25 $\frac{1}{2}$	25 $\frac{1}{2}$	25 $\frac{3}{4}$	24 $\frac{1}{2}$	24 $\frac{1}{2}$
Back of Seat Cushion to Dash Pad	43 $\frac{1}{2}$	43 $\frac{1}{2}$	43 $\frac{1}{2}$	43 $\frac{3}{4}$	42 $\frac{1}{2}$	43 $\frac{1}{2}$
Steering Wheel to Top of Cushion, in Neutral Position	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{5}{8}$	5 $\frac{1}{2}$	6

Printed in U. S. A.

Sept., 1938

PACKARD SUPER EIGHT BODY DIMENSIONS—Continued

ALL MEASUREMENTS ARE IN INCHES

Packard DATA BOOK Super Eight

Body Models	5-Pass. 4-Door Touring Sedan	2-4 Pass. Club Coupe	2-4 Pass. Con- vertible Coupe	5-Pass. Con- vertible Sedan	8-Pass. Sedan	8-Pass. Sed.-Lim.
Over-all Dimensions						
Car Height Loaded	68 $\frac{1}{4}$	68 $\frac{1}{4}$	66 $\frac{1}{2}$	67 $\frac{1}{2}$	68 $\frac{3}{4}$	68 $\frac{3}{4}$
Fender to Fender, Front	73 $\frac{11}{16}$	73 $\frac{11}{16}$	73 $\frac{11}{16}$	73 $\frac{11}{16}$	73 $\frac{11}{16}$	73 $\frac{11}{16}$
Fender to Fender, Rear	73	73	73	73	75	75
Body Width (to panels)	66 $\frac{3}{8}$	66 $\frac{1}{8}$	66 $\frac{1}{8}$	66 $\frac{5}{8}$	66 $\frac{1}{8}$	66 $\frac{1}{8}$
Car Length Bumper to Bumper with Trunk Rack	205 $\frac{1}{2}$	205 $\frac{1}{2}$	205 $\frac{1}{2}$	205 $\frac{1}{2}$	226 $\frac{1}{2}$	226 $\frac{1}{2}$
Car Length Bumper to Bumper without Trunk Rack	201 $\frac{1}{2}$	201 $\frac{1}{2}$	201 $\frac{1}{2}$	201 $\frac{1}{2}$	222 $\frac{1}{2}$	222 $\frac{1}{2}$
Body Length Over-all	132 $\frac{1}{2}$	132 $\frac{1}{2}$	132 $\frac{1}{2}$	132 $\frac{1}{2}$	153 $\frac{1}{2}$	153 $\frac{1}{2}$
Trunk Dimensions						
Inside Height, 5 Wheel Car	17 $\frac{3}{8}$	17 $\frac{3}{8}$	17 $\frac{3}{8}$	12 $\frac{1}{2}$	17 $\frac{3}{8}$	17 $\frac{3}{8}$
Inside Width, 5 Wheel Car	47	47	47	47	47	47
Inside Height, 6 Wheel Car	25 $\frac{1}{2}$	25 $\frac{1}{2}$	25 $\frac{1}{2}$	20 $\frac{1}{4}$	25 $\frac{1}{2}$	25 $\frac{1}{2}$
Inside Width, 6 Wheel Car	47	47	47	47	47	47
Cu. Ft. Capacity (Usable) 5 Wheel	14.75	7.94	7.94	11	14.75	14.75

PACKARD SUPER EIGHT BODY DIMENSIONS—Continued

ALL MEASUREMENTS ARE IN INCHES

Body Models	5-Pass. 4-Door Touring Sedan	2-4 Pass. Club Coupe	2-4 Pass. Con- vertible Coupe	5-Pass. Con- vertible Sedan	8-Pass. Sedan	8-Pass. Sed.-Lim.
Trunk Dimensions (Cont.) Cu. Ft. Capacity (Usable) 6 Wheel	21.35	6.60 in. Wheel Compt.	6.60 in. Wheel Compt.	17.60	21.35	21.35
Size of Trunk Door Opening Width	39	39	39	39	39	39
Size of Trunk Door Opening Height	33 $\frac{3}{8}$	41 $\frac{13}{16}$	41 $\frac{13}{16}$	33 $\frac{3}{8}$	33 $\frac{3}{8}$	33 $\frac{3}{8}$
General						
Front Door Width	35	39 $\frac{5}{8}$	39 $\frac{5}{8}$	35	39 $\frac{5}{8}$	39 $\frac{5}{8}$
Rear Door Width	28 $\frac{3}{8}$	—	—	28 $\frac{3}{8}$	34 $\frac{1}{2}$	34 $\frac{1}{2}$
Windshields—Width	44 $\frac{11}{16}$	44 $\frac{11}{16}$	44 $\frac{11}{16}$	44 $\frac{11}{16}$	44 $\frac{11}{16}$	44 $\frac{11}{16}$
Windshields—Height	13 $\frac{5}{8}$	13 $\frac{5}{8}$	13 $\frac{5}{8}$	13 $\frac{5}{8}$	13 $\frac{5}{8}$	13 $\frac{5}{8}$
Rear Windows—Width	37 $\frac{3}{4}$	37 $\frac{3}{4}$	23 $\frac{1}{2}$	23 $\frac{1}{2}$	37 $\frac{3}{4}$	37 $\frac{3}{4}$
Rear Windows—Height	11 $\frac{3}{4}$	11 $\frac{3}{4}$	5 $\frac{5}{8}$	5 $\frac{5}{8}$	11 $\frac{3}{4}$	11 $\frac{3}{4}$
Hood Length	50 $\frac{13}{16}$	50 $\frac{13}{16}$	50 $\frac{13}{16}$	50 $\frac{13}{16}$	50 $\frac{13}{16}$	50 $\frac{13}{16}$

PACKARD TWELVE
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PACKARD TWELVE
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PACKARD TWELVE BODY FEATURES

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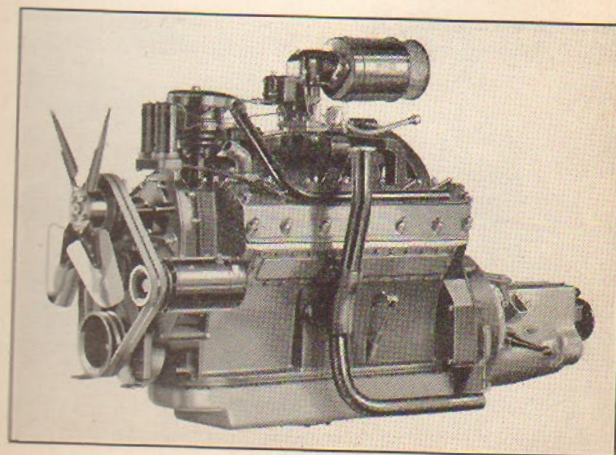
PACKARD TWELVE

UNFETTERED by price limitations, the Packard Twelve reflects all that is best in Packard engineering, precision workmanship and quality materials. It is the result of nearly 40 years' experience in building the world's finest motor cars.

Built to meet the rigid requirements of those who can afford and insist upon having the finest things in life, the Packard Twelve fully measures up to the most exacting standards. For years the Packard Twelve has been the favored choice of first families both in America and abroad.

PACKARD TWELVE ENGINE

The Packard Twelve engine is one of the most remarkable ever built. Thousands have proved their



Packard Twelve Engine.

worth by an enduring life and resistance to wear that has been astonishing. It is a powerful and wonderfully balanced engine.

Brief Specifications of the Twelve engine are:

TYPE—V-type L-head

NO. CYLINDERS—Twelve

BORE AND STROKE— $3\frac{7}{8}$ " x $4\frac{1}{4}$ "

PISTON DISPLACEMENT—473 Cubic Inches

DEVELOPED BRAKE H.P.—175 @ 3200 R.P.M.

S.A.E. H.P.—56.7 H.P.

COMPRESSION RATIO—Standard—6.3 to 1

Optional—6.0 to 1

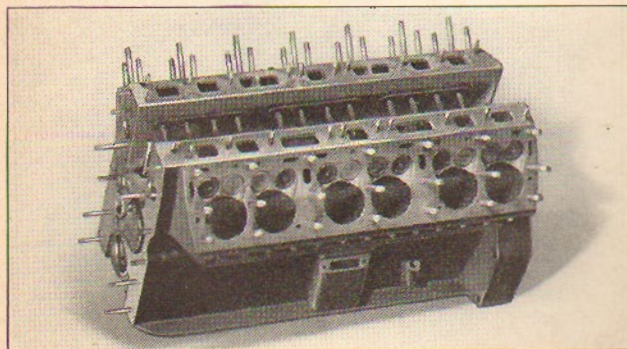
7.0 to 1

Engine Mountings

The engine is mounted at three points with rubber mountings, one at front center, two at the rear. There are also two stabilizers at the flywheel housing.

Cylinder Block and Crankcase

Cast into one unit the crankcase and cylinder blocks are made of close grain chrome nickel alloy semi-steel.



Cylinder block and crankcase are cast in one unit.

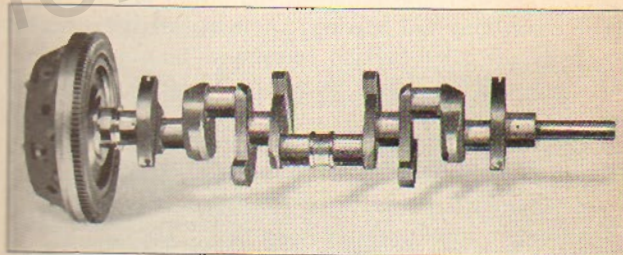
This unit type construction is very desirable in large engines where extra rigidity is required. The oil reservoir or lower half of the crankcase is made of aluminum to provide heat dissipation.

Cylinder Head

The cylinder head is made of an aluminum alloy and is scientifically designed to secure a high turbulence of the gas mixture and so obtain rapid and complete combustion.

Crankshaft

Much of the unmatched smoothness of the Twelve engine is traceable to the husky crankshaft. Perfectly



Packard crankshaft main bearings and connecting rod journals overlap, providing greater rigidity.

balanced, this part is forged from a carefully proportioned mild chrome alloy steel. The crankshaft weight is 120 pounds, and it is supported by four wide main bearings of $2\frac{3}{4}$ inch diameter, and having a total bearing surface of 56.13 square inches. Main bearing and connecting rod journals overlap $\frac{5}{8}$ inch, which provides unusual shaft rigidity with resulting smoothness. The crankshaft is hardened by the elec-

trical induction process—an expensive method which provides a glass-hard surface to the bearings.

Vibration Damper

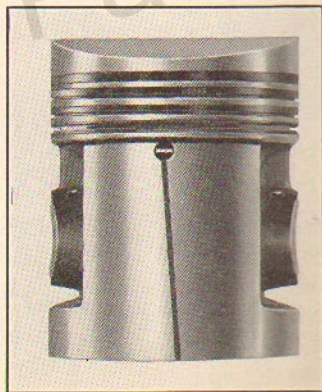
The exclusive, Packard designed vibration damper is a further contribution to the velvety smoothness of the Twelve. The damper unit is sealed in rubber, insuring permanent adjustment and prevention of dirt or water entering the unit. The outstanding feature of the Packard damper is its ability to dampen out vibration at *all* speeds.

Connecting Rods and Bearings

Connecting rods are made of drop forged chrome molybdenum steel and are, of course, rifle-drilled to permit pressure lubrication of the piston pin bearings. The connecting rod bearings are made of an expensive copper-lead alloy which possesses unusually high strength and resistance to wear. These bearings are of the removable precision type with steel backs and they easily withstand sustained high engine speeds.

Pistons

The Packard Twelve is equipped with Autothermic light weight aluminum alloy pistons, with steel struts. This special design of piston permits a closer fitting of the pistons and quiet-



Packard Twelve four ring, Autothermic piston.

er operation in a cold engine. For a complete description of Autothermic piston design see the Six and 120 section of this Data Book. Four piston rings are used—one compression ring—two combination compression and oil rings and one damper type oil control ring.

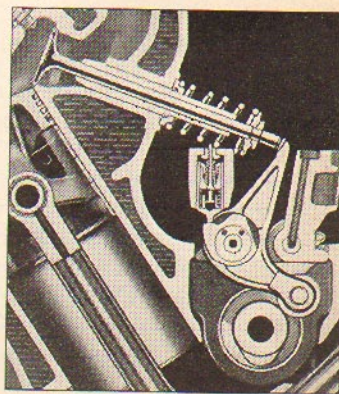
Camshaft

Supported on four bearings, the Packard Twelve camshaft is carburized hardened. This process gives a tough, ductile inside core with exceptional hardness to the outside bearing and cam surfaces. The fuel pump and vacuum booster unit is driven off the camshaft by an eccentric, while the distributor is driven by an integrally cut gear on the camshaft. The camshaft itself is driven by the crankshaft through the medium of a wide silent chain.

Valve Mechanism

The Packard Twelve intake valves are chrome nickel steel while the exhaust valves are made of Austenitic chrome nickel steel, an expensive material which has exceptionally high heat resisting qualities.

Valves in the Twelve operate at zero clearance because of an automatic take-up mechanism. This operates by oil actuated eccentrics which support the main



Packard Twelve valve lifter and silencer mechanism.

roller bearings of the rocker levers. These eccentrics adjust each rocker arm lever individually, and take up all lash between the rocker arm and valve stem. The mechanism is not only exceedingly quiet in operation, but is also free from friction, and not subject to wear. It is generously lubricated, operating in a bath of oil. The roller cam follower operates as well as the rocker arm itself on roller bearings.

HIGH-PRESSURE LUBRICATION

The fine mechanism of the Packard Twelve engine is lubricated under full pressure. Oil is forced to the main, camshaft, connecting rod bearings, rocker arms and through rifle-drilled connecting rods to piston pins. Pistons, cylinder walls, distributor drive gear are also pressure lubricated by oil sprayed from oil bleed holes in the connecting rods as they rotate and register with oil holes in the crankshaft. The valve mechanism is lubricated by oil supplied directly to the automatic adjusters.

Oil Temperature Regulator

The oil temperature regulator on the Packard Twelve performs the dual function of cooling the oil in summer and warming it in winter. It is a special radiator located on the outside of the engine at the front and is connected to the cooling system. The device also shortens the warming up time of the engine, thus minimizing the thinning of the oil because of long automatic choke operation.

Crankcase Ventilation

To prevent corrosion of finely finished engine surfaces, the Packard Twelve is equipped with a forced-

draft crankcase ventilating system. Clean, fresh air is forced by the fan blast into the crankcase through the screened filter of the oil filler pipe. At the right rear of the engine is an exhaust pipe for the ventilating system. The constant suction or draft created at the lower end of this pipe promptly expels all harmful vapors and moisture condensation, which would otherwise dilute the lubricating oil and form destructive acids.

Air Cleaner

To prevent harmful and abrasive road dust or other foreign matter from being drawn into the engine through the carburetor, a combination air cleaner and intake silencer is provided.

Oil Filter

Life of the engine is further protected by a full flow oil filter. The filter cartridge or strainer removes any foreign matter from the oil as it flows through the filter before delivery to the bearings.

FUEL SYSTEM

Fuel Tank

The Packard Twelve fuel tank has a capacity of 30 gallons, which permits long distance driving with infrequent stops for replenishing the gasoline supply.

Important Note: To secure the best results in performance, economy and long life from the Packard Twelve engine, it is recommended by the factory to all owners that Ethyl gasoline, or other antiknock fuels of 76 octane or higher should be used.

Fuel Pump and Feed Lines

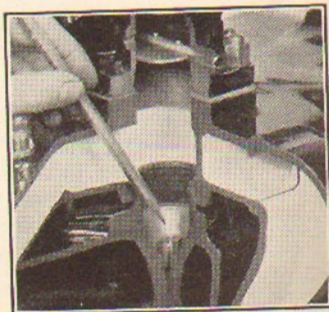
The fuel pump and vacuum booster pump (for

windshield wipers) are driven by an eccentric on the camshaft. All fuel is filtered to trap any sediment or water before it can enter the pump or carburetor. Fuel lines are located on the outside of the frame for maximum cooling and prevention of vapor lock.

Carburetor

The Packard Twelve down-draft carburetor is of the duplex plain tube type with fixed main metering orifices and a mechanically operated economizer valve controlling the mixture for full power. The throat diameter is $1\frac{1}{2}$ inches. It is located atop the motor in the center of the V, and the dual throats feed each arm of the intake manifold with balanced fuel distribution to the twelve cylinders. The design of the exhaust and intake manifold applies no heat directly to the intake. This purposely permits a cooler mixture with a consequent greater charge because expansion from heat is greatly reduced.

Any liquid fuel which might enter the manifold is impinged on two hot conical stoves which immediately vaporize this fuel, returning the gas to the manifold. The stoves, located beneath the openings of the intake, are cast into the exhaust manifold from which they receive their heat. This design gives the Packard Twelve the nearest approach to what is termed cold carburetion.



Conical stove in the intake manifold.

Automatic Choke

The Packard Twelve automatic choke is operated by the combination of a bimetallic thermostatic spring attached near the exhaust and the vacuum created in the intake manifold. The automatic choke is calibrated to provide proper fuel mixture for starting under all temperature conditions.

Muffler and Exhaust System

The Packard Twelve is equipped with a tandem type exhaust muffler. Together these mufflers tune out all exhaust roar with a minimum of back pressure. By floating the exhaust pipe, mufflers and tail pipe on rubber mountings, transmission of any vibration to the frame is prevented.

COOLING SYSTEM

Radiator

The Packard Twelve radiator is of the tubular type, which provides a free water flow with maximum cooling capacity. The water capacity of the system is 10 gallons. The radiator is provided with automatic shutters which maintain an even and efficient engine operating temperature both winter and summer. The entire radiator unit is cushioned on a rubber mounting which protects it from strains.

Fan-Blast Cooling Tunnels

Like all other Packard cars, the Twelve is provided with Fan-Blast Cooling Tunnels under the fenders which greatly improve cooling efficiency.

Fan

The high capacity four-bladed fan is mounted on

the water pump shaft and driven by twin belts from the crankshaft. The diameter of the Packard Twelve fan is 21 inches.

Water Pump

Operating on two ball bearings, the impeller type water pump has a capacity of 48.3 gallons per minute, or nearly 3,000 gallons an hour, at a car speed of 40 miles per hour.

Expansion Tank

Located under the right front fender on the frame is an expansion tank. This traps the overflow from the radiator caused by heat expansion. Providing a closed circulation system, this expansion tank prevents vaporization and loss of anti-freeze solutions. A further safeguard in this connection is found in an automatically regulated vent located in the filler cap. It regulates the pressure built up in the cooling system and is so adjusted that the normal boiling point is increased by 12 degrees.

ELECTRICAL SYSTEM

Battery

The rubber ribbed battery, located under the front seat, is of the high-level type with 21 plates and 150 ampere hour capacity.

Generator

The generator is driven by twin V-type fan belts from the crankshaft and cooled by a built-in fan which draws air through the generator. It is equipped with voltage-current regulation entirely automatic in

operation. This not only protects the battery from being run down, but also against overcharging.

Starter Motor

An exceptionally heavy duty starter motor is employed on the Packard Twelve to insure quick starting in cold weather. Mounted on the flywheel housing, it is operated by a push button on the instrument panel.

Distributor

The distributor on the Packard Twelve is of the double breaker arm type to insure uninterrupted long life, and to give reserve spark intensity at high speeds. It has full automatic control of the spark advance to insure maximum power and economy.

Fuel Compensator

A graduated advance arm on the distributor permits manual adjustment of the distributor to suit varying grades of fuel.

Headlights

A manually operated light control button located on the instrument panel provides the following selections of road lighting:

- (a) ALL THE WAY IN—Lights off
- (b) OUT ONE NOTCH—Parking, tail lights and instrument panel lights.
- (c) OUT TWO NOTCHES—City driving beam with both headlight beams tilted. Toe switch raises or lowers both beams alternately.

- (d) **OUT THREE NOTCHES**—Full headlight beams, with toe switch ~~dinner~~ control of left headlamp only, for passing other cars. Right hand side of the road fully lighted.

Tell-Tale Signals

Colored tell-tale signals indicating which headlight beam is in use are located in the instrument panel at the left and right. Depending on what beam is being operated, a colored light appears illuminating any one of the words "Park," "City," "Drive," or "Pass."

Instrument Lighting

Adjustable bright to dim lighting of the instrument panel is provided by a rheostat control knob.

Two reading or map lights are operated by a separate switch. They illuminate the ignition key switch and front compartment.

Tail and Stop Lights

Combination tail and stop lights are mounted on the rear fenders. Reflex safety lenses in each lamp reflect a warning signal to other cars when car is parked and tail lights are off.

Horns

Twin horns with pleasant tones and long carrying qualities are located on the left front side of the dash under the hood.

Circuit Breaker

The headlighting and body wiring circuits, which include the cigar lighter and various other accessories,

are protected in case of overload or short circuit by two thermostatic type overload relays or circuit breakers. Tail and stop light circuits are doubly protected by separate fuses in sockets near the light switch.

Ignition Coil

The ignition switch located on the instrument panel is connected to the two coils which are mounted on the engine in front of the distributor. When the switch is in the off position, the circuit is broken through the coils, grounding them and making it impossible to start the engine by wiring around the switch.

CLUTCH

The Packard Twelve clutch is the single plate type, 12 inches in diameter, with 149 square inches of lining area. Each of the six release levers employs two roller bearings to minimize friction. The clutch throwout ball bearing is sealed in lubricant for life.

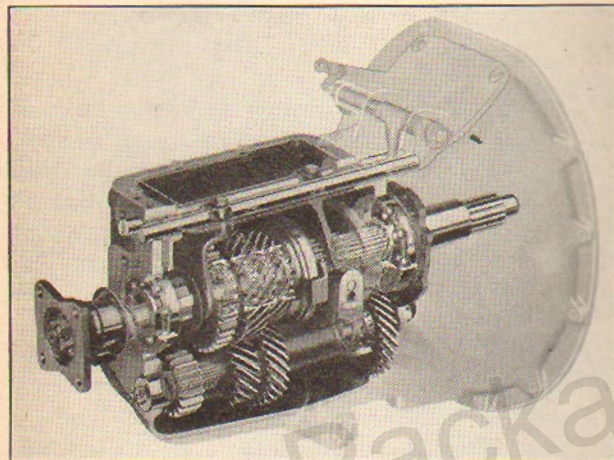
Vacuum Booster

To insure utmost ease in operation of this large clutch, the Packard Twelve is equipped with a vacuum assister which is attached to the clutch pedal and reduces pedal effort to a minimum. This item is especially appreciated by women drivers.

TRANSMISSION

The transmission is of the all-silent synchronized type, of compact design and constructed of materials that insure exceptional strength and long life. Qual-

ity of this unit is reflected in its design, which employs 10 ball and roller bearings. The main shaft is supported at each end by a ball bearing. The second speed and high speed gears and the front end of the coun-



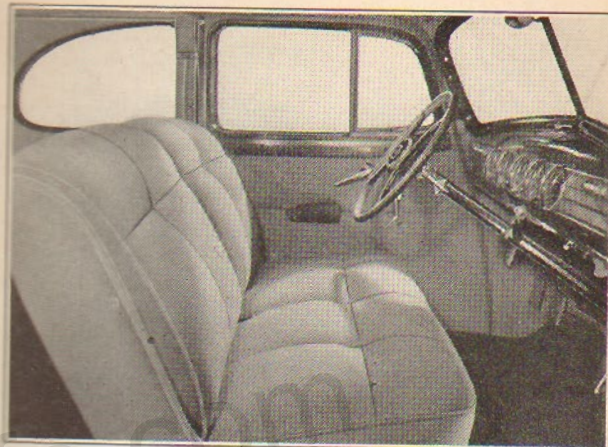
Packard Twelve transmission—10 ball and roller bearings.

tershaft are each mounted on two ball bearings. Roller bearings are used at the rear end of the countershaft, and also between the clutch driving and main driven shaft.

Transmission gears are hardened by the carburizing process, which gives the teeth a glass hard surface, leaving the core strong and tough to easily withstand great impact loads.

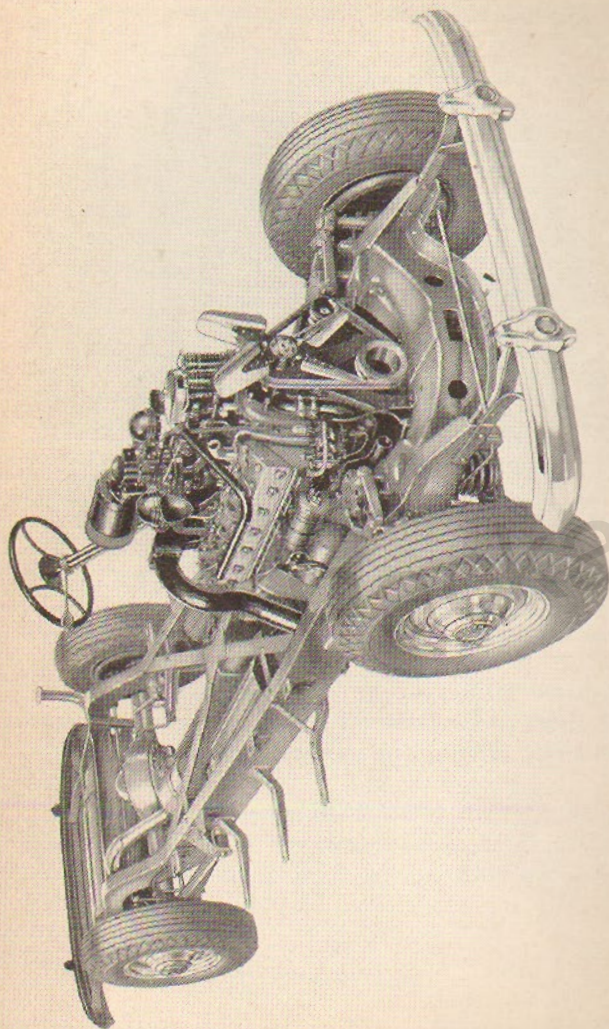
HANDISHIFT

Handishift—the new steering column gear shifting mechanism is built in this year in the new Packard



Packard Twelve Handishift—vacuum actuated.

Twelve. It is specially engineered to meet the requirements of the Twelve and differs from the Six, 120 and Super Eight in that vacuum from the engine intake manifold is utilized to shift the gears.



The Packard Twelve chassis—advanced engineering and quality construction.

PACKARD TWELVE CHASSIS

Wheelbase

The Packard Twelve is available in two wheelbase lengths, with seven body styles on the 134 $\frac{3}{8}$ inch wheelbase and three body styles on the 139 $\frac{3}{8}$ inch wheelbase.

Frame

The Packard Twelve is equipped with a double-trussed frame, which is a model for strength and rigidity. It is one of the important contributing factors to body quietness and lack of vibration.

Frame side members are of heavy stock (5/32" thickness) and are box-section in design.

The frame X member is of the tapered I beam girder construction, and designed so that the arms extend front and rear from the center section in straight lines, insuring maximum strength and rigidity.

Side rails and X member are heavily reinforced by cross members. The front end cross member is a massive steel channel which is welded and riveted to the side members.

SAFE-T-FLEX INDEPENDENT FRONT WHEEL SUSPENSION

Although proportionately much heavier in construction, the Safe-T-flex front wheel suspension used on the Packard Twelve is of the same basic design as used on all other Packard cars. For complete description and advantages, see Packard Six and 120 section of this Data Book.

HARMONIZED STEERING

The Packard Twelve steering gear is of the worm and double tooth roller type. The steering worm is mounted on two taper roller bearings and the roller which engages the worm is carried by two ball bearings.

The steering control of the wheels is through a single spring loaded connecting rod to the center steering lever, which is mounted in two roller bearings at the center of the front cross member. Attached are two cross tubes connected to the wheels at the steering knuckles.

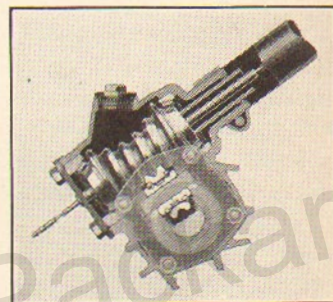
The steering gear ratio is 20.5 to 1 and the short turning radius of the Twelve permits easy parking and sharp angle cutting of the front wheels for parking in crowded places.

The steering wheel—18½ inches in diameter—has two curved spokes which join the rim and hub at four points. It is not only very attractive in appearance, but possesses unusual strength and is extremely comfortable to the hands.

Roll Control Bars

For the control of body roll, such as occasioned when rounding curves, the Packard Twelve is equipped with two roll control bars.

The front roll control is attached at the top to the



Double row anti-friction bearings in the steering gear.

front ends of the frame and anchored at the bottom on the lower arms of the Safe-T-flex. The rear control bar is located back of the rear axle.

Lateral Ride Stabilizer

To provide maximum riding ease, the Packard Twelve is equipped with a lateral ride stabilizer. This device, located behind the rear axle, maintains alignment between frame and axle. The action of the lateral ride stabilizer supplements the action of the roll-control bar in providing greater handling ease and eliminates lateral vibration in the ride.

Shock Absorbers

The shock absorbers on the Packard Twelve are of the double action type. The front shock absorbers are not required to take any of the driving or braking load, because these shocks are absorbed by the rigid torque arms in the Safe-T-flex suspension.

Rear Springs

Rear springs of the leaf type are made from silicon manganese steel and are packed with graphite grease to prevent squeaks. They are enclosed in felt to retain the lubricant and a flexible outside metal cover is applied to prevent entrance of dirt or water. The springs are 60½ inches long and 2¼ inches wide.

Shackles

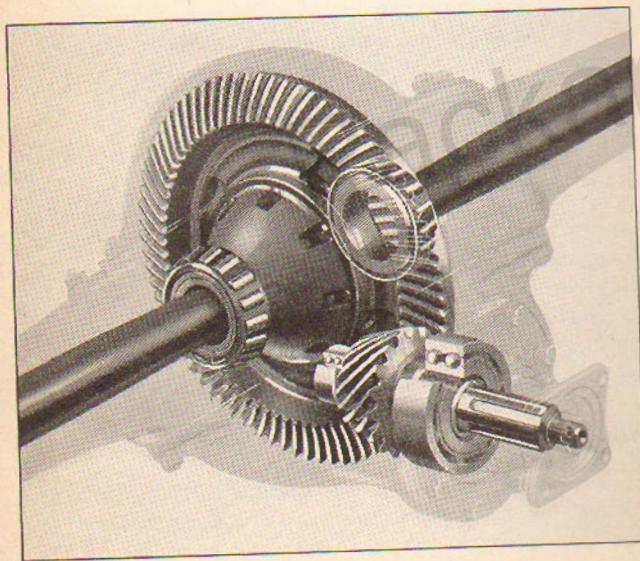
The frame is completely insulated from the rear springs by the use of rubber. The forward end of the rear spring is carried in a rubber bearing, and the upper part of the rear shackle is also rubber insulated. The lower end of the rear shackle is a threaded steel

bolt and bushing which permits free spring movement without noise or side play. Being self-adjusting, no compensation for wear is necessary.

REAR AXLE

The rear axle is of the semi-floating type with the Packard Angleset rear axle housing. The Angleset feature provides a tilted housing which gives greater road clearance, greater head-room, and eliminates the need of an inconvenient tunnel in the rear compartment.

The axle is equipped with hypoid gears which, incidentally, were developed by Packard in 1926. For



Packard Angleset rear axle—Two double-row ball bearings support the straddle-mounted pinion.

Printed in U. S. A.

full advantages, see description in Packard Six and 120 section.

The driving pinion is straddle mounted with two double-row ball bearings, one mounted ahead of the pinion, and one behind. This design provides a most solid and rigid support for the pinion. Each axle shaft is supported at the wheel hub with two adjustable heavy duty roller bearings, and the differential carrier and ring gear are also carried on two roller bearings. This makes a total of eight anti-friction bearings used in the rear axle.

HOTCHKISS DRIVE

In accordance with Packard practice, the Packard Twelve uses the Hotchkiss method of driving through the rear springs rather than through a torque tube. For advantages, see Packard Six and 120 section.

Universal Joint Shaft

The Packard Twelve is equipped with a large diameter universal joint shaft with roller bearings in the universal joints themselves. Sealed-in lubrication protects the bearings against dirt and water. All universal joint shafts are carefully balanced both statically and dynamically.

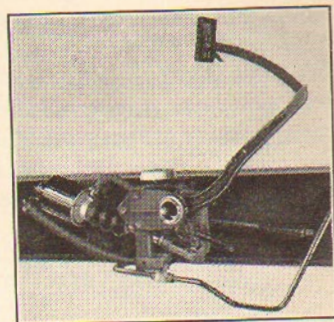
HYDRAULIC BRAKES

Consistent with the Packard engineering policy in providing for the utmost in safety in all its cars, the Packard Twelve is equipped with hydraulic foot brakes. Although larger and more powerful in order to handle the greater weight of the Twelve, the brakes themselves are of the same design as used on the Pack-

ard Six, 120 and Super Eight. The brake drums are 14 inches in diameter and the total effective braking area is 330 square inches.

Vacuum Brake Booster

Because of its greater car weight and larger sized brakes, the operation of the foot brakes on the Twelve would require much greater physical effort were it not for an efficiently operating vacuum brake booster. This unit permits a small



The brake booster decreases pedal pressure required.

woman to have perfect mastery over the car with but little pedal effort.

Mechanical Hand Brake

For parking and emergency purposes the system provides mechanical braking which is entirely independent of the hydraulic system. The mechanical brakes operate on the rear wheels. This is much more effective than designs which apply the braking effort to the propeller shaft. The hand-brakes have an effective braking area of 165 square inches.

Wheels

Wheels are of the all-steel, disc demountable type. They are 16 inch diameter with drop center rims.

Tires

Packard Twelve tires are 6-ply low pressure and

16 x 8.25 in size, the largest used on any American production passenger car. These exceptionally large tires, contribute greatly to riding comfort. All tires and tubes are balanced for smooth running operation.

BALL AND ROLLER BEARINGS

Indicative of the superb quality of the Packard Twelve is the number of anti-friction bearings used in its construction. To minimize friction to the utmost degree possible, to promote the greatest freedom from service attention and to give unusually long mechanical life, there is a total of 122 ball and roller bearings employed in the chassis of the Packard Twelve. This is far more than used in any other American car. And not only are these jewel-like parts used in generous quantities, but the bearings themselves must undergo an exacting inspection for quietness by radio amplification in a specially designed sound-proof room.

CHASSIS LUBRICATION

Another item that is indicative of the care in engineering to provide long mechanical life and simplified service attention, is the minimum number of points requiring lubrication attention on the Packard Twelve. There are only 15 points requiring lubrication at 2,000 mile periods, contrasted to many more points on competitive cars and at 1,000 mile periods.

PACKARD TWELVE BODY FEATURES

BUILT for people who are most discriminating in their choice of fine possessions, the Packard Twelve meets fully the most exacting standards in luxurious transportation.

This is true whether the predominating requirement of the purchaser be comfort, performance, dependability, safety or beauty. The Packard Twelve is America's finest car.

From an appearance standpoint, the new Packard Twelve is characteristically Packard. It reflects distinction and well-bred refinement in every line.

The Packard Twelve is certainly not gaudy or garish in its styling. But neither is it ultra-conservative. It has sparkle, but a soft sparkle. It does not screech in its appearance, neither does it whisper. In short, the Packard Twelve is a car of dignity and prestige, and as such, looks the part.

Fully matching the Packard Twelve engine and chassis in quality of materials and painstaking workmanship, is the Packard Twelve body.

BODY CONSTRUCTION

In more than 30 years of body building experience, Packard has never built a body which is the equal of the Packard Twelve in strength and quietness. The body is of the composite type—a combination of wood and steel construction. It is common knowledge that steel reinforced with hardwood possesses greater strength than where steel alone is used. In making this statement Packard is entirely unbiased, because it builds both the all-steel and composite type of body.

In those body sections where wood is employed, it consists of the finest straight-grained knot-free selected hardwoods—ash, birch and hard maple. Each piece of lumber is individually inspected for both quality and moisture content.

In all body members which are required to have great structural strength, the hardwood construction is reinforced with heavy gauge steel. This includes such important parts as pillars, doors, cowl, roof rails and sills.

Evidence of the rugged strength found in the



Body Weight Test

This Packard Twelve body was subjected to a weight test of 4000 pounds dead weight of sand, approximately the weight of the car itself. Both during the test and afterward all doors opened and closed freely. The body was not strained in any way.

Packard Twelve body can be seen in the accompanying cut. On the roof of this Packard Twelve there are 40 bags of sand each weighing 100 pounds, making a total weight of 4,000 pounds. In spite of

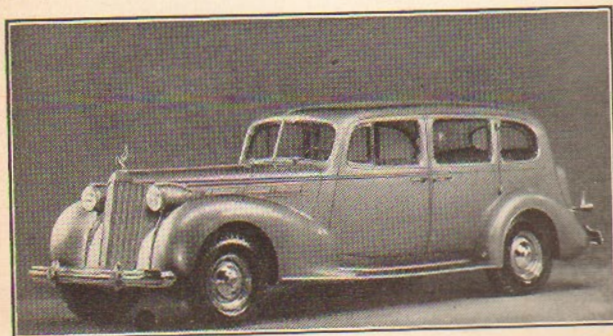
this exceptionally heavy load, all doors opened and closed easily. An examination of the body at the completion of this test showed that it was not strained in any way.

Insulation

It is a well known fact that wood does not conduct noise with such rapidity or volume as does steel. Therefore, the composite body is by nature more quiet than the all-steel type. In the Packard Twelve body these natural sound deadening characteristics are supplemented by a most thorough system of sound insulation. Sixteen different sound deadening materials are used at different points throughout the body. In addition to this care in the insulation of the body itself, there are 18 pads of live rubber which insulate the body from the frame. All of these things combined give unequalled quietness to the Packard Twelve body.

BODY APPEARANCE—EXTERIOR

A head-on view of the Packard Twelve is impressive. The large area provided by the thermostat-



Handsomely styled from radiator to streamlined rear end.

ically controlled radiator shutters is very attractive. Each alternate shutter bar is painted to match the body color, with the other bars finished in bright chrome. The effect of this alternate spacing of chrome with painted bars is a wider spacing of the chrome bars. It creates a beautiful color effect.

Headlamps

Torpedo type headlamps are set off with attractive windsplits of chrome. The lamps are mounted directly to the fender aprons.

Windshield

The V-type windshield has an exceptionally large opening which provides excellent vision for observing overhead stop lights, and the low cowl gives a very wide range of vision.

Hood and Louvers

The hood is beautifully proportioned, and is fitted with an attractive stationary center panel. One conveniently operated handle on each side forms a ready means of lifting the hood. The louvers are of the hinged door type, and their attractiveness is accentuated by a medallion located to the front section of the louver trim. This medallion with a background of red vitreous enamel bears the words "Packard 12" in chrome script.

Hub Caps

The large hub caps bearing the long familiar red hexagon are attractively set off by four concentric flutes around the edges of the caps.

Fenders

The front fenders are gracefully proportioned and completely conceal the chassis by dipping down over the front and sides of the wheels and tapering to a streamline point at the rear. Chrome strips on the front fender apron running up to the headlamps add a touch of sparkle at that point. Rear fenders are air-foil design, and blend harmoniously with the lines of the front fenders.

Running Boards

Completing the sweeping curves of front and rear fenders are the running boards. These parts are covered with deep ribbed rubber mats, firmly vulcanized to the metal board.

Trunk

All sedan models contain a built-in trunk of spacious proportions, the lines of which complete the streamlining from front to rear.

Spare Tires and Wheels

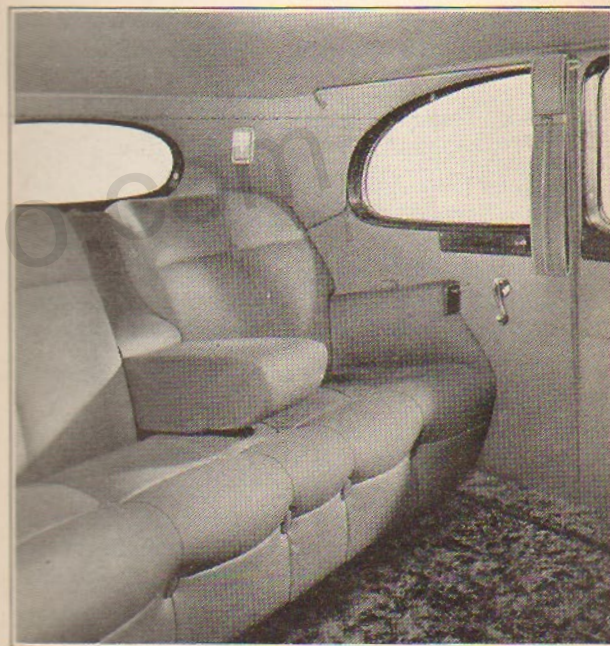
On all models specifying five-wheel equipment, the extra wheel and tire are carried in the rear compartment. The Packard Twelve 2-4-passenger coupe, the convertible coupe, convertible sedan and victoria are furnished only with 6-wheel equipment. On all cars with 6-wheel equipment the extra wheels and tires are carried in the front fenders.

BODY INTERIOR

Entrance to the body interior is made most easily by front and rear doors of exceptional width and

height. Seat placements are such that there is no necessity of cramping or twisting when entering the car.

An examination of the Packard Twelve sedan interior reveals an atmosphere of restful comfort and luxury reflected by the tasteful appointments and tailored excellence of the trim.



Luxurious fittings and smart tailoring distinguish the interior.

In the trim only the choicest of all-wool broadcloth is used. Fabricated from fleece noted for its fine and lasting texture, these lustrous fabrics are the finest

that can be obtained. An optional choice of seven different super deluxe quality broadcloths is offered. Seats and side walls are trimmed with a wide, pillow type tufted design, which to the eye is indicative of the luxurious comfort it affords. On the 5-passenger convertible sedan, 2-4-passenger convertible coupe and 5-passenger victoria coupe an optional choice of six different colors in leather are offered, gray, blue, tan, green, black or red. A further optional choice of Bedford cord instead of leather is offered at no extra charge.

Seat Comfort

Typical of the steps taken to build practical luxury into the Packard Twelve is found in the seat construction. Seat cushions and backs are built to a master template which represents the composite measurements of 40,000 people. This assures orthopedically correct cushion contours, and is one of the reasons for an almost complete absence of fatigue when riding in the Packard Twelve.

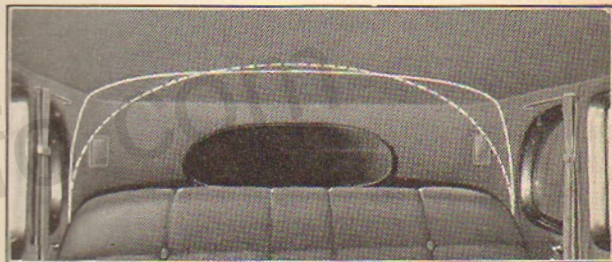
So that seat back and cushions will permanently retain their shape, they are constructed of the finest materials obtainable. A study of the illustration showing seat construction will indicate the quality of materials and the extreme care exercised in workmanship in building the luxurious seats for the Packard Twelve.

In the rear compartment every thought has been taken to insure the greatest comfort and convenience of passengers. The soft folding center arm rest is supplemented by two side arm rests, and in addition to these, there will be found on either side a comfortable arm sling. This swinging type of arm rest has a lateral adjustment range of 19 inches, and in addi-

tion to being an adjustable arm rest, it serves the purpose of an assist strap.

Head-Room

In addition to the generous side width and ample shoulder-room in the rear set of the Packard Twelve sedan, there is also generous head-room, and this is particularly true at the outer edge of the seat. In some cars, bodies have been so sharply sloped that in



Generous headroom for each rear seat passenger.

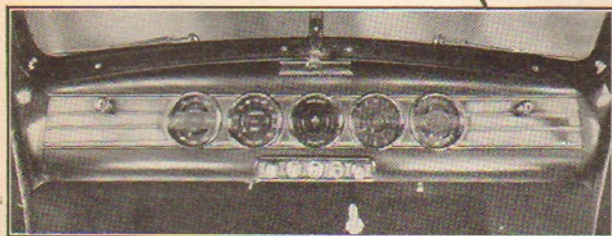
the rear corners it is almost impossible for a passenger to wear a top hat.

A final touch of luxury and beauty in the rear compartment is found in the rich crushed pile mohair carpet, which has a backing of soft sponge rubber.

Instrument Panel

Seated in the front compartment, one is immediately attracted by the beautiful instrument panel. Finished in chrome and light grained French burl walnut, which contrasts pleasingly with the darker walnut of the window mouldings, the instrument board is a thing of beauty. Flanked at either end by commodious package compartments, the instru-

ments themselves are grouped in five circular panels so spaced as to be of the greatest utility to the driver. The upper part of the panel curves forward to the



The instrument panel displays Packard taste and refinement.

V windshield, forming a shelf in which is mounted the windshield wiper control button, and a large ash receptacle.

Defroster Outlet

Defroster outlets which distribute warm air and defrost both sides of the windshield glass are built into the windshield garnish moulding.

Front Seat Adjustment

The front seat is capable of adjustment fore and aft, to the extent of 5 inches. Whenever the seat is moved forward it automatically raises the seat cushion height, slightly tilting the seat back forward, which gives the driver of short stature a full view of the road ahead.

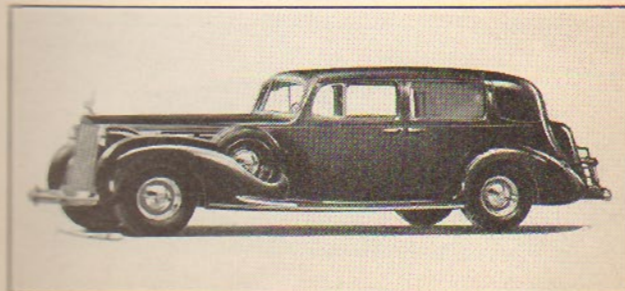
In the full adjustment of the seat forward, the cushion is raised $\frac{7}{8}$ of an inch at the rear, and $\frac{1}{4}$ of an inch at the front. The seat back moves forward $6\frac{3}{4}$ inches at the top and 5 inches at the bottom.

Ventilation

The Packard system of body ventilation provides for the admittance of clean fresh air at all times. It permits control by individual passengers to suit their own requirements. Rain guards are fitted over each front door ventilator, and full length rain gutters prevent rain drip when entering or leaving the car.

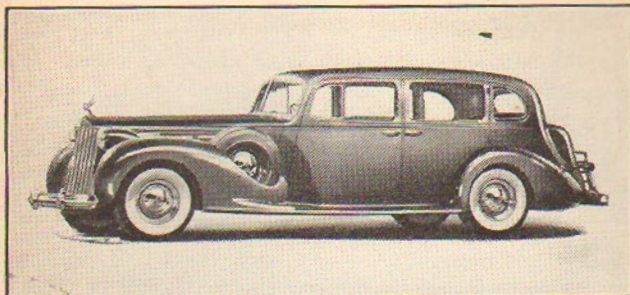
No. Pass.	Body Style	Series	WB	Overall with Rack	Body Model
5	Touring Sedan	1707	134"	226"	1232
5	Touring Sedan (4-Door)	1707	134"	226"	1233
7	Touring Sedan	1708	139"	231"	1234
7	Touring Sedan Limousine	1708	139"	231"	1235
5	Club Sedan	1707	134"	220"	1236
5	Coupe	1707	134"	220"	1237
2-4	Coupe	1707	134"	223"	1238
2-4	Convertible Coupe	1707	134"	223"	1239
5	Victoria	1707	134"	226"	1227
5	Convertible Sedan	1708	139"	226"	1253

PACKARD TWELVE—BODY MODELS

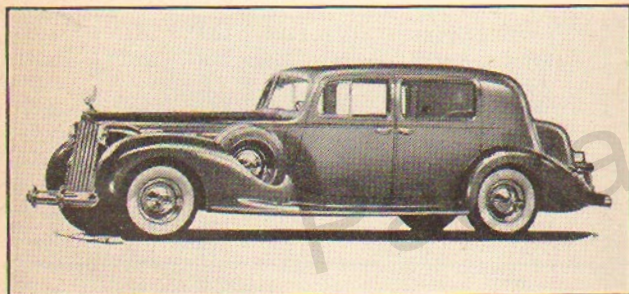


Packard Twelve—5-Passenger Formal Sedan—134 inch wheelbase.

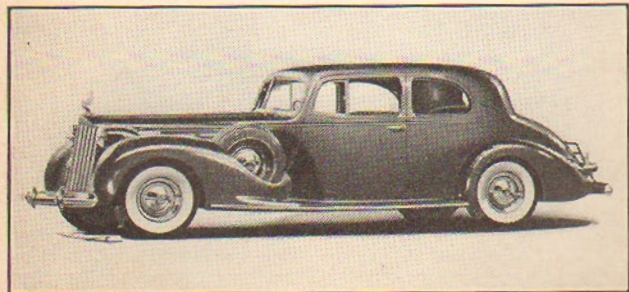
PACKARD TWELVE—BODY MODELS



Packard Twelve—5-Passenger Touring Sedan—134 inch wheelbase.

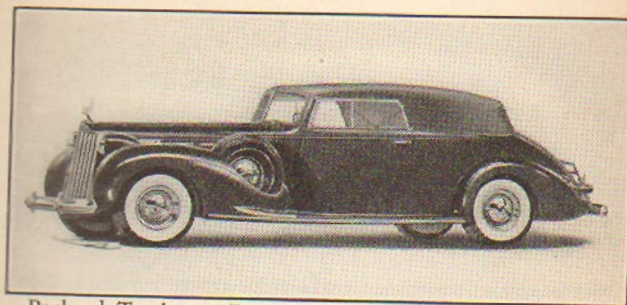


Packard Twelve—5-Passenger Club Sedan—134 inch wheelbase.

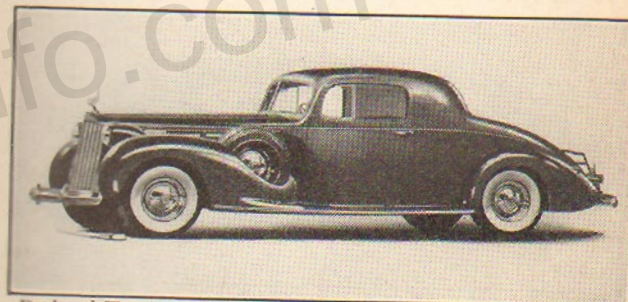


Packard Twelve—5-Passenger 2-Door Coupe—134 inch wheelbase.

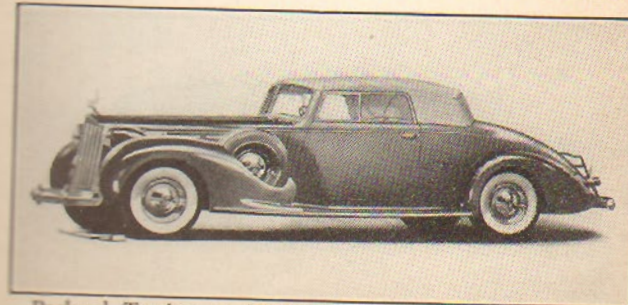
PACKARD TWELVE—BODY MODELS



Packard Twelve—5-Passenger 2-Door Victoria—134 inch wheelbase.

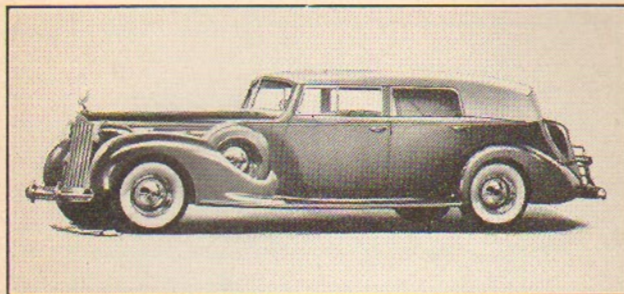


Packard Twelve—2-4-Passenger Coupe—134 inch wheelbase.

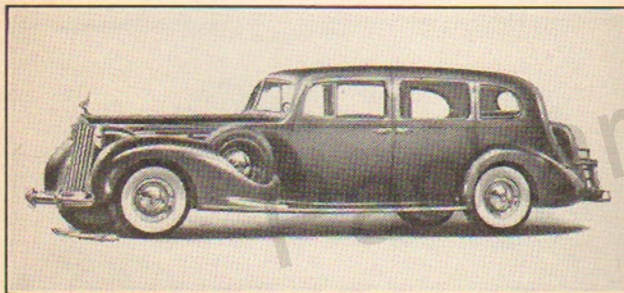


Packard Twelve—2-4-Passenger Convertible Coupe—134 inch wheelbase.

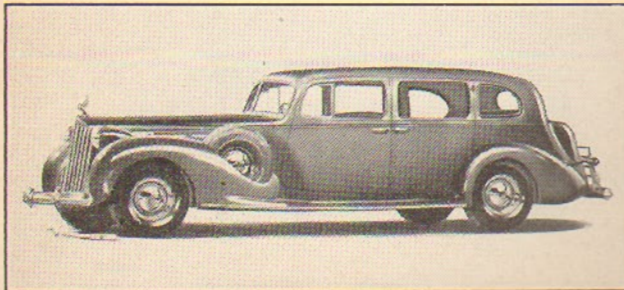
PACKARD TWELVE—BODY MODELS



Packard Twelve—5-Passenger Convertible Sedan—139 inch wheelbase.



Packard Twelve—7-Passenger Touring Sedan—139 inch wheelbase.



Packard Twelve—7-Passenger Touring Sedan Limousine—139 inch wheelbase.

PACKARD TWELVE BODY DIMENSIONS
ALL MEASUREMENTS ARE IN INCHES

Body Models	5-Pass. Formal Sedan	5-Pass. Touring Sedan	5-Pass. Club Sedan	5-Pass. 2-Door Coupe	5-Pass. 2-Door Victoria	2-4 Pass. 2-Door Coupe	2-4 Pass. Convert. Coupe	5-Pass. Convert. Sedan	7-Pass. Touring Sedan	7-Pass. Touring Sed.-Lim
Wheelbase	134 1/2	134 1/2	134 1/2	134 1/2	134 1/2	134 1/2	134 1/2	139 3/4	139 3/4	139 3/4
Seat Width—Front Shoulders	52 1/4	52 1/4	52 3/4	52 3/4	51	52 3/4	51	51	52 1/4	52 1/4
Hips—Taken 5 inches ahead of seat cushion back	44 5/8	44 1/2	44 1/2	44 1/2	45 1/2	44 1/2	44 1/2	46 1/2	44 1/2	44 1/2
Door-to-door room at front of cushion	45 1/2	45 1/2	45 1/2	46 1/2	45 1/2	45 1/2	45 1/2	45 1/2	45 1/2	45 1/2
Seat Width—Rear Elbow—Over arm rests	61 1/2	61 1/2	61 1/2	55 1/2	47	—	—	52	61 1/2	61 1/2
Shoulders	57	57	58 1/4	54 3/4	61	—	61	52	57	57
Hips—Taken 5 inches ahead of seat cushion back	46	46	46	49	49 1/4	39	39	46	46	46
Door-to-door room at front of cushion	58	58	58	55 1/2	53 1/2	—	—	58	—	58
Folding seat	—	—	—	—	—	—	—	—	2 Seats 18 1/2 wide	2 Seats 18 1/2 wide
Seat Height—Floor to top cushion	13 1/2	13 1/2	13 1/2	13 1/2	12	13 1/4	11 3/4	11 1/2	13 1/2	13 1/2
Front Seat	13 3/4	13 3/4	13 3/4	13 3/4	12 3/4	13 3/4	13 3/4	—	13 3/4	13 3/4
Rear Seat	11 3/4	—	—	—	—	—	—	—	14	15 1/4
Folding Seat	—	—	—	—	—	—	—	—	—	—
Seat Depth—Front to back of seat cushion	18 3/8	18 3/8	18 3/8	18	17 1/2	18 5/8	18 5/8	18 3/4	18 3/4	18 3/4
Front Seat	—	—	—	—	—	—	—	—	—	—

PACKARD TWELVE BODY DIMENSIONS—Continued

ALL MEASUREMENTS ARE IN INCHES

Body Models	5-Pass. Formal Sedan	5-Pass. Touring Sedan	5-Pass. Club Sedan	5-Pass. 2-Door Coupe	5-Pass. 2-Door Victoria	2-4 Pass. 2-Door Coupe	2-4 Pass. 2-4 Pass. Convert. Coupe	5-Pass. Convert. Sedan	7-Pass. Touring Sedan	7-Pass. Touring Sed.-Lim
Seat Depth (Cont.)										
Rear Seat	19 1/4	19 1/2	19 1/2	19 1/2	19 3/4	18 3/4	18 3/4	20	19 1/2	19 1/2
Folding Seat	15 1/8	—	—	—	—	—	—	—	17	17
Seat Back Height										
Front Seat	21	20	20	20 3/4	22 1/2	21	22 3/4	23 1/2	20	20 3/4
Rear Seat	21 1/8	21 1/4	21 1/4	22 1/4	23 3/8	22	22	21 1/2	21 7/8	21 7/8
Folding Seat	12	—	—	—	—	—	—	—	16 1/2	16 1/2
Head Room—At angle										
Front Seat to Roof	38 1/4	38 1/4	38 1/4	38 1/4	37 1/4	38	37 1/4	37 1/4	38 1/4	38 1/4
Rear Seat to Roof	36 3/4	36 3/4	37	37	36	—	—	36	36 3/4	36 3/4
Folding Seat to Roof	37	—	—	—	—	—	—	—	37 1/4	37 1/4
Floor to Roof—Center	48 11/16	48 11/16	48 1/2	49 1/4	46 3/4	46 3/4	—	—	48 3/4	48 3/4
Leg Room—Rear Seat										
Back of Rear Cushion to Back of Front Seat—At 20° above floor	45 1/2	48 5/8	34 1/8	28 13/16	33 3/8	46 1/2	46 1/2	37 1/2	53 15/16	53 5/8
Front of Folding Seat to Back of Front Seat	—	—	—	—	—	—	—	—	10 1/4	12
Front of Rear Seat Back to Folding Seat	—	—	—	—	—	—	—	—	28	26 3/4

PACKARD TWELVE BODY DIMENSIONS—Continued

ALL MEASUREMENTS ARE IN INCHES

Body Models	5-Pass. Formal Sedan	5-Pass. Touring Sedan	5-Pass. Club Sedan	5-Pass. 2-Door Coupe	5-Pass. 2-Door Victoria	2-4 Pass. 2-Door Coupe	2-4 Pass. 2-4 Pass. Convert. Coupe	5-Pass. Convert. Sedan	7-Pass. Touring Sedan	7-Pass. Touring Sed.-Lim
Leg Room—Front Seat										
Front of Seat Cushion to Dash Pad—Neutral position	24 1/2	24 1/2	24 1/2	24 1/2	25 3/4	25 3/4	26 1/2	26	24 1/2	24 1/2
Back of Seat Cushion to Dash	42 3/4	42 3/4	42 3/4	42 3/4	43 1/4	44 1/2	44 3/4	44 7/8	42 3/4	42 3/4
Steering Wheel to Top of Cushion—Neutral position	63 1/2	63 1/2	63 1/2	63 1/2	63 1/2	63 1/2	63 1/2	63 1/2	63 1/2	63 1/2
Over-all Dimensions										
Fender to Fender Width	74 3/4	74 3/4	74 3/4	74 3/4	74 3/4	74 3/4	74 3/4	74 3/4	74 3/4	74 3/4
Over-all Height	70 7/8	70 7/8	70 7/8	70 1/2	—	69 3/8	67 7/8	—	70 15/16	70 15/16
Body Width—to panels	65	65	64 3/4	63 1/4	63 1/4	63 3/8	63 3/8	64 1/2	65 1/8	65 1/8
Car Length—Bumper to bumper	223 3/8	223 3/8	219 7/8	219 7/8	223 3/8	223 3/8	223 3/8	223 3/8	230 5/8	230 5/8
With Trunk Rack	223 13/16	223 13/16	217 3/8	217 3/8	223 13/16	217 3/8	217 3/8	223 13/16	228 13/16	228 13/16
Without Trunk Rack	144 15/16	144 15/16	137 1/2	137 1/2	137 1/2	137 1/2	137 1/2	149 1/2	149 1/2	149 1/2
Body Length										
A—5 Wheels with Rear Tire Carrier.										
B—6 Wheels without Rear Tire Carrier.										

PACKARD TWELVE BODY DIMENSIONS—Continued

ALL MEASUREMENTS ARE IN INCHES

Body Models	5-Pass. Formal Sedan	5-Pass. Touring Sedan	5-Pass. Club Sedan	5-Pass. 2-Door Coupe	5-Pass. 2-Door Victoria	2-4 Pass. 2-Door Coupe	2-4 Pass. Convert Coupe	5-Pass. Convert Sedan	7-Pass. Touring Sedan	7-Pass. Touring Sed.-Lim
Trunk Dimensions										
Inside Height—5 wheel car	17 $\frac{7}{8}$	17 $\frac{7}{8}$	15 $\frac{13}{16}$	14 $\frac{3}{8}$	9	—	—	17	17 $\frac{7}{8}$	17 $\frac{7}{8}$
Inside Height—6 wheel car	29 $\frac{7}{8}$	29 $\frac{7}{8}$	27 $\frac{13}{16}$	26 $\frac{3}{8}$	21	—	—	27	29 $\frac{7}{8}$	29 $\frac{7}{8}$
Inside Width	48 $\frac{1}{2}$	48 $\frac{1}{2}$	48 $\frac{1}{2}$	48 $\frac{1}{2}$	48 $\frac{1}{2}$	48 $\frac{1}{2}$	48 $\frac{1}{2}$	48 $\frac{1}{2}$	48 $\frac{1}{2}$	48 $\frac{1}{2}$
Cu. Ft. Capacity—5 wheel	8.88	8.88	8.39	8.16	6.50	26.75	26	14.16	8.88	8.88
Cu. Ft. Capacity—6 wheel	17.11	17.11	16.5	15.88	19.06	26.75	26	25.77	17.11	17.11
Size of Trunk Door Opening Width	36 $\frac{1}{2}$	36 $\frac{1}{2}$	36 $\frac{1}{2}$	40 $\frac{3}{4}$	—	39	39	36 $\frac{1}{2}$	36 $\frac{1}{2}$	36 $\frac{1}{2}$
Height	29	29	29	38 $\frac{1}{2}$	38 $\frac{1}{2}$	29 $\frac{1}{2}$	29 $\frac{1}{2}$	29	29	29
General										
Door Width—Front	38 $\frac{3}{8}$	38 $\frac{3}{8}$	35 $\frac{3}{8}$	35 $\frac{3}{8}$	42	38 $\frac{5}{8}$	42	38 $\frac{5}{8}$	38 $\frac{5}{8}$	38 $\frac{5}{8}$
Rear	35 $\frac{1}{2}$	35 $\frac{1}{2}$	33 $\frac{1}{2}$	—	—	—	—	33 $\frac{1}{2}$	33 $\frac{1}{2}$	33 $\frac{1}{2}$
Windshield—Width ▼	22	22	22	22	22	22	22	22	22	22
Height	13 $\frac{1}{8}$	13 $\frac{1}{8}$	13 $\frac{1}{8}$	13 $\frac{1}{8}$	11 $\frac{3}{8}$	13 $\frac{5}{8}$	11 $\frac{3}{8}$	11 $\frac{3}{8}$	13 $\frac{5}{8}$	13 $\frac{5}{8}$
Rear Window—Width	29	29	29	29	—	29	28 $\frac{1}{2}$	—	29	29
Height	10 $\frac{3}{8}$	10 $\frac{3}{8}$	10 $\frac{3}{8}$	10 $\frac{1}{8}$	—	10 $\frac{1}{8}$	8 $\frac{1}{2}$	—	10 $\frac{1}{8}$	10 $\frac{1}{8}$
Hood Length	66 $\frac{1}{2}$	66 $\frac{1}{2}$	66 $\frac{1}{2}$	66 $\frac{1}{2}$	66 $\frac{1}{2}$	66 $\frac{1}{2}$	66 $\frac{1}{2}$	66 $\frac{1}{2}$	66 $\frac{1}{2}$	66 $\frac{1}{2}$

▼ Glass measurement each side of V.

MECHANICAL SPEC.

PACKARD
TIMETEC

ENGINE

Make	.....	1700	1701-2	1701-5	1707-8
Type	.....	Packard L Head-Vertical in bloc	Packard L Head-Vertical in bloc	Packard L Head-Vertical in bloc	Packard Modified L Head V Type Block
A.M.A. Horsepower	.....	3200	3200	3200	3200
Maximum Brake Horsepower	.....	3200	3200	3200	3200
Revolutions per Minute	.....	1500	1500	1500	1500
Suspension	.....	Rubber Mounted	Rubber Mounted	Rubber Mounted	Rubber Mounted
Firing Order	.....	1-5-3-6-2-4	1-6-2-5-8-3-7-4	1-6-2-5-8-3-7-4	1-6-1-5-2-1-3-4-1
Bore	.....	3 1/2"	3 1/2"	3 3/16"	3 7/16"
Stroke	.....	2 1/4"	2 1/4"	3 3/16"	3 7/16"
Piston Displacement	.....	245.34 cu. in.	282.05 cu. in.	320 cu. in.	473 cu. in.
Cylinders	.....	6 in line	8 in line	8 in line	12, 2 blocks at 90° angle
Compression Ratio—Standard	.....	6.52 to 1	6.41 to 1	6.45 to 1	6.30 to 1
Compression Ratio—Optional	.....	None	6.85 to 1	6.85 to 1	7.03 to 1
Compression Ratio—Optional	.....	None	None	None	6.06 to 1
Weight with Clutch and Transmission	.....	787 lbs. with overdrive	845 lbs. with overdrive	1014 lbs. with overdrive	1346 lbs.
Cylinder Head Material	.....	Cast Iron	Cast Iron	Cast Iron	Aluminum
Motor R.P.M. per Mile	.....	5296	5021-1701	5021-1703	2879

Sept., 1938

CRANKCASE

Type	.....	Integral with cylinders	Integral with cylinders	Separate casting	Integral with cylinders
Upper Half Material	.....	Cast Iron	Cast Iron	Aluminum	Cast Iron
Lower Half Material	.....	Cast Iron	Steel Stamping	Aluminum	Cast Iron
Oil Capacity	.....	5 qts.	6 qts.	7 1/2 qts.	10 qts.
Main Bearing Diameter	.....	2 3/8"	2 3/8"	2 3/8"	2 3/8"
Main Bearing Length No. 1	.....	1 19/32"	1 1/2"	61/64"	1 1/2"
Main Bearing Length No. 2	.....	1 1/2"	1 19/32"	1 17/64"	1 1/2"
Main Bearing Length No. 3	.....	2 1/2"	1 7/32"	61/64"	1 31/32"
Main Bearing Length No. 4	.....	2 1/2"	2 3/16"	1 45/64"	None
Main Bearing Length No. 5	.....	None	None	61/64"	None
Main Bearing Length No. 6	.....	None	None	61/64"	None

Mechanical

DATA BOOK

Specifications

PACKARD
CUSTOM CARS

SERVICE PARTS

FRANKCASE—Continued		1700
Main Bearing Length No. 7	.....	None
Main Bearing Length No. 8	.....	None
Main Bearing Length No. 9	.....	None
Crankcase Oil Gauge	.....	Dip Stick, left side
Total Main Bearing Area	.....	45.1 sq. in.
Crankcase Drain Plug	.....	7/8" 18

VALVES

Valve Lift	Ex. .318
Valve Arrangement	Int. .3175
Valve Head Diameter-Inlet	L Head
Valve Head Diameter-Exhaust	1.575"
Valve Stem Diameter-Inlet	1.1375"
Valve Stem Diameter-Exhaust	1.375"
Valve Stem Length	340.55"
Valve Material-Inlet	5% Cr
Valve Material-Exhaust	Chrome Nickel
Valve End (Type)	Austenitic Steel
Valve Stem Clearance-Inlet	Slot and Key
Valve Stem Clearance-Exhaust	.002"
Valve Tappet Clearance-Inlet-Warm	.004"
Valve Tappet Clearance-Exhaust-Warm	.007"
Inlet Valve Opens	.010"
Inlet Valve Closes	1° BTDC
Exhaust Valve Opens	39° ALDC
Exhaust Valve Closes	5° ATDC
Tappet Clearance for Timing Inlet	45° BTDC
Tappet Clearance for Timing Exhaust	.0125"
Valve Seat Angle-Inlet	.015"
Valve Seat Angle-Exhaust	30°
Valve Spring	45°
Valve Spring Load	Single
Valve Spring Load Valve Closed	50 lbs.
Valve Spring Load Valve Open	(15/8")
Exhaust Pipe Diameter	120 lbs.
	2"

VALVES—Continued	
Muffler Size—Front	1700
Muffler Size—Rear	5 3/16" x 38 1/4"
	None
ROST END	
Gear Cover	Steel Stamping
Camshaft Drive	Silent Chain
Make of Chain	Morse 3682-R
Length, Width and Pitch of Chain	58 links; 1 1/4"; .375"
No. of Camshaft Bearings	4
Clearance of Camshaft Bearings	.001"-.003"
Camshaft End Play	.002"-.004"
Camshaft Sprocket—Material and Size	Cast Iron-42 teeth
Camshaft Chain Adjustment	None

PISTON

Weight	19 1/2 oz.
Weight with Rings and Pin	26 oz.
Over-all Height	3 3/8"
Height Centerline of Pin to Top	2 1/8"
Type and Material	Autothermic Alum.
Skirt Clearance	Alloy with strut .001"
Type Pin—Size	3 1/4" x 7/8"
Type Lubrication of Pin	Floating Pressure
Piston Pin Hole—Ream	.87515"-.87485"
Piston Pin Fit in Piston	Finger Push at 160°
Piston Pin Fit in Rod	Size to Size
Piston Pin Overizes	.003"-.006"
No. of Rings per Piston	3
No. of Oil Rings per Piston	1

1701-2
None
None
None
Dip Stick,
left side
56.6 sq. in.
5/8" - 18

Ex. 318	Chrome Nickel
Int. 3175	Austenitic Steel
L Head	Slot and Key
1 17/32"	.002"
1 13/32"	.004"
1 13/32"	.007"
3.4025"	.010"
3.4025"	1" BTDC
5 5/8"	39° ALDC
	5° ATDC
	45° BLDC
	.0125"
	.015"
	30°
	45°
	Single
	50 lbs. (15/8")
	120 lbs.
	2 1/2"

1703-5
1 3/8"
61/64"
2 21/64"
Dip Stick,
left side
90.86 sq. in.
1 1/4"-18

.354
L Head
1.21/.32"
1.15/.32"
3.405"
3.405"
7.13/.32"
Chrome-Nickel Austenitic Steel Slot and Key
.003"
.0045"
.006"
.008"
BDTC .26 [±]
ALDC .69 [±]
ATDC .34 [±]
BILD .161 [±]
.005"
.005"
.005"
.005"
Packard Double Pack 73 lbs. (3 1/16") 459 lbs.

1707-8
None
None
None
Dip Stick,
left side
56.13 sq. in.
1 1/4"-18

3125	Modified L Head				
	1 41/64"				
	1 21/32"				
	3 405"				
	338"				
	6 35/64"				
	Chrome Nickel				
	Austenitic Steel				
	Slot and Key				
	.0025"				
	.005"				
	Automatic Take-up				
	Automatic Take-up				
	ATDC				
	45° ALDC				
	10° ATDC				
	35° BLDC				
	—				
	45°				
	45°				
	Single				
	70 lbs. (2 7/32")				
	145 lbs.				
	23 1/2"				

PISTON—Continued

1700

Depth of Piston Ring Grooves No. 1.	.161"
Depth of Piston Ring Grooves No. 2.	.1835"
Depth of Piston Ring Grooves No. 3.	.1835"
Depth of Piston Ring Grooves No. 4.	—
Type of Compression Rings	2 Per. Circle No. 70
Type of Oil Rings	1 Per. Circle No. 2
Width of Compression Rings	X90-85
Width of Oil Rings	.1240", .123"
Piston Ring Wall Thickness No. 1	.1865", .186"
Piston Ring Wall Thickness No. 2	.140", .150"
Piston Ring Wall Thickness No. 3	.140", .150"
Piston Ring Wall Thickness No. 4	.122", .130"
Piston Ring Gap—Oil	.007", .015"
Piston Ring Gap—Oil	.007", .015"
Location of Drain Holes	Above pin
Piston Oil Drain Holes	12.5/32"
Piston Oversizes	.005", .010", .020", .030", .040"

CONNECTING ROD

Weight	1 lb., 15.6 oz.
Material	Steel Forging
Bearing Type	Detachable Shell
Center to Center Length	7 11/16"
Diameter of Crankpin Bearing	2 3/32"
Length of Crankpin Bearing	1 1/4"
Clearance Bearing to Crankpin	.0005", .0015"
End Play on Crankshaft	.004", .010"
Oil Lead to Piston Pin	Rifle Drilled
Bearing Material	Babbitt
Assembled in Motor	Oil Hole Toward Camshaft

Printed in U. S. A.

1701-2	1 Per. Circle No. 70
.1562"	1 Per. Circle No. 85
.1787"	X90-85
.1787"	.1240", .123"
.1787"	.1865", .186"
.1787"	.140", .150"
.1787"	.140", .150"
.1787"	.122", .130"
.1787"	.007", .015"
.1787"	.007", .015"
.1787"	Above pin
.1787"	12.5/32"
.1787"	.005", .010", .020", .030", .040"

1703-5	1 Per. Circle No. 85
.15325"	1 Per. Circle No. X90-85
.1732"	124", .1230"
.1732"	.155", .1545"
.1732"	.130", .140"
.1732"	.150", .140"
.1732"	.140" Max.
.1732"	.114", .122"
.1732"	.007", .015"
.1732"	.007", .015"
.1732"	Above pin
.1732"	20 No. 30 (1285")
.1732"	.003", .005", .010", .015", .020", .025", .030", .035", .045"

1707-8	2 Per. Circle No. X90-85
.1652"	1 Plain
.1652"	2 Per. Circle No. 70
.1652"	1 Per. Circle No. X90-85
.1852"	124", .1230"
.1852"	.155", .1545"
.1852"	.140", .150"
.1852"	.140", .150"
.1852"	.140", .150"
.1852"	.124", .132"
.1852"	.007", .015"
.1852"	.007", .015"
.1852"	Above pin
.1852"	12 No. 30 (1285")
.1852"	.003", .005", .010", .015", .020", .030", .045"

2 lbs., 4 oz.	Steel Forging
Detachable Shell	9"
2 3/16"	1 1/4"
.001", .0015"	.001", .0015"
.008", .010"	Rifle Drilled
Copper-Lead Alloy	Oil Hole Toward Camshaft

2 lbs., 8.3 oz.	Steel Forging
Detachable Shell	10 3/8"
2 3/16"	1 1/4"
.001", .0015"	.001", .0015"
.003", .005"	Rifle Drilled
Copper-Lead Alloy	Oil Hole Toward Camshaft

1 lb., 15.6 oz.	Steel Forging
Detachable Shell	7 11/16"
2 3/32"	1 1/4"
.0005", .0015"	.004", .010"
Rifle Drilled	Babbitt
Oil Hole Toward	Camshaft

1 lb., 15.6 oz.	Steel Forging
Detachable Shell	7 11/16"
2 3/32"	1 1/4"
.0005", .0015"	.004", .010"
Rifle Drilled	Babbitt
Oil Hole Toward	Camshaft

CONNECTING ROD—Continued

Cap Attached	Bolts, Nuts and Lock Nuts
Shims	Not Used

CRANKSHAFT

Type	Counterbalanced
Material	Steel Forging
No. of Counterweights	6 Forged Integral
Main Bearing Diameter	2 3/4"
Thrust Taken On	No. 1
Vibration Damper	Rubber Friction Disc, Waterproof
Weight	81 1/2 lbs.
End Play	.003", .008"
Main Bearing Material	Babbitt Lined Steel Shell
Clearance—All Main Bearings	.001", .003"
Crankshaft Sprocket—Material & Size	Steel—21 teeth
Shims	Not Used

MOTOR LUBRICATION

Type	Full Pressure
Oil Pump Type	Gear
Crankcase Capacity	5 qts.
Oil Filter Location	Left Side
Oil Temperature Regulator	None
Oil Measuring Stick	Left Crankcase
Oil Intake	Floating Block
Crankcase Ventilator	R.H. at Rear of Block
Oil Pressure—Normal Driving	35 lbs.
Oil Drain	Hex. Head Flange Plug 1/4"-18

Sept., 1938

5

CHASSIS LUBRICATION

Every 2,000 Miles

Crankcase—S.A.E. 30*

*Below -10°F. -10W plus 10% kerosene

-10°F. -20W

32°F. -S.A.E. 30

*Average Daylight Temperature

90°F. -S.A.E. 40

Rear Spring Shackles

Knuckle Pins

Pressure Gun Grease

Steering Connecting Rod—

Pressure Gun Grease

Steering Tie Rods—

Pressure Gun Grease

Universal Joint Spline—Gun Grease

Water Pump Shaft—S.A.E. 30

Generator—S.A.E. 30

Starter Motor—S.A.E. 30

Distributor—No. 3 Cup Grease S.A.E. 30

Clutch and Brake Pedal—S.A.E. 30

Steering Crank—Pressure Gun Grease

Every 10,000 Miles

Support Arm Pin, Outer—Gun Grease

Front Wheel Bearing No. 3 Fibre Grease

Transmission, S.A.E. 140 Summer

Steering Gear, S.A.E. 140 Winter

Rear Axle—See Packard Dealer

Universal Joints, S.A.E. 140

Every 30,000 Miles

Rear Wheel Bearing No. 3 Fibre Grease

Universal Joints, Gun Grease

*With Reservoirs.

1700

Drain and Refill

5 qts.

1701-2

Drain and Refill

6 qts.

1703-5

Drain and Refill

7½ qts.

1707-8

Drain and Refill

10 qts.

*2 Lub. Connectors

*2 Lub. Connectors

2 Lub. Connectors

2 Lub. Connectors

4 Lub. Connectors

1 Lub. Connector

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10 qts.

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10 qts.

*2 Lub. Connectors

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4 Lub. Connectors

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Drain and Refill

5 qts.

1701-2

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6 qts.

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Drain and Refill

7½ qts.

1707-8

Drain and Refill

10 qts.

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*2 Lub. Connectors

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4 Lub. Connectors

1 Lub. Connector

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1700

Drain and Refill

5 qts.

1701-2

Drain and Refill

6 qts.

1703-5

Drain and Refill

7½ qts.

1707-8

Drain and Refill

10 qts.

*2 Lub. Connectors

FRAME	1700	1701-2	1703-5	1707-8
Type	Taper Pressed Steel Double Drop, Box Section Side Rail in Front	Taper Pressed Steel Double Drop, Box Section Side Rail in Front	Taper Pressed Steel Double Drop, Box Section Side Rail in Front	Taper Pressed Steel Double Drop, Box Section Side Rail in Front and at Kickup
Depth	6 15/16"	6 15/16"-1701 7 1/32"-1702	6 15/16"-1703 7 1/32"-1705	8 1/16"
Thickness	7/64"	7/64"-1701 5/32"-1702	7/64"-1703 5/32"-1705	5/32"
No. of Cross Members	5 I-Beam, X Type Member in Center	5 I-Beam, X Type Member in Center	5 I-Beam, X Type Member in Center	5 I-Beam, X Type Member in Center
Wheelbase	122"	127"-1701 148"-1702	127"-1703 148"-1705	134 3/8"-1707 139 3/8"-1708

FRONT SUSPENSION	1700	1701-2	1703-5	1707-8
Type	Packard Safe-T-flex Independent Reverse Elliott	Packard Safe-T-flex Independent Parallellogram Reverse Elliott	Packard Safe-T-flex Independent Parallellogram Reverse Elliott	Packard Safe-T-flex Independent Parallellogram Elliott
Axle End	Steering Knuckle Pin Bushing Upper and Lower	Steering Knuckle Pin Bushing Upper and Lower	Steering Knuckle Pin Bushing Upper and Lower	Steering Knuckle Pin Bushing Upper and Lower
Caster	1 3/16" Long	1 3/16" Long	1 3/16" Long	1 3/16" Long
Knuckle Pin Angle	0° + 1/16" - 0°	0° + 1/16" - 0°	0° + 1/16" - 0°	0° + 1/16" - 0°
Tread	59 3/16"	59 3/16"	59 3/16"	59 3/16"
Wheel Bearing—Inner	Timken 2585 Cone 2523 Cup	Timken 2585 Cone 2523 Cup	Timken 2585 Cone 2523 Cup	Timken 3385 Cone 3320 Cup
Wheel Bearing—Outer	Timken 1380 Cone 1329 Cup	Timken 1380 Cone 1329 Cup	Timken 1380 Cone 1329 Cup	Timken 2687 Cone 2620 Cup
Wheel Bearing Adjustment	Tighten Nut and Back Off 1/2 Turn and Lock	Tighten Nut and Back Off 1/2 Turn and Lock	Tighten Nut and Back Off 1/2 Turn and Lock	Tighten Nut and Back Off 1/2 Turn and Lock

STEERING GEAR

Make	Packard
Type	Worm and Double Tooth Roller
Steering Wheel	18"-3 Spoke
Ratio	20.19 to 1
Type of Steering Wheel	Vulcanized Rubber Over Steel Frame
Minimum Turning Radius	21' 0"

ELECTRICAL

Battery—Make	Willard—15 Plate
Battery—Capacity	95 Ampere Hours
Battery—Size	9"x7"x8 13/16"
Ignition Timing	6° BTDC
Breaker Point Gap	.018"-.022"
Spark Control	Full Automatic
Spark Advance Begins at	600 R.P.M. Engine
Distributor	Autolite IG-4015
Spark Plug—Size	10 mm.
Spark Plug—Make and Type (2)	103 AC or Champion Y4
Spark Plug Gap	.0255"-.0305"
Generator—Make and Type	Autolite GCO-4807-A-2
Generator Drive	Belt
Generator Cut-In Speed—Cold	710 R.P.M.
Generator Maximum Charging Rate—Cold (8 Volt)	30.5 Ampere
Generator Maximum Charging Rate—Hot (8 Volt)	25.5 Ampere
Generator Voltage Regulator	Autolite VRD-4001
Generator Voltage to Close Cut-Out	6 1/2 to 7 1/4 Volts
Generator Ventilated	Yes

MECHANICAL DATA BOOK Specifications

1700	Packard Worm and Double Tooth Roller 18"-3 Spoke 20.19 to 1 Vulcanized Rubber Over Steel Frame 1701-21' 0"
1701-2	Packard Worm and Double Tooth Roller 18"-3 Spoke 20.19 to 1 Vulcanized Rubber Over Steel Frame 1702-26' 6"
1703-5	Packard Worm and Double Tooth Roller 18"-4 Spoke 20.19 to 1 Vulcanized Rubber Over Steel Frame 1703-21' 6"
1707-8	Packard Worm and Double Tooth Roller 18 1/2"-4 Spoke 20.5 to 1 Vulcanized Rubber Over Steel Frame, Damped 1707-24' 6"
1700	Willard—15 Plate 95 Ampere Hours 9"x7"x8 13/16" 6° BTDC .018"-.022" Full Automatic 600 R.P.M. Engine Autolite IG-4015 10 mm. 103 AC or Champion Y4 .0255"-.0305" Autolite GCO-4807-A-2 Belt 710 R.P.M.
1701-2	Hi Level Prest-O-Lite Delco—17 Plate 114 Ampere Hours 10 3/8"x7"x8 3/8" 7° BTDC .0125"-.0175" Full Automatic 600 R.P.M. Engine Autolite IG1-4007 10 mm. 103 AC or Champion Y4 .0255"-.0305" Autolite GCO-4807-A-2 Belt 710 R.P.M.
1703-5	Hi Level Prest-O-Lite Delco—17 Plate 114 Ampere Hours 10 3/8"x7"x8 3/8" 7° BTDC .0125"-.0175" Full Automatic 600 R.P.M. Engine Autolite IGT-4006 10 mm. 103 AC or Champion Y4 .0255"-.0305" Autolite GCO-4803-A Belt 800 R.P.M.
1707-8	Hi Level Prest-O-Lite —21 Plate 150 Ampere Hours 13"x7"x9 3/16" 6° BTDC .018"-.022" Full Automatic 600 R.P.M. Engine Autolite IGO-4002-A 10 mm. 103 AC or Champion Y4 .0255"-.0305" Autolite GCE14803-A Belt 700 R.P.M.

ELECTRICAL—Continued

Mechanical	DATA BOOK	Specifications		
Starter Motor—Make and Type	Autolite MAW-4018 Bendix Shift 140	Autolite MAW-4018 Bendix Shift 140	Owen-Dyneto DI-1568 Bendix Shift 148	Owen-Dyneto DN-1389 Bendix Shift 118
Starter Drive	9	9	9	10
No. of Flywheel Teeth	9	9	9	10
No. of Teeth in Bendix Pinion	9	9	9	10
Pinion Meshes	On Instrument Board and Foot Switch	On Instrument Board and Foot Switch	On Instrument Board and Foot Switch	On Instrument Board and Foot Switch
Light Control	Thermostat Relay	Thermostat Relay	Thermostat Relay	Thermostat Relay
Headlamp Current Protection	25 Volt, 20 Ampere	25 Volt, 20 Ampere	25 Volt, 20 Ampere	25 Volt, 20 Ampere
Auxiliary Fuse	25 Volt, 20 Ampere	25 Volt, 20 Ampere	25 Volt, 20 Ampere	25 Volt, 20 Ampere
Body Fuse	25 Volt, 20 Ampere	25 Volt, 20 Ampere	25 Volt, 20 Ampere	25 Volt, 20 Ampere
Tail Lamp Fuse	25 Volt, 20 Amp.	25 Volt, 20 Amp.	25 Volt, 20 Ampere	25 Volt, 20 Ampere
Stop Light Fuse	7"	7"	6 1/4"	7 1/4"
Headlamp Lens Dia. at Base	32-32 Mazda	32-32 Mazda	32-32 Mazda	32-32 Mazda
Headlamp Bulb—C.P. and Mazda No.	No. 2330L	No. 2330L	No. 2330L	No. 2330L RT
Export	50-32 Mazda	50-32 Mazda	50-32 Mazda	50-32 Mazda
Lamps—Make	C. M. Hall	C. M. Hall	C. M. Hall	C. M. Hall
Horn—Location	Sparton	Sparton	Sparton	Sparton
Battery Terminal Grounded	Mounted on Engine	Mounted on Engine	Mounted on Engine	Mounted on Engine
Ampere Draw of Horns (2)	Positive	Positive	Positive	Positive
Ampere Draw of Car Heater Motor	22-25 Ampere	22-25 Ampere	22-25 Ampere	22-25 Ampere
Ampere Draw of Lights	3 Ampere at 6 Volts	3 Ampere at 6 Volts	3 Ampere at 6 Volts	3 Ampere at 6 Volts
Ampere Draw of Coil—Idling	10 Ampere	10 Ampere	10 Ampere	12 Ampere
Ampere Draw of Coil—Stopped	3 Ampere	3 Ampere	3 Ampere	12 Ampere
Ampere Draw of Coil—Type	2 1/2 Ampere	2 1/2 Ampere	2 1/2 Ampere	2 1/2 Ampere
Cigar Lighter—Type	Electric—Borg	Electric—Borg	Electric—Borg	Electric—Jaeger
Starter Stall Torque	Automatic	Automatic	Automatic	Automatic
Ignition Coil	12 ft. lbs., 3.4 volt	12 ft. lbs., 3.4 Volt	25 ft. lbs., 3.6 Volt	39 ft. lbs., 2.9 Volt
Spring Tension on Contacts—Distributor	525 Ampere	525 Ampere	700 Ampere	610 Ampere
	Autolite CE-4632 on Cylinder Head	Autolite CE-4632 on Cylinder Head	Autolite CE-4026 on Horn Bracket on Cylinder Head	2 Autolite CE-1203 on Gear Cover
	19-23 Oz.	19-23 Oz.	19-23 Oz.	15-19 Oz.

COOLING SYSTEM

Mechanical	DATA BOOK	Specifications
Water Pump	Centrifugal Self-Adjusting Fan Belt	Centrifugal Fan Belt
Water Pump Drive	Cellular	Tubular
Radiator Core	One-Piece Stamping	One-Piece Stamping
Radiator Shell	4 Gal.	4 Gal.
Capacity of System	3 8/10 Gal.	4 Blade 21"
Fan	4 Blade 18"	On Crankshaft
Driving Pulley	On Crankshaft	135° to 1
Ratio	.963 to 1	135°
Thermostat Starts to Open	135°	Yes
Radiator Shutter	49 1/4 O.D. x 3 1/4" x 42°	48 1/4 O.D. x 1" x 42°
Fan Belt	7 1/2" x 1 3/4" I.D.	5 5/8" x 1 3/4" I.D.
Radiator Hose—Inlet	7 1/2" x 1 3/4" I.D.	5 5/8" x 1 3/4" I.D.
Radiator Hose—Outlet	3" x 1 3/4" I.D.	4 3/4" x 2" I.D.
Heat Indicator	On Instrument Board	On Instrument Board
Fan Belt Adjustment	At Generator	At Generator
Gravity Flow of Radiator	36.65 Gal. per Minute	38 Gal. per Minute
ASOLINE SYSTEM		
Carburetor—Make and Size	Chandler-Grove 1 1/4" Down-draft, Single Bbl. Mechanical Pump A.C. in Combination with Vacuum Pump	Stromberg 1 1/4" Duplex Down-draft Mechanical Pump A.C. in Combination with Vacuum Pump
Gasoline Feed	Off Camshaft	Off Camshaft
Pump Drive	Incorporated in Fuel Pump	Incorporated in Fuel Pump
Gasoline Filter	Electric	Electric
Gasoline Gauge	18 Gal.	21 Gal.
Gasoline Tank Capacity	Optional—Oil Bath Type	A.C.—Oil Bath Type
Air Cleaner and Silencer	Thermostat	Thermostat
Carburetor Heat Control	Thermostatically Controlled Unit	Thermostatically Controlled
Automatic Choke	Construction	Construction
Carburetor Fuel Level	17/32" Below Top of Bowl	3/4" Below Top of Bowl
		9/16" Below Top of Bowl

REAR AXLE

1700

Type Semi-floating

Make Packard
 Final Drive Hypoid Gears
 Propulsion Through Springs
 Axle Housing Pressed Steel—
 "Banjo Type"
 Universal Joints "Mechanics"
 Roller Bearing Type

No. Required 2
 Oil Capacity 6 Pints
 Wheel Bearings Timken
 Cone 26878 (2)
 Cup 26830 (2)

Tread 60"

Standard Gear Ratio (without overdrive) 4.54 to 1

Pinion Back Lash003", .005"

No. Teeth—Gear and Pinion 50—11

Oil Drain Plugs 1/2"—14 Pipe

SPRINGS

Front—5 Passenger Sedan 1550x72 Rate-Coil

Rear—5 Passenger Sedan 1025x110 Rate-Leaf

7 Passenger Sedan —

Front—Size 5.8" O.D. 4 1/2" I.D.

No. of Coils 8.5" Effective

Rear—Length and Width 54"x2"

1701-2

Type Semi-floating

Make Packard
 Final Drive Hypoid Gears
 Propulsion Through Springs
 Axle Housing Pressed Steel—
 "Banjo Type"
 Universal Joints "Mechanics"
 Roller Bearing Type

No. Required 2
 Oil Capacity 6 Pints
 Wheel Bearings Timken
 Cone 26878 1701
 Cup 26830 1701
 Cone 3576 1702
 Cup 3525 1702

Tread 60"

Standard Gear Ratio (without overdrive) 4.36 to 1

Pinion Back Lash003", .005"

No. Teeth—Gear and Pinion 48—11

Oil Drain Plugs 1/2"—14 Pipe

1703-5

Type Semi-floating

Make Packard
 Final Drive Hypoid Gears
 Propulsion Through Springs
 Axle Housing Pressed Steel—
 "Banjo Type"
 Universal Joints "Mechanics"
 Roller Bearing Type

No. Required 2
 Oil Capacity 6 Pints
 Wheel Bearings Timken
 Cone 26878 1703
 Cup 26830 1703
 Cone 3576 1703
 Cup 3525 1703

Tread 61"

Standard Gear Ratio (without overdrive) 4.36 to 1

Pinion Back Lash003", .005"

No. Teeth—Gear and Pinion 48—11

Oil Drain Plugs 1/2"—14 Pipe

1707-8

Type Angleset

Make Semi-floating
 Final Drive Packard
 Propulsion Hypoid Gears
 Axle Housing Through Springs
 Axle Housing Pressed Steel—
 "Banjo Type"
 Universal Joints "Banjo Type"
 Roller Bearing Type

No. Required 2
 Oil Capacity 6 Pints
 Wheel Bearings Timken—(4)
 Cone 359
 Cup 354

Tread 61"

Standard Gear Ratio (without overdrive) 4.41 to 1

Pinion Back Lash003", .005"

No. Teeth—Gear and Pinion 75—17

Oil Drain Plugs 1 1/4"—18 Flange

Front—5 Passenger Sedan 1750x77 Rate-Coil 1703
 2125x110 Rate-Coil 1705
 2325x120 Rate-Coil 1708

Rear—5 Passenger Sedan 1075x115 Rate-Leaf 1701
 1350x135 Rate-Leaf 1702
 1500x150 Rate-Leaf 1707

Front—Size 5.81" O.D. 4 1/2" I.D.—1701
 5.81" O.D. 4 1/2" I.D.—1702
 5.81" O.D. 4 1/2" I.D.—1703

No. of Coils 8.41 Effective—1701
 7.96 Effective—1702
 54"x2"

Rear—Length and Width 54"x2"

SPRINGS—Continued 1700

Shocks Rubber Bushed

Spring Covers No

Shock Absorbers Delco Hydraulic

Two-Way

Shock Absorber (Lateral Stabilizer) Houde Two-way

Shock Absorber Rear Only

Lateral Stabilizer Standard Equipment

Spring Material—Front and Rear Silico Manganese

BRAKES

Type Internal Expanding

Operation 4 Wheels

Effective Area Hydraulic-2 Shoe

Effective Area 168 sq. in.

Hand Brake 84 sq. in.

Size of Lining 1 3/4"x3/16"x12"

Material—Primary Marshall No. 2201

Material—Secondary Marshall No. 2201

Drum—Diameter 11" Centrifuge

Vacuum Booster None

WHEELS

Make *Motor Wheel

*Steel Artillery Wheel Special Equipment.

1701-2

Type Rubber Bushed

Shocks No

Spring Covers Delco Hydraulic

Two-Way

Shock Absorbers Houde Two-way

Shock Absorber Rear Only

Lateral Stabilizer Standard Equipment

Spring Material—Front and Rear Silico Manganese

BRAKES

Type Internal Expanding

Operation 4 Wheels

Effective Area Hydraulic-2 Shoe

Effective Area 182 sq. in.

Hand Brake 234 sq. in.

Size of Lining 91 sq. in.

Material—Primary Marshall No. 2201

Material—Secondary Marshall No. 2201

Drum—Diameter 11" Centrifuge

Vacuum Booster None

WHEELS

Make *Motor Wheel

*Steel Artillery Wheel Special Equipment.

1703-5

Type Rubber Bushed

Shocks No

Spring Covers Delco Hydraulic

Two-Way

Shock Absorbers Houde Two-way

Shock Absorber Rear Only

Lateral Stabilizer Standard Equipment

Spring Material—Front and Rear Silico Manganese

BRAKES

Type Internal Expanding

Operation 4 Wheels

Effective Area Hydraulic-2 Shoe

Effective Area 234 sq. in.

Hand Brake 117 sq. in.

Size of Lining 1 3/4"x3/16"x13"

Material—Primary Marshall No. 2201

Material—Secondary Marshall No. 2201

Drum—Diameter 11" Centrifuge

Vacuum Booster None

WHEELS

Make *Motor Wheel

*Steel Artillery Wheel Special Equipment.

1707-8

Type Lower-Threaded Type

Shocks Upper-Rubber Bushed

Spring Covers Metal on Rear Springs

Shock Absorbers Delco Hydraulic

Two-Way

Shock Absorber (Lateral Stabilizer) None

Shock Absorber Front and Rear

Lateral Stabilizer Standard Equipment

Spring Material—Front and Rear Silico Manganese

BRAKES

Type Internal Expanding

Operation 4 Wheels

Effective Area Hydraulic-2 Shoe

Effective Area 330 sq. in.

Hand Brake 165 sq. in.

Size of Lining 2 3/4"x3/16"x15"

Material—Primary No. 451 Raybestos

Material—Secondary Marshall No. 1035-1703-4

Drum—Diameter U. S. Ash, No. 589-1703-5

Vacuum Booster Marshall No. 600-1703-4

WHEELS

Make 12" Centrifuge

*Motor Wheel

Demountable Disc

WHEELS—Continued

Size of Tire	1700
Recommended Tire Pressure—Cold	16 x 6.50-4 ply
Front	22
Rear	24

BODY

Make	Packard
Panel Material	Steel
Upholstery Material	Broadcloth
Closed Cars	Colonial Grain
Convertible Cars	Leather
Glass	Safety
Windshield Wiper (Vacuum Type)	Tandem with Vacuum Booster
Radio Antenna	Left Side Cowl Accessory
Built-in Trunk**	Yes
Radio Lead-in Location	None
Spare Wheel Location-R	Rear Compartment
Top Type	Metal
Trunk Rack	Special Equipment

**Radio Lead-in on 1707-8 is in left pillar on all closed jobs except limousines where lead-in enters trunk compartment on right side.

***Trunk or rear compartment.

1701-2	1703-5	1707-8
16x7.00-4 ply-1701	16x7.00-4 ply-1703	16x8.25-6 ply
16x7.00-6 ply-1702	16x7.00-6 ply-1705	1707-8-26
1701-22; 1702-24	1703-24; 1705-26	1707-27
1701-24; 1702-27	1703-25; 1705-29	1708-Conv. Sedan 27
		1708 Sed. & Limo. 29
Packard Steel	Packard Steel	Packard Steel
Broadcloth Colonial Grain Leather Safety Tandem with Vacuum Booster Left Side Cowl Accessory	Broadcloth Hand Buffed Leather Safety Tandem with Vacuum Booster Left Side Cowl Accessory	Broadcloth Hand Buffed Leather Safety Tandem with Vacuum Booster Built in Roof
Yes	Yes	Yes
None	None	**Left Front Pillar
Rear Compartment	Rear Compartment	Rear Compartment
Metal	Except Coupe	Except Coupe
Special Equipment	Metal	Fabric
	Special Equipment	Special Equipment

**Left Front Pillar

Rear Compartment

Except Coupe

Fabric

Special Equipment

COMPLETE CAR WEIGHTS

Type of Body	1700	1701	1702	1703	1705	DeLuxe 1707	DeLuxe 1708
Touring Sedan, 5-passenger	3430	3605		3930		5670	
Touring Sedan (2-door) 5-passenger	3390	3595					
Club Coupe, 2-4-passenger	3365	3535		3860		5400	
Convertible Coupe, 2-4-passenger	3385	3545		3870		5540	
Business Coupe, 2-passenger	3295	3490					
Convertible Sedan, 5-passenger		3780		4005			5890
Touring Sedan, 7-8-passenger			4100		4425		5750
Touring Limousine, 7-8-passenger			4185		4510		5825
Formal Sedan, 5-passenger						5745	
Club Sedan, 5-passenger						5590	
Coupe, 5-passenger						5425	
Victoria, 5-passenger						5570	
Chassis	2406	2604	2850	3000	3140	3920	3975

Packard
Custom Cars

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Times 100

MECHANICAL
SPEC.

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PACKARD
CUSTOM CARS

SERVICE AND
ACCESSORIES

PACKARD CUSTOM CARS

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PACKARD CUSTOM CARS

FOR centuries the coach was a mark of supreme distinction. It was the outward visible indication of royalty and aristocracy. It attained its highest development in France under the Louis' and in Holland, where the art of Rembrandt appeared on the panels of the royal equipages.

The traditions of this centuries-old art furnish the inspiration and background for the modern custom cars. As the aristocrat of old was proud of his individually fashioned coach, so are particular men and women of today supremely conscious of the art and craftsmanship of Packard Custom bodies.

To meet the increasing demand of those who desire the added distinction and luxury of the custom car, Packard will offer four body types to be available on the 17th Series Packard Twelve chassis, namely, the Brunn Touring Cabriolet, the Brunn All-Weather Cabriolet, the Packard-Rollston All-Weather Cabriolet and the Packard-Rollston All-Weather Town Car.

The new Brunn Touring Cabriolet was designed for the purpose of giving extra comfort and vision to the passengers. This model has all the smartness of the wholly convertible bodies, with the rear quarter of the top only, folding, and the front portion remaining rigid. The forward slope of the rear hinge pillar increases the length of the rear quarter and provides better vision for the occupants of the rear seat when the top is lowered. The forward slant of the glass in the rear doors harmonizes with the slant of the windshield.

The top is made with exposed bows on each side of the rear quarter. After the top has been lowered, all the advantages of an open body are secured. When

necessity arises, the top can be raised in a few seconds from the exterior, without any help from the occupants and without disturbing them. With the top up and windows raised, perfect protection is provided. This type of top is staunch and free from rattles.

Another improvement is the absence of a header bar back of the driving seat. The glass rises from the back of the front seat and slides into a small channel flush with the headlining.

The slender windshield pillar of manganese bronze is as small as is consistent with strength. This narrow pillar, together with the square corners of the windows, provides increased vision. Glass skylights in the front part of the top in close connection with the windshield are an added feature of this model. These skylights, neutralite in color, permit vision without undue glare from the sun. Visors of generous size are provided so that it is possible to cover these panels altogether when so desired.

The new Brunn All-Weather Cabriolet has additional room in the rear tonneau and will include two folding opera type seats as standard, one side-facing and one rear-facing. Both of these auxiliary seats are concealed in the center partition when not in use. The rear quarter of the top is collapsible and can be readily raised or lowered. An easily installed canopy protects the front compartment in case of inclement weather.

The Packard-Rollston All-Weather Cabriolet fills the demand for a more conservative type of town car. The two opera type folding seats, one side-facing and the other rear-facing, are concealed when not in use. The front compartment canopy, complete with hinged side spoons, is stored in a concealed compartment above the chauffeur's head. This arrangement

provides for quick and easy installation or storage of the canopy.

The Packard-Rollston All-Weather Town Car provides ample room for five passengers in the rear tonneau. The two forward-facing auxiliary seats are concealed in the center partition when not in use. The two rear quarter windows are of the ventilating type. The canopy for the driver's compartment is carried in a concealed locker in which the canopy side spoons are pivoted, above the chauffeur's head.

Special Designs

While Packard Twelve Custom cars generally meet the requirements for either the conservative or more extreme type of cars, we realize that there is a limited clientele who desire something entirely different. You have only to inform us of your customer's desires and we will then submit for his approval designs especially prepared for him by leaders in custom body building whose reputation for creative ability, craftsmanship and excellence of coachwork is outstanding.

BRUNN TOURING CABRIOLET

Style No. 4086

Available only on the 1708 Packard Twelve 139 $\frac{3}{8}$ " wheelbase chassis.

STANDARD EQUIPMENT

Slanting Vee windshield with stationary glass
Painted windshield stanchions
Windows in windshield header
Collapsible rear quarters
Division glass, raised or lowered by means of regulator

Built-in radio antenna
Folding center arm rest in rear seat back
Haartz top material
Down cushions throughout
Mahogany garnish mouldings
Two carpet-covered hassocks in rear compartment
Chauffeurbrella
Clock in rear compartment
Conventional drop type windows
Safety glass used throughout
Fenderwell equipment
Six steel wheels
Black sidewall tires
Two spare tires
Trunk built in body
Imported sheepskin rug for rear compartment

OPTIONAL EQUIPMENT

Color on body, bonnet, chassis and wheels
Upholstery cloth or domestic leather
Color of Haartz top material for roof and rear quarters
White sidewall tires
One side-facing opera type folding seat if specified before body is upholstered

SPECIAL EQUIPMENT AT EXTRA COST

Leather for roof and rear quarters
Imported or special domestic leather upholstery material

BRUNN ALL-WEATHER CABRIOLET

Style No. 4087

Available only on the 1708 Packard Twelve 139 $\frac{3}{8}$ " wheelbase chassis.

STANDARD EQUIPMENT

Slanting Vee windshield with stationary glass
Painted windshield stanchions
Collapsible rear quarters
Canopy for front compartment
Front compartment upholstered in leather
Glass in partition lowers
Folding arm rest in rear seat back
Haartz top material
Down cushions in rear compartment
Two opera type folding seats, one side-facing and
one rear-facing, both concealed when not in use
Built-in radio antenna
Mahogany garnish mouldings
Two carpet-covered hassocks for rear compartment
Chauffeurbrella
Clock in rear compartment
Telephone
Conventional drop type windows
Safety glass throughout
Fenderwell equipment
Six steel wheels
Black sidewall tires
Two spare tires
Trunk built in body
Imported sheepskin rug for rear compartment

OPTIONAL EQUIPMENT

Color on body, bonnet, chassis and wheels
Upholstery cloth or domestic leather
Color of Haartz top material for roof and rear
quarters
White sidewall tires

SPECIAL EQUIPMENT AT EXTRA COST

Leather for roof and rear quarters

Imported or special domestic leather upholstery
material

PACKARD ROLLSTON
ALL-WEATHER CABRIOLET

Style No. 594

Available only on the 1707 Packard Twelve 134 $\frac{3}{8}$ "
wheelbase chassis.

STANDARD EQUIPMENT

Slanting windshield with stationary glass
Painted stanchions with chromium frame around
windshield glass
Black turtle grain leather for roof and rear quarters
Canopy for driver's compartment carried in a special
compartment in division header in which canopy
side spoons are pivoted
Laidlaw super deluxe broadcloth 749-D for rear
compartment
Black leather for front compartment
Opera type occasional seats, one side-facing and
one rear-facing (concealed when not in use)
Glass in partition lowers
Two carpet-covered hassocks in rear compartment
Folding center arm rest in rear seat back
Equipped with radio antenna—lead on right hand
side of cowl panel
Walnut garnish mouldings
Conventional drop-type windows
Safety glass used throughout
Fenderwell equipment
Six steel wheels
Black sidewall tires
Two spare tires
Trunk built in rear of body

Insulation on body panels and floor
Entire car, including body, bonnet, chassis and wheels, painted black

OPTIONAL EQUIPMENT

Any Packard Twelve upholstery cloth
Any Packard Twelve color on body, bonnet, chassis and wheels
White sidewall tires

SPECIAL EQUIPMENT AT EXTRA COST

Special leather for roof and rear quarters
Special upholstery material for front or rear compartment
Dummy landau bows for rear quarters

PACKARD ROLLSTON ALL-WEATHER TOWN CAR

Style No. 595

Available only on the 1708 Packard Twelve 139 $\frac{3}{8}$ " wheelbase chassis.

STANDARD EQUIPMENT

Slanting windshield with stationary glass
Painted stanchions with chromium frame around windshield glass
Black turtle grain leather for roof and rear quarters
Canopy for driver's compartment carried in a special compartment in division header in which canopy side spoons are pivoted
Laidlaw super deluxe broadcloth 749-D for rear compartment
Black leather for front compartment
Forward-facing occasional seats (concealed when not in use)
Glass in partition lowers

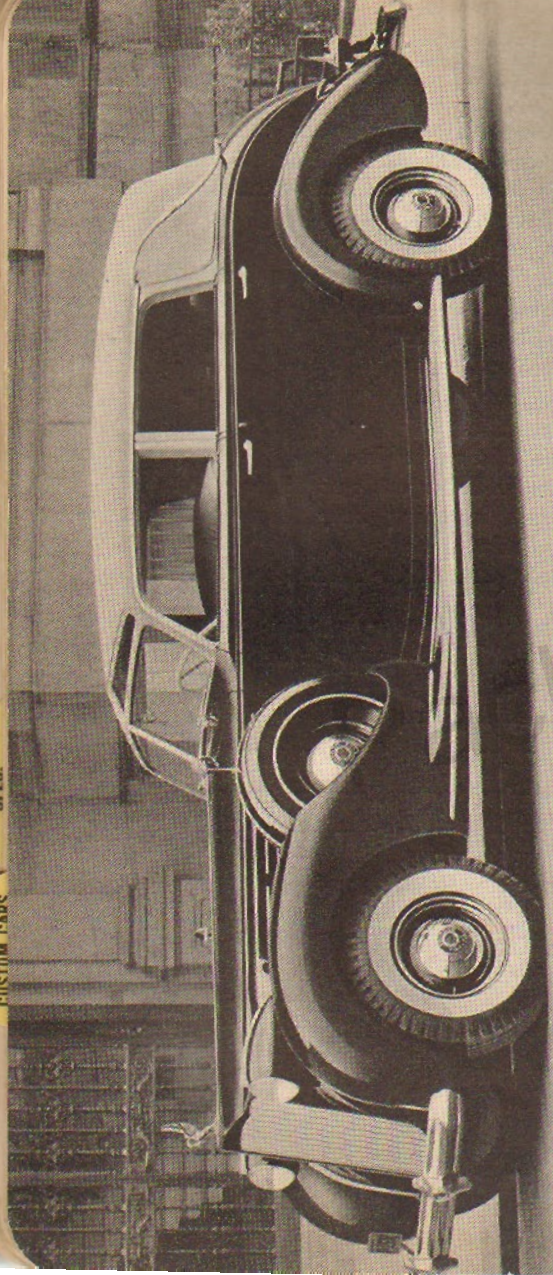
Carpet-covered foot rest in rear compartment
Folding center arm rest in rear seat back
Equipped with radio antenna—lead on right hand side of cowl panel
Walnut garnish mouldings
Rear quarter windows of the ventilating type
Safety glass throughout
Fenderwell equipment
Six steel wheels
Black sidewall tires
Two spare tires
Trunk built in rear of body
Insulation on body panels and floor
Entire car, including body, bonnet, chassis and wheels, painted black

OPTIONAL EQUIPMENT

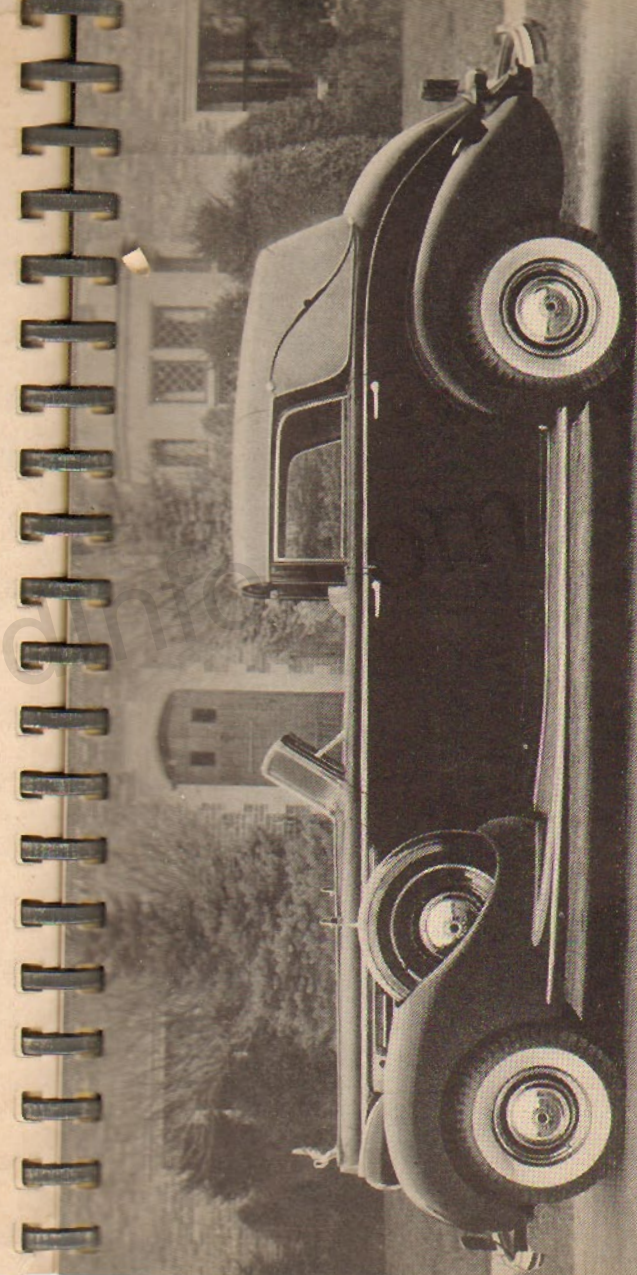
Any Packard Twelve upholstery cloth
Any Packard Twelve color on body, bonnet, chassis and wheels
White sidewall tires

SPECIAL EQUIPMENT AT EXTRA COST

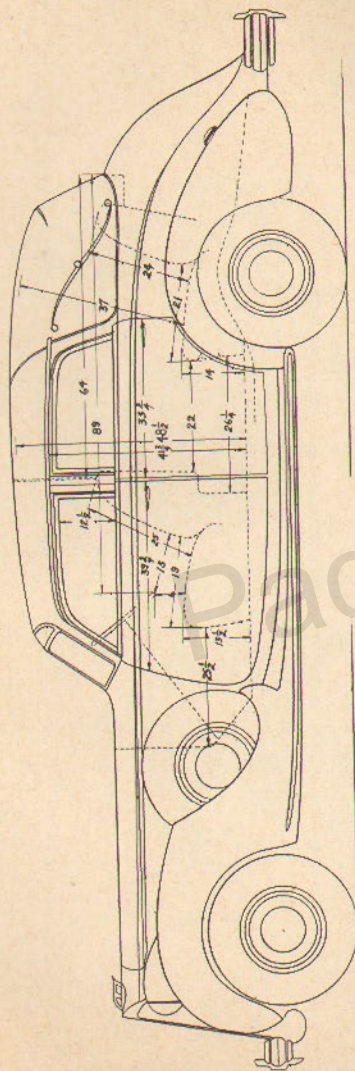
Special leather for roof and rear quarters
Special upholstery material for front or rear compartment
Dummy landau bows for rear quarters



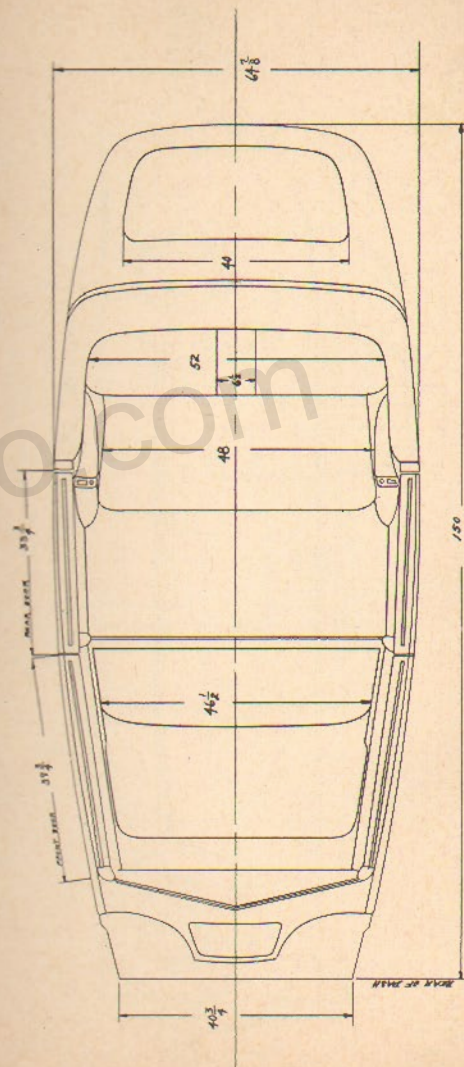
Style 4086 Brunn Touring Cabriolet



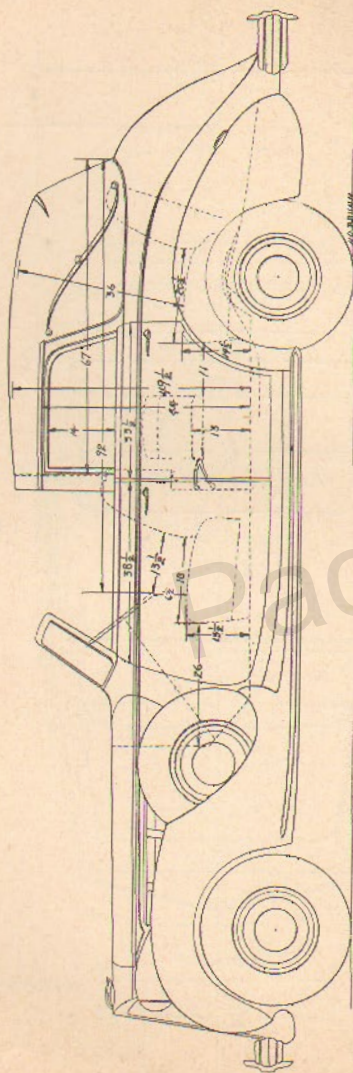
Style 4087 Brunn All-Weather Cabriolet.



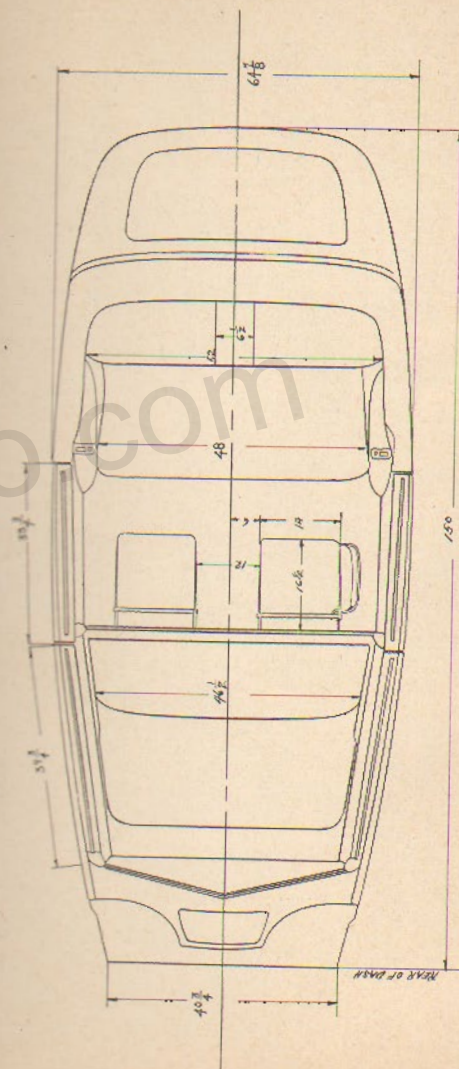
Style 4086 Brunn Touring Cabriolet.



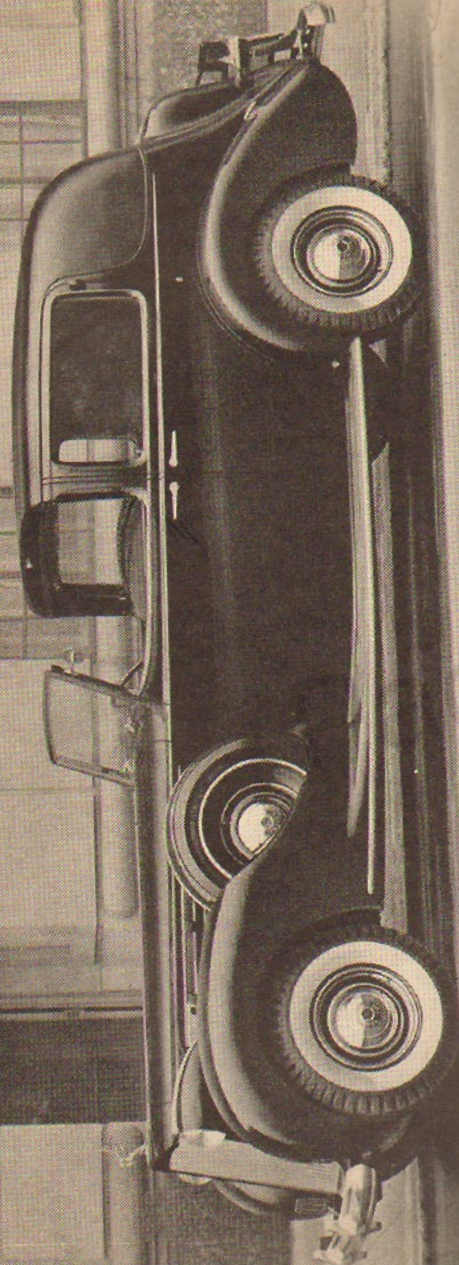
Style 4086 Brunn Touring Cabriolet.



Style 4087 Brunn All-Weather Cabriolet.



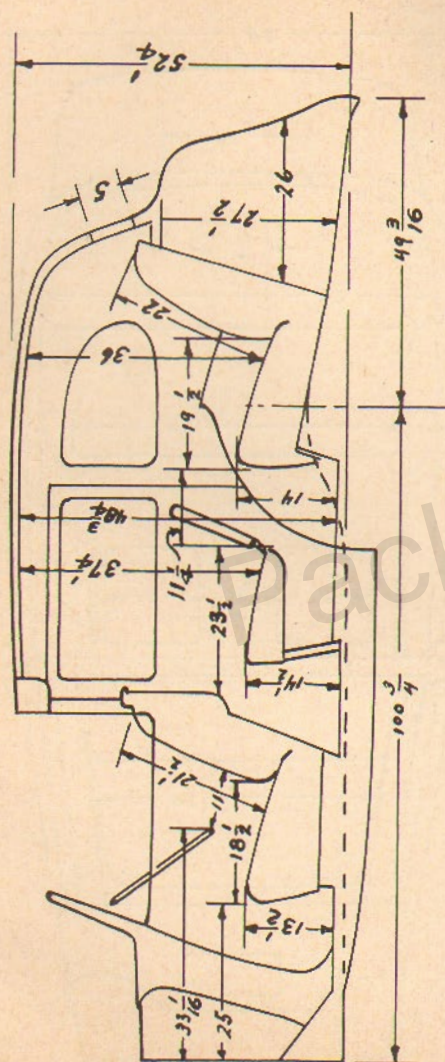
Style 4087 Brunn All-Weather Cabriolet.



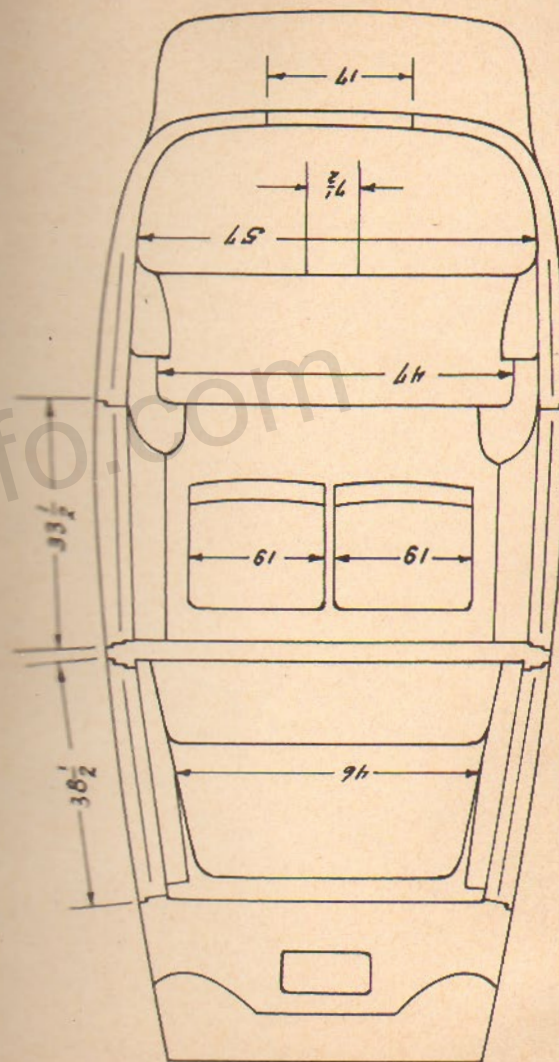
Style 594 Packard Rollston All-Weather Cabriolet.



Style 595 Packard Rollston All-Weather Town Car.



Style 595 Packard Rollston All-Weather Town Car.



Style 595 Packard Rollston All-Weather Town Car.

Packard
1900-1909

Packard
1910-1919

MECHANICAL
SPEC.

PACKARD
CUSTOM CARS

PackardInfo.com

SERVICE AND
ACCESSORIES

PACKARD SERVICE POLICY

BY DISTRIBUTERS AND DEALERS

The original purchaser of a new Packard car will be entitled to the following:

1. Parts and Labor:

For 90 days after the original delivery of such motor car to the owner, provided the car has not been driven to exceed 4,000 miles, any parts, including all standard equipment, except tires, that may be adjudged by Packard Motor Car Company to be defective under its warranty will be replaced or repaired by any Packard dealer or distributor in the United States and Canada without charge to the owner for material or labor.

2. Adjustment:

The owner is entitled during this period to receive the inspections and adjustments of his new car, as indicated on the coupons attached to the owner's card by the selling Packard dealer or distributor, provided such adjustments are not made necessary by accident, neglect or misuse.

3. Inspections:

Throughout the life of the car the owner is entitled to have it tested and inspected without charge every 30 days or 1,000 miles by an authorized Packard Service Station, provided such inspection requires no removal or dismantling of parts or units.

4. Owner's Service Card:

At the time of delivery the owner is provided with an Owner's Service Card which will introduce him to any authorized Packard Service Station and entitle him to receive service in accordance with this policy. The owner should carry the card with him at all times so it can be presented when necessary.

5. Tourist Privileges:

When touring, the owner is entitled, upon presentation of the Owner's Service Card, to all of the benefits of this policy during the warranty period at any authorized Packard Service Station in the United States and Canada, provided the date of delivery and name of dealer from whom the car was purchased are stamped on the plate provided for that purpose on the front face of the dash.

6. Change of Residence:

In case the owner changes his residence from one location to another before the warranty period has expired, the Packard Service Station serving the locality into which the owner moves, will, upon presentation of the Owner's Service Card, render any no-charge service to which the owner may be entitled.

7. Service Charges:

Every authorized Packard Service Station has made a list of correct charges for service work. In order that maintenance costs may be kept as low as possible, these charges are based on careful studies of the shortest times for doing the service operations consistent with proper workmanship. Guaranteed Packard Parts

can be obtained from any authorized Packard Service Station and should be used for replacement purposes.

PACKARD SERVICE PLEDGE

PACKARD believes that Packard owners are entitled to Service that will be on as high a plane as Packard prestige, which has been maintained for over thirty years.

Every effort is made to maintain a relationship between the Service Department and the owner that will be one of mutual understanding of the highest order.

We feel that each new Packard sold opens the door to new responsibility. It is our earnest endeavor to carry out the fundamentals of Packard Service as expressed in the Packard Service Pledge. They are: First, TO CORRECTLY DIAGNOSE AND PROPERLY REPAIR or adjust any unsatisfactory condition brought to our attention.

Second, TO BE COURTEOUS at all times. Packard owners visiting us will be considered as our guests, and we shall do everything we can to make them feel at home.

Third, TO LIVE UP TO ALL PROMISES we make to Packard owners. Realizing the loss of time and inconvenience that can be sustained by an idle car, we shall service Packard owners promptly and with the least amount of delay.

Fourth, TO KEEP OUR ESTABLISHMENT SCRUPULOUSLY CLEAN AND INVITING and insist that our personnel be just as clean and neat in its personal appearance.

Fifth, TO MAINTAIN OUR EQUIPMENT AT

THE HIGHEST POINT OF EFFICIENCY, to employ the necessary special tools designed to correctly service Packard cars and to use approved Packard precision built Parts and Accessories.

Sixth, TO SEE TO IT THAT ALL WORK PERFORMED CARRIES FAIR CHARGES. All misunderstandings and adjustments will be handled in the most diplomatic manner so that every visit from a Packard owner will be a pleasant and mutually satisfactory one.

Seventh, TO SERVICE EVERY CUSTOMER IN SUCH A WAY AS TO MAKE HIM SUPREME PROUD OF PACKARD OWNERSHIP. We shall make it a point to keep in touch with Packard owners in order to assure them the fullest measure of continuous satisfaction from their purchases.

LUBRICATION PLANS

Plan No. 1—The Blue Book

At a suggested price to the owner of \$4.25 the following Lubrication-Inspection Service is rendered:

1. Complete chassis lubrications with correct factory specified oil and greases required at first 500-mile and 2,000-mile intervals. 2. One 10,000-mile front wheel bearing lubrication. 3. Five complete inspection services which keep both the owner and our service department familiar with the condition of the car. A safety inspection is also included. This tends to prevent unexpected and expensive repair work and is a preventive service. The cost of the blue book should be listed as a separate item in the delivered price of each new car and the book given to the owner at

the time of delivery. The blue book is to be accepted at full face value in exchange for Plan No. 2.

Plan No. 2—The Buff Book

This Lubrication-Inspection Service includes all operations of Plan No. 1 and in addition includes the lubricants for motor oil changes at the first 500 miles and every 2,000 miles for a 10,000-mile period. Lubricant is also supplied for changes in the transmission, rear axle and steering at the proper season. This plan also includes replacement of the oil-filter cartridge, air-cleaner service and the safety inspection service. Prices are as quoted by distributors and dealers.

ACCESSORY PRICE LIST

Radio, Twelve De Luxe.....	\$85.00
Radio, Custom	69.95
Radio, Single Unit	57.95
Radio Guest Speaker.....	8.50
Heater, De Luxe.....	19.85
Heater, Standard	16.45
Heater, Rear Compartment.....	32.50
Fresh Air Intake	14.75
Defroster	7.95
NoRoL	10.50
Seat Covers (Sedan)	12.75
Steering Stabilizer	19.50
Auxiliary Front Bumper	9.50
Clock, Electric	11.75
Cormorant Radiator Emblem.....	10.00
Road and Fog Light.....	6.95
Backing Light	7.50
Spotlight	18.50
Robes with Monograms.....	36.50 (up)
Battery Charger	8.25
Cigar Lighter	2.50
Steering Wheel, De Luxe.....	12.50

This supersedes previous price lists.

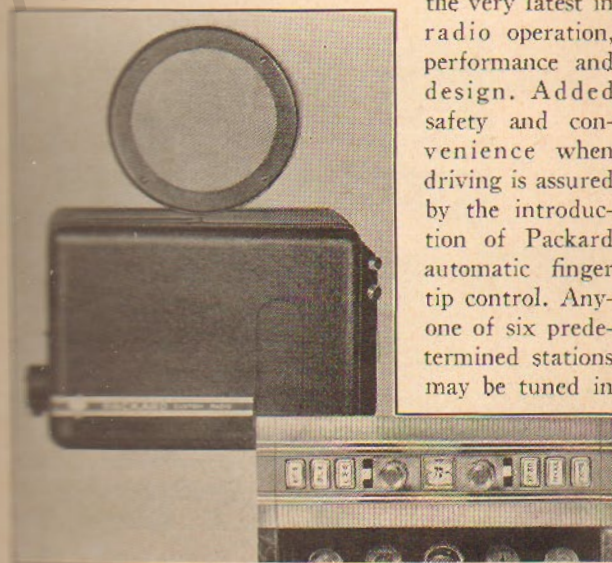
PACKARD APPROVED ACCESSORIES

TO assure the most enjoyment, greatest comfort and every convenience, to provide the opportunity of setting each Packard apart from others, we have engineered and approved certain custom accessory items which will complement the beauty, durability and prestige of Packard cars. These beautifully produced accessories carry the unqualified approval of Packard engineers. Recommend them to your owners, sell Packard Accessories with confidence.

Custom Radio

The new Packard Custom Radio, with its automatic finger tip control, provides Packard owners with

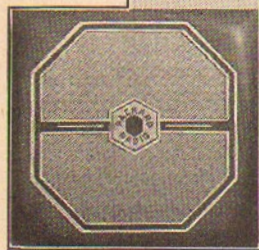
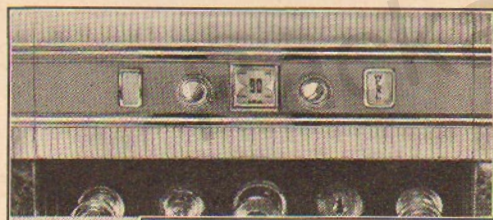
the very latest in radio operation, performance and design. Added safety and convenience when driving is assured by the introduction of Packard automatic finger tip control. Any one of six predetermined stations may be tuned in



by pressing the tip of your finger against one of the six buttons on the dial. Additional stations may be selected as desired in the conventional manner. More perfect acoustics, sharper tuning and long distance reception are the results of building this radio to Packard 1939 specifications.

Guest Speaker

This guest speaker permits the passengers in the rear seat to enjoy the radio programs without increasing the volume of the front compartment speaker. The use of two speakers provides perfect acoustics throughout the car.



Single Unit Radio

Like the other Packard radios, this six-tube set has automatic tuning built into it. On this set a single button operates the automatic selector and assures ease of operation. The eight-inch speaker's clear, true reproduction and the moderate price will appeal to many owners.

Packard De Luxe Heater

Designed to appear as part of the regular car equipment, this heater is traditionally Packard in design, giving distinct individuality. The doors are hinged in the center. This, together with the down draft opening in the bottom, permits perfect control of the abundance of heat produced. A safety defroster take-off is provided in the top of this heater. The gypsy-brown finish and oxidized silver trim harmonize with the rest of the car finish.



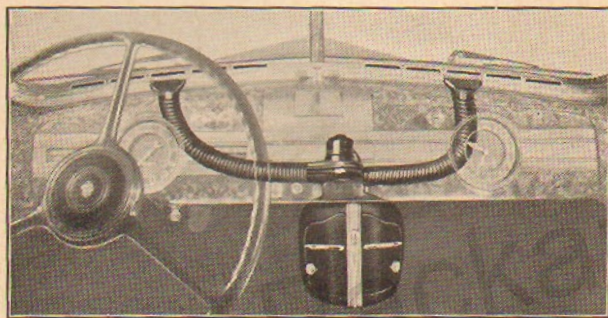
Packard Standard Heater

An excellent, moderately priced hot water heater built to Packard specifications. This smaller model meets the motorist's requirements for climates where the maximum heat is not desired. This heater is a little smaller and approximately 70 per cent as efficient as the DeLuxé model.

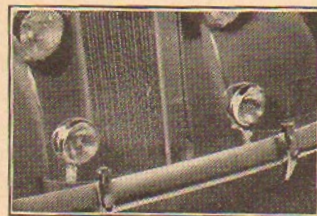


Packard Dual Windshield Defroster

Designed to fit either model Packard hot water heater, this windshield defroster adds immeasurably to the safety and pleasure of driving in bad weather. It forces a stream of warm air across both sections of the windshield, keeping the glass clear of frost, sleet or mist. Independent of the heater fan, it can be used at any time, and is controlled by a separate switch.



Packard Road and Fog Lights



Powerful driving lights, which mount on the front bumper bracket and cast long, low beams of penetrating light. Packard road and fog lights will be appreciated by the motorist who frequently drives through dust, fog, snow or rain. For greater safety they should be mounted in pairs.

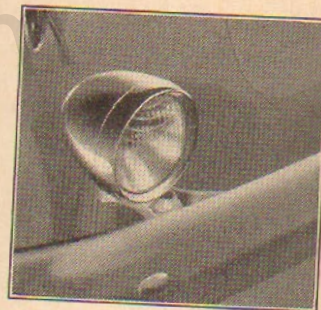
Packard Spotlight

This inner-controlled spotlight is especially valuable. It lights up the dark spot just beyond the oncoming car and is perfect for reading street signs and house numbers.



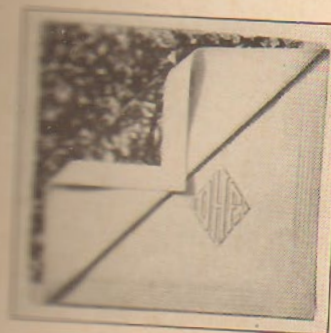
Packard Backing Light

This miniature flood light illuminates the line of road behind the car, revealing hidden hazards such as loose posts, deep ditches, the edge of the driveway, etc., hard to locate in the dark.



Packard Custom Robes

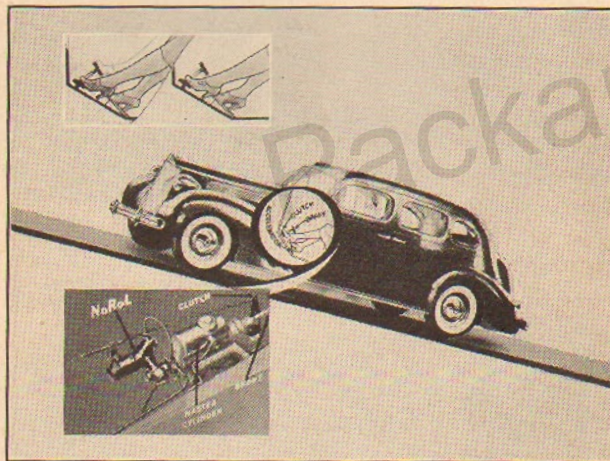
Packard motoring robes are tailored in the correct style, are soft and snugly warm. Finished in the finest silk plush and monogrammed with your initials, they are a distinctive as well as useful accessory.



Packard NoRoL

A new safety device to hold a Packard car from rolling back down a hill or incline if you have to stop on a hill in the country or in traffic on a busy city street.

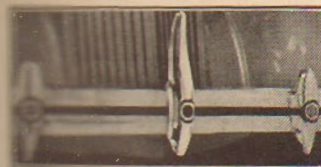
There is nothing new for the driver to learn or worry about. When he brings the car to a stop on a hill he depresses the brake and clutch pedals. The NoRoL unit holds the car from rolling back. He can then remove his foot from the brake to operate the accelerator and drive on as soon as traffic permits. When the clutch is engaged the NoRoL is automatically released, permitting the car to move ahead without risk of rolling back.



With the NoRoL the driver can remove his foot from the brake pedal and be in position to operate the accelerator as soon as traffic permits him to drive ahead. Each start on a hill is as easy as starting on a level street.

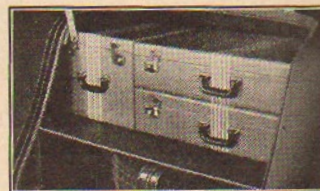
Radiator Grille Protector

Designed to prevent the rear bumpers of another car overriding your front one and damaging the radiator grille, this heavily chrome-plated guard bolts to the center of the front bumper. The Packard red hexagon is stamped in the center to match the regular bumper guards.



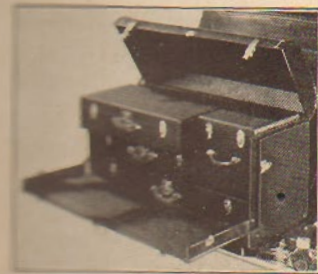
Packard Luggage

A complete line of Packard luggage is made expressly for the spacious luggage compartment in Packard cars. All cases are of fine quality, styled to please the most discriminating and are available in a clever, modern covering. All have brass hardware.



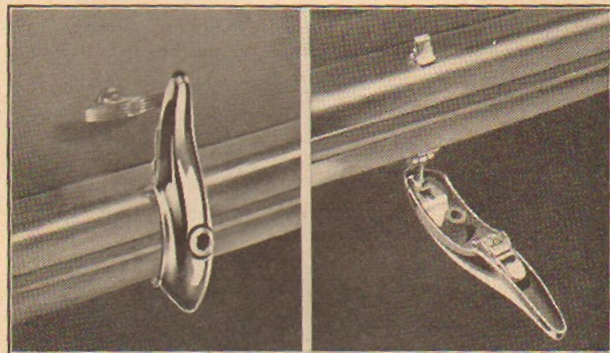
Packard Rear Rack Trunks

Open top, drop front construction makes this steel trunk most efficient. Painted to match the car, it is attractive and can be purchased either with or without suitcases to fit. Each trunk is equipped with a hinge arrangement which allows it to be tipped, giving free access to the luggage and spare tire compartments.



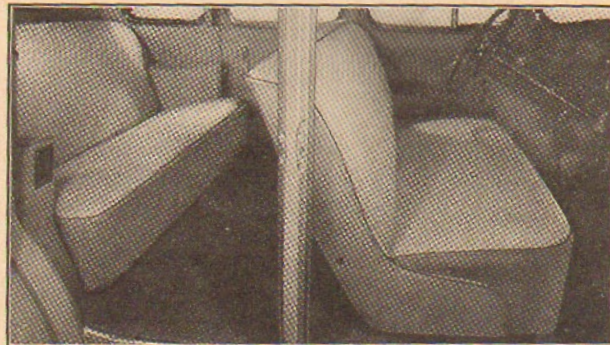
Trunk Lid Guard

This strong, chrome-plated guard is designed to protect the trunk door from damage when the front bumper of other cars strike and over-ride the rear bumper of your car.



Packard San-Tex Seat Covers

San-Tex seat covers are very desirable in warm weather because of their coolness, neat appearance and cleanliness. They are cleaned easily, without removing from the car, by using a damp cloth or sponge.



SERVICE AND
REPAIRS

PACKARD
CUSTOM CARS

MECHANICAL
SPEC.

PACKARD
PARTS LIST

Packard

com

