HOW
WHAT
WHY

About THE 1936 HUDSONS
AND TERRAPLANES

To HUDSON and TERRAPLANE SALESMEN

The Hudson Motor Car Company prides itself on having a retail sales organization that is aggressive, intelligent and alert.

Intelligent and aggressive salesmanship on your part, plus motor cars that we have every reason to believe are the best that are built today . . . those two factors are responsible for your steadily growing success, and ours.

The purpose of this 1936 edition of "How—What—Why" is to make you intimately and accurately acquainted with the 1936 Hudsons and Terraplanes. Not to be thoroughly familiar with your product puts you at a disadvantage in selling against men who may represent a competitive car not nearly so good, but who may inspire greater confidence because they are able to talk convincingly about such desirable features as it may possess.

In the 1936 Hudson and Terraplane you have a wealth of good points to talk about . . . features that are not found as abundantly in any other one car, and many great features which are found in no other cars, regardless of price.

So, it's up to you to know your product from head lamp to tail light. You'll be asked many questions . . . and in nearly every instance these questions will come

from people who sincerely want to know *How* that works, *What* those are for, *Why* this method is superior. If you can tell them briefly and in terms they can understand, they will be favorably impressed with Hudson-built cars and with your ability as a salesman.

Within the covers of this book you will find the answer to probably every question that will arise. Read it through . . . not just once, but a number of times . . . until you're able to answer any question that will be frequently asked, and know where to turn quickly for the answer that may not be at the tip of your tongue.

Do this, and we can confidently assure you that you will be a better and more successful salesman.

HUDSON MOTOR CAR COMPANY

HUDSON AND TERRAPLANE FEATURES in 1936

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Hudson, the leader of the performance parade for many years, again shows the way in performance in 1936, and, in addition, assumes a new title:

The New Leader of the Style Parade!

The 1936 Hudsons and Terraplanes are as outstanding in style and beauty as they are in performance, safety, economy and smooth, quiet comfort.

As the company which has pioneered more than seventy "firsts" and introduced many of the developments that have become standard in the automobile industry, Hudson is looked to by the motoring public for advancements in design that will set the pace for other manufacturers.

And in every element of value that an automobile owner wants in his car . . . style, performance, safety, comfort and convenience, and economy . . . Hudsons and Terraplanes again set the pace in 1936.

Style

From bumper to bumper, the new Hudsons and Terraplanes are restyled. The designers have taken all that

is best in modern styling and wind-streaming, and have added an extra measure of gracefulness and pleasing beauty that has not been achieved in any other cars. All bodies are many inches longer, and are lower and fleeter looking. The curving contours of the radiator, hood, top, sides and rear are even more pleasingly moulded than before. The radiator grille, the "frontispiece" that tells approaching motorists that another Hudson or another Terraplane is coming, is distinctive and graceful, and as modern as tomorrow. The radiator ornament, usually just an incidental, becomes a real beauty asset in the new Hudsons and Terraplanes, not only as a distinguishing feature, but also as a symbol of the grace, speed and smoothness of the cars.

The fenders, front and rear, are redesigned in the most modern motif. The slanting, divided V-windshield is not only a beauty factor, but also gives greater vision and lessens wind resistance to a degree. The steel top is now seamless, and is a smooth unit with the body shell. The rear end styling is the goal that all automobile designers have been striving for since Hudson inaugurated the wind-streamed, sweeping rear end in 1934. While most companies have sought this goal (and without success) at the expense of inside body room, the 1936 Hudsons and Terraplanes not only have accomplished the most beautiful exterior design, but have even *increased* the roominess and rear seat headroom.

The supplementary items of design, such as the hardware, the upholstery, the interior trim, the instrument panel, the lamps, the wheels . . . all of these have had as much attention as the body styling, and they complete the "eyeful of beauty." The instrument panel, particularly, is far and away the most unusual and

distinctive in any car . . . a feature that will be copied by many other manufacturers.

Performance

Aside from a change in the water circulating system, and a few rather minor changes intended to insure a perfect uniformity of operation, the power plant in Hudsons and Terraplanes remains unchanged. This will be a cause for great satisfaction to everyone who owns or sells Hudsons and Terraplanes, for their performance is recognized as best among all stock cars.

Ruggedness and Safety

In past years Hudson has built proved safety into Hudsons and Terraplanes to a greater degree than other manufacturers . . . safer brakes, stronger bodies and chassis, sturdier axles . . . every safety factor keeping pace with the exceptional performance built into Hudsons and Terraplanes. But, just as every driver must also "drive safely for the other fellow," so Hudson engineers have worked to make Hudsons and Terraplanes still safer, considering the other less-safe cars on the roads. Out of this effort have come the Duo-Automatic Hydraulic Brakes, unquestionably the greatest braking advancement in years. Now the smoothness and equalized action of hydraulic brakes are supplemented by the certainty of rugged, rotary equalized mechanical brakes . . . a two-in-one system that provides in the fullest degree the merits of both hydraulic and mechanical brakes.

The new Radial Safety Control, which has a beneficial effect on braking, provides still another important safety element in that it reduces driver's fatigue to the

absolute minimum through the Rhythmic Ride and Tru-Line Steering.

Hudsons and Terraplanes, again in 1936, have bodies *completely of steel.* The front end box-girder design, the strongest in the industry, is likewise continued. So is the rigid chassis frame, with the deepest side rails and X-member, K-member and three straight cross-members, further reinforced by the steel body floor that is bolted to the frame at 34 points. More high-nickel chrome steel, nickel molybdenum (electric furnace) steel and chrome molybdenum steel is used in the engine, transmission and rear axle of Hudson-built cars than in any other cars in their price field. The pressed-steel wheels are the sturdiest type known and the steel running boards are really "side bumpers," because of their exceptional strength.

Economy

All of the factors which made Hudsons and Terraplanes so notably economical in operation and upkeep in 1935 are retained in 1936. Both in the hands of owners and in supervised tests, these cars have proved their "stinginess" with regard to gasoline and oil consumption. Greater front-end stability, accomplished through the new Radial Safety Control design, increases tire life and is an important economy factor.

Comfort and Convenience

"Hudson-built cars are easy-riding and easy-handling."

That has been a byword in the automobile world for years, but it is more true than ever in 1936, when Hudsons and Terraplanes provide Radial Safety Control, the Rhythmic Ride and Tru-Line Steering.

Radial Safety Control is an entirely new principle of front axle and spring design, which adds tremendously to safe riding, safe steering and safe stopping.

The Rhythmic Ride . . . for the first time, long, gentle front springs are free from steering and braking strains, with nothing at all to do but cushion the ride.

Tru-Line Steering is a new principle that enables the car to hold its direction without swerving or wandering—unaffected by spring action, braking or road conditions.

To the year-'round ventilation design, which has been the most complete ventilating system in any automobile, Hudsons and Terraplanes are in 1936 adding the Automatic Draft Eliminator. This winter-driving feature, which eliminates drafts when the car is closed for cold weather, is important both as a health and comfort factor.

Roominess and comfort are synonymous . . . and Hudsons and Terraplanes in 1936 have the widest front and rear seats in their price classes. Seats and backs are soft, deep and restful. Front seats and steering columns are adjustable. The handbrake is up under the cowl, out of the way (except in Terraplane De Luxe models), and, with the Electric Hand, there is no gearshift lever to take up floor space. The spare tire is laid flat in the enclosed baggage compartment, easily removable, and there is an exceptionally large and convenient baggage space.

1936
TERRAPLANE
MODELS

115-Inch Wheelbase 88 and 100 Horsepower

De Luxe Series

Sedan Brougham Touring Sedan
Touring Brougham Business Coupe
Coupe with Rumble Seat
Convertible Coupe

Custom Series

Sedan Brougham Touring Sedan
Touring Brougham Business Coupe
Coupe with Rumble Seat
Convertible Coupe

IN 1936, more even than ever before, the Terraplane will be the car chosen by motorists who want a car that gives more . . . in performance, in safety, in economy, in comfort and luxury . . . than other cars in the low price field. In performance and economy, Terraplane in 1936 retains the proved margin of superiority it has enjoyed in 1934 and 1935. In safety, size, comfort and luxury, it steps far out ahead of the field.

Radial Safety Control . . . the Rhythmic Ride . . . Tru-Line Steering . . . Duo-Automatic Hydraulic Brakes . . . Automatic Draft Eliminator . . . 1936 Terraplanes have these important, essential advancements—and no other car in the price class has even one.

Terraplane buyers in 1936 are offered a wider selection of body models than ever before . . . seven models in both the De Luxe and Custom series. All are on the longer wheelbase for 1936—115 inches. And all bodies are larger and roomier . . . the widest front and back seats in the price class . . . more leg and head room than is offered in all but a very few cars in any price class.

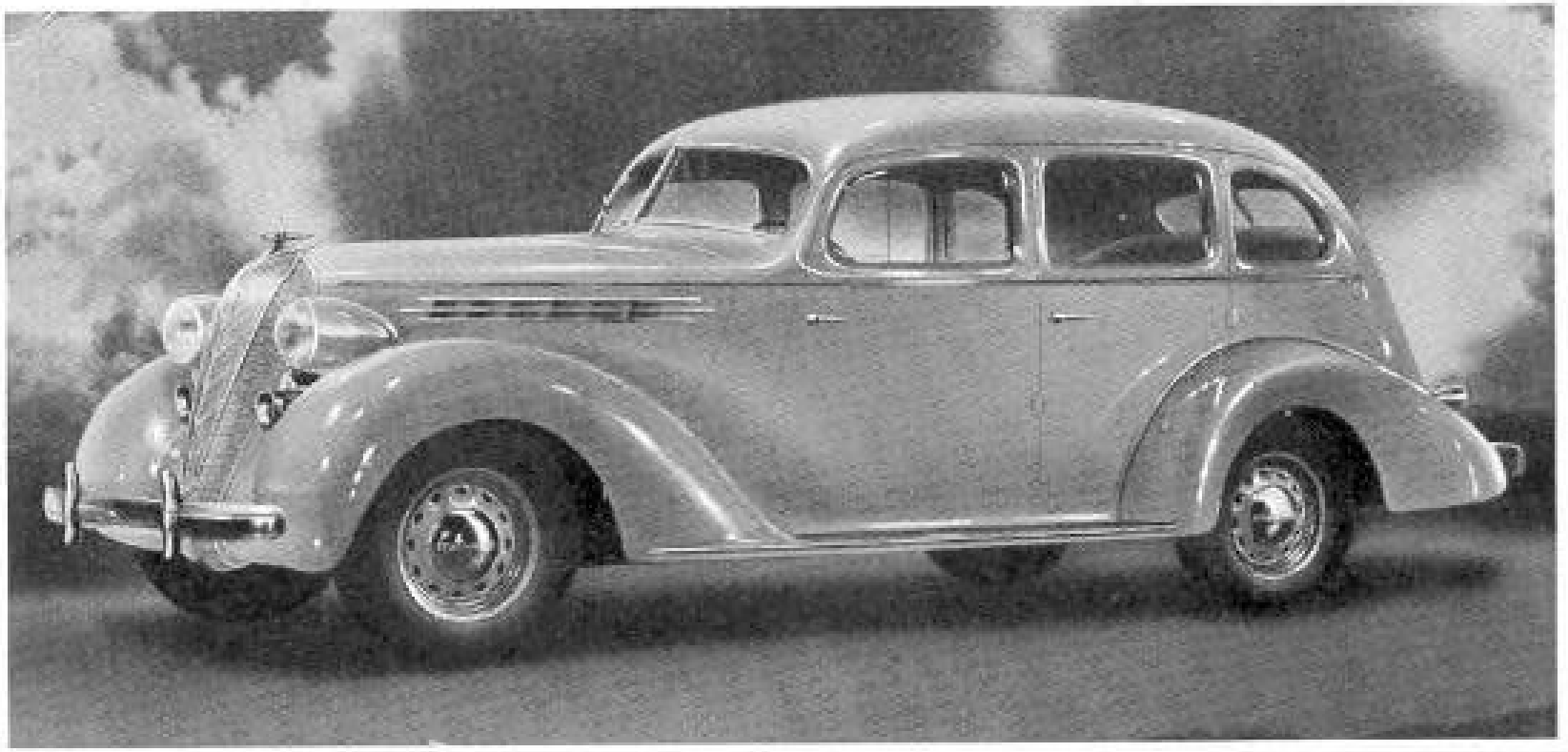
Again the famous Terraplane motor tops the others in performance, with 88 horsepower (100 horsepower available) and the favorable power-to-weight ratio that gets away from the lights first and keeps out ahead of the crowd. And again, the "Electric Hand" is available on all models.

PRINCIPAL SPECIFICATIONS

Developed Horsepower	88 and 100
Bore and Stroke	3" x 5"
Displacement	212 cu. in.
Compression	6 to 1 and 7 to 1
A.M.A. Horsepower	21.6
Wheelbase	115 inches
Over-all Length:	
Sedans, Broughams	195"
Coupes, Convertibles	200¾"
Tires	16 x 6.00

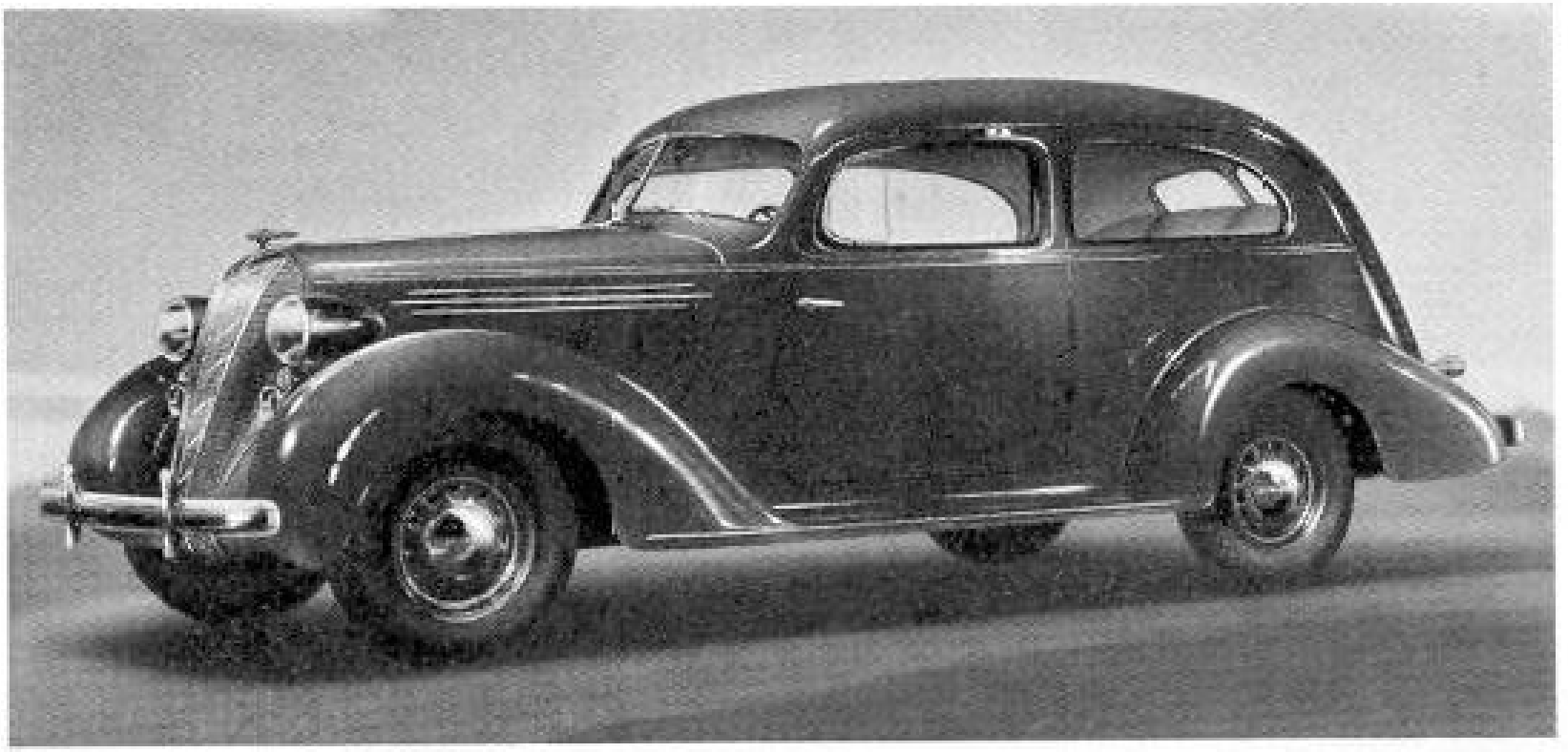
(Note—All Terraplanes illustrated on the following pages are in the Custom Series. Differences between the Custom and De Luxe Series are detailed on Page 100. Touring Sedans and Touring Broughams, which are not illustrated, are similar to the Sedans and Broughams, except that they include an integral trunk.)

TERRAPLANE SEDAN—115-Inch Wheelbase



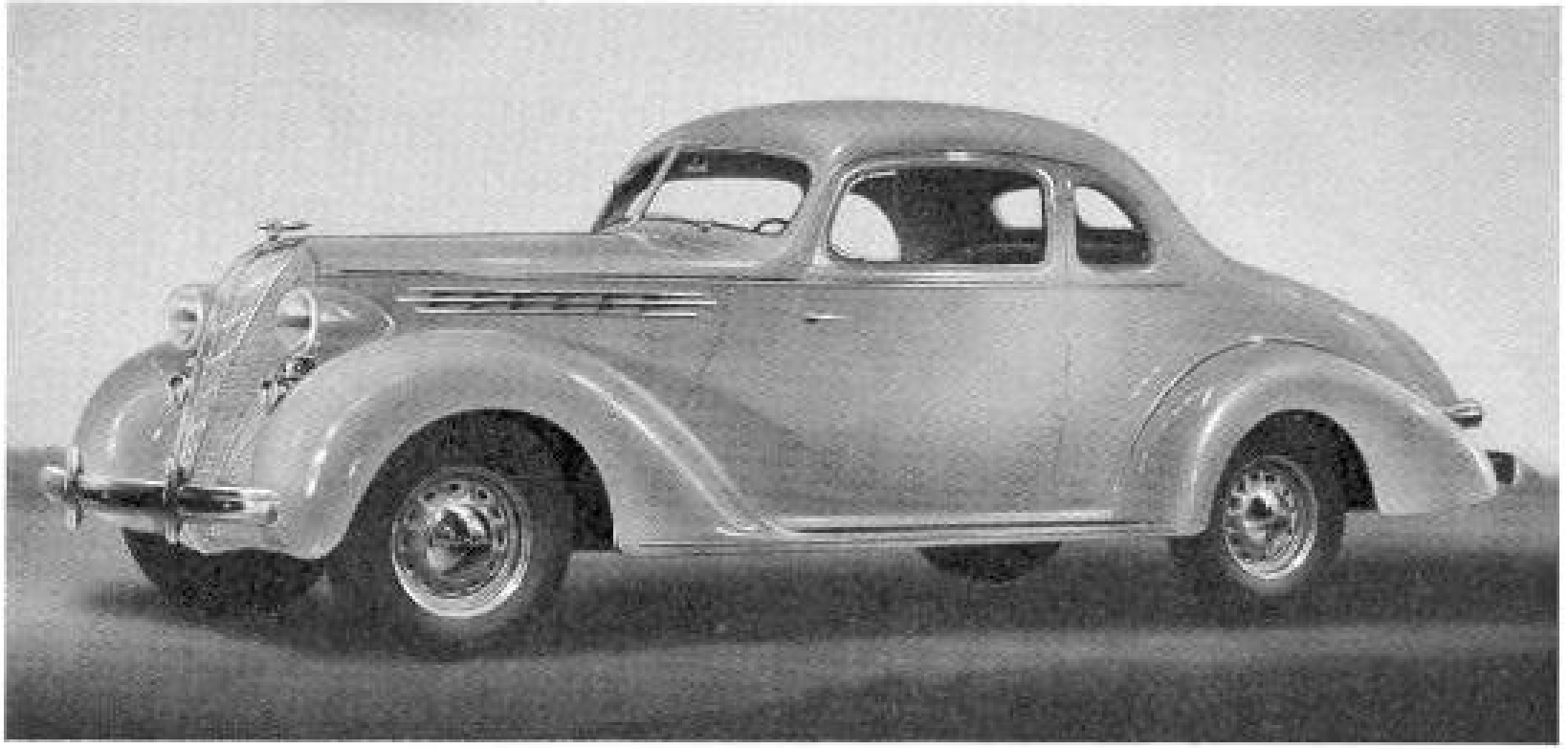
	Delivered Price	*Monthly Payments*
De Luxe Sedan	$.....	$.....
De Luxe Touring Sedan	$.....	$.....
Custom Sedan	$.....	$.....
Custom Touring Sedan	$.....	$.....

TERRAPLANE BROUGHAM—115-Inch Wheelbase



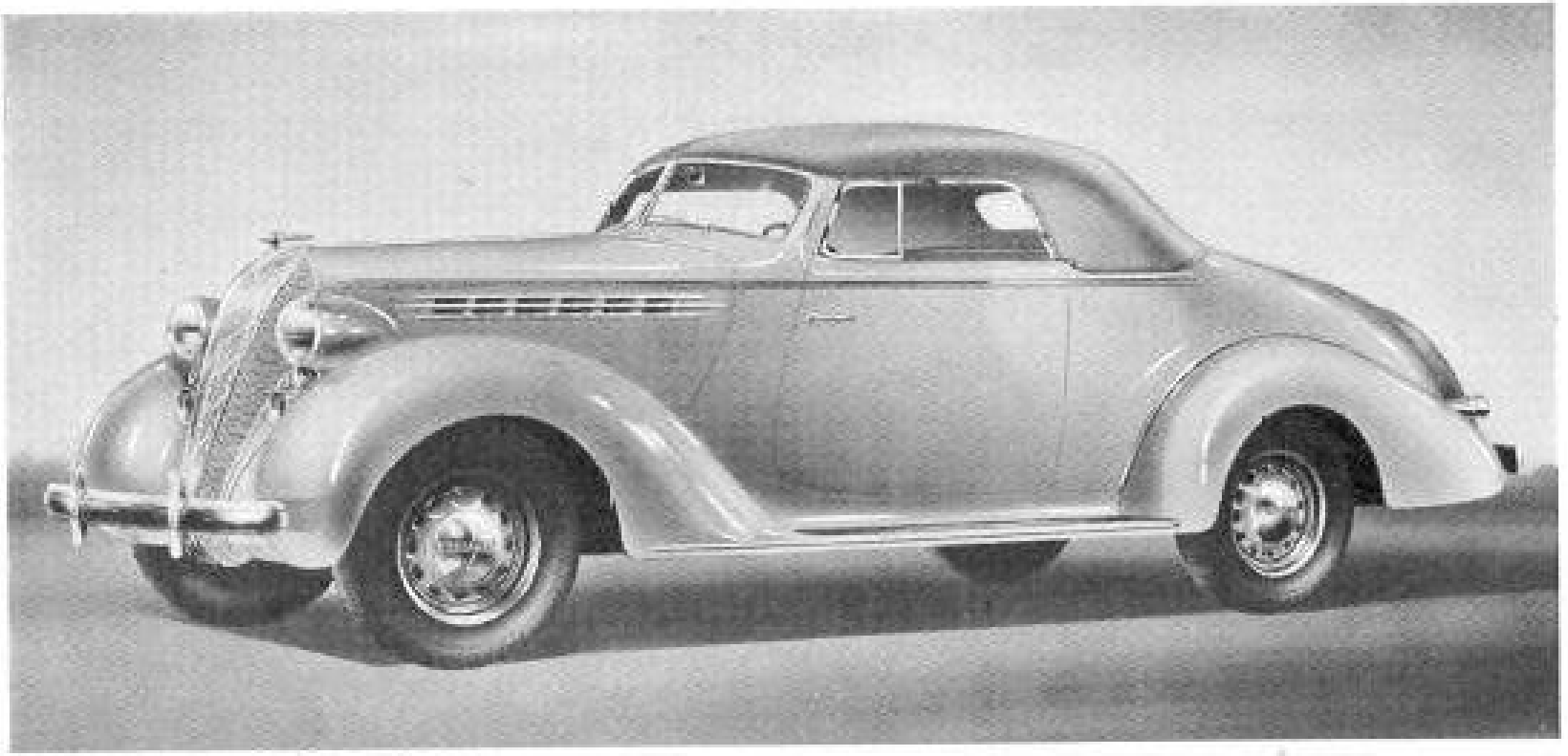
	Delivered Price	*Monthly Payments*
De Luxe Brougham	$.....	$.....
De Luxe Touring Brougham	$.....	$.....
Custom Brougham	$.....	$.....
Custom Touring Brougham	$.....	$.....

TERRAPLANE COUPE—115-Inch Wheelbase



	Delivered Price	*Monthly Payments*
De Luxe Business Coupe	$.....	$.....
De Luxe Coupe with Rumble Seat	$.....	$.....
Custom Business Coupe	$.....	$.....
Custom Coupe with Rumble Seat	$.....	$.....

TERRAPLANE CONVERTIBLE COUPE—115-Inch Wheelbase



	Delivered Price	*Monthly Payments*
De Luxe Convertible Coupe	$.....	$.....
Custom Convertible Coupe	$.....	$.....

1936
HUDSON 6
MODELS

120-Inch Wheelbase 93 and 100 Horsepower

Custom Series

Sedan Brougham Touring Sedan

Touring Brougham Business Coupe

Coupe with Rumble Seat

Convertible Coupe

A WHEELBASE of 120 inches . . . an over-all length of 204⅞ inches . . . the widest front and back seats in the price class . . . 93 and 100 horsepower . . . Radial Safety Control . . . the Rhythmic Ride . . . Tru-Line Steering . . . Duo-Automatic Hydraulic Brakes . . . the Automatic Draft Eliminator . . . Electric Hand . . . complete steel body with seamless steel roof . . . greatest luggage capacity . . . these are some of the reasons why the Hudson Six for 1936 is easily the greatest value in its price range—just a few dollars more than the lowest priced cars.

The Hudson Six also offers the new Hudson styling . . . new radiator, new hood treatment, new V-windshield, new fender design, new rear end design, new instrument panel treatment, new type of domed ceiling . . . all harmonizing in the most beautiful car yet offered to the motoring public.

The Hudson Six is now, more than ever, in the BIG CAR class, with big car size, big car performance, big car luxury . . . but with the remarkable economy that was proved in scores of tests in all parts of the country in the past year.

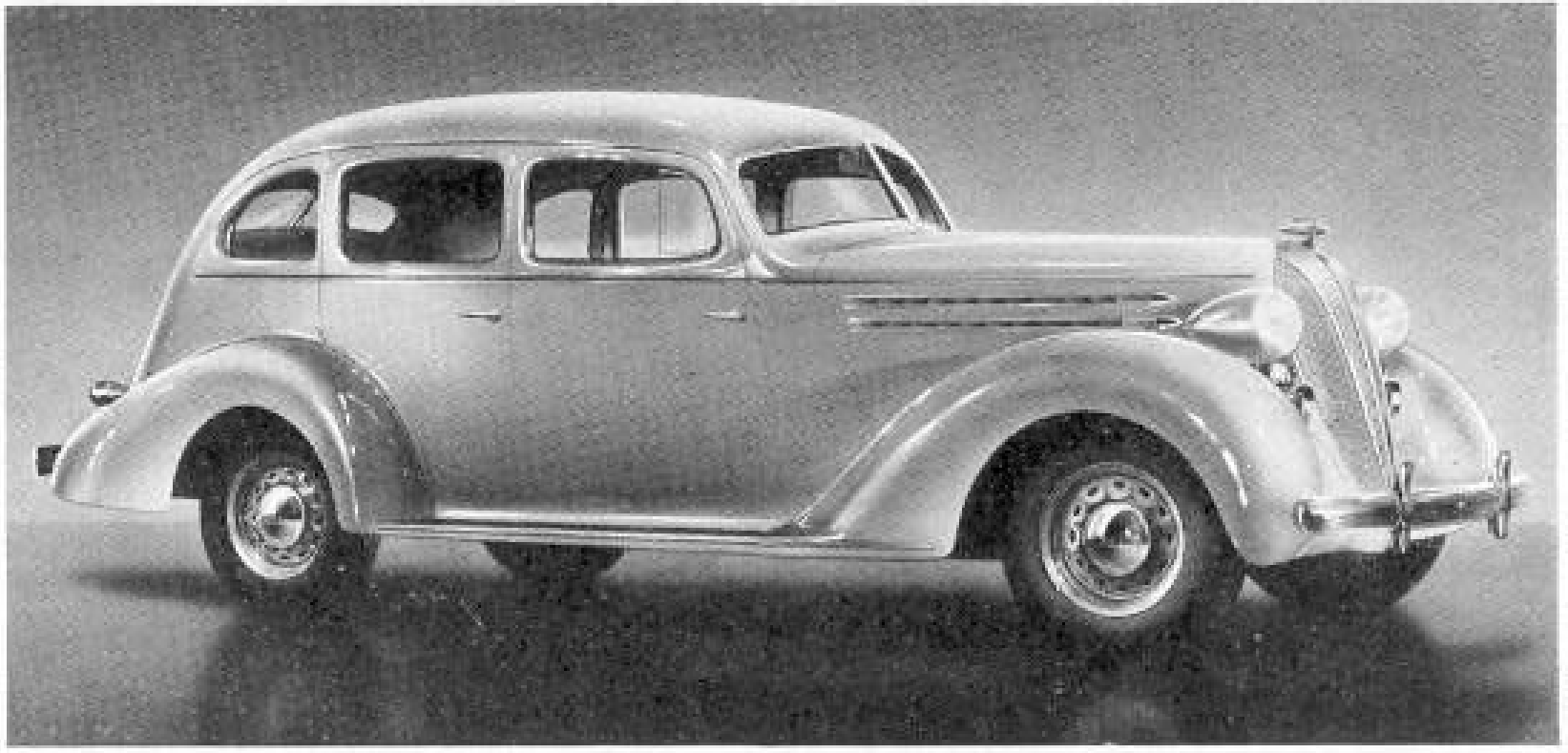
Seven models, all with Custom equipment, are offered in the Hudson Six series in 1936. (The Touring Sedan and Touring Brougham, which are not illustrated on the following pages, are similar to the Sedan and Brougham, except that they include an integral trunk.)

Hudson Six buyers have a choice of two beautiful and durable upholstery fabrics—boucle or mohair. All models have satin-silver-finish interior hardware, twin horns, twin tail lamps, and translucent rear window curtain. Sedans have a metal robe rail and a foot rest conveniently recessed in the back of the front seat.

PRINCIPAL SPECIFICATIONS

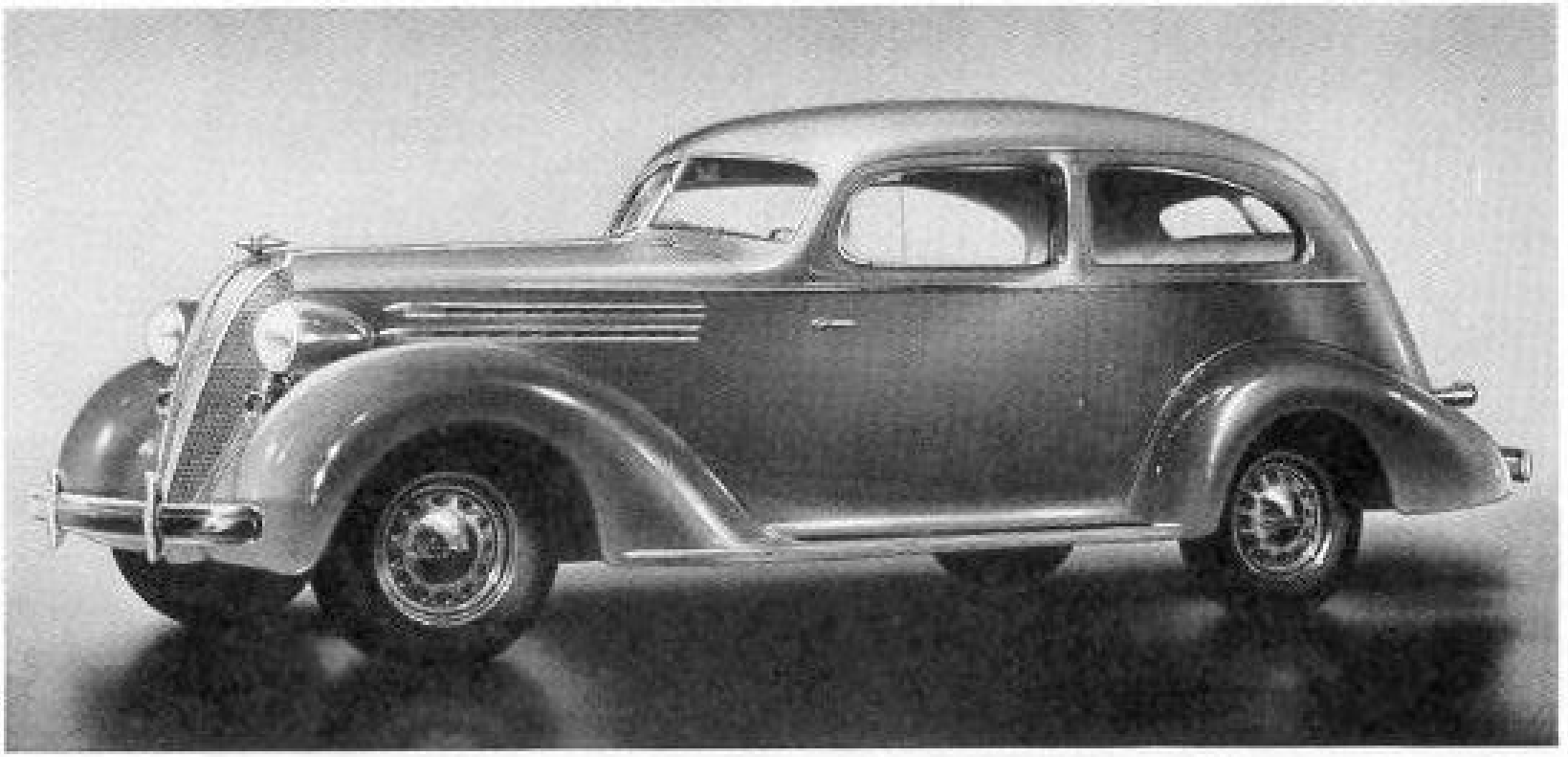
Developed Horsepower	93 and 100
Bore and Stroke	3" x 5"
Displacement	212 cu. in.
Compression	6.25 to 1 and 7 to 1
A.M.A. Horsepower	21.6
Wheelbase	120 inches
Over-all Length:	
Sedan, Brougham	199⅝"
Coupe, Convertible	204⅞"
Tires	16 x 6.00

HUDSON SIX SEDAN—120-Inch Wheelbase



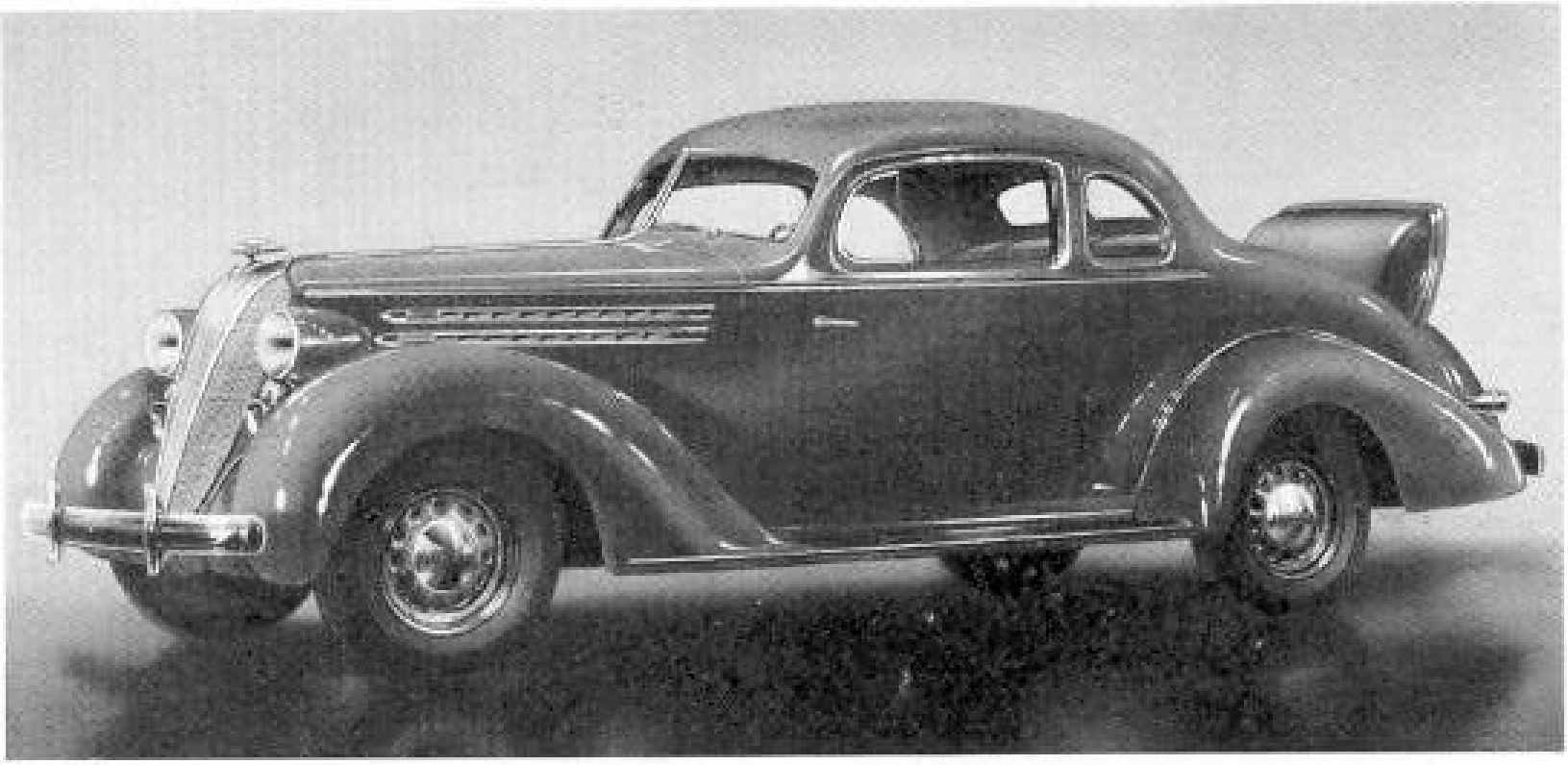
	Delivered Price	*Monthly Payments*
Custom Sedan	$.....	$.....
Custom Touring Sedan	$.....	$.....

HUDSON SIX BROUGHAM—120-Inch Wheelbase



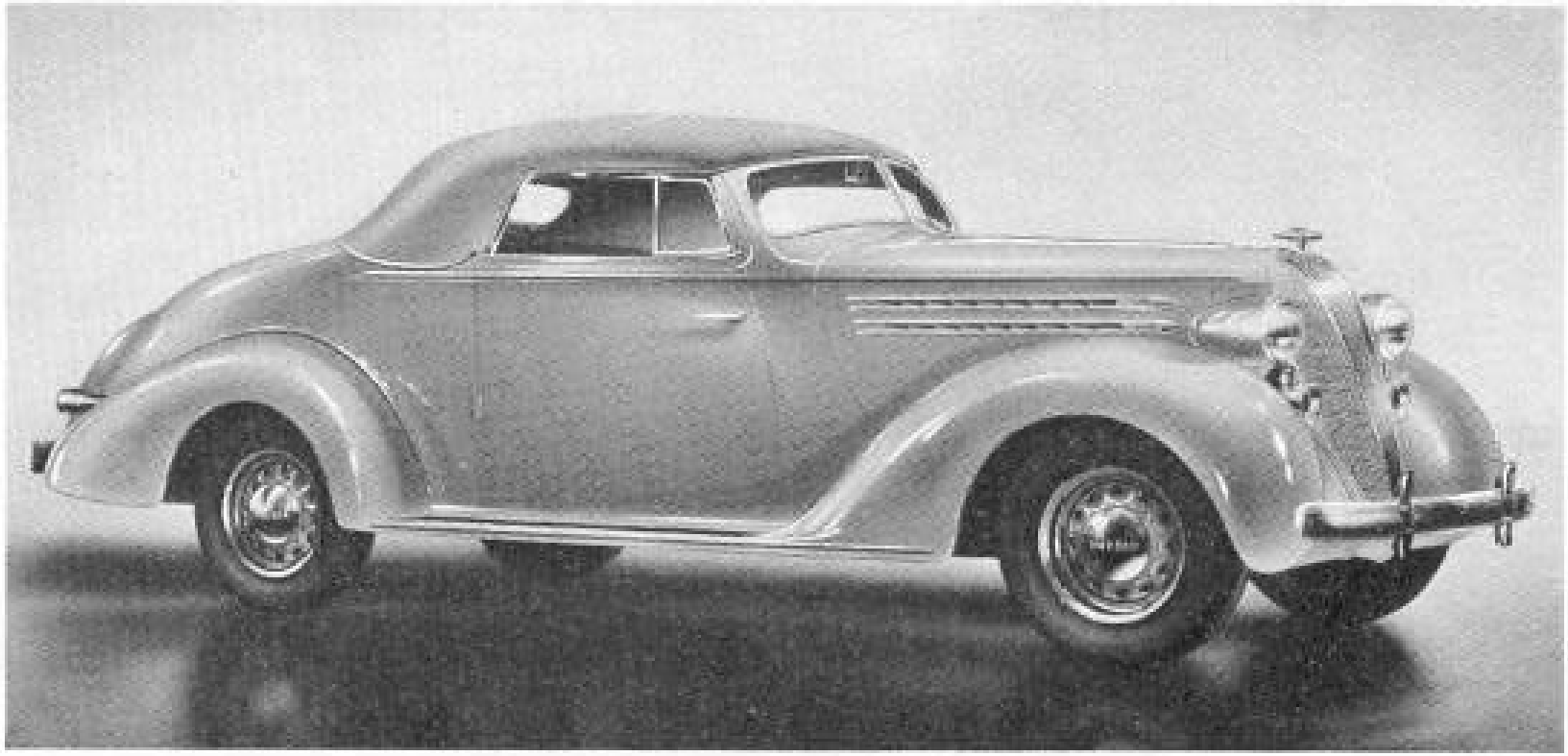
	Delivered Price	*Monthly Payments*
Custom Brougham	$.....	$.....
Custom Touring Brougham	$.....	$.....

HUDSON SIX COUPE—120-Inch Wheelbase



	Delivered Price	*Monthly Payments*
Custom Business Coupe	$.....	$.....
Custom Coupe with Rumble Seat	$.....	$.....

HUDSON SIX CONVERTIBLE COUPE—120-Inch Wheelbase



	Delivered Price	*Monthly Payments*
Custom Convertible Coupe	$.....	$.....

1936
HUDSON 8
MODELS

120 and 127-Inch Wheelbase
113 and 124 Horsepower

De Luxe Series

Sedan Brougham Touring Sedan
Touring Brougham Business Coupe
Coupe with Rumble Seat
Convertible Coupe

Custom Series

Sedan Brougham Touring Sedan
Touring Brougham Business Coupe
Coupe with Rumble Seat
Convertible Coupe

FOURTEEN models of Hudson Eights—seven in the Custom and seven in the De Luxe Series—offer the fine car buyer in 1936 the widest selection and also give him the greatest big car value in history.

Hudson Eights are bigger in 1936 . . . bigger in every way. Wheelbases are longer . . . 120 inches on the Broughams, Coupes and Convertible Coupes, and *127 inches on the Sedans.* Over-all lengths are greater . . . 199⅝ inches on the Broughams, 204⅞ inches on the Coupes and Convertible Coupes, and 206⅝ inches on the Sedans. Front seats and rear seats are wider . . . *roomy* room for three passengers in each seat. Leg room and head room to spare. More space . . . and more convenient space . . . in the baggage compartments and trunks.

Hudson Eights in 1936 are more beautiful, more graceful and better finished, both outside and inside.

Hudson Eights in 1936 give Hudson proved performance. Important advancements have been made in the water circulating system and in the fuel feed system.

Hudson Eights in 1936 are even safer than before. Hudson built the first bodies all of steel, and now those bodies have been made even stronger. Further, they have a smooth, seamless roof.

And Hudson Eights in 1936 offer FIVE THINGS YOU NEVER SAW BEFORE . . . five things you will not see in 1936 except on Hudson-built cars. 1. Radial Safety Control. 2. The Rhythmic Ride. 3. Tru-Line Steering. 4. Duo-Automatic Hydraulic Brakes. 5. Automatic Draft Eliminator.

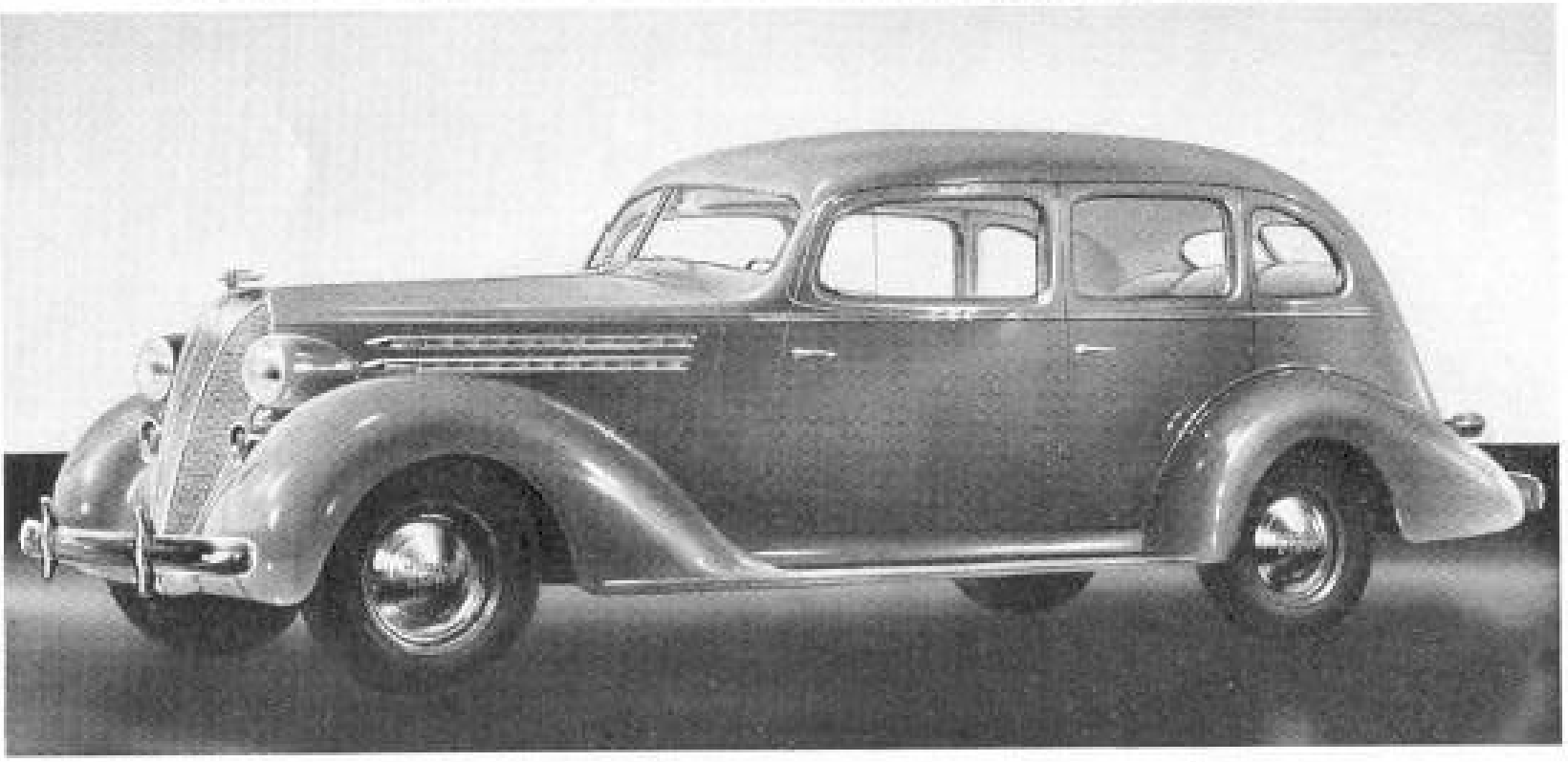
But with all of this extraordinary value built into Hudson Eights, they remain in the medium price field. They are by far the finest cars ever priced so low.

PRINCIPAL SPECIFICATIONS

Developed Horsepower	113 and 124
Bore and Stroke	3″ x 4½″
Displacement	254.47 cu. in.
Compression	6 to 1 and 7 to 1
A. M. A. Horsepower	28.8
Wheelbases	120 and 127 inches
Over-all Lengths:	
Broughams	199⅝ inches
Coupes and Convertibles	204¾ inches
Sedans	206⅝ inches
Tires	16 x 6.25

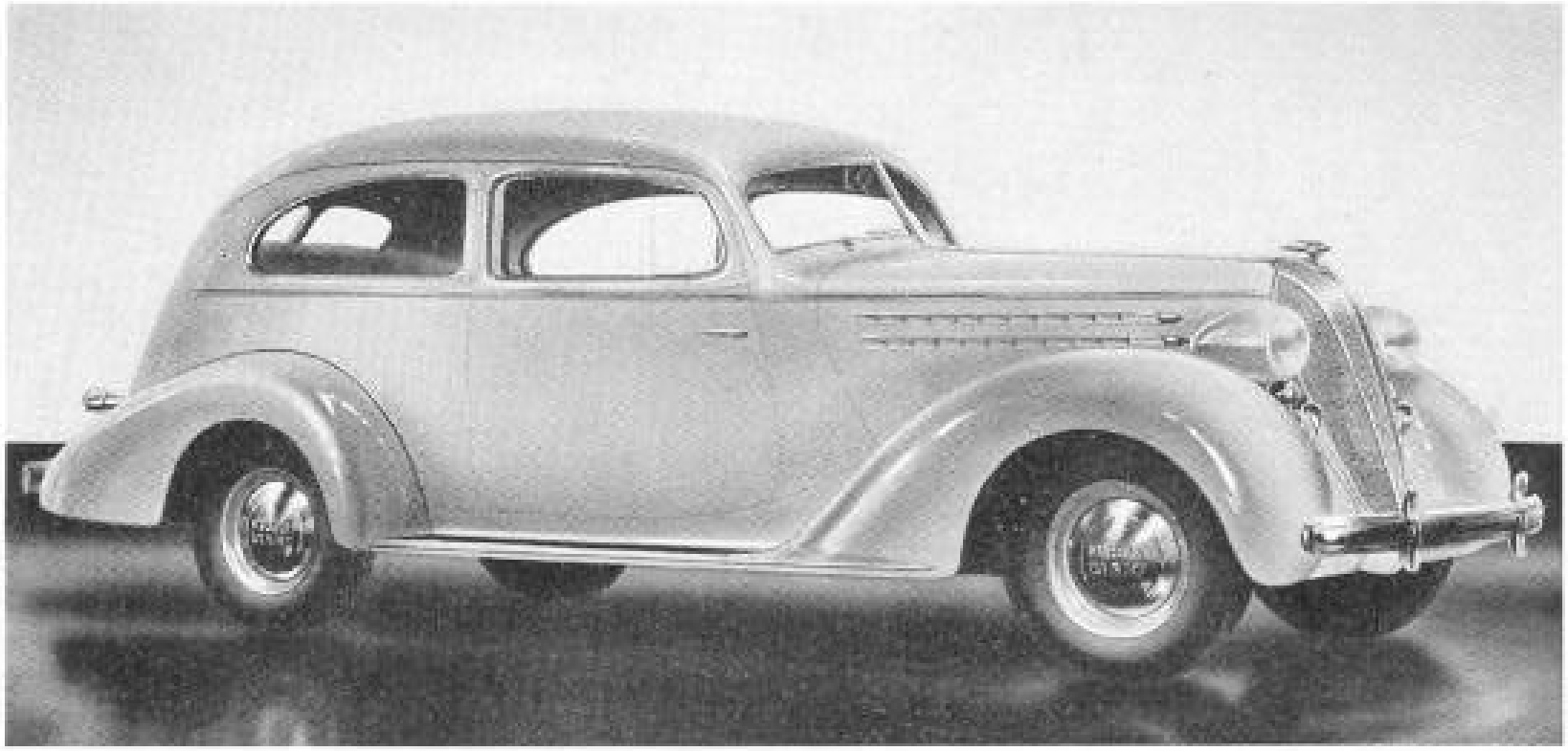
(Note—All Hudson Eights illustrated on the following pages are in the Custom Series. Differences between the Custom and De Luxe Series are detailed on Page 100. Touring Sedans and Touring Broughams, which are not illustrated, are similar to the Sedans and Broughams, except that they include an integral trunk.)

HUDSON EIGHT SEDAN—127-Inch Wheelbase



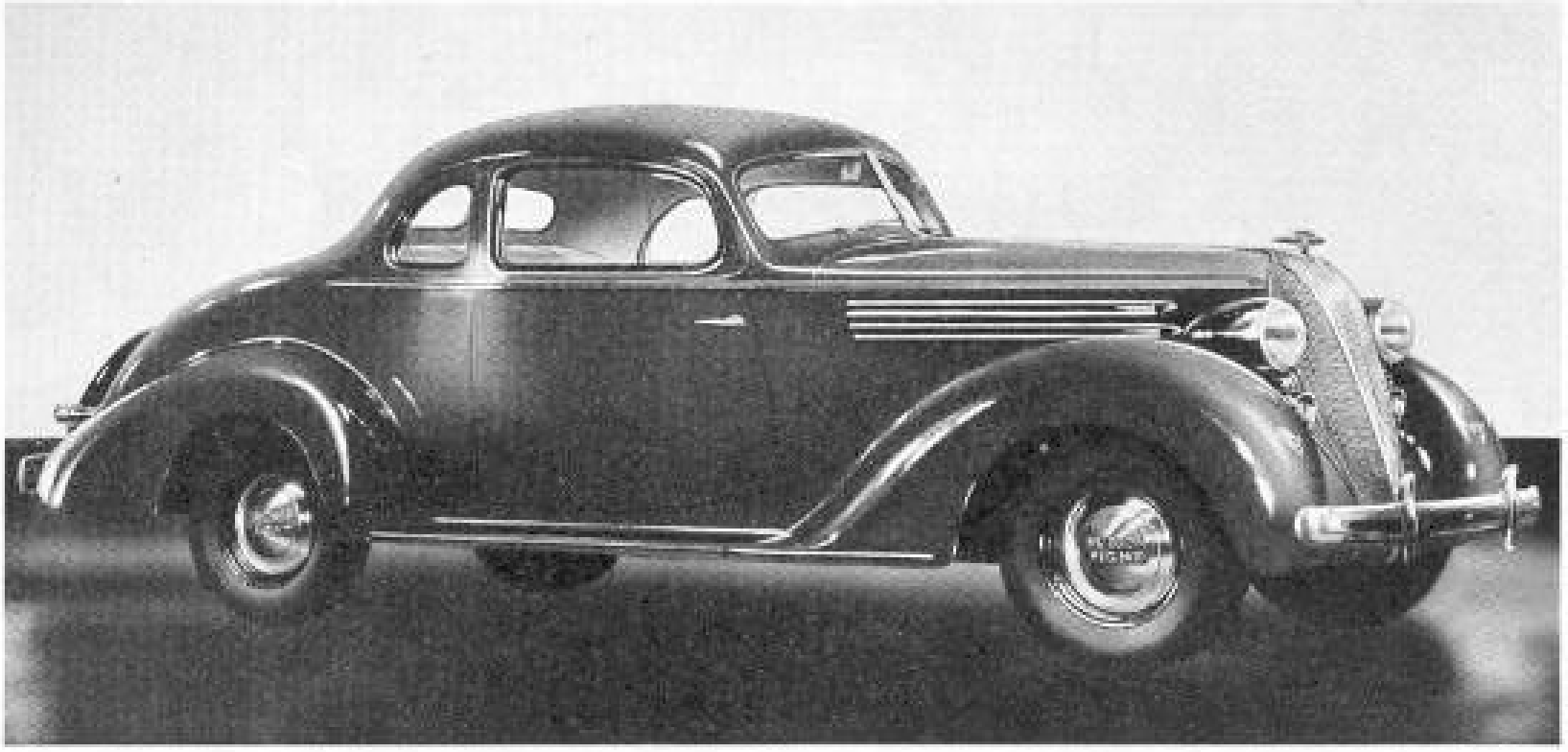
	Delivered Price	*Monthly Payments*
De Luxe Sedan	$.....	$.....
De Luxe Touring Sedan	$.....	$.....
Custom Sedan	$.....	$.....
Custom Touring Sedan	$.....	$.....

HUDSON EIGHT BROUGHAM—120-Inch Wheelbase



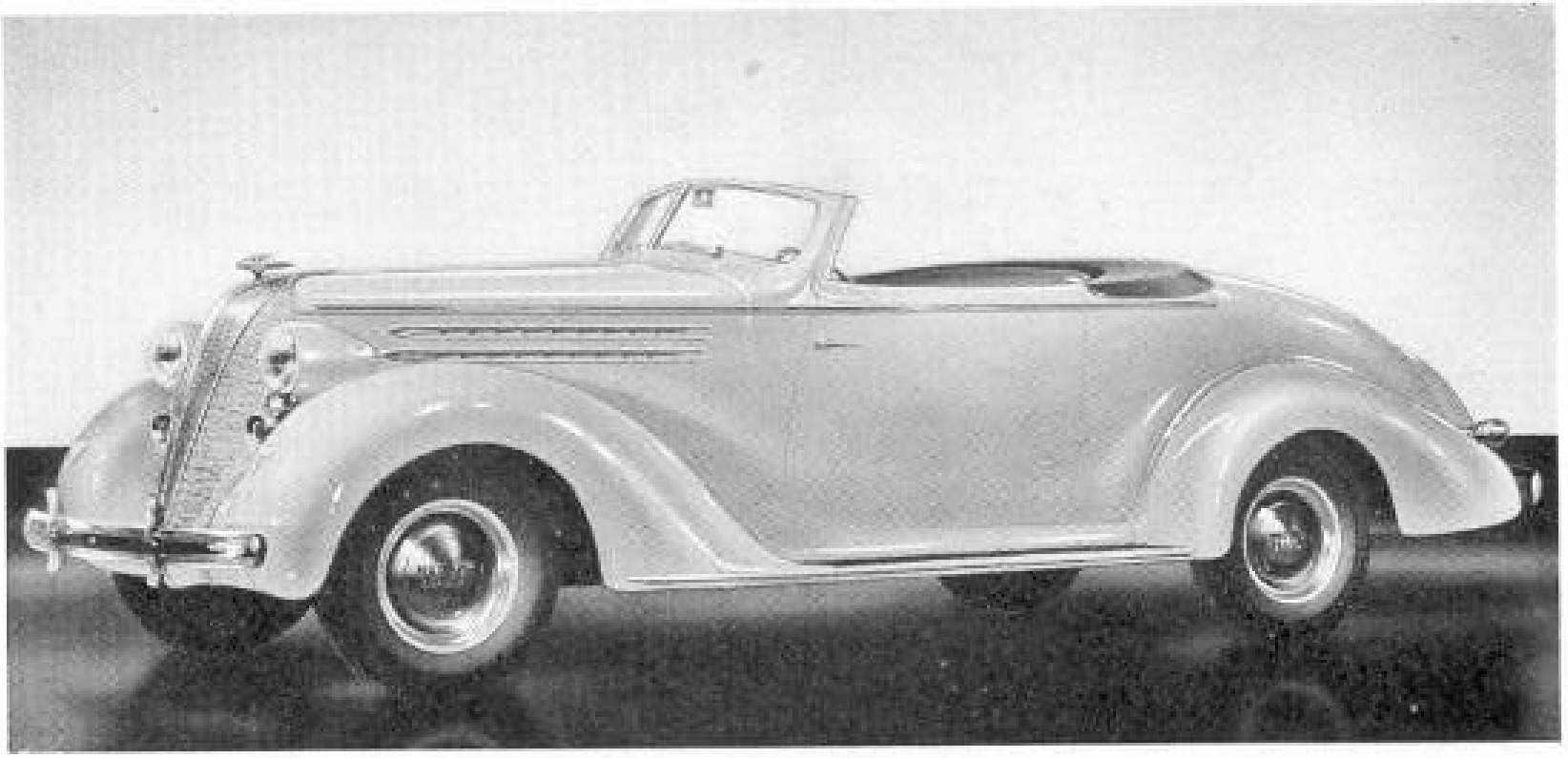
	Delivered Price	*Monthly Payments*
De Luxe Brougham	$.....	$.....
De Luxe Touring Brougham	$.....	$.....
Custom Brougham	$.....	$.....
Custom Touring Brougham	$.....	$.....

HUDSON EIGHT COUPE—120-Inch Wheelbase



	Delivered Price	*Monthly Payments*
De Luxe Business Coupe	$.....	$.....
De Luxe Coupe with Rumble Seat	$.....	$.....
Custom Business Coupe	$.....	$.....
Custom Coupe with Rumble Seat	$.....	$.....

HUDSON EIGHT CONVERTIBLE COUPE—120-Inch Wheelbase



	Delivered Price	*Monthly Payments*
De Luxe Convertible Coupe	$.....	$.....
Custom Convertible Coupe	$.....	$.....

5

The POWER PLANT

Both in America and abroad, Hudson-built engines are recognized as the most efficient in any stock car. This superiority has been proved time and again, both in laboratory tests and in actual competition against records. A comparison of specifications of American cars shows Hudson-built engines to develop a greater horsepower per cubic inch of piston displacement than any others and, so far as can be ascertained, an equal margin of superiority is enjoyed over all foreign stock cars.

Reid Railton, famous English automobile engineer who designed Sir Malcolm Campbell's "Bluebird," said of Hudson-built cars: "These cars will *outperform any car* made in England and—so far as I know—in the world! They excel in power for their weight, and in their quietness and smoothness excel *any* engine built by *anyone.*"

Along with this exceptional power and efficiency, Hudson-built engines have a smoothness of operation

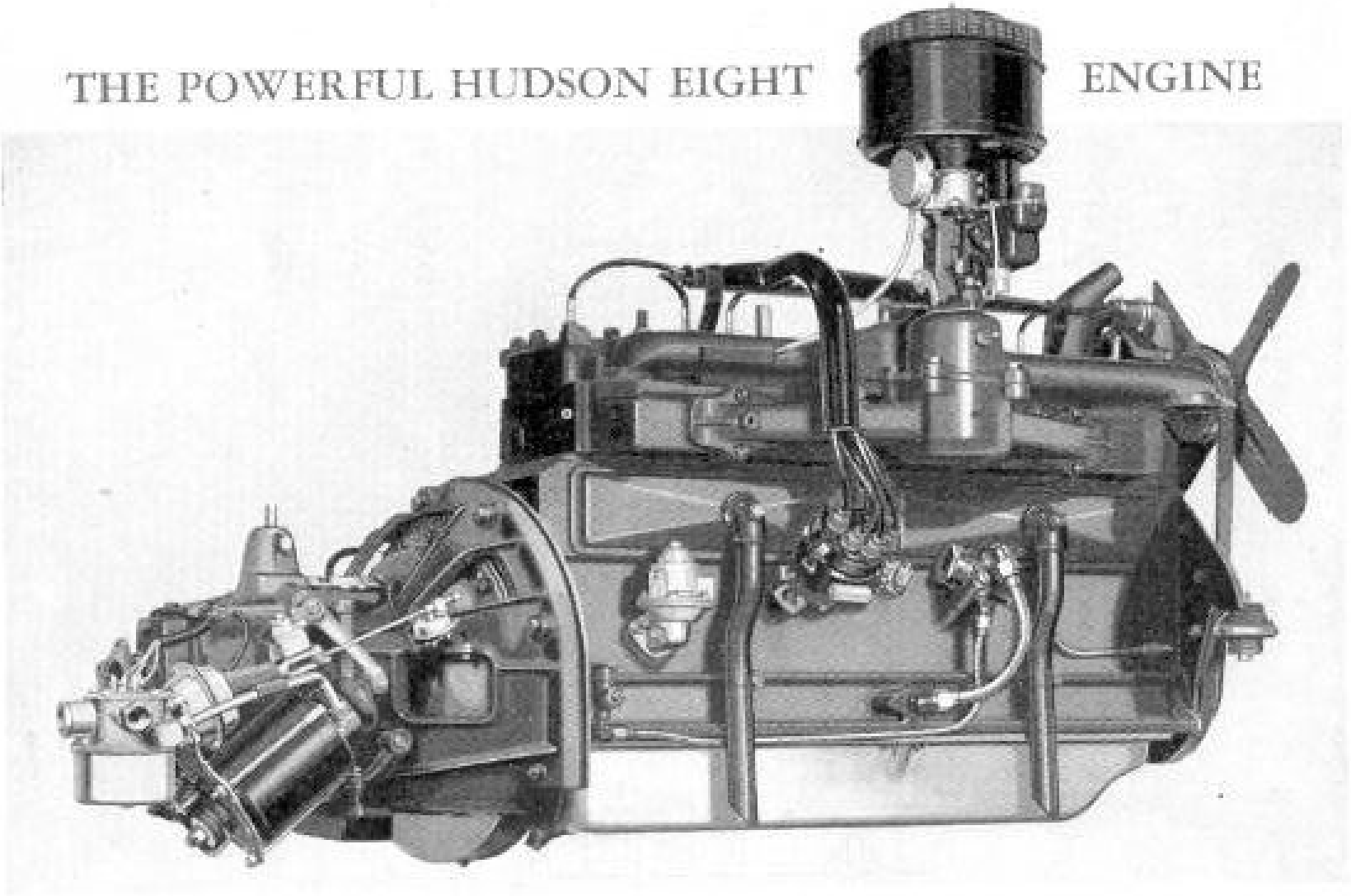
that permits a full use of the power. No extreme types of engine mounting or of vibration-absorbing devices are required.

This extraordinary efficiency requires, naturally, a perfect balance and adequacy of all phases of the engine's design. Oiling system, cooling system, electrical system and all other units not only blend into the perfectly performing whole, but each is ample to permit the maximum performance of the engine over a long period of time. It was this co-ordination of all parts, *plus an ample reserve,* that enabled a Hudson to break thirty-six performance records, from 5 miles to 1000 miles, at Muroc Lake in May, 1935.

This high peak of efficiency and performance is not a sudden development. It is a gradual accomplishment of a long period of years, during which Hudson engineers have undoubtedly contributed more to automobile engine design than any other organization. Every year sees improvements in Hudson-built engines . . . developments that increase their efficiency, or their economy, or their smoothness. In the 1936 engines, important improvements have been made particularly in the cooling and fuel feed systems. These developments are fully described in the following questions and answers.

Hudson-built engines may be expected to retain, in 1936, the margin of superiority they have enjoyed over all other stock car engines.

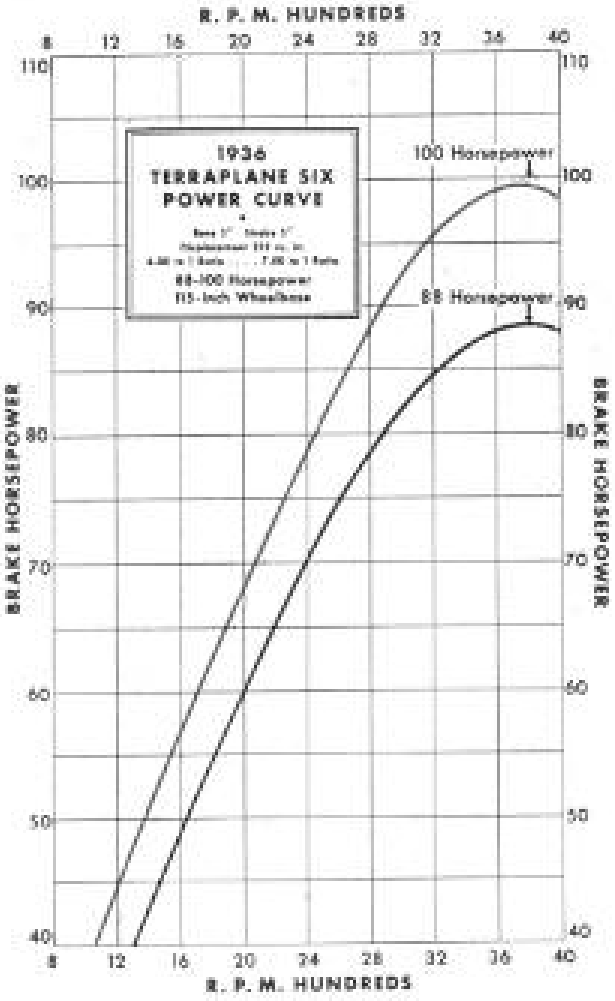
THE POWERFUL HUDSON EIGHT ENGINE



In Hudson-built cars, every part, however small or unimportant it may appear to be, contributes very definitely to one or more of the several factors that combine to make Hudsons and Terraplanes the best-riding, best-performing cars on the road. After most answers in the following pages will be noted symbols that indicate the particular factors to which the answer pertains.

KEY TO SYMBOLS

A.....APPEARANCE AND STYLE
C.....COMFORT AND CONVENIENCE
E.....ECONOMY
R.....RUGGEDNESS
P.....PERFORMANCE
S.....SAFETY



Black Line—Horsepower with standard head and 6-1 compression ratio
Red Line—Horsepower with optional head and 7-1 compression ratio

POWER PLANT QUESTIONS AND ANSWERS

1—Of what type are Hudson and Terraplane motors?
High compression, high speed L-head. (E, P)

2—Do many automobiles have L-head motors?
In 1935, 21 out of 25 American manufacturers, building 76 per cent of all American cars, used L-head motors.

3—How many cylinders do Hudson

and Terraplane motors have?

Terraplane, 6; Hudson, 6 and 8.

4—What is the bore and stroke?

Terraplane—3″x5″

Hudson Six—3″x5″

Hudson Eight—3″ x 4½″ (P)

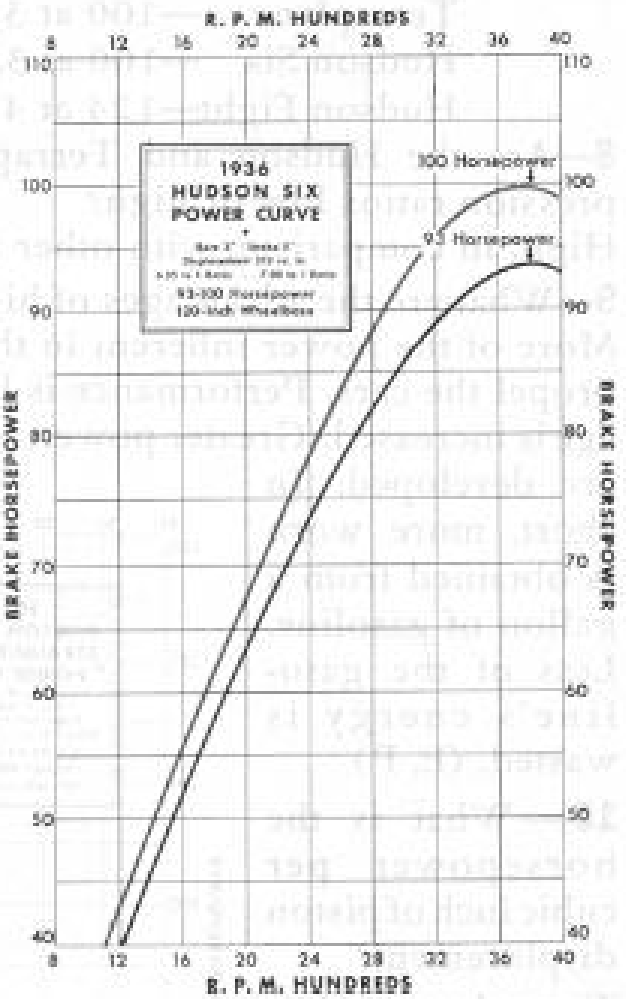
5—What is the displacement?

Terraplane — 212 cu. in.

Hudson Six—212 cu. in.

Hudson Eight—254 cu. in. (P)

6—What are the compression ratios and actual developed horsepowers of Hudson and Terraplane engines with standard cylinder heads?



Black Line—Horsepower with standard head and 6.25-1 compression ratio

Red Line—Horsepower with optional head and 7-1 compression ratio

Standard Compression Ratios	*Horsepowers*
Terraplane.....6 to 1	88 at 3,800 r. p. m.
Hudson Six.....6.25 to 1	93 at 3,800 r. p. m.
Hudson Eight.....6 to 1	113 at 3,800 r. p. m.

7—Are "power-dome" cylinder heads available?

Yes. With the power-dome aluminum heads (7 to 1 compression ratio), the horsepowers are:

Terraplane —100 at 3,800 r. p. m.
Hudson Six —100 at 3,800 r. p. m.
Hudson Eight—124 at 4,000 r. p. m.

8—Are the Hudson and Terraplane standard compression ratios low or high?

High, in comparison with other makes of cars. (E, P)

9—What are the advantages of high compression?

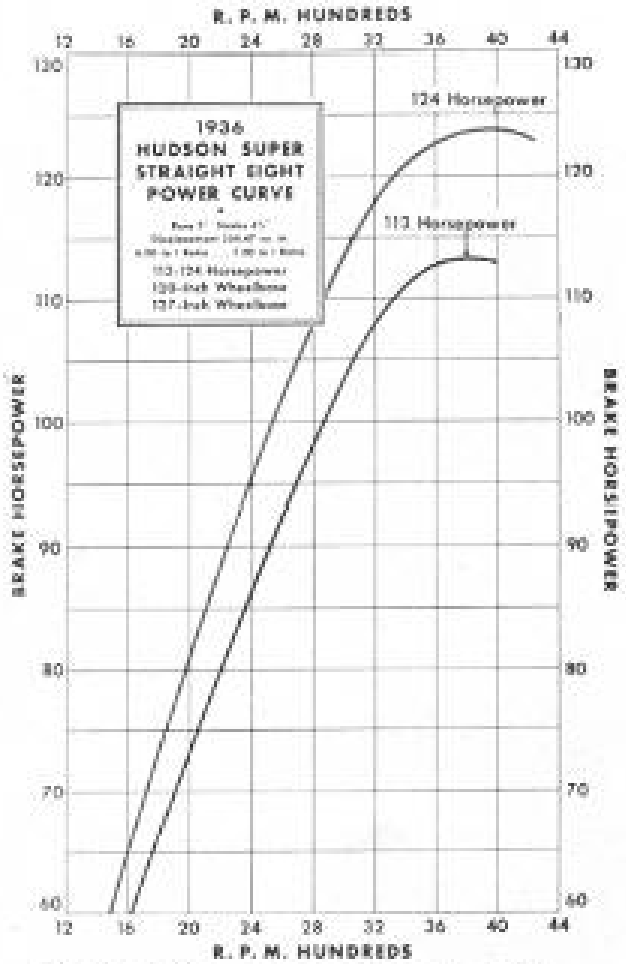
More of the power inherent in the gasoline is used to propel the cars. Performance is better. Gasoline mileage is increased. Greater power, acceleration and speed are developed. In short, more work is obtained from a gallon of gasoline. Less of the gasoline's energy is wasted. (E, P)

10—What is the horsepower per cubic inch of piston displacement?

Terraplane—.415
Hudson Six—.438
Hudson Eight—.444.

11—Is this a high power-ratio?

Yes. It is probably the highest on any production motor in the world—exceeded only by racing and special super-charged motors. (P)



Black Line—Horsepower with standard head and 6-1 compression ratio
Red Line—Horsepower with optional head and 7-1 compression ratio

12—What makes it possible for Terraplane and Hudson engines to have the greatest power per cubic inch of piston displacement?

5

The use of perfectly compensated reciprocating parts, the elimination of useless dead weight, the use of high-compression heads, an exclusive valve tappet and cam design, the exclusive Hudson oiling system, and other factors co-ordinated into a balanced unit.

13—What is the number of engine revolutions per mile?

Terraplane—3096 Hudson Six—3096

Hudson Eight—3042

14—What is the A. M. A. horsepower (for taxing purposes only)?

Terraplane—21.6 Hudson—28.8

15—What does power-to-weight ratio mean?

It means the relation of a motor car's developed horsepower to its total weight. In other words, the number of pounds of weight divided by the number of horsepower.

16—Is this important to a car's performance?

Yes. In terms of performance, a high power-to-weight ratio is more important than anything else. A strong man can lift a 50-pound weight easier than a weak man. The more power an engine has in proportion to its weight, the faster and longer it will run—with proportionately less wear and tear on the whole car.

17—Do Terraplanes and Hudsons have a high power-to-weight ratio?

Yes. All Hudson-built cars have the *airplane* ratio—one horsepower to about 30 pounds. The ratios of other cars range as high as 1 horsepower to 48 or 50 pounds.

18—If other manufacturers claim the highest power-to-weight ratio (A. M. A. horsepower rating), are they telling the truth?

Possibly. But it doesn't mean anything. "A. M. A. horsepower" is calculated by a mathematical formula involving only the bore and number of cylinders. It ignores stroke, compression, ignition, valves, cooling or other vital factors of engine efficiency which affect horsepower.

"A. M. A. horsepower" is used only for taxation and legal purposes, and has no relation whatever to *actual* horsepower, usually called "brake horsepower." The superior power-to-weight ratio of Hudsons and Terraplanes is figured from brake horsepower—*actual, usable* horsepower.

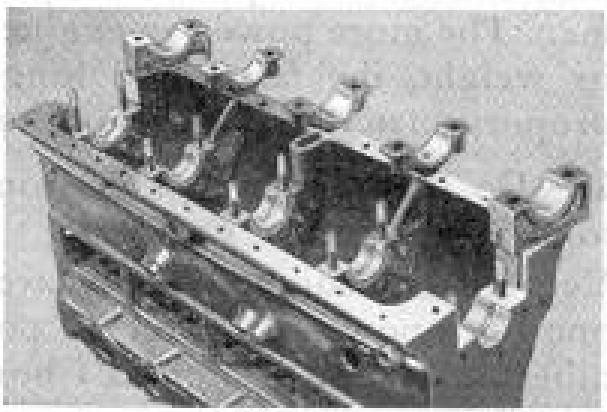
19—Does the high compression and the high speeds in 1936 engines put any unusual strain on the cylinder head gasket?

Some extra strain, but Hudsons and Terraplanes have a steel gasket that will withstand the pressure and heat. Copper gaskets, used by other manufacturers, would not be adequate.

CYLINDER BLOCK, CRANKCASE AND CRANKSHAFT

20—What type of cylinder block and crankcase construction is used?

They are cast integrally. The crankcase is heavily ribbed internally, the ribs supporting the massive main



Crankcase "Bridge-Truss" Ribbing

bearings. This "bridge-truss" construction provides an unusually rigid crankcase, which preserves perfect alignment of the heavy, inherently compensated crankshaft and the camshaft.

21—From what material are the block and crankcase cast?

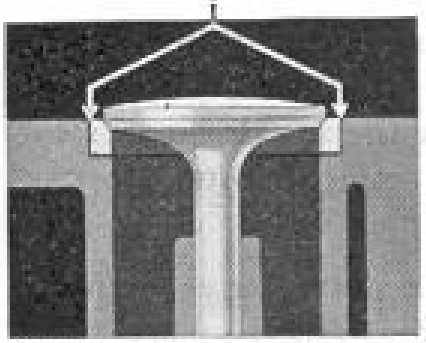
A high chrome alloy. This material, used only in Hudson-built motors, will increase the engine life tremendously. It provides a hard wear-resisting cylinder bore. Also, it is so hard that it provides a valve seat as enduring as any in the industry, without the many disadvantages of a separate insert. (E, P, R)

22—Then Hudsons and Terraplanes do not have special hardened inserts for valve seats?

No. Valve seat inserts are needed only when the block is made of softer metal.

23—Is there any advantage in the chrome alloy block providing an integral valve seat, compared with the valve seat insert?

Yes. No matter how tightly a valve seat insert may fit in the block, heat will not pass across a junction as freely as through the unbroken metal of the chrome alloy block (note illustration). This junction is virtually an insulator. Thus heat is conducted more quickly in Hudsons and Terraplanes, performance is improved, and the life of the valves greatly increased. (E, P, R)



With valve seat inserts, the junction between insert and cylinder block metal prevents conduction of heat. Hudson-built motors, with chrome alloy block, do not require valve seat inserts

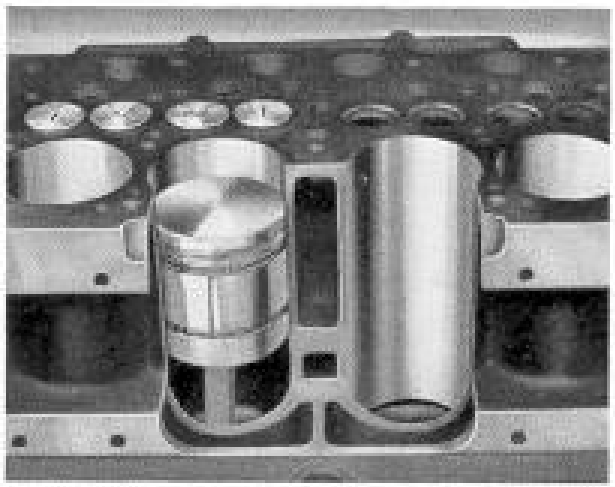
24—Why do not other manufacturers use high chrome alloy blocks?

Because they are much more

expensive. Hudson and Terraplane castings cost more, the factory tools for machining them cost more, the factory's machining speed is only half as fast, and thus twice as costly. But the Hudson or Terraplane owner gets a better car.

25—How is the unusually fine finish of the cylinder bore obtained?

The bore is power "honed" to a limit of one thousandth of an inch. This hardens, as well as smooths the bore surface to a satin finish. It increases the engine life and aids the "breaking in" process by shortening the process while protecting cylinder surfaces.



Cylinder Block, Cut-away View

26—How is the crankcase ventilated?

By two ventilator pipes extending from the front and rear end of the tappet covers to a point below the motor, where the current of passing air dissipates the fumes and prevents them from getting into the passenger compartment. (C, E)

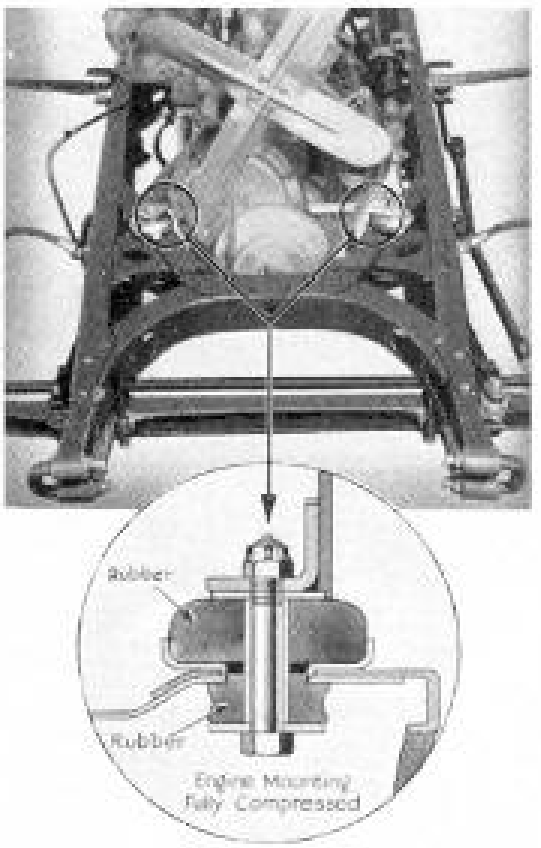
27—Does crankcase ventilation have any purpose, other than dissipation of fumes?

Yes, a much more important purpose. It carries away water vapor, which is one of the major products of combustion and which would emulsify the motor oil. It also rids the crankcase of sulphurous acid fumes coming from the combustion of low-grade fuels containing sulphur. These fumes have a harmful effect on

bright steel parts. The water and acid are vaporized by the churning action of the connecting rods, thus permitting their escape through the ventilator pipes. Hudson-built motors are the only ones in which the oil is so churned. The ventilators also permit a breathing action, eliminating any possibility of crankcase pressure being built up by the rapidly reciprocating connecting rods and pistons. (C, E, S)

28—How are Hudson and Terraplane motors mounted on the chassis?

They are mounted on live rubber cushions at three points. This cushioning of the motor prevents vibration and sound from being transmitted from motor to chassis and body. Three-point suspension provides further insurance against transmission of vibration and sound by permitting the engine to rock slightly as if cradled. (C, P)



Live Rubber Mountings for Hudson-built Engines

29—Why do Hudson and Terraplane motors not have the so-called "floating power" mounting?

Because the inherent smoothness and minimum vibration of Hudson-built motors do not require so loose and flexible a mounting. Engines with more violent vibration periods require a more

flexible mounting to prevent the vibration from being transmitted to the chassis and body. On the other hand, the looser type of mounting also permits increased engine vibration. On such motors, all accessory units, such as the carburetor, distributor, etc., are subject to the same violent vibrations, which restrict their effectiveness and shorten their lives.

30—Is the motor in Hudson-built cars moved forward to give an equal distribution of weight over the front and rear axles?

No, the motor is still mounted somewhat to the rear of the axle, and there is more weight on the rear axle than on the front. (C, P, E)

31—What merit is there in the claims of competitive manufacturers that an equal distribution of weight on the axles gives smoother driving?

While this may appear true in theory, it is untrue in practice. Cars with the engine moved forward are notoriously hard and uncomfortable to steer and their practical top speed is reduced several miles an hour. The principal reason for this is: The heavier weight on the front axle puts a greater burden on the steering mechanism and the driver has to "carry the added weight." This heavier weight also causes much greater front tire wear. As an example—shortly before the Hudson Eight was making 24-hour performance tests in 1935, another manufacturer tested his car, which has a forward-mounted engine, at the same testing ground. Many new tires were required on the other car during a 24-hour run, but the Hudson, running at higher speeds, went 24 hours without a single tire change.

32—What type of crankshaft is used?

An inherently compensated and balanced crankshaft, with compensating counter-balances forged integrally with the shaft. It is balanced both statically and dynamically. The inherently compensated crankshaft was originated and patented by Hudson. (C, P, R)

Patented, Inherently Compensated Crankshaft—Hudson Eight

33—What does "balanced statically and dynamically" mean?

Balanced statically means balanced "at rest." Balanced dynamically means balanced "in motion," or while revolving so that there is no centrifugal "throw" or "whip." (C, P)

34—What is the number of compensating weights?

Terraplane—8 Hudson—8

35—What is the length and weight of the shaft?

	Length	*Weight*
Terraplane.....	$27\frac{29}{32}$"	73.25 pounds
Hudson.....	$36\frac{13}{32}$"	77.50 pounds

36—Do the weight and the relatively short length of the shaft have any special significance?

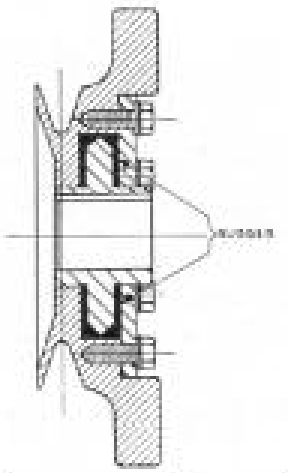
Yes. Hudson and Terraplane crankshafts have less tendency to whip than longer and lighter shafts. This is further minimized by the new heavier center rib in the crankcase. The crankshafts maintain a steady alignment even at highest speeds. (P, R)

37—What is meant by a "compensated" crankshaft?

Any revolving mass, such as a crankshaft, tends, through centrifugal force, to pull out of shape at high speed. Crankshafts of Hudsons and Terraplanes have the counter-balancing weights so placed that they set up compensating forces that are always equal to, and opposite, the forces acting on the crankshaft proper. Thus the crankshafts are "inherently compensated." Even when running at high speed, "Hudson-built" crankshafts exert no more pressure on their bearings than when running at low speeds. (C, E, P)

38—Do Hudsons and Terraplanes have a crankshaft damper?

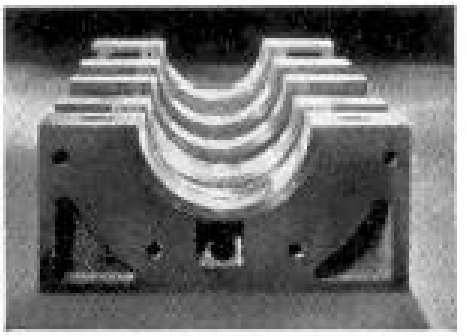
Yes. Although the crankshaft is inherently compensated against vibration caused by centrifugal action, the intermittent power impulses of the motors would, at higher speeds, cause an audible vibration or sound. The Hudson damper, which completely dampens or absorbs such vibrations, is at the front end of the shaft and consists of two members. One is joined rigidly to the crankshaft, and the other, virtually a small flywheel, is mounted on the rigid member, but separated by live rubber surfaces. It has no wearing parts to be adjusted or replaced. (C, P)



Cross-section of vibration damper, showing rubber insulation

39—What type of main bearing is used?

Bronze-backed bearings, lined with highest quality babbitt metal. Since the compensated crankshaft minimizes bearing friction and the exclusive oiling system maintains a perfect oil film between bearing surfaces, the amount of heat absorbed by crankshaft bearings is relatively low. Bronze is an excellent heat conducting medium. The babbitt lining is comparative-



Main Bearings

ly thin and the heat is immediately conducted through the babbitt to the bronze and then to the crankcase structure itself, where it is dissipated. Bearings in Hudson-built engines frequently operate for the life of the car without mechanical adjustment. (E, P, R)

40—What is the number and size of main bearings?

Main bearing sizes, effective areas and surfaces* are:

TERRAPLANE AND HUDSON SIX—

	Dia. In.	*Length In.*	*Area Sq. In.*	*Surface Sq. In.*
No. 1	2 11/32	1 1/2	3.516	11.046
No. 2	2 3/8	1 3/4	4.156 (takes thrust)	13.056
No. 3	2 13/32	2 3/8	5.721	17.973

Total surface—42.075 sq. inches.

HUDSON EIGHT—

	Dia. In.	*Length In.*	*Area Sq. In.*	*Surface Sq. In.*
No. 1	2 9/32	1 5/8	3.706	11.643
No. 2	2 3/16	1 3/8	3.180	9.990
No. 3	2 11/32	1 7/8	4.371 (takes thrust)	13.732
No. 4	2 3/8	1 3/8	3.266	10.260
No. 5	2 13/32	2	4.812	15.117

Total area—19.335 sq. inches.

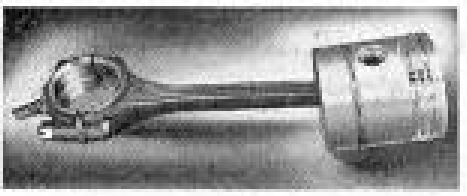
Total surface—60.742 sq. inches.

*(Note—Information given out by some automobile manufacturers confuses "bearing area" and "bearing surface," giving the impression that the bearing surface in their engines is the effective bearing area, whereas the bearing surface is always much greater than the area. This difference should be kept clearly in mind.)

PISTONS AND CONNECTING RODS

41—Of what type and material are the pistons?

The T-slot, low-expansion, cam-ground, "pinned" ring type, made of silicon aluminum alloy. This alloy, which is 10 per cent lighter even than aluminum, is also extremely hard and provides not only an excellent bearing surface but also freedom from scoring, assuring a longer motor life. The pistons have a glass-smooth finish. The T-slot design prevents warping under temperature changes. "Cam-ground" means that the pistons have a slight elliptical shape, instead of being perfectly round. When the piston expands as it becomes hot, it becomes perfectly round. The cam ground principle permits the piston to be fitted closer than any other in the industry, thus eliminating "piston slap" when the engine is cold. (E, P)



Piston and Connecting Rod

42—Is there any special feature in the piston design?

Yes. Three rings (two compression and one oil) are above the wristpin, and one oil ring is below the pin. Having the lower oil ring below the pin greatly reduces the possibility of oil leakage past the piston, while still permitting ample lubrication of the cylinder walls. This almost doubles the oil economy. The upper three rings are slightly farther from the piston top than previously, thus improving the compression seal and preventing loss of power. All four rings are "pinned," the bottom one with a separate pin. All rings are further removed from the extreme combustion temperatures, permitting longer ring life.

"Pinned" Piston Rings

43—What is a "pinned" ring?

The rings are conventional, but they are "pinned" in position so that they will not rotate and chatter and cause irregular and eccentric cylinder wear. This design further seals the cylinder against compression loss and oil pumping. (C, E, P)

44—What other automobile manufacturers use "pinned" rings?

Only one—Rolls Royce.

45—Since the pin keeps the ends of the three upper pins in alignment, what prevents a passage, or "blow-by," or gas and oil at this point?

The ends of the rings are not in absolute alignment. They are staggered a small fraction of an inch to prevent an aperture that would permit "blow-by."

46—Can the pin that holds the rings in place become loose?

No. It is peened to keep it permanently in place.

47—What is the weight of one Hudson or Terraplane piston?

9.6 ounces.

48—What is the weight of one iron piston of similar size?

27 ounces or more.

49—Do silicon aluminum alloy pistons have any advantages over ordinary cast-iron pistons?

Yes—many. Hudson and Terraplane pistons, weighing one-third as much as iron pistons, greatly reduce vibra-

tion tendencies and strain and overload on the connecting rods and crankshafts. They can be fitted more closely, owing to their cam ground design. Thus they hold compression better (saving gasoline and oil), permit higher compression and wear much longer. Also, aluminum is a dissipator of heat; cast iron holds heat much longer. The only disadvantage is to the manufacturer—they are more expensive to make. (C, E, P, R)

50—Are the wrist pins of the usual type?

No. After being ground, they are "lapped" (held to a variation of 3/10ths of 1/1000th of an inch) to a glass-smooth finish, which assures a permanently close fit. The piston is diamond-bored for the wrist pin. The wrist pins are all floating, meaning that they ride in three bearings (two in the piston, one in the connecting rod), as in very high-priced cars (Duesenberg, Packard, Pierce-Arrow). The full floating design gives better distribution of lubrication, better heat dissipation, prevents seizing, and reduces wear to a minimum. The pin is kept in place by steel lock rings. Pin bushings are bronze. (E, P, R)

51—Are Hudson and Terraplane wrist pins smaller in diameter than those in some competitive cars?

Yes. They are smaller than those in cars using iron pistons, because they have approximately only one-third the amount of work to perform. Comparing piston weights, or working load, Hudson and Terraplane pins are proportionately much larger. (E, P)

52—Of what type and material are the connecting rods?

The rod is an "I" beam type of drop-forged special steel, providing extreme rigidity and strength with light weight. (R)

53—What is the connecting rod length?

$8\frac{3}{16}''$, center to center.

54—What is the size and type of the lower end bearing? Width, $1\frac{3}{8}''$; diameter, $1\frac{15}{16}''$. It is of spun babbitt, diamond bored for accuracy and finish. (E, P, R)

Weighing Connecting Rod

55—Are the piston and connecting rod assemblies uniform in weight?

Yes. Pistons and connecting rods are individually weighed and come within exceedingly close limits. The rods, for example, installed in any one Hudson or Terraplane engine will not vary more than one-quarter of an ounce. The piston assemblies in a motor are uniform to a featherweight balance. (C, E, P)

CAMSHAFT AND VALVE ASSEMBLY

56—What type of camshaft do Hudsons and Terraplanes have?

An electric-furnace-hardened shaft of nickel-chrome-molybdenum-iron alloy. *This is as hard and tough as any camshaft material* used by any manufacturer. Hudson was the first automobile manufacturer to use it. Due to its extreme hardness, it can be ground to the smoothest possible surface, permitting a low friction, non-wearing cam nose. (E, P, R)

57—How is the camshaft driven?

By gears—a steel gear on the crankshaft and a laminated bakelite gear on the camshaft. In the 1936

Hudsons and Terraplanes, the laminated gear has a wider face, which will increase its life and permit smoother operation. These gears have helical-shaped teeth, are quiet and long lived and do not require adjusting. (E, P, R)

58—What type of bearing supports the camshaft?

Large babbitt bearings. The surfaces are reamed to the dimensions of the camshaft surfaces plus oil clearances. In contrast, some competitive manufacturers support the camshaft in the original cast iron of the cylinder block. The Hudson-Terraplane method, far more expensive, makes for long life and quiet operation throughout the life of the motor. (E, P, R)

59—What are the camshaft bearing sizes?

Terraplane and Hudson Six—

	Dia.	*Length*
Front	2″	$1\frac{3}{16}$″ (takes end thrust)
Center	$1\frac{31}{32}$″	$1\frac{1}{16}$″
Rear	$1\frac{1}{2}$″	$\frac{15}{16}$″

Hudson Eight—

No. 1	$2\frac{1}{32}$″	$1\frac{3}{8}$″ (takes end thrust)
No. 2	2″	1″
No. 3	$1\frac{31}{32}$″	$1\frac{1}{4}$″
No. 4	$1\frac{15}{16}$″	1″
No. 5	$1\frac{1}{2}$″	$1\frac{1}{2}$″

60—What type of tappet is used?

The roller-cam type. (P)

61—What is the roller-cam type, and what are its advantages?

In the roller-cam design, the rotating, specially designed cam lobe wipes across the large semi-circular valve-tappet shoe, keeping always in contact with

Tappet on Camshaft Lobe

the shoe and giving a roller effect. This constant contact prevents the slapping or tapping that occurs as the cam lobe hits the shoe in the ordinary cam and tappet design. The Hudson design gives precisely the same effect as a 5″ roller tappet. It is longer lived and quieter than the roller tappet design. (C, E, P, R)

62—Is the roller-cam design found in any other car?

No. This was developed by Hudson and is found only in Hudson-built cars.

63—Is this design as long lived as others and does it require more adjustment, or less?

It is longer lived and requires less adjustment. Because of the smooth roller action and the absence of pounding, less heat is generated and there is less wear and strain. (C, E, P, R)

64—What kind of valves are used?

Intake valves are special nickel-chromium steel. Exhaust valves are special silicon-chromium-alloy steel. (E, P, R)

65—What are the valve head diameters?

	Intake	*Exhaust*
Terraplane and Hudson Six..	1 3/8″	1 3/8″
Hudson Eight.....	1 1/2″	1 3/8″

66—Is there any change in the valve design in the 1936 engines?

Yes. The valve stems and guides are larger, giving more bearing surface and greater strength, and reducing

wear and the possibility of distortion and sticking. The valve stem diameter has been increased 15%, giving a similar increase in bearing surface. The contact surface between the valve stem and tappet screw is increased 30%. (P)

67—What is the amount of valve lift?

$\frac{11}{32}$" on all valves.

68—Will the valve spring tension remain constant?

Yes. The valve springs are specially treated and cadmium plated to prevent rusting and to assure their original tension throughout their life. Cadmium plating prevents fractures of the surface, or "skin" of the wire that would otherwise occur during the stretching action as the spring wire is bent. Valve springs not so treated tend to "soften" after a short period of use. (E, P)

69—Are the valve springs designed for high speed operation?

Yes. Valve flutter at high speeds is prevented by specially designed cups which fit over the lower coils of the valve springs, maintaining their alignment at high speeds and permitting perfect action of the spring no matter how rapidly the engine rotates. (P)

THE FUEL FEED SYSTEM

70—What kind of carburetion is used?

Triple-venturi, down-draft, delayed deceleration type. (E, P)

71—Why is the delayed deceleration type used?

Down-draft Carburetor, Radial Manifold, Automatic Choke, Vapor-lock Relief Valve, Air Cleaner and Silencer, and Backfire Arrester

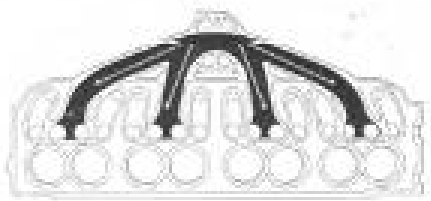
So that deceleration will be smooth and continuous, rather than abrupt, when the driver's foot leaves the accelerator. (C, P)

72—How is gasoline supplied to the carburetor?

By a fuel pump driven by the camshaft.

73—What type of intake manifold is used?

The "radial" low-velocity type, in which large straight passages to the cylinders radiate from the distributing chamber as spokes from a hub. The "easy breathing" with this type of manifold permits better combustion. (E, P)



Radial Manifold, Showing Straight Passage to Cylinders

74—What are its advantages?

The uniform distribution of the fuel mixture of all cylinders, resulting in uniform power impulses in all cylinders and smoother performance. (E, P)

75—Do Hudsons and Terraplanes have automatic choke?

Yes. It is standard on all series except Terraplane De Luxe, which has manual choke. (E, P, S)

76—What are its advantages?

It automatically makes the proper mixture adjustment

for starting, and then automatically changes the adjustment for continued driving. Choking is controlled entirely by the temperature of the carburetor and vacuum in the intake manifold. Nothing is left to human neglect or forgetfulness. When the choke is not operating, part of the clean warm air is diverted directly to the fuel stream in the manifold, further aiding in atomization. There is a special relief valve that operates in the event of back-fire. This is an important safety factor. (E, P, S)

77—Have any changes been made in the automatic choke design in 1936?

Yes. Two important changes: 1. It has been simplified to permit easier removal of the screen for cleaning—remove two screws and lift off the cap, then simply pull the screen from its slot. 2. A new cam-and-rod design assures the opening of the choke when the engine is started. In cold weather, the contraction of metal parts sometimes caused the choke valve to stick when the car had been standing for some hours and, as it might not open immediately when the engine starts it would cause flooding of the carburetor and consequent stalling. With the new cam design, the valve is pushed open by pressing well down on the accelerator. (P, E)

78—Have any other changes been made in the 1936 fuel-feed system?

Yes. A vapor-lock relief valve has been designed at the float chamber. When the engine is stopped, the undissipated heat sometimes causes part of the gasoline in the float chamber to vaporize. This vapor tends to "lock" fluid gasoline from the jet, and must be removed to let the fluid fuel through before the motor can be restarted.

Normally, it would be necessary to suck the vapor slowly through the jet by prolonged use of the starter, but the new vapor-lock relief valve opens automatically when the accelerator is released, and permits the vapor to escape quickly. (P, E, S)

79—Is the fuel heated in any manner to assist carburetion?

Yes. Exhaust gas from the rear four cylinders is taken from the exhaust manifold and carried around the intake jacket to heat the fuel before it passes through the intake manifold. (E, P)

80—Is there thermostatic control of this for summer and winter driving?

Yes, on all series except Terraplane De Luxe, which has manual adjustment. (E, P)

81—Do Hudson and Terraplane carburetors have air cleaners and silencers?

Yes. They are standard on all models. Further, they have a flame arrester, an important safety factor. (P, S)

82—What is the gasoline tank capacity?

16½ gallons in all Hudsons and Terraplanes.

83—How is the possibility of vapor-lock in the fuel feed line eliminated?

The fuel feed line is outside of the channel section of the frame, so that the passing air may keep the gasoline cool and fluid. (P)

ELECTRICAL SYSTEM AND STARTER

84—What type of generator is used?

Heavy-duty Generator, with Fan-forced Ventilation

The new high output, voltage regulated, third brush type, with fan-forced ventilation (Terraplane De Luxe series generator is without voltage regulator unless radio is ordered, in which case the generator installation is exactly the same as in other series). The forced ventilation feature permits a charging rate of 22 amperes instead of the usual 12 to 15 amperes, without danger of overheating the generator. This assures an ample battery charge, regardless of drain on the battery by excessive use of radio, starter, and other electrical accessories. To prevent overcharging and consequent damage to the battery, the generator has a voltage regulator that automatically reduces the charging rate when the battery reaches a full charge, and automatically increases it when the battery charge drops to a designated point. The entire electrical system is protected against damage through safety fuses. There is also a fuse located in the voltage regulator which protects the field circuit of the generator. (E, P, S)

85—At what speed does the generator reach the maximum charging rate?

At 28 miles per hour.

86—Has the generator output been improved?

Yes; it has been improved to provide a *longer peak* output. Instead of tapering off from the peak as rapidly as other generators do, the output at 60 miles an hour (for an example) is over 36 per cent greater

than before. This has been accomplished by making the entire unit and its component parts larger; the armature, fields and frame have more copper and iron, and there is a new third brush regulation of output. (E, P)

87—How is the generator driven?

By a V-belt. An adjustable bracket permits proper belt tension at all times.

88—What type of starter is used?

A finger-touch starter. The weight of the driver's finger on a conveniently located button on the instrument board actuates the 6-volt solenoid operated switch, which in turn actuates the over-size starting motor. A Bendix drive is used. There is a manual button at the starting motor for emergency or "under hood" operation. With the "Electric Head" installation, the clutch pedal should be depressed when the starter button is touched. (C)

89—Is there any change in the starter cranking speed?

Yes. The Terraplane has a 9-tooth pinion instead of 11-tooth, with a proportionately higher cranking speed. The cranking speed is now the same for all Hudsons and Terraplanes. (P)

90—How is the starter bearing lubricated?

An oiler provides constant and ample lubrication. (P)

91—What size are the batteries?

Terraplane—105 amp. hour, 17 plates (full size); Hudson—125 amp. hour, 19 plates (full size). (E, P)

92—Are these heavy-duty batteries?

Yes; they are standard batteries with a very high plate area. Consequently they have a high current flow for cranking the engine in extremely cold weather. The additional capacity of these batteries provides a store-

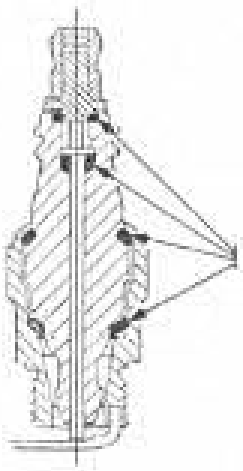
house for the extra generating capacity of the larger 1936 ventilated and cooled generator. (E, P)

93—Where is the battery located?

Under the floor of the front compartment, the most convenient location. (C)

94—What type of spark advance is used?

Full automatic, for maximum efficiency at all speeds. (C, P)



Cross-section of Spark Plug, showing Sillimanite Seal

95—What type of spark plugs are used?

14-millimeter spark plugs. Hudson was the first manufacturer to adopt metric plugs as standard equipment. A feature of the plugs used in 1936 Hudsons and Terraplanes is the sealing of the interior of the plug with sillimanite to prevent compression and oil leaks through the plug. These leaks would cause oil to pocket at the firing end of the plug, resulting in carbon deposits and fouling. (E, P)

96—Why is the single-lever ignition breaker used?

It is equally as efficient as the two-lever type and does not require occasional synchronizing adjustments, as does the two-lever type. Consequently, it is a sturdier and more satisfactory design.

OILING SYSTEM

97—What is the function of a motor oiling system?

To provide a lot of oil to all bearings and other friction surfaces at all times, whether the motor is cold or hot, running fast or slow, or on a level plane or an angle. (E, P)

98—What type of oiling systems do Hudsons and Terraplanes have?

The Duo-Flo system, patented by Hudson and available in no other cars. (E, P)

99—How does the Duo-Flo system get oil to the various bearings and friction parts?

In general, by four different ways. A brief description of the system will explain these. The oil is originally in the oil pan, or reservoir, at the bottom of the motor. Immediately over the pan and completely covering it is the oil tray, which has a depression, or trough, exactly under each of the connecting rods.

Now, for the manner (1) in which the camshaft gears and the front and rear bearings of the camshaft and crankshaft are lubricated. The double oil pump draws oil by suction through a pipe extending into the oil pan, and then sends it through two pipes, one leading to the front end and the other to the rear end of the motor. The front end pipe pours its oil over the front end gears and also into small reservoirs located immediately over each front end bearing. Oil feeds directly from each of these reservoirs into its bearings. The surplus flows by gravity to the bottom of the motor and into the first depression or trough at the front end of the oil tray. It then passes successively from one trough to another until it reaches the middle of the tray, whence it flows back into the pan below. In the same manner, the rear end pipe pours its oil over the small reservoirs at the rear end bearing, the surplus flowing down into the rear end of the oil tray and passing eventually into the pan below. Thus, being

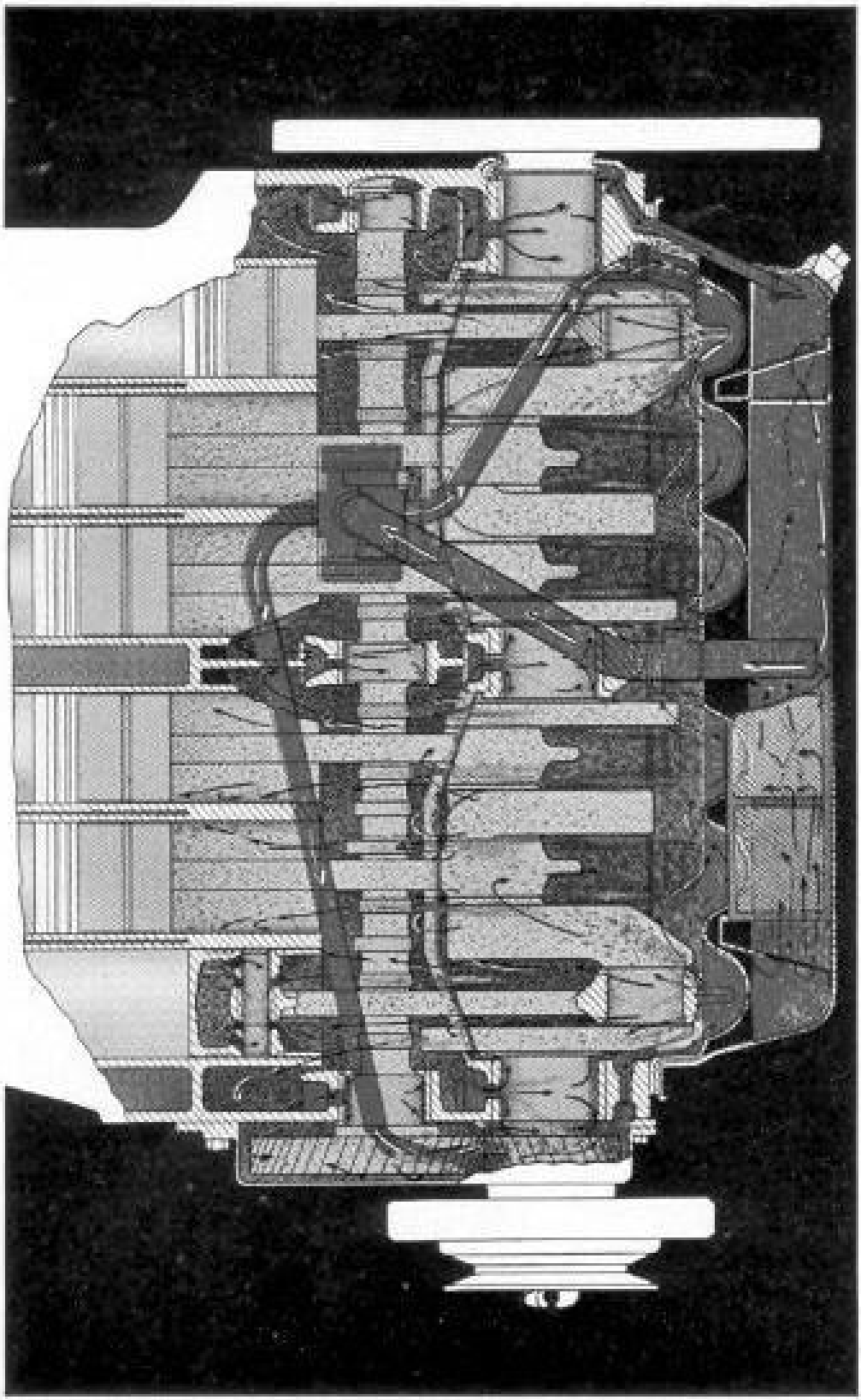
fed directly from reservoirs of oil, these parts have all the lubricant they can use all the time. The reservoirs can never be empty, even when the motor has been idle for a long time.

Oil "Scoop," or "Finger" on Connecting Rod Lower End

Next, the way (2) in which the intermediate camshaft and crankshaft bearings are lubricated. From the lower end of each connecting rod extends a finger, or scoop, that dips into one of the troughs in the oil tray with each revolution of the motor, and scoops or throws a quantity of oil up against the inside wall of the motor block and crankcase. As the oil runs down the wall, it is caught in a channel (much as eaves catch rain running down a roof). From this main channel, it flows through other channels into small reservoirs over the intermediate camshaft and crankshaft bearings, from which the bearings are directly lubricated. The over-flow drops back into the oil tray. These reservoirs can never be empty, and the bearings will always have positive lubrication.

The connecting rod bearings are lubricated in this manner (3): The finger, or scoop, that dips into the oil with each revolution of the crankshaft is drilled with a hole reaching to the bearing, so that a fresh supply of oil is fed to the bearing at each revolution. The revolutions are so frequent that the feeding is actually constant. Furthermore, lubrication begins with the first revolution of the motor. The bearings are never dry.

The cylinder walls are lubricated in this way (4): A large portion of the oil scooped up by the fingers is thrown directly against the cylinder walls, drenching



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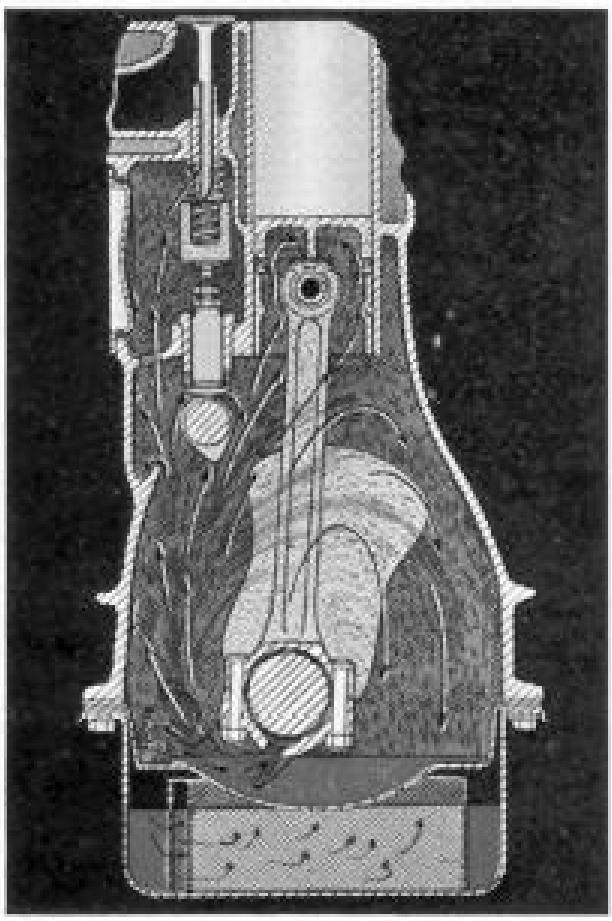
(At Left) The diagrammatic cross-section of a Hudson-built motor shows the Duo-Flo oiling system. Solid dark red indicates fluid or flowing oil; solid lighter red indicates oil film on friction surfaces, such as piston walls and bearings; mottled red indicates oil spray enveloping moving parts in crankcase and engine block. Note the following: The oil pan at the bottom, into which the return oil pours from the center of the oil tray and from the return pipe at the rear; the mesh filters the oil as it flows from the outer labyrinth into the center part (the sump), from which the cleaned, cooled oil is carried up through a large pipe to the oil pump. From the pump, it is carried to the working parts at the front and rear of the engine, as the arrows indicate. Flowing downward from these front and rear sections, the oil runs into the first and sixth of the six troughs in the oil tray. The first and sixth connecting rods are shown dipping into their troughs to take oil into the connecting rod bearing and to splash it in a fine spray over the cylinder wall and the working parts above. The oil moves from the front and rear troughs toward the center of the tray, then flows down into the oil pan and the above procedure is repeated.



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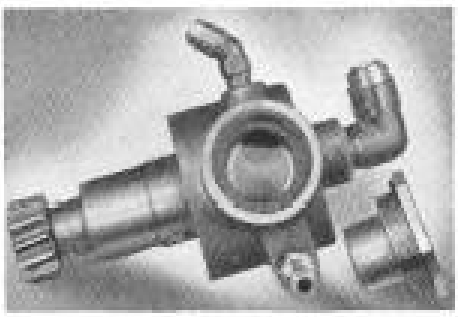
(At Right) The cross-section view of the end shows a connecting rod scooping oil from the tray and throwing it up over the camshaft, tappet and valve mechanism, to the cylinder and to the friction surfaces of the piston and wrist pin.

them immediately. In addition to this, the churning and splashing action within the crankcase immediately creates a fine oil mist, or vapor, which completely fills the crankcase and further lubricates the cylinder walls. (E, P, S)

100—Why is the system called Duo-Flo?

Because the oil flows in *two* large streams. The double pump delivers the oil to both ends of the motor, from which the streams flow to meet again in the middle, thus circulating twice as much oil within a given time as was previously possible. (E, P, S)



Large, Double-action Oil Pump

101—What is the advantage of such a large flow of oil?

The big rivers of oil easily soak up and carry away all of the heat of the bearings, whereas a small stream of oil entering the bearings neither cools the bearings nor stays cool itself, and often requires a separate cooling system. Instead of squirting a little hot oil on a bearing, the Duo-Flo system pours a lot of cooled oil over it. Because oil in a pressure system is almost always *hot*, it must be *forced* through the system to enable any heat to be carried away. The large oil flow provided by the Duo-Flo system prevents connecting rod and main bearing trouble and other costly service work. (E, P, S)

102—Can the flow of oil ever fail in Hudson and Terraplane motors?

No—not if there is oil in the oil pan. And the "telltale" light on the instrument panel gives warning against a lack of sufficient oil. The double pump is

absolutely valveless, and has no adjustments or by-passes. It works when the engine works, and always works the same. Inside the engine, the distribution of oil is controlled by gravity, a force that will never change and never fail. (E, P, S)

103—Does the Duo-Flo system provide adequate lubrication before the engine has warmed up on a cold day?

Yes. It is the only system that gives positive lubrication from the *instant of starting.* The oil is ready where it is needed at the first turn of the motor. It is not necessary to wait for thickened, sluggish oil to be forced through small apertures to point of friction. (E, P, S)

104—But would it not be better to *force* oil into the bearing, as is done in a "forced-feed" system, rather than pour it on?

Oil *cannot* be forced into a bearing. The space to be lubricated between a bearing and its journal is approximately .001" in thickness, and thousands of pounds of pressure would be required to force oil into this space. The pressure of an automobile oil pump is about forty pounds, and consequently it could not even begin to force oil into the bearing. The "forced-feed" system is so named because it forces oil through small holes and pipes to a point outside of the bearing. The Duo-Flo system pours much larger quantities of oil to the same point. The oil is then pulled, or sucked, into the small spaces by the capillary action of the moving parts. The pressure of this action is many times greater than that of any oil pump. All that any oiling system can do is to carry the oil to a point outside of the bearing. The moving bearing does the lubricating, acting as its own pump.

105—Has the Duo-Flo system any other advantages?

Yes. It has no small passages to become clogged with dirt, oil sediment or abrasive particles.

It stirs up the oil, vaporizing the water and acid (foreign matters in the oil) so that they pass off through the ventilators. If a bearing becomes loose and takes an excess of oil, it does not rob the other bearings of their oil quotas, as is true with the force-feed or pressure system. A loose bearing would get all of the oil it could use with the Duo-Flo system. (E, P, S)

106—Is the Duo-Flo system long lived?

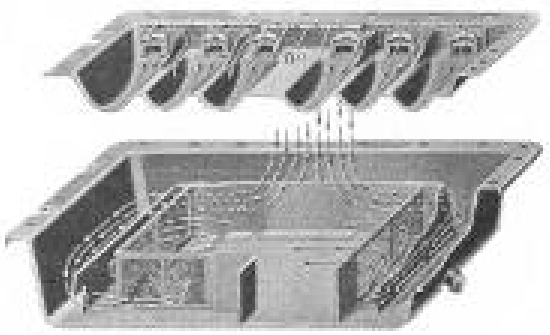
Yes. It is absolutely the only system that will be working exactly the same after 100,000 miles. (E, P, S)

107—Does it make any difference whether the Hudson or Terraplane is on a hillside?

Absolutely not. The Duo-Flo system functions perfectly regardless of the angle of the motor. The troughs in the upper oil tray retain oil wherever it is needed along the full length of the motor, and do not permit all of it to run to one end or back into the sump. (P, S)

108—Is the oil cooled and cleaned at any point in its circulation through the engine?

Yes. When the oil returns to the pan, it must flow through labyrinthian passages (a winding series of baffles) before it passes through the filtering screen into the sump, from which it is again drawn up by the two oil pumps. During this devious flow through the pan, the tempera-



A cut-away perspective view of the oil pan with its labyrinthian passage and filter screen and (above it) the oil tray

ture of the oil drops 45 degrees due to the cooling effect of the air passing beneath the car. (E. P)

109—What is the refill capacity of the oil pan?

Terraplane and Hudson Six—5 quarts; Hudson Eight —7 quarts.

110—How often should the oil be changed?

For the best results, it is recommended that with normal driving and the use of a good grade of oil, it be changed at each 2000 miles. However, if an owner prefers to change oil more frequently, he is taking a precaution toward the longest life and best service possible for the engine.

COOLING SYSTEM

111—How much water does the system hold?

Terraplane—13 quarts; Hudson Six—13 quarts; Hudson Eight—20 quarts.

112—Has any change been made in the water pump or circulating system?

Yes, the pump has been redesigned for a pressure system of circulation. A thermostatic valve is at the front of the cylinder head, to cause the water to return immediately through a by-pass to the engine until the water has reached the engine temperature; then the thermostat causes the water to flow in the normal manner through the radiator (for cooling) before returning to the engine. (P)

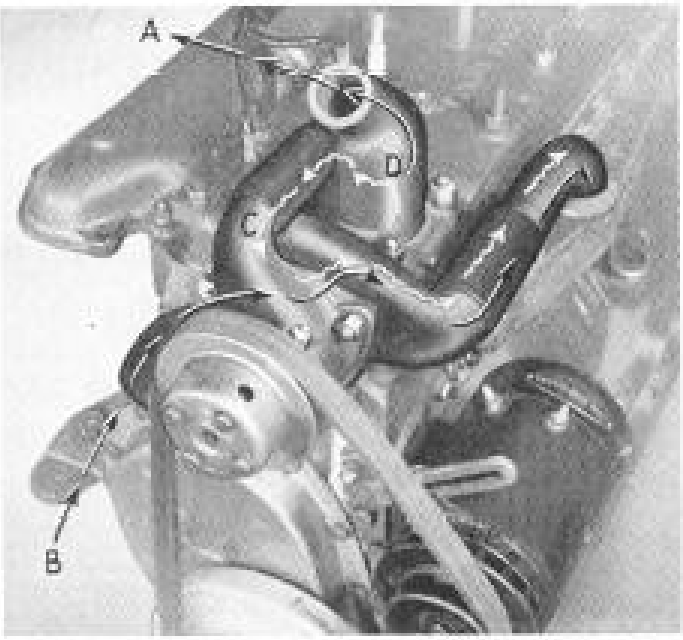
113—Why is the thermostatic valve in the cylinder head instead of in its previous location?

The closer it is to the engine block, the faster the circulation during the warming up period of the engine and the shorter the warming up period. (P)

114—Will this faster heating of the water affect the car heater performance?

Yes, the Hudson-designed heaters will begin throwing

heat into the car within a very few minutes. No special thermostat will be needed with Hudson-designed heaters, except possibly in territories having a prolonged season of extreme cold. (C)



New Water-circulating System — Wavy white lines indicate circulation after engine is started until water reaches engine running temperature; thermostatic valve (at D) turns water from cylinder block through by-pass (C) and directly back into the engine. Straight black lines indicate normal circulation after water has reached engine running temperature; thermostatic valve (D) directs water to radiator (A); after passing through radiator and being cooled, it is brought back (B) through water pump and pumped by pressure through the engine.

115—What is the advantage of the pressure system?

It provides rapid, positive distribution of water in much greater volume. About 40 per cent more water flows through the engine than before. The circulation is 30 gallons per minute at approximately 50 miles per hour. (P)

116—Is the new type of pump trouble-free?

Yes. No packing adjustment is required, as the pump is automatically and permanently self-sealed at the shaft and housing by a spring-loaded, graphite-impregnated cork ring. The thrust is taken by spring-loaded stain-

less-steel washers that are machined and ground. The pump is considerably more expensive than pumps previously used. (E, P)

117—Is there a water temperature indicator?

Yes, in all models except Terraplane De Luxe. (S)

118—What type of fan is used?

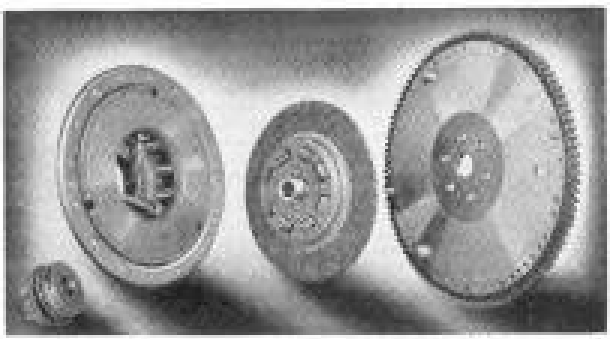
A sturdy, four-blade fan, with scientifically pitched blades for uniform distribution of the air current. It is driven by a V-belt. (P, R)

THE CLUTCH

119—What type of clutch is used in Hudsons and Terraplanes?

A single-plate, cork-insert, oil-cushioned, triple-sealed clutch. This is the smoothest engaging type of clutch known, being entirely free from chatter and grab, and is unusually long lived. (C, E, P, R)

120—What is the advantage of cork as a friction material?



Triple-sealed, Oil-cushioned Clutch Parts

Its co-efficient of friction is higher than that of any other known material. When used with cushioning oil, it is very long wearing. It does not disintegrate from the effects of the oil as does other clutch lining material, and provides smooth clutch engagement. (C, E, P)

121—What is the advantage of the oil-cushion feature?

Lubricated working parts mean longer life and an oil cushion provides the smoothest initial engagement known. Clutch grabbing, which results from dry surfaces, is eliminated. (C, E, P, R)

122—What is meant by "triple-sealed" clutch?

The Hudson and Terraplane clutch is (1) sealed in front—a leather-sealed throw-out bearing; (2) sealed around the perimeter, against centrifugal action of the oil; (3) sealed at the rear, against leakage. The cushioning oil is retained for exceptionally long mileages, and the minimum of attention is required. (E, P)

123—How many cork inserts are there?

Terraplane.....90 Hudson Six.....90
Hudson Eight.....108

124—Will the cork inserts become loose, come out or wear out?

They will remain firmly fixed in the friction plate, and will wear for an extraordinarily long period. After being inserted in the plate, the corks are spread and fixed in oil under a pressure of 1600 pounds, and a heat of 400-425 degrees for a period of one hour. After this they are cooled in oil and trimmed to a limit of .001". (E, P)

125—Is the pressure plate made of cast iron, as in other cars?

No. It is of forged steel, exactly the same as the material in the front axle. This expensive material is used because of its strength and uniformity. (E, P, R)

126—Will the clutch springs "soften" after brief use, as they do in other cars?

No. They are "set" by special treatment to prevent softening during use. This assures retention of the

clutch's operating characteristics throughout its life and saves service adjustment. (E, P, R)

127—Is there any special feature of design about the clutch cover?

Yes. It is heavily ribbed for increased rigidity. (R)

128—Is the flywheel made of iron?

No. It is made of steel, for lightness and strength. It is heat treated, ground and polished, and perfectly balanced. It provides the best contacting surface for the clutch yet devised. It is approximately only half as heavy as the iron flywheels used in competitive cars, and consumes 50% less power from the motor. (C, E, P, R)

129—What kind of fluid is used in the clutch?

For the smoothest possible service, Hudsonite Clutch Compound, an inexpensive fluid developed by Hudson engineers, is recommended. It may be obtained from all Hudson and Terraplane dealers and service stations. (C, P)

130—Can a clutch of the Hudson-Terraplane type be found in any other car?

No. It has been developed over a period of twenty years by Hudson engineers, who have concentrated on this one type of design and have brought it to its present high peak of efficiency.

131—Is automatic clutch available?

Automatic clutch is optional on all models. Persons who prefer automatic clutch find that the necessarily abrupt action of the vacuum-actuated automatic device is cushioned by the soft, velvety effect of the lubricated cork disc in the Hudson-built clutch. Other manufacturers must add some delaying device in an effort to get the same result. To insure perfect timing of the automatic clutch operation, so that there will be a perfectly smooth engagement, a pendulum valve

regulates the rate of take-up in the clutch. A dashpot control on the carburetor prevents sudden closing of the throttle, thus allowing correct co-ordination between the throttle and clutch action. (C, P)

132—Has any change been made in the automatic clutch design for 1936?

Yes; the cylinder is larger, providing more power and smoother engagement and disengagement of the clutch. (P)

133—Is free wheeling available?

All the advantages of free wheeling, with none of the usual disadvantages, are provided with automatic clutch available on Hudsons and Terraplanes.

TRANSMISSION

134—What type of transmission is used?

A synchro-shift, three-speed transmission, with silent second gear. Low and reverse gears are automatically demeshed when second and high gears are engaged, or when the transmission is in neutral. This feature lengthens the life of the transmission and makes it quieter in operation. The synchro-shift, non-clashing transmission, rapid and positive in its action, is an important factor in Hudson and Terraplane super-performance. (E, P, R)

Synchro-Shift Transmission, Cut-away View (Left Side)

135—Has any change been made in the transmission design for 1936?

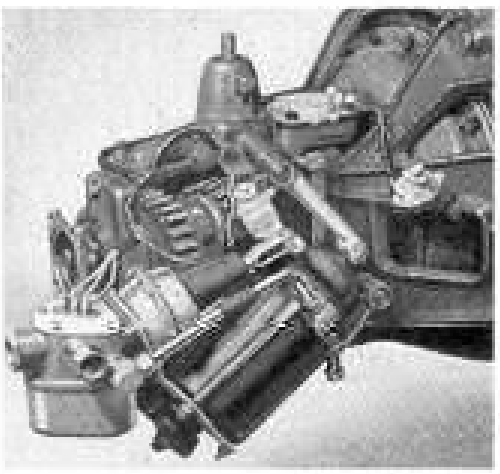
Yes; (1) the faces have been widened on the mainshaft low and reverse gears and the countershaft low gear; (2) the

tooth chamfer has been altered; (3) the transmission case is longer to accommodate the wider gears. The large bronze thrust washer that was adopted in 1935 is continued. All of these changes strengthen the transmission and permit easier, more positive shifting. (P, R)

136—What is the "Electric Hand?"

It is a gearshifting development with pre-selection feature, in which the work of shifting is done with vacuum power.

137—How is it operated? Pre-selection means that the next gear into which the transmission is to be shifted can be chosen any length of time in advance of the actual shifting. It is done in this manner: An arm extends out from the steering column, immediately under the normal position of the driver's right hand on the steering wheel. Extending up from the end of this arm is a small lever or trigger easily reached by the fingers of the driver's right hand. While running in any gear, the driver can move the lever through an H (similar to that of the conventional gearshift) to pre-select the next gear in which he wishes to travel. When the driver is ready to shift gears (if his car is equipped with automatic clutch) he takes his foot momentarily from the accelerator and the shifting is accomplished by vacuum action; if the car does not have automatic clutch, the driver presses the clutch pedal and this actuates the shift.



Vacuum - power gearshifting installation on transmission, electrically actuated through "Electric Hand" pre-selector

138—What are its advantages?

1. Its simple operation is much less fatiguing than manipulating a gearshift lever.
2. The driver need never take his hand from the wheel or his eyes from the road to shift gears—a safety factor.
3. He can anticipate his shifting requirements and is not compelled to reach hastily for his shift-lever in an emergency.
4. Eliminating the gearshift lever makes the front compartment clear and much roomier—*see illustration on page* 105—(the emergency brake is changed to a cowl position except in the Terraplane De Luxe series; cowl position brake is used when "Electric Hand" is installed).

139—Can the conventional gearshift be used if the "Electric Hand" is installed?

Yes—the gearshift lever can be attached in a few seconds, and the transmission operated in the conventional manner.

140—What are the transmission gear ratios?

High.....1-1	Low.....2.42-1
Second.....1.61-1	Reverse.....2.99-1

141—Of what material are the transmission gears made?

Alloy steel. The constant mesh gears are of electric furnace steel, the most expensive of all automobile steels. The Terraplane is, as far as is known, the only car in its price class using this steel. (E, P, R, S)

142—Are the transmission bearings adequate for their work?

Yes. As an added measure of safety and durability,

there is a multiple ball thrust between the main stem gear and the main shaft. This provides great oversize bearing capacity to take care of the load at this point. Also, needle bearings carry the front end of the main shaft. (E, P, R, S)

143—Can any gear become disengaged when the car is passing over rough roads?

No. Transmission "Interlocks" prevent this. The clutch pedal must be depressed if gears are changed in *any* speed. (S)

6

THE CHASSIS

Since its first cars were built in 1909, the Hudson Motor Car Company has been a leader in the improvement of chassis design and construction.

Many of the features which are now regarded as basic in chassis design were first developed by Hudson. Box-type frame cross members were first introduced in Hudson-built cars, and Hudson was first to employ a steel body floor as a vital frame cross member. Hudson is the originator of the patented splayed spring construction which gives Hudson-built cars greater stability.

And in 1936 the Hudsons and Terraplanes embody a greater number of important and exclusive improvements in chassis construction than any previous models.

RADIAL SAFETY CONTROL brings to Hudson-built cars the world's first safety chassis. Now, motorists can have steering that is almost automatic . . . smoother riding than has been known before . . . and straight stopping that is free from twisting or pitch. Radial Safety Control embraces a new method of springing and front end construction, fully explained in this section.

TRU-LINE STEERING is another feature made possible by this superior chassis design. It involves a new principle that enables the car to hold its direction without swerving or wandering . . . unaffected by spring action, braking or road conditions.

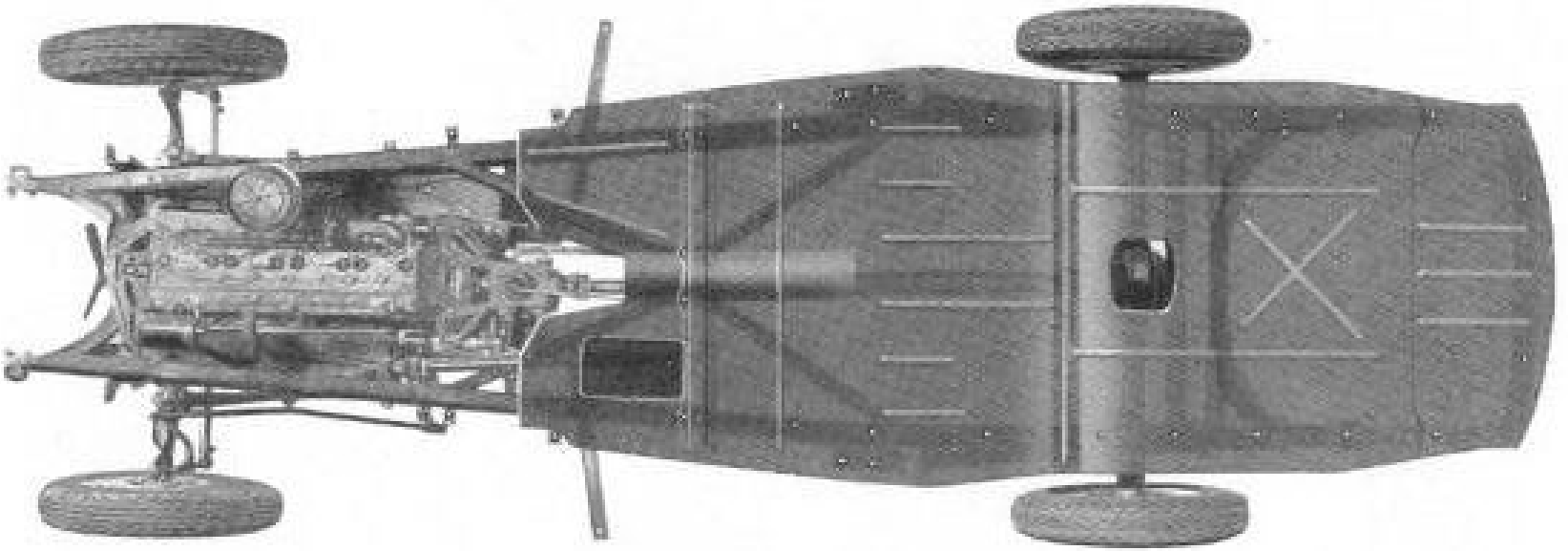
THE RHYTHMIC RIDE is brought to motor car owners for the first time in the 1936 Hudson and Terraplane. Longer and gentler springs, which have nothing to do but cushion the body from road shocks.

DUO-AUTOMATIC HYDRAULIC brakes . . . brakes which for the first time give the smooth equalized response of hydraulics combined with the absolute safety and dependability of mechanical brakes.

More than ever before the chassis will sell Hudson-built cars in 1936. Everybody will be asking about Radial Safety Control . . . Tru-Line Steering . . . the Rhythmic Ride . . . and Duo-Automatic Hydraulic Brakes.

No cars except Hudsons and Terraplanes will have even one of them.

THE CHASSIS



Plan-view Illustration of Hudson Eight Chassis, showing (in phantom) the Sheet Steel Panel that Serves as Both Chassis Cross-member and Body Floor

In Hudson-built cars, every part, however small or unimportant it may appear to be, contributes very definitely to one or more of the several factors that combine to make Hudsons and Terraplanes the best-riding, best-performing cars on the road. After most answers in the following pages will be noted symbols that indicate the particular factors to which the answer pertains.

KEY TO SYMBOLS

A.....APPEARANCE AND STYLE
C.....COMFORT AND CONVENIENCE
E.....ECONOMY R.....RUGGEDNESS
P.....PERFORMANCE S.....SAFETY

CHASSIS
QUESTIONS AND ANSWERS

144—What are the Hudson and Terraplane wheelbases?

Terraplane.....115″
Hudson Six.....120″
Hudson Eight (Broughams, Coupes, Convertible Coupes).....120″
Hudson Eight (Sedans).....127″

145—What are the over-all lengths (bumper to bumper)?

	Broughams and Sedans	*Coupes and Convertibles*
Terraplane.....	195″	200¼″
Hudson Six.....	199⅝″	204⅞″
Hudson Eight (Broughams, Coupes and Convertible Coupes only).....	199⅝″	204⅞″
Hudson Eight (Sedans only).....	206⅝″	

146—What is the tread?

	Front	*Rear*
All Hudsons and Terraplanes (C, S)	56″	57 1/2″

147—What is the depth of the frame?

Terraplane.....6 3/4″ Hudson.....7″
(R, S)

148—What is the width of the flange?

Terraplane.....1 3/4″ Hudson Eight 120″ w.b. 1 25/32″
Hudson Six . . . 1 25/32″ Hudson Eight 127″ w.b. 1 51/64″
(R, S)

149—What thickness of steel is used in the frame?

Terraplane..... 3/32″ Hudson Eight 120″ w.b. . 1/8″
Hudson Six..... 1/8″ Hudson Eight 127″ w.b. . 9/64″
(R, S)

150—What portion of the frame side rail is deepest and strongest?

Deep, Box-Section Frame (note torque rod from frame to axle; see question No. 156)

The section between the "X" member and the rear end of the front spring. The maximum depth is at the latter point. (R, S)

151—Why is this portion made stronger?

Because it is the point of maximum stress from road shock. The fact that the maximum depth section is in front of the steering gear mounting minimizes the

transmission of road vibration to the steering wheel. (C, R, S)

152—Has the chassis frame been strengthened in any way for the 1936 models?

Yes; the depth of the side rails has been increased approximately ¾" over the rear axle—another point of special stress. (R, S)

153—What cross members does the frame have?

(a) "K" member at the front, bolted to each side rail at three points.

(b) An "X" member, with box section extending to the front end of the frame.

(c, d, e) Three straight members.

(f) The heavy sheet-steel body floor, bolted to the frame at 34 points.

(g) The heavy steel running board brackets, two on each side, which are bolted both to the side rail and the cross member. In addition to these, the motor supports at the transmission function as a cross member and add to the strength and rigidity of the frame. (C, R, S)

154—Do any other cars have all of these?

No. No other car has the complete broad backbone of sheet steel. While a few other cars have the front end "K" member, only Hudsons and Terraplanes have this member bolted to each side rail at three points. (R, S)

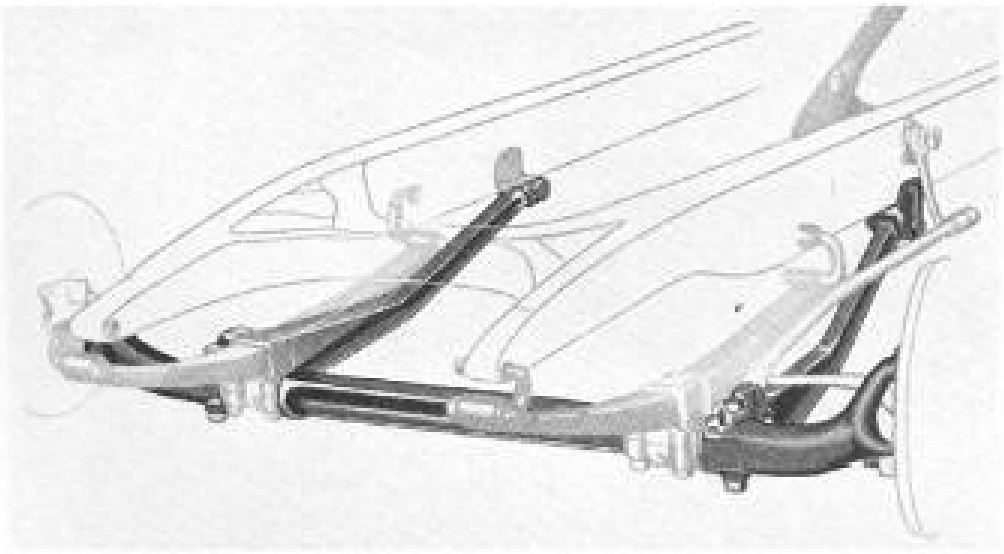
155—Are the Hudson and Terraplane frames as heavy as those of competitive cars?

In depth of frame, in cross bracing, and in strength and rigidity, yes. In number of pounds of metal (in brief, dead weight), no. (E, P, R, S)

RADIAL SAFETY CONTROL

156—What is Radial Safety Control?

It is the new, exclusive front end design on 1936 Hudsons and Terraplanes, which greatly improves the riding, steering and braking qualities of the cars. It provides the Rhythmic Ride and permits Tru-Line steering. Two sturdy drop-forged torque rods (one on each side of the chassis frame) are attached to the frame with rubber-bushed pivot pins at a point in line with the steering Pitman arm, the rods being able to rotate on the pivot pins. The front ends of the rods are fixed to the front axle at points just outside of the spring mountings; they serve to carry the propulsion from the chassis to the front axle and wheels, and also to transmit the braking action of the front wheels to the chassis. Since the rods are pivoted at the rear, they permit the axle to rise and fall freely as inequalities in the road are encountered, but the definite length of the rods permits the axle to move only in a true arc. The



Radial Safety Control—Phantom view showing drop-forged torque arms which permit the front axle to move only in a true arc, and which greatly improve riding, steering and braking

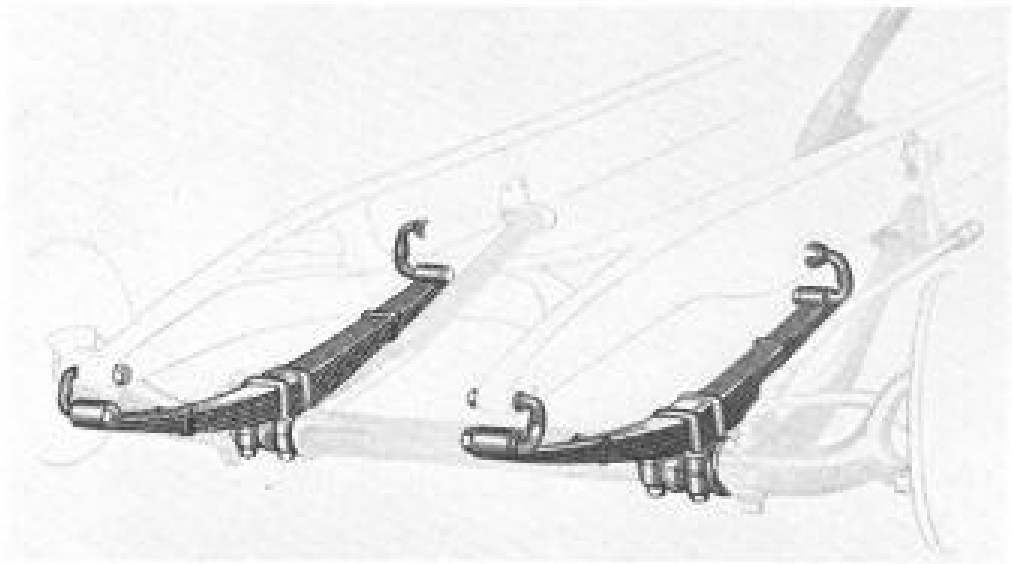
axle cannot move backward and forward with the spring-flex as it can do when the front springs are used as torque rods in the conventional front end design. The springs are not rigidly mounted on the axle, but are mounted by means of a lubricated saddle bearing, which permits the slight rotation of the axle as the saddle bearing follows its up-and-down travel. This is done because the springs now have no function except to cushion the car.

(Further details of the Radial Safety Control design and of its effect on riding, steering and braking may be found in the sections on Spring Suspension, Steering and Brakes.)

SPRING SUSPENSION

157—Has any change been made in the spring suspension in the 1936 models?

Yes, a very important change. The Radial Safety Control, which is exclusive in Hudsons and Terraplanes, has eliminated the braking torque "duty" of the front



Rhythmic Ride—Phantom view of new front end design shows front springs shackled at both ends, since they have no braking torque duty and do nothing but cushion the car

springs (see question No. 156), so that their only function now is to cushion the car. It provides the Rhythmic Ride. *Without Radial Safety Control,* the front springs must act as a torque-arm, transmitting the propelling power from the chassis frame to the front axle and wheels, and also transmitting the braking power of the front wheels to the chassis. This requires a much heavier, stiffer spring than is needed for spring suspension only. The 1936 Hudson and Terraplane springs have a much softer, slower action, and consequently give a much smoother ride. Since the front springs are not required to absorb brake torque, they are shackled at both ends.

158—How much softer are the front springs used in 1936?

As an example: 235 pounds of weight were required to deflect a 1935 Hudson spring one inch; 120 pounds will deflect a 1936 spring one inch. (C)

159—What type of spring is used?

The semi-elliptical type, as on costly cars. They are made of silicon manganese steel.

160—Is independent springing of the front wheels available?

No; not in the "knee action" sense. "Knee action" was not needed in 1935 to give Hudson-built cars a superior "ride," and the Radial Safety Control in 1936 gives a still much smoother ride with the still greater stability of the two torque rods, in addition to the sturdy front axle.

Hudson-built cars have independent springing in the sense that each front spring acts independently of the other, and also independently of any brake torque

action. Due to the softness of the springs, the deflection of one spring, caused by road bumps, has little effect on the other spring or the horizontal position of the chassis and body. (C, P, R, S)

161—Do 1936 Hudsons and Terraplanes have stabilizer bars?

No. Radial Safety Control performs this function, thus leaving the springs to perform their intended function of cushioning the ride.

162—Why are leaf springs preferred to coil springs?

Because (a) they do not tend to soften, as do coil springs, but retain their original characteristics to a greater degree throughout their life; (b) they are safer; the leaf spring is less likely to break because the winding of the coil spring in manufacture stretches the outer side of the spring wire and compresses the inner side, giving unequal characteristics to the different sections of the spring; further, if a leaf of the leaf-type spring breaks, the other leaves support the car, but if a coil spring breaks, all spring support is gone; (c) the friction of the leaves gives a valuable "snubbing" effect that is not possible in coil springs. (C, S, P, R)

163—Have the springs been changed in 1936?

Yes. Both front and rear springs have been made longer, giving a softer, smoother ride. Front springs are shackled at both ends to provide a free and soft action.

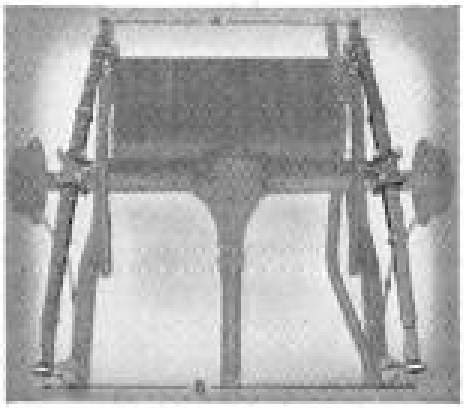
164—What are the spring dimensions, and how many leaves are in each?

In all Hudsons and Terraplanes:

	Length	Width	No. of Leaves
Front Springs.....	33″	1¾″	10
Rear Springs.....	52″	1¾″	10

165—Are the springs parallel with each other?

No. They are "splayed." This means that the rear ends of the front springs are mounted farther apart than the front ends, and the front ends of the rear springs are set farther apart than the rear ends. This spreading of the springs prevents the swaying of the chassis and body at all speeds, and rolling when turning curves at high speeds. This exclusive Hudson design greatly increases the car's stability and the passengers' feeling of security. (C, P, S)



Splayed Springs (Note Greater Width at B than at A)

166—Why is there a rubber pad between the spring and the axle?

This permits a still softer, smoother spring action and further insulates the car and the passengers from road vibrations.

167—Can Hudson-built cars "hit the axle" if a sudden severe jolt compresses the springs to the limit?

No. A rubber pad or "auxiliary spring" between the frame and the axle absorbs such jolts. (C, S)

168—What type of spring shackle is used?

The Unit-type shackle, threaded and permanently self-adjusting, and free from rattles and squeaks. (C, E)

U-type, Self-adjusting Shackle

169—Are spring covers used?

Yes. Fabric spring covers are standard on all series except the Terraplane De Luxe. They retain the graphite lubricant and prevent foreign matter from entering between the leaves. Rust between the leaves neutralizes the lubricant and grit reduces the friction surfaces. (C, E, P)

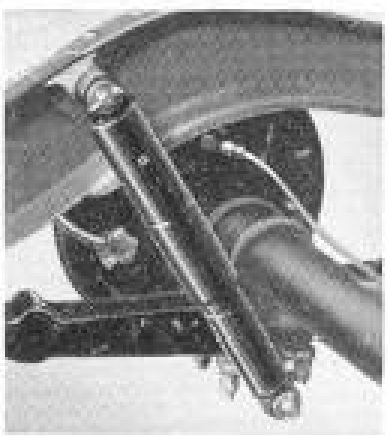
SHOCK ABSORBERS

170—What type of shock absorber is used?

The Hudson Road Leveller direct-acting type. This type was first used by Hudson, but will soon be adopted by other cars. (C, P, R)

171—Why are "Road Levellers" preferred?

They give the smoothest ride on both boulevard and rough road, are the simplest in design, require the least attention, and are the most nearly trouble free of all types. They have a much larger oil capacity than other types and the oil moves through larger apertures, thus providing a "soft" ride on smooth pavements, and tightening the action when rough roads are encountered. They have a direct 1 to 1 action, whereas other types have a 4 to 1 reduction. Consequently, the "Road Levellers" are four times as effective. The top and bottom parts of the cylinder are threaded, so that any one of five different valves may be inserted, to give any type of ride desired.



"Road Leveller" Shock Absorber

172 — Do temperature changes affect the "Road Levellers?"

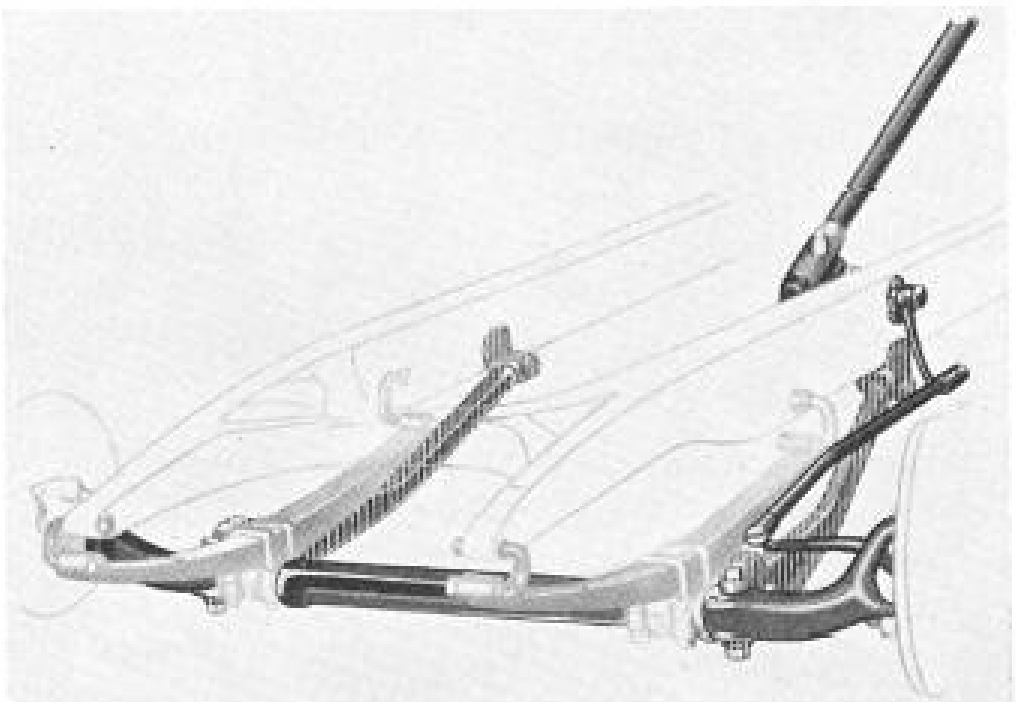
No. Because of the larger apertures, changes in the oil

viscosity due to temperature changes have little effect on the action of the "Road Levellers." The valves in the 1936 shock absorbers have been revised to meet the requirements of the longer, softer springs. (C, P)

STEERING

173—Is there any change in the steering in 1936 Hudsons and Terraplanes?

Yes. They have Tru-line Steering, which is accomplished through the Radial Safety Control design. With conventional spring control of the front axle, a slight rotary motion of the axle is unavoidable—for example, when the brakes are applied or released. This rotation changes the castor, or proper tilt, of the front axle. The castor is also changed as springs become older and their characteristics alter, or if there is a variation in the original characteristics of a set of



Tru-Line Steering—Phantom view showing steering hook-up and (in cross-hatching) torque arms that keep front axle in a true arc and retain proper caster, providing Tru-Line Steering

springs. Changing castor affects steering. Too much castor causes shimmy; too little reduces the "self-steer." The torque rods of the Radial Safety Control design *prevent any change in castor,* so there can be no variation in steering from that cause. The car actually tends to steer itself. In engineering language, "It has road sense." (C, P, E, S)

174—What type of steering gear is used?

The worm and sector type is used in all Hudsons and Terraplanes.

The worm shaft is carried on tapered roller bearings. It is a shock-cushion, "self-adjusting" gear. (C, P, S)

175—Is there any change in the steering hook-up in 1936?

Yes; the tie-rod is carried on ball bearings at each end for friction-less steering. (P, C, R)

Cut-away View of Worm-and-Sector Steering Gear

176—What are the steering gear ratios?

17 to 1 on all Hudsons and Terraplanes.

177—Is the steering column adjustable?

Yes, in all series, it may be shim adjusted to give the most restful driving angle. (C)

178—What size steering wheel is used?

17 inch. (R, S)

179—What type of steering wheel is used?

In the Hudson Eight Custom models, the wheel has a modern, plastic-covered, steel-cored rim, with spokes

comprised of three rods of spring steel. In all other models, the wheel is of the conventional hard rubber type with steel core. (S, A)

180—What is the advantage of the type of wheel with the spring steel spokes?

The slight flexibility of the spokes makes driving somewhat more restful. The flexibility is not sufficient, however, to affect the steering action in the least. (C)

181—Is the steering wheel comfortable to the hand?

Yes. It is molded to fit the hand, so that the thumb and all fingers rest easily on the rim. (C)

BRAKES

182—What kind of brakes do Hudsons and Terraplanes have?

Duo-Automatic Hydraulic brakes.

183—What does "duo-automatic" mean?

It means that it is a double system, or two systems so hooked up that one supplements the other. If the primary system should fail to function properly, the secondary system then does the braking. (S)

184—What is the primary system?

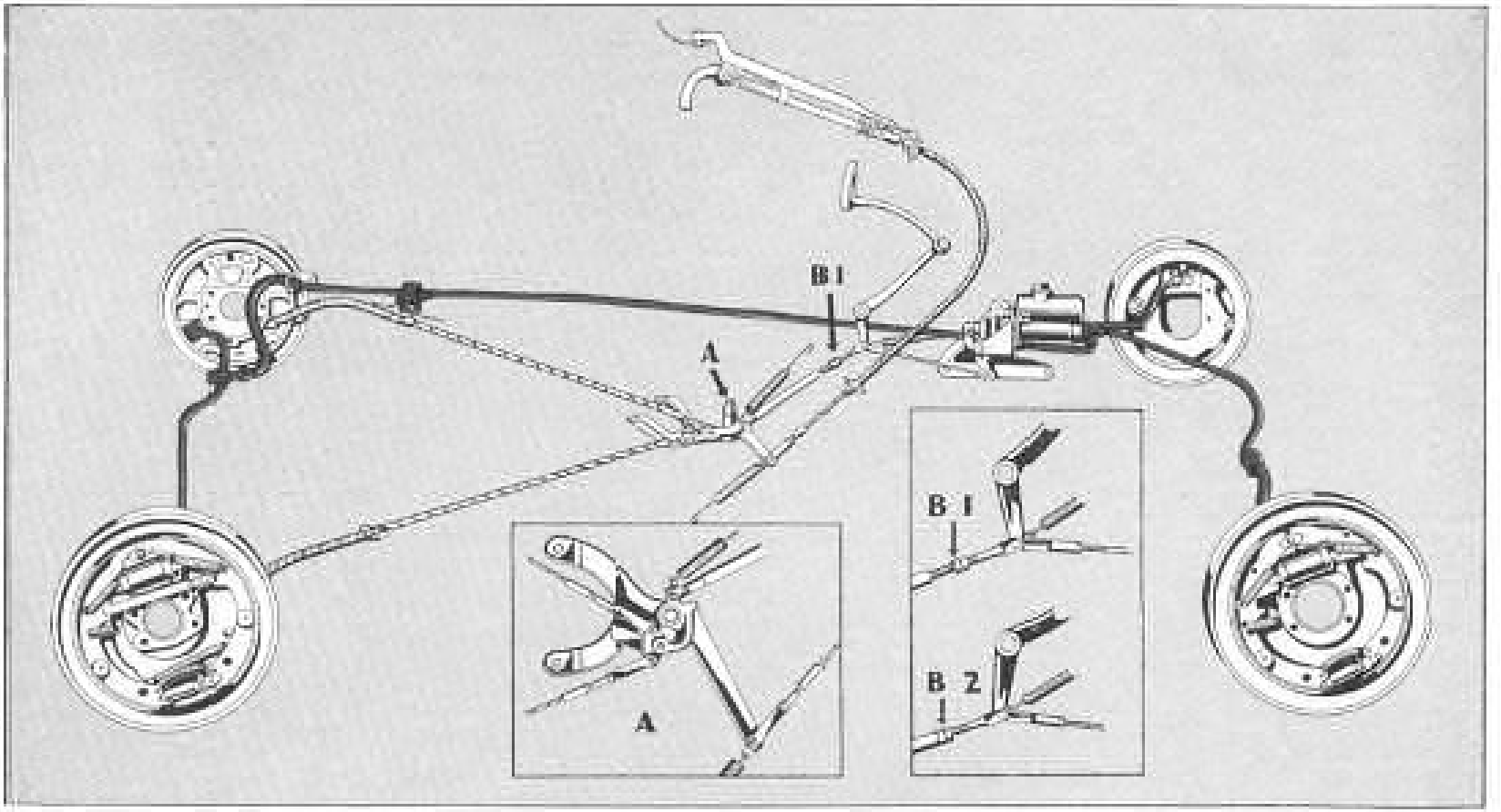
A conventional hydraulic system, with internal expanding, low-velocity, servo-acting brakes operating on all four wheels.

185—What is the secondary system?

Hudson Rotary Equalized mechanical brakes, operating on the rear wheels.

186—How does the one system supplement the other?

When the brake pedal is applied, the hydraulic brakes "take hold" at a certain point in the pedal travel, as is

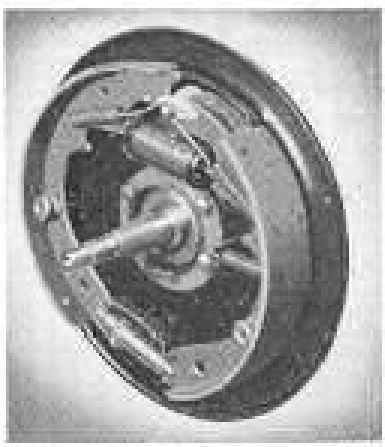


Duo-Automatic Hydraulic Brakes, showing Primary Hydraulic System (*Hydraulic lines in red*) and Reserve Mechanical System. A—Hudson Rotary Equalizer on Reserve Mechanical System. B 1—Normal position of "pick-up" design; Hydraulic Brakes take effect at this point when pressure is applied to the pedal. B 2—Position at which Reserve Mechanical Brakes are applied; the "pick-up" nut has traveled approximately one inch to contact the sleeve that actuates the Rotary Equalizer and the Mechanical Brakes

customary. If for any reason the hydraulic brakes should fail to "take hold" at the proper point, a slight additional travel of the pedal (about one inch) applies the rotary-equalized mechanical brakes. This application of the mechanical brakes is absolutely automatic and requires no action by the driver except pressure on the brake pedal. (S)

187—Why did Hudson adopt Duo-Automatic Hydraulic brakes?

Hydraulic brakes were adopted because they are inherently equalized and consequently prevent side-skidding and other dangers that are possible with unequalized brakes; also, they provide the smoothest stopping and require a minimum of effort by the driver. The possibility of loss of braking effectiveness (through loss of fluid or other cause) makes a supplementary system necessary for absolute safety of the passengers at all times. Hudson Rotary Equalized mechanical brakes were adopted as the supplementary system because they had proved their efficiency and their positive operation at all times. Although they operate on the rear wheels, instead of all four wheels, they are ample to control the car in any emergency, and may be used with complete safety until the hydraulic brakes are again functioning. (P, R, S)



Low-velocity, Servo-acting Brake (front wheel assembly)

188—Do the hydraulic and mechanical systems operate different shoes at the wheels?

No; they actuate the same shoes, thus assuring the most effective braking performance. (S)

189—What does "servo-acting" mean?

It means that the power of the revolving wheels is utilized to set the brakes and stop the car. This power is controlled by the brake pedal in much the same way that the engine power is controlled by the accelerator pedal. The car motion contributes to the powerful yet easy brake action. (P, S)

190—What is the "rotary equalizer?"

It is a steel unit to which the brake cables are attached. The rotary action of the equalizer, when the brake pedal is applied, actuates the cables in an absolutely equal movement at equal pressure, stopping the car quickly and smoothly in a straight line. It is simpler than other equalizing designs and does not require adjustment. It is an exclusive Hudson and Terraplane design. (S, P)

191—How does Radial Safety Control affect the braking action?

Since the braking action of the front wheels is transmitted to the chassis through the drop-forged torque rods (see question No. 156), the deceleration is more prompt and positive than when the springs are used for the braking torque. (P, S, C)

192—What type of brake drums is used?

The drums are of alloy steel, machined and polished and are of a special thickness to assure concentricity under all operating conditions. (S)

The brake drums are held to .003″ to .005″ eccentricity, measured with the drum rotating on the wheel spindle.

193—What are the brake shoe dimensions?

	Shoe Lengths	*Width*
Terraplane	$22\frac{1}{8}''$	$1\frac{3}{4}''$
Hudson Six	$22\frac{1}{8}''$	$1\frac{3}{4}''$
Hudson Eight	$23\frac{15}{16}''$	$1\frac{3}{4}''$

194—How is rusting of brake operating parts prevented?

Actuating parts are heavily cadmium plated. Rear brakes are protected against splash by use of centrifugal shields.

195—How is the braking power divided between the front and rear wheels?

50-50.

196—Can water and mud be thrown into the rear wheel brake by the revolving front wheel?

No. A baffle plate prevents water and abrasives from being thrown into the rear brake system. Water and mud are never splashed sideways by a left wheel into a right brake drum or vice versa; thus front wheel brakes are never so affected and rear wheel brakes are affected only by the front wheel splash. For this reason, only the rear brakes need be protected by baffle plates. (E, P, S)

197—How is the parking brake applied?

On the rear wheels. The operation is through the rotary equalizer and is the same as that described under questions Nos. 185 and 189, except for the manner of application. (S)

198—How is the parking brake operated?

By hand-control conveniently placed under the cowl.

This has a finger-release for extra ease of operation and, when the Electric Hand pre-selective shift is used, leaves the front compartment clear, with added leg room. (The Terraplane De Luxe series retains the conventional center position parking brake lever, although the cowl type brake is used with "Electric Hand" installation.)

THE AXLES

(Note— Also see "Radial Safety Control"—question No. 156.)

199—What kind of front axle is standard?

The Elliott type, with the axle forks forged integral with the sturdy axle beam. It is a solid forging of high grade steel. A heavy ball-bearing tie-rod is used. (R, S)

200—What is unusual about the Hudson-built front axle and steering knuckle assembly?

The ball bearing that supports the weight of the car is, to assist in easy steering, in a housing between the king pin and the axle forks, instead of being exposed, and the king pins are made of nickel-molybdenum alloy. (C, R, S)

201—Why is nickel-molybdenum alloy steel used for king pins and other vital parts?

Where a great strain or over-load might cause the usual material to break, nickel-molybdenum will only bend. It is the safest material for severe service (R, S)

Sturdy Rear Axle Gear Construction

202—What kind of rear axle is used?

A semi-floating, fully adjustable rear axle. (P, R)

203—What are the advantages of the Hudson-built rear axle?

1. Minimum unsprung weight, with great strength.
2. Tapered roller bearings throughout.
3. It is fully adjustable, including wheel bearings.
4. Ring gears and drive pinion are of nickel-molybdenum alloy steel. (E, P, R)

204—What type of driving gear is used?

The spiral bevel type. (C, P, R)

205—What is the axle ratio?

Terraplane..4-1/9 to 1 Hudson.....4-1/9 to 1

206—What type of universal joint is used?

Needle roller bearing joints, with sealed lubrication, which give better distribution of the power load. Friction is minimized and the life of the universal is indefinitely prolonged. The needle roller bearings afford more capacity than the heaviest service could possibly require. All Hudson-built cars have two universal joints, whereas some cars use only one. (E, P, R)

207—What type of drive is used?

Hotchkiss drive. With this type, the torque, or propelling force of the rear axle is transmitted through the rear springs to the chassis. Similarly, the decelerating torque of the brakes is transmitted to the chassis through the rear springs, as well as through the torque arms from the front axle to the frame. (P)

208—What are the advantages of the Hotchkiss drive?

The car rides easier and holds the road better, because of the flexibility of the rolling parts, and the lower unsprung weight, as compared with other types of drives. The springs tend to "cushion" the quick forward thrust of a sudden acceleration, and likewise "cushion" a quick deceleration. This not only adds to

passenger comfort, but protects the car mechanism. Less tire noise is transmitted to the body. (C, P, R, S)

WHEELS AND TIRES

209—What size and type of wheels are used?

All wheels are pressed steel spoke, artillery type. 16 inches in diameter. There are no wheel options.

210—What sizes of tires are used?

Terraplane....16 x 6.00 Hudson Six....16 x 6.00
Hudson Eight..16 x 6.25

There are no optional tire sizes.

211—What tire pressures are recommended?

In all models: front, 24 pounds; rear, 30 pounds.

MISCELLANEOUS

212—What type of chassis lubrication is used?

Pressure lubrication through self-cleaning chassis fittings. (E)

Some of the 30 Anti-friction, Heavy Duty Roller and Ball Bearings in One Hudson-built Car

213—Are many roller and ball bearings used in Hudson-built cars?

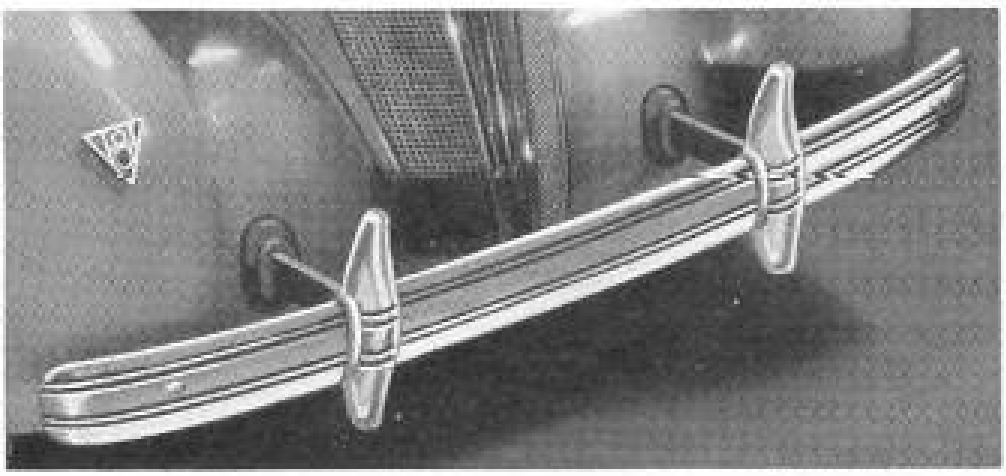
Yes, 30. Probably more and larger bearings than in any other cars in their price fields. (E, P, R, S)

214—What type of bumper is used?

"Wide-range" bumpers. The full width and extreme "up-and-down" range afforded by the deep section of these sturdy graceful bumpers gives the car maximum protection. Front and rear bumper-guards are standard equipment. (A, R, S)

215—What type of running board is used?

Heavy sheet steel, with a round flanged edge to add strength, and with a durable, corrugated rubber mat. (R, S)



Wide-range Bumper

216—How are the running boards mounted?

On heavy steel channel brackets that are riveted to both the side rails and the X-member, thus forming additional cross-members and adding further strength to the chassis. (R, S)

217—Do the running boards provide any protection for the body?

Yes. Because of their own strength and that of the bracket, they are actually side-bumpers that protect the body from side collision. (R, S)

218—Are there any other structural members that add strength and further protect the body from damage by collision?

Yes. The fender brackets are unusually large section members that add rigidity and strength. Even with three men standing on the running board the entire car can be lifted by the front fender without distorting it. (R, S)

219—What type of muffler is used?

The baffled type which is big enough to accommodate the exhaust from an even larger engine, and still provide maximum silence. (C, P)

220—What is the capacity of the gasoline tank?

16½ gallons in all models.

221—Is the gasoline tank filler easily accessible?

Yes. The tank is placed somewhat forward from the conventional position, and is protected from stones thrown by the wheels. Further, it is protected by heavy rear cross members against collision from the rear. (C, S)

222—What is the road clearance?

Front axle center, $8\frac{0}{16}''$; rear axle center, $8\frac{7}{16}''$.

223—In what manner are the body and chassis joined?

Under the Unit-Engineering plan, they become virtually one unit, for the sheet steel cross member, which is bolted to the chassis frame at 34 points, is also the body floor and is welded inseparably to the box girder type all-steel body shell. (C, P, R, S)

7

THE BODY

●

For many years Hudson has built the safest automobile bodies. In 1935 Hudson built the first body *completely* of steel. In 1936 Hudson is making this body completely of steel *also the most beautiful body ever built on an automobile.*

The sweeping, flowing lines not only reach the maximum in practical streamlining, but give a beauty of both detail and ensemble that has never before been achieved in an automobile. From front bumper to rear bumper, every line is flowing, graceful and harmonious. The radiator, hood, lamps, slanting V-windshield, rounded seamless steel top, the sweeping rear contours, the hardware . . . every detail takes its place in the beautiful ensemble. It's truly "*An Eyeful of Beauty.*"

And the interior keeps pace with the exterior. The deep, rounded instrument panel is something new in automobile design . . . and something that other cars will be copying before long. The dome ceiling is even more attractive than before, and the deep, soft seat cushions and backs are as luxurious to look at as they are to rest on. The upholstery fabrics . . . mohairs,

boucle, special tweed and "treebark" cord . . . are handsome and durable, and the trim-pieces and hardware are designed especially to "fit into the picture."

As for colors, there is not only a greater selection in 1936, but the options cover a wider range of color.

All of the structural strength of the first bodies all of steel is retained, and even increased, in 1936. This is particularly true in the box section at the front of the body, where the curved instrument panel gives additional reinforcement.

In Hudson-built cars, every part, however small or unimportant it may appear to be, contributes very definitely to one or more of the several factors that combine to make Hudsons and Terraplanes the best-riding, best-performing cars on the road. After most answers in the following pages will be noted symbols that indicate the particular factors to which the answer pertains.

KEY TO SYMBOLS

A.....APPEARANCE AND STYLE
C.....COMFORT AND CONVENIENCE
E.....ECONOMY R.....RUGGEDNESS
P.....PERFORMANCE S.....SAFETY

BODY
QUESTIONS AND ANSWERS

224—How many Terraplane and Hudson body models are there?

Thirty-five, as follows:

Terraplane De Luxe models:

Brougham	Sedan
Touring Brougham	Touring Sedan
4-Passenger Coupe	2-Passenger Coupe
Convertible Coupe	

Terraplane Custom models:

Brougham	Sedan
Touring Brougham	Touring Sedan
4-Passenger Coupe	2-Passenger Coupe
Convertible Coupe	

Hudson Custom Six models:

Brougham	Sedan
Touring Brougham	Touring Sedan
4-Passenger Coupe	2-Passenger Coupe
Convertible Coupe	

Hudson De Luxe Eight (120-inch wheelbase) models:

Brougham	4-Passenger Coupe
Touring Brougham	2-Passenger Coupe
Convertible Coupe	

Hudson Custom Eight (120-inch wheelbase) models:

Brougham	4-Passenger Coupe
Touring Brougham	2-Passenger Coupe
	Convertible Coupe

Hudson De Luxe Eight (127-inch wheelbase) models:

Sedan	Touring Sedan

Hudson Custom Eight (127-inch wheelbase) models:

Sedan	Touring Sedan

225—In what ways do Terraplane Custom models differ from the Terraplane De Luxe models?

The Custom models have the following additional equipment:

Automatic carburetor heat control
Automatic choke
Radiator thermostat
Water temperature gauge
Ventilating wings
Voltage regulator on generator
Parcel compartment lock
Cowl type emergency brake
Spring covers
Twin outside horns
Twin tail lights
Full-type door weather seal
Door Pull-to
Front compartment floodlight
Mohair covered side walls
Colored rubber mat

226—In what ways do the Hudson Custom Eight models differ from the Hudson De Luxe Eight models?

The Custom models have:

Built-in radio
Modern plastic rim, steel-wire spoke steering wheel
Wheel-size hub caps
All sheet-metal surfaces lacquered
Chrome scuff plates
Cigar lighter
Twin windshield wipers
Twin air horns
Twin sun visors
Special interior trim
Long pile carpet

Ample Room for Three Passengers in Both Front and Rear Seats

227—Are Hudson and Terraplane bodies roomy?

Yes. They have 20 per cent more cubic capacity than any other cars in their price class. Most of this added roominess is in seat widths. There is ample room for three passengers in both the front and rear seats. The leg room is greater than in nearly all other cars, and there is ample headroom in all models. (A, C)

228—What are the seat widths?

Front seat cushion width, 50 inches; rear seat cushion width, 49 inches. Rear seat width above the arm rests is 56 inches; at the shoulders, 54¼ inches. (C)

229—What type of body is used in all Hudson-built cars?

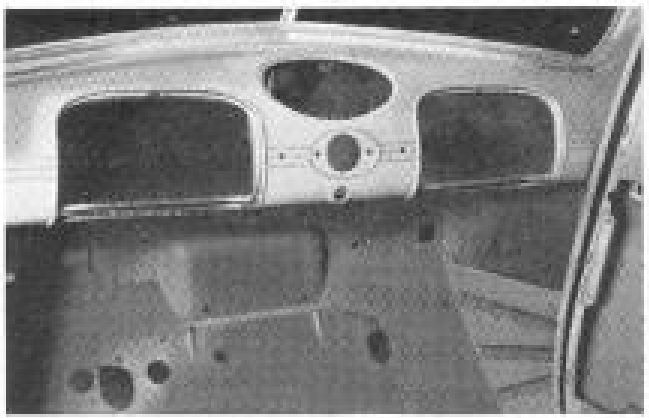
Unit steel; sides, floor, ends and roof are of steel, giving the highest degree of safety built into any automobile today. (R, S)

230—Is no wood used at all?

Not for structural purposes. Wood bows are used across the top, but only as a base for attaching the headlining. The bodies do not even have wood floor sills. (R, S)

231—Do they differ from the steel bodies used by other manufacturers?

Yes. Under the Unit-Engineering plan the body is a complete steel entity. The steel floor panel is welded to the body so that it helps to form a complete steel box, each side of which reinforces each other side. Structurally, the design is comparable to the steel structure of a bridge, or the Empire State Building, or an ocean liner—in which each structural part strengthens those adjoining. (R, S)



One of the Rugged Steel Box Sections of a Hudson-built Body

232—What type of top is used?

A steel top, which is a smooth, solid unit with the body shell. There are no seams or joints in the roof and body structure; just a complete steel box made from a single sheet of steel. (S)

233—Will the steel roof be noisy or cause drumming?

No. Hudson engineers have worked at this problem from two sides to achieve a silent body—they have worked to prevent and eliminate vibration, the cause of body drumming, and have also developed sound-deadening construction to its highest point. (C)

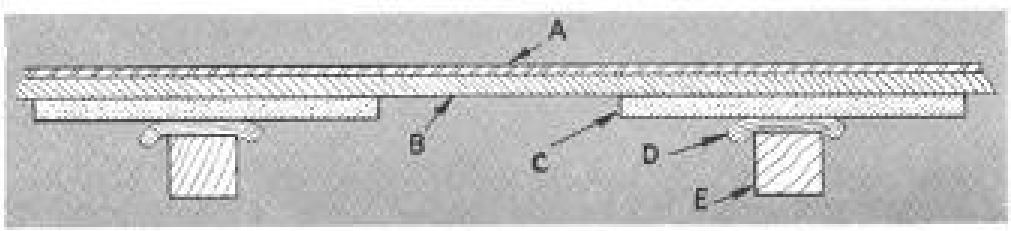
234—What has been done to eliminate vibration?

Many things, the two major ones of which are: 1. The development, several years ago, of the Hudson compensated crankshaft, the smoothest running crankshaft in any automobile today. 2. The use of a type of

rubber-cushion engine mountings that damp out any minute engine vibrations that would otherwise be transmitted (through rigid engine mountings) to the body and would tend to set up "sympathetic" body vibrations. The steel roof, being the largest unbroken section of sheet metal, would be affected most strongly by such vibrations.

235—What have Hudson engineers done to sound-deaden the steel roof?

Sheets of "muffle-board," a pliable, felt-like material, are cemented to the under side of the roof. Next underneath these are loosely placed strips of Masonite, a hard material usually used as building board. The Masonite strips are held up by the top bows, but there is a heavy layer of wadding between the bows and the Masonite. The Masonite is not screwed or rigidly fixed to the bows, but is only supported by them. There is a direct contact between the steel top, the muffle-board, the Masonite, the wadding and the top bows, but since each of these materials has a *different vibration frequency* (or vibration wave length), they damp out and completely eliminate any vibration that might be started in the steel roof. (C)



Sound-deadening construction of Hudson-built body roofs: A—Heavy gauge sheet steel. B—"Muffle-board" cemented to steel. C—Masonite strips, running across the top and held against the "muffle-board," but not firmly fastened either to the "muffle-board" or the supporting top bows. D—"Blue wadding," insulating top bow from Masonite. E—Top bow.

236—What are the advantages of Hudson and Terraplane steel bodies over composite bodies (steel and wood)?

The same that a steel railroad coach has over a composite coach. The many fatalities in railroad accidents involving composite coaches have driven railroads to adopt exclusive all-steel coach equipment as rapidly as possible.

Further, Hudson and Terraplane all-steel bodies are quieter. Wood inevitably expands and shrinks from atmospheric changes. Shrinkage loosens the body bolts, and friction and consequent squeaks cannot be permanently prevented. Hudson and Terraplane all-steel bodies are welded or riveted together (not bolted), so parts can never rub and squeak. (C, R, S)

237—Are the body doors also of steel?

Yes. In fact, they are double strength, the inner as well as the outer wall being of steel, with overlapping flanges. They are so strong and rigid that, with a heavy man's weight hanging from them, they will still swing freely and close perfectly. (R, S)

238—Will the doors squeak or rattle?

No. A small oil reservoir in each door hinge prevents hinge squeaks. Also, the dove-tail and striker plates are lubricated with saturated wicks (patented by Hudson). Dove-tails and striker plates are also adjustable to prevent door rattle. This feature is exclusive to Terraplane in its price class. The lubrication feature is exclusive to both Terraplane and Hudson. (C, R)

239—Why are Hudson and Terraplane doors hinged at the rear?

To permit the front side of the door to follow the

Wide Door and Clear Front Compartment

streamlined angle of the windshield and other body contours. Also to permit easier ingress and egress. It has been aptly called the "can't stub your toe door." (A, C)

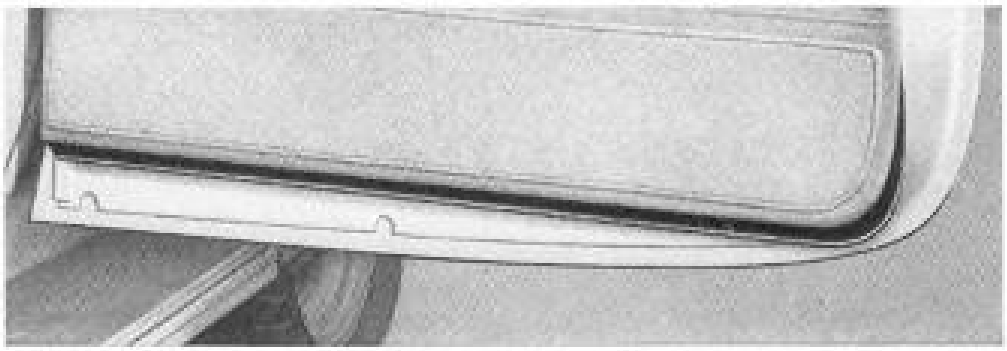
240—Are there any other structural features adding strength to the body?

Yes. The instrument panel, a heavy steel stamping, is an integral structural part of the front end, combining with the cowls, and the dash-to-pillar braces to form a complete box section. The windshield pillars, the top header (the front portion of the roof immediately over the windshield) and the cowl are formed from one welded solid piece, making another box section. (R, S)

241—Are the bodies insulated in any way?

Yes. The body is completely insulated and the passengers are thoroughly protected from heat and cold, motor fumes and resonance. A heavy jute pad, under the rubber floor mat, extends from under the front seat forward to the dash and up to the cowl. The car wiring coming through the dash is strung through this padding and then up the dash. Over this dash padding and the wiring is laid another heavy layer of jute padding, which serves two purposes: 1—It covers the holes in the under-layer through which the wiring comes, and

thus prevents engine fumes from entering the car; the wires are sandwiched between the two layers. 2—It provides additional insulation at the place where the



Rubber Door-seal (which prevents air-leaks)

engine heat would be greatest. An embossed, laminated finish panel covers the dash insulation. The jute padding under the floor mat is cemented to the floor, both as an insulation and as a carpet pad. A sheet of muffle-board covers the rear deck floor of coupes and convertibles. Ventilating wings and all windows are rubber sealed in place in the fully closed position. The doors are weatherstripped at the top and bottom and have a wind cord at the side. They also have a tubular rubber seal strip around the door opening that completely seals the crack when the door is closed.

The roof insulation is described under question No. 235.

All welded seams in the steel body are sealed with "dumdum." (C)

242—Does anything else contribute to the unusual quietness of the body?

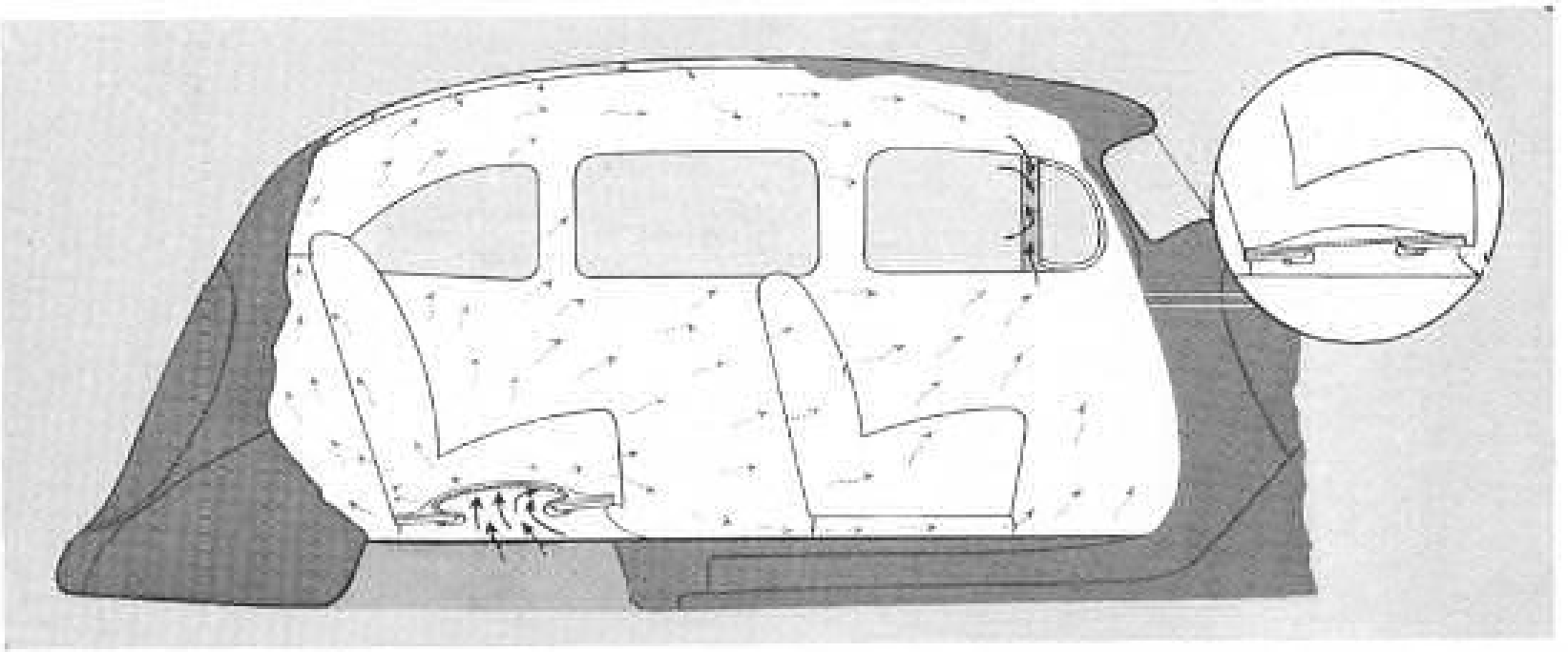
Yes. The permanent rigidity of the body, the perfect fit of the doors and windows, the accuracy and adjustable features of the door lock and other hardware, the "over-stuffed" door trim panels and the streamlining that minimizes the sound of the passing air. (C)

243—Do Hudsons and Terraplanes have draftless individual ventilation?

Yes. The Hudson complete year-'round ventilation is an important health asset, as absence of drafts minimizes danger of colds, bronchial and sinus infections and similar ailments. It is also a tremendous comfort asset while riding. Each passenger may control the ventilation for himself—have as much fresh air as he wants—without affecting any other passenger. Utilizing the natural air currents, the Hudson system prevents drafts, clears the car of smoke and stale air, circulates the air in the car, cools the car in hot weather, and prevents clouding of the windshield and windows. (C, E, S)

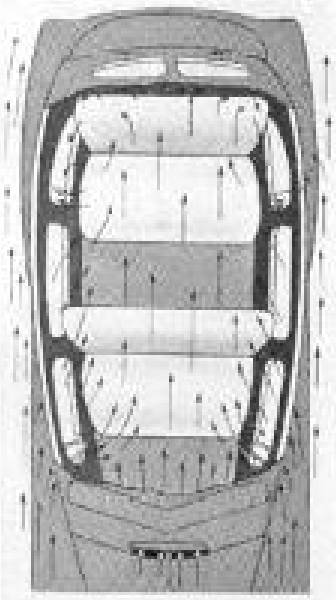
244—Is there any ventilating advancement in the 1936 models?

Yes. A very important advancement—the Automatic Draft Eliminator, for the admission of fresh, filtered air to the car in winter driving. In cold-weather driving, it is frequently desirable to have one ventilator slightly open for fresh air. The suction of the passing air outside of the car sucks the stale air from the car and this must, of course, be replaced by air from some source. Normally, it would leak in around the doors and windows, causing drafts about the passengers' feet, but the 1936 Hudson and Terraplane bodies are so tightly sealed as to prevent this. New air is admitted through a hole in the floor immediately over the rear axle, the suction power of the vacuum created in the body being sufficient to draw the fresh air in if the car is traveling at 8 miles per hour or faster. The air is filtered by a bag made from a fabric similar to that in a vacuum-cleaner bag.



Automatic Draft Eliminator: When any ventilator is open, the passing air outside the car sucks the air from the car (see arrows at front window ventilator). This air must be replaced from some other source and, since the body is sealed tight, it comes through the Automatic Draft Eliminator under the rear seat. Heavy arrows indicate air currents coming to filtering bag; light arrows indicate filtered air seeping through side-wall lining and headlining, around window frames, etc., into car body, giving draftless fresh air to passengers. Air is drawn through draft eliminator only when car is traveling 8 miles per hour or more, and when a window or ventilator is open. Inset in circle shows filtering bag lying flat across floor pan opening when not in operation.

Summer ventilation, with wide cowl ventilator, ventilating wings and windows admitting cool breezes for all passengers. Each passenger can individually control ventilation for himself.



245—Will the air coming through the filtering bag cause drafts, especially on the feet of rear-seat passengers?

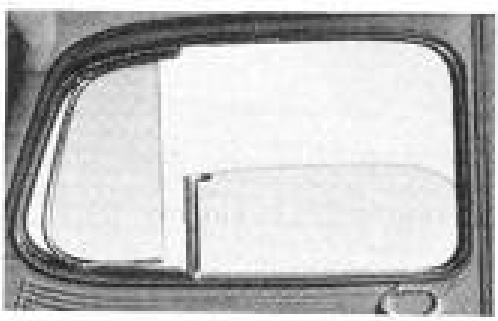
Absolutely not, because drafts could not pass through the fabric bag or the seat fabric. Instead, the air will be diffused draftlessly into the car in many ways—through the side-walls and around the window frames, up to the roof of the car and through the headlining, etc. The air will actually "seep" into the car, but never cause drafts. (C)

246—Will the filtering bag ever become clogged with dust?

Possibly, but it can be easily removed, and can be cleaned by shaking. In fact, it is designed to be removed for periodic cleaning.

247—Do any other 1936 cars have the Automatic Draft Eliminator?

No. It is exclusive in Hudsons and Terraplanes.



Ventilating Wing that Serves as Wind-deflector, or Wind-scoop, or may be Lowered into Door

248—Are there any other special ventilating features?

Yes. The most advanced in the industry. In addition to year-'round draftless individual ventilation, all 1936 models (except the Terraplane De Luxe series) have divided front windows, the front portion of which may be used as a deflector, or as a wind scoop, or may be lowered fully into the door, so that, with the rear portion of the glass down, the front seat passenger may have a fully opened window. The complete movement of the front portion, deflector, wind scoop, or down is made with *one* handle. In the Terraplane De Luxe there is no ventilating wing, but a solid window with full ventilating operation. A continuous motion of the handle moves the glass back and then down to open; reversing the process to close. (C)

249—Is there a cowl ventilator?

Yes. An unusually large ventilator (17″ x 3″ in size) that throws all of the cool air into the front compartment that may be desired. (C)

17-inch Cowl Ventilator

250—To what extent are Hudson and Terraplane bodies streamlined?

To the fullest extent practical with present-day design. The slanting V-radiator, the slanting V-windshield, the domed roof, the rounded bonnet contours, the sweeping fenders, the rounded body sides and rear quarters, and the sweeping rear end comprise the

latest in streamlining design. Practically, this design lessens wind resistance and rear end suction, decreases fuel consumption, increases top speed and permits more comfortable riding. (A, C, E, P)

251—Which is more important in streamline designing, the front of the car or the sides and rear?

The side and rear design is responsible for 75 per cent of wind resistance—the front for only 25 per cent. This is why the scientifically designed side and rear contours of Hudson and Terraplane bodies give them the most efficient streamlining. (A, C, E, P)

252—How much has streamlining added to Hudson and Terraplane efficiency?

Insofar as the influence of streamlining on wind resistance is concerned, 1936 Hudson and Terraplane models are five times as efficient (by scientific calculation) as models of a few years ago. (E, P)

253—In terms of power and performance, what has been the effect of streamlining?

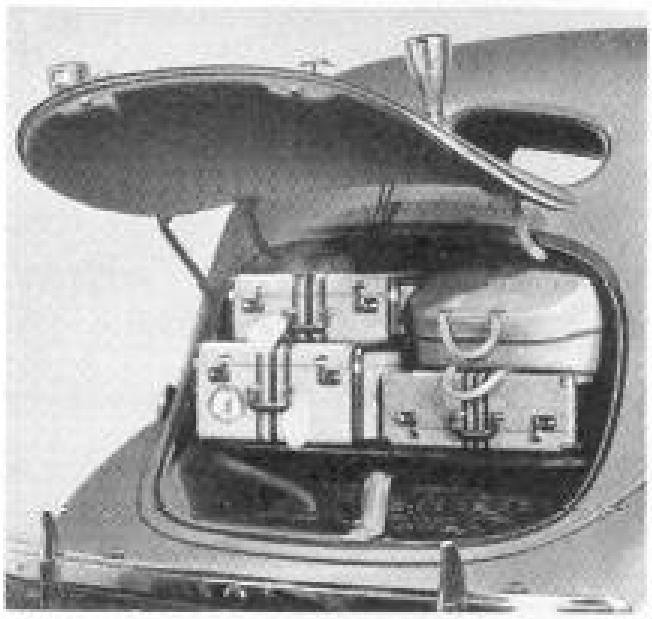
In the dynamically streamlined Terraplane, the 88-horsepower motor does work that would require a 110-horsepower motor in a non-streamlined car of the same size and weight. The 113-horsepower Hudson motor accomplishes what a non-streamlined car could do only with a 135-horsepower motor. (E, P)

254—How was Hudson and Terraplane streamlining designed and tested?

In wind-tunnels, just as airplane design is conceived and tested.

255—What is the Baggage Compartment?

It is a compartment in the rear of the Sedan and Brougham bodies that holds the spare tire and luggage. The tire is laid flat in the bottom of the compartment, with a wooden floor over it to hold the luggage. The tire, held in place with a single nut, is easily and quickly removed. The tire may also be side-mounted in the fender, adding greatly to the already capacious luggage space. The door to this compartment is dust-proof and water-tight and has a thief-proof lock. (A, C, E)



Commodious rear compartment luggage space; still greater space is afforded with trunk models, or with tire side-mounted in fender

256—Are trunk models available?

Yes. The Touring Sedans and Touring Broughams are trunk models. As with the Sedans and Broughams, the tire may be side-mounted to increase the luggage space.

257—How much luggage space is there?

Compartment with tire mounted inside—12⅓ cu. ft.

Compartment with tire side-mounted—17 cu. ft.

Trunk model with tire mounted inside—16⅓ cu. ft.

Trunk model with tire side-mounted—21 cu. ft.

258—Where are the tools kept?

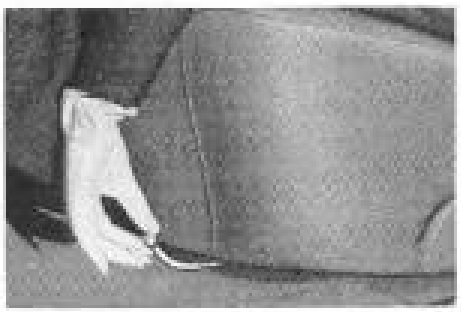
In the baggage compartment. They are most accessible—car seats need not be moved or passengers disturbed. (C)

259—When the tire is side-mounted, what kind of tire cover is used?

An easily removable, close-fitting metal cover that harmonizes with the body design. (A)

260—Are the drivers' seats adjustable?

Yes. In the Sedan model, the front seat can be adjusted to accommodate the tallest or shortest driver. In the coach models, the driver's seat moves similarly. A lever at the side of the seat releases the locking mechanism and permits the seat to slide easily to the desired position. Releasing the lever locks the seat in the new position. The seat cushion and backs are slanted to give the most relaxed posture. (C)



Easy Adjustment for Sliding Front Seats

261—Is there easy access to the rear seat of Brougham models?

Yes. The easiest to be found in any car of this type. The entire right front seat slides forward six inches upon easy pressure against the seat-back, even with a person sitting in the seat. This added space, plus the space gained by tilting the seat-back forward, permits easy ingress, even with large parcels. No other car has this important feature.

262—What type of upholstery is used?

The piped type, that is used in the most expensive cars.

(Current upholstery fabric options are shown in the "Price and Equipment List".) (A)

263—What kind of seat cushions are used?

Exceptionally deep cushions having comfort-type springs, with roll-burlap for silence and wire-braced to prevent the springs from moving. While unusually soft, to cushion the body more completely than most automobile seat springs do, they have less rebound than most springs. (A, C)

Beautifully Domed Ceiling and Rear-quarter, and Convenient Rear-quarter Window Regulator

264—Is there anything unusual about the rear ceiling design?

Yes. It is a "dome" ceiling, having no corners or angles, but only beautifully rounded contours—actually a dome effect. (A)

265—What kind of interior trim is used?

Rich wood finish. The beauty of the door garnish mouldings on all Hudson models is enhanced by a graceful valance design. (A)

266—What type of hardware is used?

The hardware is of a graceful streamline design to harmonize with the complete car design. Its lustrous

metal finish accentuates the beauty of the interior trim and appointments. All interior hardware is Butler (dull satin) finish. Handle knobs are in white plastic. Exterior hardware is chromium plated. (A)

267—Can all doors be locked from the inside?

Yes. However, it is impossible for the driver to lock himself outside of the car inadvertently. He can lock himself outside only by using the door lock key. (A, C)

268—How many keys are required for Hudsons and Terraplanes?

Two. One for the car door and ignition; the other for the spare tire and baggage compartment and the package locker on the instrument board. (C)

269—Are locks on doors and baggage compartment thief-proof?

Yes. (E)

270—What instruments are in the panel?

In the Terraplane Custom series panel—a large, quick vision speedometer, a mileage meter, a gasoline level gauge, a water temperature gauge and flashing oil pressure and generator safety signal lights. The water temperature gauge is not installed in the Terraplane De Luxe series. In addition to all of the above instruments, the Hudson Six and Hudson Eight instrument panels also contain a rheostat for control of intensity of instrument lighting. (A, C)

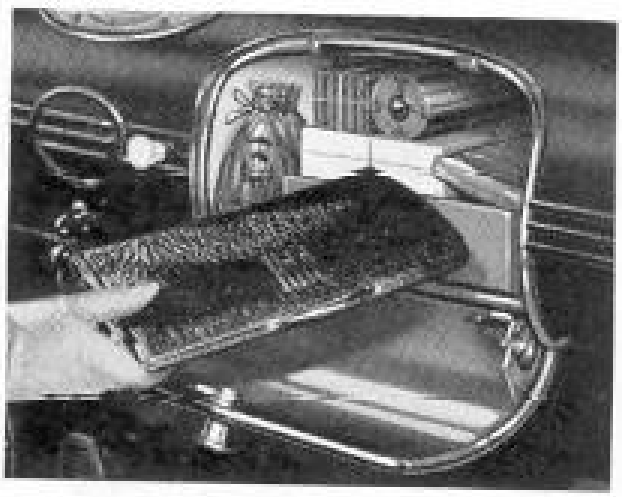
271—What other instruments are on the instrument board?

The rotary-button light switch, the finger-touch starter control, the ignition switch, the radio dial and operating knob. A front compartment floodlight is in-

stalled immediately behind the instrument panel and at the side of the package locker. (This light is not installed in the Terraplane De Luxe series.) This bulb is easily removed from and installed in its bracket, and, as it is on a 10 in. extension wire, it may be used as an emergency light within a limited range in the front compartment. (C)

272—Why are flashing ruby lights used instead of an ammeter and oil pressure gauge?

The flashing lights are more conspicuous warning signals. The driver will not ignore them. (S)



Parcel Compartment (813 Cubic Ins.)

273—What is the parcel compartment capacity?

813 cubic inches. (C)

274—Is radio standard equipment in any models?

Yes. In all Hudson Eight Custom models. (C)

275—Is radio optional in other models?

Yes, in all Hudson Six Custom and Hudson Eight De Luxe models, and in all Terraplane models. Also, antennae are provided with radios purchased for installation in the field.

276—What type of antenna is used?

An "under-car" type; the antenna is run back-and-forth between the running boards, immediately under the chassis frame and over the propeller shaft. It is

completely waterproof and abrasion-proof, and is held by spring-tension hooks (holes in running boards are provided in all cars for antenna installation in the field). (P)

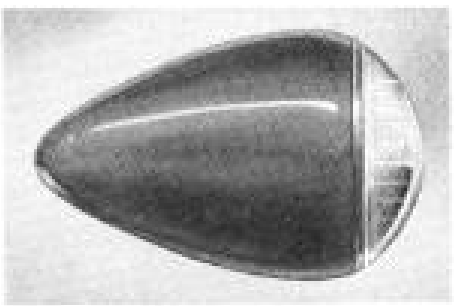
277—Is the radio built into Hudsons and Terraplanes, or merely "added" as an accessory?

It is built in, in an inconspicuous, out-of-the-way position behind the instrument board and above the steering post, and does not prevent the installation of a heater. The Hudson-built design for radio installation permits the best reception with the least electrical and mechanical interference.

The dial and operating knob are integral installations in the instrument board. An "under the car" antenna is used because of the steel roof construction of Hudson-built bodies. Since such an antenna does not have the same effectiveness that roof antennae have, the 1936 Hudson radio was designed especially to operate with the new type of antenna and to give the highest quality reception. (A)

278—Will the radio exhaust the battery if used extensively?

No. (Refer to question No. 84.)



Hudson Headlamp

279—What type of headlamp is used?

The two-beam type, with bright and dim beams operated by a convenient foot switch. The lamps are finished to match the color and finish of the fenders in all models.

280—Has any change been made in the illuminating capacity of the headlamps?

Yes. The bulb and the lens have been redesigned to give a much superior passing beam, while retaining the full strength of the former driving beam. (Note—Mazda bulb No. 2331 should always be used with this lamp.) In the past, the driving beam was approximately 50,000 candlepower, and gave illumination for 700-800 feet ahead of the car, but the passing beam was only 25,000 candlepower and gave illumination for only 150-200 feet ahead of the car. In the 1936 models, the driving beam candlepower and illumination distance remain the same, but the passing beam candlepower is increased to approximately 50,000 and the illuminated distance is approximately 500 feet. Also, the passing beam is deflected 3 degrees to the right, giving complete illumination not only on the road but also on the right shoulder. Illumination from the passing beam is ample for fairly high speed driving on the open highway, but it affects approaching drivers even less than before. The new headlamps are, in every respect, important safety advancements. (S)

281—What other lighting equipment does the car have?

All models have twin tail lamps (except Terraplane De Luxe, which has one). All tail lamps are chrome finished, and the brackets are chrome finished if the fenders are colored, and are black if the fenders are black enamel.

All 5-passenger models have a dome light with a 15-candlepower bulb, giving probably the best illumination ever provided in an automobile interior.

All models have an indirect light on the instrument panel, and all (except Terraplane De Luxe) have a front compartment floodlight. (A, C)

282—Where are the tail lights located?

In Sedans and Broughams they are mounted on the luggage compartment or trunk lid, in Coupes and Convertibles on the fenders. (S, A)

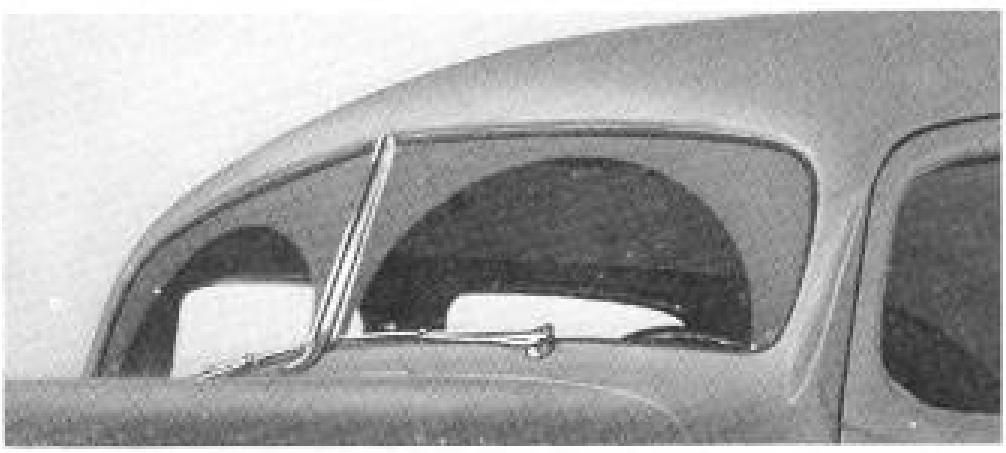
283—When the tail light is on the luggage compartment lid, how will drivers approaching from the rear be able to see the car if it is stopped and the compartment lid is raised?

A red lens in the bottom of the tail light will give a warning to the rear when the lid is raised. (S)

284—Do Hudsons and Terraplanes have safety glass?

Safety glass is standard in windshields and front window wings. It is optional throughout all models at extra cost. (S)

285—What type of windshield wipers is on Hudsons and Terraplanes?



New Vacuum-operated Windshield Wipers (Clear Semi-circle Shows Wiper's Range)

Vacuum-operated self-parking wipers, that go automatically to the "rest" position when not in use. The

wipers oscillate from the bottom of the windshield, instead of the top, as in the past. This gives a wider clear vision of the road and is an important safety factor. Hudson Eight Custom models have two wipers; all other models, one. (C, S)

286—What type of foot rest is used?

In all Terraplane and Hudson Six models, the foot rest for the rear seat passengers in Sedan models is cut into the front seat back, giving a wide resting surface at the most comfortable angle.

In Hudson Eight Sedans, the foot rest is a metal bar, covered with a corrugated rubber tube, which may be twisted slightly around the bar to expose an unworn portion whenever the rubber shows apparent wear. (A, C)

287—What kind of carpet is used?

A heavy pile type carpet. It is cushioned by a kersey silencer pad that is cemented to the floor. Also, a matching carpet material covers the bottoms of all doors (except in the Terraplane De Luxe series), the bottoms of all rear quarter panels, to prevent scuffing. (A, E)

288—What are the other interior appointments?

Pull-to grips on all right-hand front doors (except Terraplane De Luxe models).

Ash receivers on front seat backs of all Sedans.

Cord-type hangers on front seat backs of all Terraplane Sedans; metal bar hangers on all Hudson Sedans.

One assist strap in all Broughams (except Terraplane De Luxe) and two assist straps in all Sedans (except Terraplane De Luxe).

Translucent rear window curtains in all Hudson Six and Hudson Eight models; curtains are on spring

rollers concealed at top of the back seat, and may be pulled upward and snapped at the window tops.

Folding-type sun visor in Terraplane De Luxe models and fully adjustable visor in all other models. Hudson Eight Custom models have two visors.

Non-glare rear-vision mirror. (A, C, S)

289—Are the driving control pedals convenient and comfortable?

Yes. The clutch, brake and accelerator pedals are conveniently placed and have a soft, easy action. Ribbed rubber pads cushion the feet and keep them from slipping from the pads.

Rubber pads around the pedal rods cover the holes in the floor through which the rods run, and keep out drafts, motor fumes and dust. (A, C, S)

290—What kind of plating is used on the exterior plated parts?

Exterior plated parts, such as bumpers, windshield wiper arms, door handles, etc., are chrome plated. (A)

291—What kind of hood ventilators are used on Hudsons and Terraplanes?

Straight horizontal louvres of the modern type, harmonizing with the body design.

292—What type of hood lock is used?

A single handle pull type, in the center of the lower edge of the hood. It is both hood-lock and hood-lift. (C)

293—What type of fenders is used?

Modern style fenders, with deeper, full-length crown. The fenders are of heavy gauge steel, rigidly mounted on heavy brackets. (A, R)

294—Of what value are the deep fender valances or skirts?

Wind-streamed Fender

In addition to blending with the streamline design of the car, they conceal the under part of the chassis and also protect the body and running boards from road splash. Black enameled fenders are standard on all models except Hudson Eight Custom models, which have fenders in body color. Fenders in body color are available in all other models at extra cost. (A, E)

295—Are the fenders protected in any way from rocks, etc., thrown by the wheels?

Yes. A heavy rubber guard mounted beneath the fender crown behind each wheel prevents stones from striking and denting the fenders. This guard also atomizes water and mud splashed by the wheels and prevents the accumulation of mud beneath the fender, and also the splashing of the fender tops and running boards. (E)

296—How are the radiator shells finished?

In the body paint color. (A)

297—How are the radiator grilles finished?

In Velchrome, with chrome-plated mouldings and center bars on all models. (A)

298—What tools are included in the original kit?

Jack, jack extension handle, starting crank, spark plug wrench, monkey wrench, end wrench, hammer,

pliers, screwdriver, wheel hub bolt wrench, shift lever with "Electric Hand" installation.

299—What type of jack is used?

The long-handled crank type, with a special fitting that permits the jack to be put under either the front or rear bumper brackets, rather than under the axles. Thus it is much easier to put the jack in place under the car and to remove it. Operating the jack is also easier, since it is done "out in the open." (C, S)

New Type Jack, Fitting Conveniently Under Bumper Bracket

HUDSON MOTOR CAR COMPANY

8

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300—Who manufactures Hudsons and Terraplanes?

Hudson Motor Car Company, whose offices and factory are in Detroit, Michigan.

301—What experience has Hudson had in building automobiles?

Twenty-six years of experience. The Hudson Motor Car Company was founded in 1909. It has built more than 2,300,000 cars, of which more than 50% are still in regular service.

302—Has Hudson been an originator, or a follower, in motor car design?

An originator from the beginning. Hudson developed the first coach model, the first inherently balanced crankshaft, the first aluminum alloy pistons, and some seventy other fundamental motor car features.

303—What about the Hudson management?

The active management is in the hands of the company's principal stockholders, many of whom have been with the company since its early years. The President of the company was one of its founders.

The great factory, covering 77 acres, in which Hudson-built cars are completely designed and manufactured: (center) main manufacturing and assembly section, (bottom) unit-steel body section, (top) gear and axle section

304—Are Hudsons and Terraplanes high-priced cars?

No. Despite their superiorities in size, performance, beauty and comfort, they are in the low and medium price fields. (E)

305—Are they expensive or economical to run?

Very economical. Their gasoline mileage will compare favorably with that of any cars in their price fields and, even with their high-compression motors, they do not require premium gasoline. Oil is seldom needed between the normal changes. Because of the balanced weight and scientific springing, they are easy on tires. Many owners report from 20,000 to 30,000 miles on a single set of tires. (E)

306—Is service on Hudsons and Terraplanes easily available?

Yes. There are distributors and dealers in every state in the Union and every province in Canada, located in towns and cities of all sizes. In addition, there are several hundred authorized service stations. Authorized service is available in practically every community. (E) (Note—The Hudson Motor Car Company's Owner Service Policy is reproduced on pages 129-133.)

307—What is the basic principle of Hudsons and Terraplanes for 1936?

The principle of Unit-Engineering—a combination of Unit-Design and Unit-Construction.

308—What is Unit-Engineering?

It is the complete co-ordination of every part of the automobile to produce a unified whole. In a Unit-Engineered Hudson or Terraplane, every part not only performs its own specific function, but co-operates with every other part in giving smooth, effortless, reliable performance. The Unit-Engineered Hudson-built car is not an assemblage of parts. It is a *co-ordination* of parts into a balanced unit—just as your head, arms, legs and torso are co-ordinated into a balanced unit.

309—With Unit-Engineering, does each part perform just one function?

No. Many perform two or more. For example: The steel instrument panel also serves as an extra cross member in the body, and the sheet steel cross member which gives such strength to the chassis also serves as the floor of the body—just as your hand serves for feeling, grasping, writing and many other functions.

This multiplicity of functions eliminates dead weight and increases efficiency. (A, C, E, P, R, S)

310—How can Hudson achieve Unit-Engineering?

Because Hudson designs and builds its cars within one great factory which is chassis and body plant combined—the only factory of its kind in the country. Motor, body and chassis engineers do not design their respective parts of the car and then have them put together on an assembly line. Hudson's motor, body and chassis engineers work in co-ordination from first blueprint to finished car in designing and building a unit automobile.

311—Can other automobile manufacturers do this?

No. No other company has facilities for designing and building all of its automobiles within one factory.

312—Has public experience proved the Unit-Engineering principle?

Yes. And as a result, during its first year, the Terraplane won a greater percentage of the total automobile market than did any other car introduced during the past 10 years.

HUDSON MOTOR CAR COMPANY'S OWNER-SERVICE POLICY

The Hudson Motor Car Co., desiring that every Hudson and Terraplane owner be thoroughly satisfied, and believing confidently that Hudson-built cars will give the utmost satisfaction, has adopted a most liberal owner-service policy.

The Hudson Service Policy is intended particularly to assure the proper care of and attention to the car during the first few thousand miles of its use. The care given to a car during this early critical period frequently determines the satisfaction (in performance, economy, comfort and long life) that the owner will get from it afterward.

FOLLOW-UP OF NEW CAR OWNERS

Dealers should establish a systematic procedure for following up each new car sale to see that the car is brought in frequently for inspection, lubrication and

minor adjustments. The first contact of this kind should be made within thirty days after the sale and, following this, the owner should be encouraged to bring his car in for lubrication on an average of every thousand miles.

USE GENUINE HUDSON AND TERRAPLANE PARTS

It is important to the car owner, the dealer and the Hudson Motor Car Co. that every owner be encouraged to use only genuine Hudson and Terraplane parts. The use of unauthorized parts usually leads to unsatisfactory performance and more costly future repairs and adjustments, thus damaging the prestige of Hudson-built products and directly restricting the dealer's and the manufacturer's opportunity for future profit. Because of its manufacturing volume and facilities, the Hudson Motor Car Co. can obviously make first grade parts more reasonably than any other manufacturer. Thus it is clear that parts cheaper in price may be of inferior quality. Since they endanger the car, they are in the long run more expensive.

COMPLAINTS

Reasonable complaints should be solicited from car owners and the causes of the complaints should be quickly rectified. This will do as much as anything else to keep the owner satisfied and friendly in order to avoid unreasonable complaints; salesmen must be extremely careful to make no promises which cannot be fulfilled to the letter. All promises should be on the side of moderation, so that the customer will receive all or more than he has been promised.

PARTS AND LABOR WARRANTY

8

Provisions of the Hudson Motor Car Co.'s owner service policy, which is intended to promote the servicing of Hudson and Terraplane cars on a basis of fairness to the purchaser, the dealer and the manufacturer, are briefly as follows:

1. A Written Warranty, having the first 90 days of ownership, or the first 4,000 miles of driving (whichever shall occur first), guarantees to every purchaser of a new Hudson or Terraplane car a more than liberal Service Policy.

2. Should Hudson or Terraplane parts or workmanship prove defective at any time during the warranty period, Hudson and Terraplane dealers will supply the parts and perform the necessary labor for replacement, free of charge.

3. Before delivery of new cars to purchasers, every Hudson and Terraplane dealer will determine that all pre-delivery conditioning operations, as shown in the pre-delivery inspection forms, have been completed.

4. During the initial driving period, the dealer who sells the car will furnish one major inspection of the car at the expiration of 500 miles of driving, or one at 500 miles and another at 1,500 miles, according to the model. (This distinction is in compliance with a provision of the Automobile Code.)

5. If a Hudson or Terraplane owner should change his residence or be touring in any part of the United States or Canada, he may be certain of the proximity of a Hudson and Terraplane dealer, and will receive the full benefit

of the Parts and Labor Warranty and of proper lubrication service from the dealer.

6. At the termination of the Warranty period, the owner is offered the facilities of one of the most efficient service organizations in the world, providing genuine Hudson and Terraplane parts at uniform list prices, and service labor, based on current flat rate prices.

SEASONAL SERVICE

In the spring and autumn, dealers should call attention of Hudson and Terraplane owners to the advisability of preparation of their cars for summer and winter driving. These minor and inexpensive adjustments not only assure more satisfactory performance, but they also prevent the necessity of more costly service work later on. This seasonal service attention is a most important factor in owner satisfaction.

OBLIGATIONS OF MANUFACTURER

The manufacturer is under the obligation to build at a fair price an automobile that is reliable, economical, sightly, and simple in operation; to issue adequate instructions for its care and maintenance; to fulfill all conditions of his warranty; to see that all distributors and dealers maintain competent service men at all times, capable of instructing the owner and repairing the car; to maintain a complete stock of repair parts at the factory; to fill all parts orders carefully and promptly; to see that all distributors and dealers maintain suitable stocks for filling orders without delay.

OBLIGATIONS OF DEALERS

The dealer is under obligation to maintain at all times a stock of genuine parts and to fill orders

promptly; to maintain a properly equipped service department and render prompt, efficient and economical service; to deliver new cars in accordance with factory instructions; to properly instruct the purchaser of a new car as to the care, maintenance and operation of the car; to keep in close touch with the owners of Hudson and Terraplane cars in his territory; to see that purchaser receives particularly full instructions about lubrication as covered by oiling chart; to do all in his power to maintain his car's prestige throughout his territory; to issue follow-up letters or cards from which it can be determined whether service work is entirely satisfactory to customer; to keep his service station clean, to treat customers with respect and courtesy at all times and to provide suitable comfort facilities for customers awaiting attention; to assist the factory in fulfilling conditions covered by the Warranty.

OBLIGATIONS OF OWNER

The owner of an automobile owes it to himself to familiarize himself thoroughly with instructions covering care and maintenance of his car and observe such instructions carefully; to exercise care and judgment in operation; to get instructions, repairs and service from Hudson and Terraplane authorized dealers insofar as possible, since Hudson and Terraplane dealers are fully familiar with Hudson and Terraplane cars and are therefore better equipped to handle repairs and adjustments. In every case, regardless of what the circumstances may be, the Hudson or Terraplane owner should feel free to call upon his dealer for advice regarding any automobile problem.

Warranty

"We warrant each new passenger automobile manufactured by us to be free from defects in material and workmanship under normal service, our obligation under this warranty being limited to making good at our factory any part or parts thereof, including all equipment or trade accessories (except tires) supplied by the car manufacturer, which shall, within ninety (90) days after making delivery of such vehicle to the original purchaser or before such vehicle has been driven 4,000 miles, whichever event shall first occur, be returned to us with transportation charges prepaid, and which our examination shall disclose to our satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on our part, and we neither assume nor authorize any other person to assume for us any liability in connection with the sale of our vehicles.

"This warranty shall not apply to any vehicle which shall have been repaired or altered by other than an authorized Hudson and Terraplane Distributor or Dealer in any way so as, in the judgment of the manufacturer, to affect its stability or reliability nor which has been subject to misuse, negligence or accident."

HUDSON MOTOR CAR COMPANY

DETROIT, MICHIGAN, U. S. A.

TESTS AND RECORDS

9

Prospective automobile buyers will often ask, "What does it mean to me that Hudson-built cars hold 76 official records for speed and performance? I never expect to drive 93 miles an hour, and I don't have any desire to tear up Mt. Washington in 13 minutes."

But the number of records officially certified by the American Automobile Association, which have been set by Hudson and Terraplane, have a very definite significance to the owner of a Hudson-built car. It means that because his car is capable of maintaining high speeds for great distances, he is insured of greater smoothness and economy and dependability at the lower speeds he prefers. Similarly, when a Hudson-built stock sedan set a new record by sustaining a speed of 85 miles per hour for 1,000 miles it proved that Hudson-built cars have stamina built into them that enables them to stand up under the worst punishment.

The prospective owner may also be assured of the performance and economy that is built into Hudson-built cars by the experience of actual owners. Thousands of owners write in voluntarily to tell of their

experiences—experiences which would be truly remarkable if encountered with other cars . . . Hudson-built cars still in use after 15, 20 and 25 years of service . . . some of the original Hudsons built in 1909 still active . . . mileages that are astounding . . . 200,000, 300,000 and occasionally more than 400,000 miles of satisfactory performance, with practically all of the original parts and equipment still giving service, and with exceptionally low maintenance and service costs.

But after all, it is today's cars in which today's prospective owner is most interested. Early in 1935 the Hudson Motor Car Company set out to lower the existing performance records for Class "C" stock cars.*

DAYTONA BEACH RUNS

Sir Malcolm Campbell of England drove a Hudson Eight in speed trials at Daytona Beach, Florida. The result was seven new records for speed and acceleration. One of these was a new mark of 88.207 m.p.h. for a one-mile run with flying start. A series of tests demonstrated the lightning acceleration of Hudson-built cars. From a standing start, a Hudson Eight accelerated through all gears to a speed of 68.18 m.p.h. in one mile. Another significant mark was set when a Hudson-built car accelerated 69.2 m.p.h. in one mile from a standing start using second gear only.

*Note: Class "C" stock cars are those having from 188 to 350 cubic inches piston displacement, and include the following makes of cars—Auburn, Buick, Chevrolet, Chrysler, De Soto, Dodge, Ford, Graham, Hudson, Hupmobile, Lafayette, La Salle, Nash, Oldsmobile, Packard 120, Plymouth, Pontiac, Reo, Studebaker and Terraplane.

MUROC LAKE RECORDS

9

A still bigger field day for Hudson-built cars came in April when a Hudson Eight stock sedan was taken to Muroc Dry Lake in California's Mojave Desert. Thirty-six new records were set by the Hudson, as given in the table on following pages.

A new speed mark of 93.03 m.p.h., the highest speed ever officially clocked for a closed car in the Class "C" group, was made in the five-mile run. Probably the most significant record made was that for 1,000 miles which the Hudson Eight made in 11 hours, 38 minutes and 55 seconds, or an average of 85.84 m.p.h. This is a record which stands, not only for closed cars of "C" classification, but for those of any class. Unimpaired by the strain of 1,000 miles with throttle wide open, the Hudson went on for hours afterward until the course became so cut and rutted that high speeds were no longer possible nor safe.

ECONOMY TESTS

In order to be able to make "proved economy" statements, in contrast to mere claims, the Hudson Motor Car Company engaged in a series of economy runs during 1935. In one of these Reid Railton, famous British automotive engineer, designer of Sir Malcolm Campbell's "Bluebird" and of John Cobb's Napier-Railton, drove a Terraplane in economy tests on the Salt Flats of Utah. The Terraplane made the astonishing mileage of 24.24 miles per gallon on the 28 mile-an-hour run, and 20.4 miles per gallon on the 50 mile-an-hour run. Both runs were for 1,000 miles and the car used regular grade gasoline. No special car was selected for this run. A member of the Contest Board of the American Automobile Association

selected the Terraplane at random from a list of private owners . . . a car that had been driven thousands of miles by its owner.

In keeping with the policy of offering proof instead of claims, Hudson and Terraplane dealers held economy tests of their own, in which Hudson-built cars were driven under all conditions of everyday driving. Reports from all tests showed remarkable economy results.

HUDSON BRAKES PROVE SUPERIOR

Offering proof instead of claims for the safety and quick-stopping ability of Hudson brakes, the Hudson Motor Car Company and its dealers also engaged in a series of brake tests during the spring and summer months.

The tests showed that Hudson-built cars far exceeded what engineering text-books refer to as "perfect practice." Dr. Alexander Klemin, in charge of the Guggenheim Laboratory at New York University, conducted a number of braking tests using a Hudson-built car. In all of the stops, made from 10 to 50 miles per hour, previously recorded tests were bettered by a wide margin. At 20 miles an hour, for example, the police require 22.4 feet. Previous best record stopping distance at this speed was 18.1 feet, whereas the Hudson stopped, according to Professor Klemin, in 13.5 feet.

Police-supervised brake tests were held in Boston, San Francisco, Philadelphia, Norfolk, Akron, Denver, Portland, Me., Oakland, Calif., San Antonio, Sandusky, O., Albany, Los Angeles and many other cities throughout the country. Hudson-built cars in many

instances stopped in less than half the distances which the various police departments regarded as perfect. In some instances competitive dealers tried to equal the Hudson and Terraplane marks with their cars, but in no case were they able to do so.

HILL CLIMBS

Hudson-built cars hold an impressive number of records for hill climbing. In the following tables it will be noticed that they hold the record on virtually every recognized hill in the United States. Most of the records were made in 1933 by Hudson-built cars which were fundamentally the same as the 1936 Hudsons and Terraplanes, but lacked many of the improvements of the latter. These records have successfully withstood other cars' attempts to lower them, hence it has not been necessary for Hudson to defend them.

HUDSON EIGHT PERFORMANCE RECORDS

Set at Muroc Dry Lake, California

Distance	Time	Speed in M.P.H.
1 kilometer	24.09 secs.	92.84
1 mile	38.83 secs.	92.70
5 kilometers	2 mins. 00.22 secs.	93.03
5 miles	3 mins. 13.50 secs.	93.02
10 kilometers	4 mins. 00.08 secs.	92.89
10 miles	6 mins. 48.91 secs.	88.03
25 kilometers	10 mins. 34.39 secs.	88.15
25 miles	16 mins. 59.29 secs.	88.24
50 kilometers	21 mins. 07.34 secs.	88.25
50 miles	33 mins. 56.78 secs.	88.37
75 kilometers	31 mins. 38.14 secs.	88.38
75 miles	50 mins. 56.03 secs.	88.34
200 kilometers	1 hr. 25 mins. 42.12 secs.	87.00
200 miles	2 hrs. 17 mins. 12.97 secs.	87.45
100 kilometers	42 mins. 11.19 secs.	88.34
100 miles	1 hr. 7 mins. 55.00 secs.	88.34
250 kilometers	1 hr. 46 mins. 48.40 secs.	87.26
250 miles	2 hrs. 53 mins. 16.92 secs.	86.56
300 kilometers	2 hrs. 7 mins. 56.91 secs.	87.41
300 miles	3 hrs. 27 mins. 24.80 secs.	86.76
400 kilometers	2 hrs. 52 mins. 17.32 secs.	86.55
400 miles	4 hrs. 37 mins. 17.71 secs.	86.55
500 kilometers	3 hrs. 34 mins. 40.78 secs.	86.83
500 miles	5 hrs. 47 mins. 26.31 secs.	86.34
1000 kilometers	7 hrs. 12 mins. 21.47 secs.	86.22
*1000 miles	11 hrs. 38 mins. 54.60 secs.	85.84
†1000 miles	11 hrs. 38 mins. 54.60 secs.	85.84
2000 kilometers	14 hrs. 51 mins. 45.85 secs.	83.61
†2000 kilometers	14 hrs. 51 mins. 45.85 secs.	83.61
3000 kilometers	22 hrs. 2 mins. 46.12 secs.	84.55
†3000 kilometers	22 hrs. 2 mins. 46.12 secs.	84.55
	1 hr.	88.34
	3 hrs.	86.60
	6 hrs.	86.38
Unlimited	12 hrs.	85.47

(Hudson Eight 5-Passenger Sedan, with full standard equipment, used in this test)

PERFORMANCE RECORDS

Set at Daytona Beach, Florida

Terraplane Sedan	1 kilometer	Standing Start	61.61
Hudson Sedan	1 mile	Standing Start	68.18
Hudson Sedan	1 kilometer	Second Gear Only	70.319
Hudson Sedan	1 mile	Second Gear Only	69.224
†Terraplane Sedan	1 kilometer	Standing Start	61.6

*NEW RECORD of 1,000 miles at 85.8 miles an hour beats best mark of ANY closed car regardless of price or size.

†"Unlimited Class" means all cars, regardless of size or price.

		Terraplane Record		Old Record	
		Min.	Sec.	Min.	Sec.
Lookout Mountain, Chattanooga, Tenn.		5	20.8	6	18
"W" Road to Walden's Ridge, Signal Mt., Chattanooga, Tenn.		4	9.8	4	37.1
Cameron Hill, Chattanooga, Tenn.		1	3.8	1	6
Eula St. Hill, Birmingham, Ala.		..	17.733	..	21
Osmoor Hill Shades Mt., Birmingham, Ala.		1	31.33	1	42.4
Gunter Hill, Montgomery, Ala.		..	23.9	..	27.4
Brown's Hill, Montgomery, Ala.		..	28.78	..	29.2
Stewart Ave., Atlanta, Ga.		..	38.67	..	44.4
Buena Vista Ave. Hill, Atlanta, Ga.		..	6 flat	..	10.6
Paterson Hill, Knoxville, Tenn.		..	10.8	..	12.6
Mill Mountain, Roanoke, Va.		1	38.13	1	43.6
Catawba Mountain, Salem, Va.		2	36.6	2	51.8
Summit Mountain, Uniontown, Pa.		2	47.6	3	18
Springfield Hill, Connellsville, Pa.		..	41.6	..	55.8
Town Hill Mountain, Cumberland, Md.		1	30.54	1	52.4
Avalon Hill, Baltimore, Md.		..	22.133	..	23
Quaker Hill, Pimlico, Baltimore, Md.		..	46 flat	..	55.2
Saw Mill Road, Philadelphia, Pa.		..	37.1	..	46.8
Hermits Lane, Philadelphia, Pa.		..	26.73	..	30.4
Ft. George Hill, New York, N. Y.		..	24.2	..	24.8
Ft. Lee Hill, New York, N. Y.		..	48	..	49.4
Shingle Hill, West Haven, Conn.		..	23 flat	..	40.8
Mount Washington		13	33	14	49
Terraplane climbs from Base to Summit of Mt. Washington Sealed in High Gear					
Big Cottonwood Canyon, Salt Lake City, Utah		24	54.9	27	18.2
Penitentiary Hill, Salt Lake City, Utah		..	36.6	..	38
Fillmore St. Hill, Santa Cruz, Calif.	(High)	..	....	..	....
Wrightwood Canyon, San Bernardino, Calif.	(High)	8	13.8	8	22.7
Mt. Baldy, Los Angeles, Calif.	(High)	8	20.217	8	54.6
Mt. Baldy, Los Angeles, Calif.	(Thru-gear)	8	20.217	8	44.25
Cushenbury-Johnson Grades, San Bernardino, Calif.	(Thru-gear)	12	39.55	14	39.8
Cushenbury-Johnson Grades, San Bernardino, Calif.	(High)	13	55.9	..	....
City Creek Canyon, near San Bernardino, Calif.	(High)	20	59.9	21	35.7
City Creek Canyon, near San Bernardino, Calif.	(Thru-gear)	18	12.8	19	55.15
Lower Waterman, near Los Angeles, Calif.	(High)	3	18.47	3	20.4
Upper Waterman, near Los Angeles, Calif.	(High)	11	32.95	12	14.75
Rim of the World, Los Angeles, Calif.	(High)	12	54.25	13	42.10
Hollow Hill, near Los Angeles, Calif.	(High)	..	25.49	..	25.75
Fish Creek Canyon Mt., near Phoenix, Ariz.	(Thru-gear)	3	15.4	3	26.2
†Mt. Washington, near Gorham, N. H.		13	20 3/5	13	33 (held by Terraplane)

†This record made by Hudson Eight; all others by Terraplane.

SPECIFICATIONS 10

TERRAPLANE DE LUXE SIX
TERRAPLANE CUSTOM SIX

ENGINE

88 horsepower, 6-cylinder, L-head type.

Bore, 3"; Stroke, 5".

Piston displacement, 212 cubic inches.

A. M. A. horsepower rating, 21.6.

Develops 88 horsepower at 3800 r.p.m.

Compression ratio, 6.00 to 1.

Optional horsepower, 100 h.p. with 7.00 to 1 compression ratio.

Pistons, silicon aluminum T-slot cam-ground type with four pinned rings.

Connecting rods drop forged.

Patented crankshaft, fully compensated, drop forged, statically and dynamically balanced, with integral counter-weights insuring extreme smoothness.

LUBRICATION

Patented Duo-flo system with positive oil feed at all temperatures.

Labyrinthian oil cooling.

Oversize oil pump.

Oil reservoir refill capacity, 5 quarts.

CARBURETION

Down-draft system.

1¼" carburetor, fitted with automatic choke and thermostatic heat control on Custom; manual choke and control on De Luxe.

Back-fire arrester.

Air cleaner.

Dash pot throttle control.

Vapor-lock relief valve.

IGNITION

Full automatic advance.

Metric spark plugs.

Moisture-proof distributor installation.

17-plate battery, 105 ampere-hour capacity.

Octane adjustment.

GENERATOR

Special extra-capacity ventilated type with voltage regulator affords ample reserve capacity for radio and other electrical equipment on De Luxe models.

Same type generator without voltage regulator on De Luxe models. If De Luxe model ordered with radio, voltage regulator is installed.

STARTER

Finger-touch control solenoid switch.

FUEL SYSTEM

Rear mounted gasoline tank—16½ gallons.

Fuel pump.

Fuel lines cooled to prevent vapor lock.

Level gauge on dash.

Uses non-premium fuel.

COOLING SYSTEM

Centrifugal, six-blade pump driven by V-belt—draws water from hottest part of block.

Improved silent fan.

Thermostat by-pass control of water circulation on Custom models.

Water temperature indicator on dash on Custom models.

Cooling system capacity, 13 quarts.

CLUTCH

Oil-cushioned, single-plate type with heat-treated cork inserts for smooth engagement and durability.

Soft pedal pressure.

Automatic clutch available as optional equipment.

TRANSMISSION

The Electric Hand, for pre-selective power-controlled gear shifting. (Optional equipment.)

Synchro-shift type—three speeds forward, one reverse—with silent gears for slow or fast shifting.

Automatic demeshing of low and reverse while in neutral or other speeds. Interlock prevents accidental slipping from gear-mesh in any speed.

Oversize ball thrust bearing with needle pilot bearing for main shaft.

Constant mesh gears S. A. E. 3440 electric furnace steel.

UNIVERSALS

Roller bearing universal with tubular propeller shaft.

REAR AXLE

Semi-floating type with nickel molybdenum steel gears and shaft.

Spiral bevel final drive.

Standard ratio, 4 1/9 to 1.

SPRINGS

Long semi-elliptic type front and rear, shackled at both ends.

Rear springs have splayed mountings to materially increase spring space for transverse stability, eliminating roll and sway.

U-type self-adjusting spring shackles.

Springs covered to preserve initial riding qualities, Custom models.

Improved oil-cushioned shock absorbers, adjustable for any type of ride desired.

Radial Safety Control with softer, smoother springs designed only for suspension of car, and not for torque duty.

BRAKES

Duo-Automatic Hydraulic brakes.

Internal expanding two-shoe design on all four wheels.

Supplementary mechanical service brakes, steel cable operated, with Mechanical equalizer, on rear wheels.

Brake diameter, 10 ½".

Brake width, 1¾".

Parking brake, steel cable operated, on rear wheels, with Mechanical equalizer.

Hand brake lever under cowl on Custom models.

STEERING GEAR

Hour glass worm and sector type.

Reduction, 17 to 1.

Timken roller front wheel bearing.

Heavy ball-bearing tie rod.

17" steering wheel with natural finger grip.

FRAME

Rigid, deep (6¾") box girder type with X-cross member in center and K-member at front end with triple strength at points of greatest stress.

Entire rear structure of frame stiffened by heavy plate cross member forming floor of body, providing unit-steel construction of body and chassis.

Front frame structure carries engine mounting of rubber.

WHEELS

16" steel balanced drop center type.

TIRES

Oversize low-pressure type 16 x 6.00".

WHEELBASE

115" wheelbase—over-all length, 200¼" bumper to bumper.

BODY

Steel roof, steel floor and body structure of steel, reinforced with steel; roof and body a single solid sheet of steel.

In unit with chassis—unit construction principle utilizes the floor of body as plate cross member of frame, giving unmatched rigidity.

Completely insulated and constructed throughout of steel in Hudson factory.

Box-girder type construction with double structure throughout, reinforced at forward end by double bulkhead formed by dash and cowl.

Instrument panel provides rigid cross member.

Rear compartment houses tire and provides abundant luggage space —12 ⅓ cubic feet; 16 ⅓ cubic feet with trunk model.

Safety glass standard in windshield and wind deflectors and available for all windows.

BODY VENTILATION

Hudson year-'round ventilation on Custom models.

Exclusive design wind deflectors in forward doors raise and lower independently and can be dropped completely into body. Can be regulated to act as ventilating deflectors or wind-scoops.

Two-way sliding window-type ventilation on De Luxe models.

Automatic draft eliminator for winter driving; filtered air inlet.

Rear-quarter windows open longitudinally, providing vacuum air exhaust.

Large cowl ventilator.

Welded body seams sealed with dum-dum.

LIGHTS

Headlamps streamlined to accord with body.

Toe switch on floor board for dim or bright.

Indirect lighting on instrument board.

Front compartment floodlight behind cowl on Custom models.

Twin tail lamps on Custom models.

UPHOLSTERY

Tree Bark or Mohair upholstery in closed models—leather in convertible coupe.

Form-fitting seats and back cushion.

Upholstered arm rests in rear seat.

EQUIPMENT

Two ash receivers in rear compartment, De Luxe models.

Generous package locker. Door lock for package locker in Custom models.

Adjustable sun visor.

Robe rail.

Thief-proof door lock.

Shim-adjustable steering column.

Steel cored, rubber covered steering wheel; special wire spoke custom type wheel optional at extra cost.

Vacuum windshield wiper.

Rear vision mirror.

Speedometer.

Fuel level gauge.

Water temperature gauge on Custom models.

Tell-tale lights for oil pressure and charging rate.

Arm rests in rear compartment.

Assist straps on Custom models.

Foot rest.

Complete lock equipment for doors and rear compartment.

Outside twin horns on Custom models.

NOTE—*The Hudson Motor Car Company reserves the right to make changes in car design, equipment or color schemes at any time without incurring any obligation to install same on cars previously sold.*

SPECIFICATIONS

HUDSON EIGHT

ENGINE

113 horsepower, 8-cylinder, L-head type.

Bore, 3"; Stroke, 4 ½".

Piston displacement, 254.47 cubic inches.

A. M. A. horsepower rating, 28.8.

Develops 113 horsepower at 3800 r.p.m.

Compression ratio, 6.00 to 1.

Optional horsepower, 124 h.p. with 7.00 to 1 compression ratio.

Pistons, silicon aluminum T-slot cam-ground type with four pinned rings.

Connecting rods drop forged.

Patented crankshaft, fully compensated, drop forged, statically and dynamically balanced, with integral counter-weights, insuring extreme smoothness.

LUBRICATION

Oil reservoir refill capacity, 7 quarts.

BATTERY

19-plate battery, 125 ampere-hour capacity.

COOLING SYSTEM

Radiator capacity, 20 quarts.

BRAKES

Brake diameter, 11 ¼".

Brake width, 1 ¾".

TIRES

Oversize low-pressure type, 16 x 6.25 inch.

WHEELBASE

120 and 127 inches.

HUDSON SIX

ENGINE

93 horsepower, 6-cylinder, L-head type.

Bore, 3"; Stroke, 5".

Piston displacement, 212 cubic inches.

A. M. A. horsepower rating, 21.6.

Develops 93 horsepower at 3800 r.p.m.

Compression ratio, 6.25 to 1.

Optional horsepower, 100 h.p. with 7.00 to 1 compression ratio.

Pistons, silicon aluminum T-slot cam-ground type with four pinned rings.

Connecting rods drop forged.

Patented crankshaft fully compensated, drop forged, statically and dynamically balanced, with integral counter-weights, insuring extreme smoothness.

LUBRICATION

Oil reservoir refill capacity, 5 quarts.

BATTERY

17-plate battery, 105 ampere-hour capacity.

COOLING SYSTEM

Radiator capacity, 13 quarts.

BRAKES

Brake diameter, 10 ½".

Brake width, 1 ¾".

TIRES

Oversize low-pressure type, 16 x 6.00 inch.

WHEELBASE

120 inches.

Specifications Which Are Uniform in the Hudson Six and Hudson Eight

10

LUBRICATION

Patented Duo-flo system with positive oil feed at all temperatures.
Labyrinthian oil cooling.
Oversize oil pump.

CARBURETION

Down-draft system.
1¼" carburetor, fitted with automatic choke and thermostatic heat control.
Air cleaner.
Back-fire arrester.
Dash pot throttle control.
Vapor-lock relief valve.

IGNITION

Full automatic advance.
Metric spark plugs.
Moisture-proof distributor installation.
Octane adjustment.

GENERATOR

Special heavy-duty, extra-capacity, ventilated type with voltage regulator.

STARTER

Push-button control, solenoid actuated heavy-duty type.

FUEL SYSTEM

16½ gallon, rear mounted gasoline tank.
Fuel pump.
Fuel lines cooled to prevent vapor lock.
Level gauge on dash.
Uses non-premium fuel.

COOLING SYSTEM

Centrifugal, 6-blade pump, driven by V-belt—draws water from hottest part of block.
Improved silent fan.
Thermostat by-pass control of water circulation.
Water temperature indicator on dash.

CLUTCH

Oil-cushioned, single-plate type, with heat-treated cork inserts for smooth engagement and durability.
Soft pedal pressure.
Automatic clutch available as optional equipment at extra charge.

TRANSMISSION

The Electric Hand, for pre-selective power-controlled gear shifting. Optional equipment on all models.
Synchro-shift type—three speeds forward—one reverse (with silent gears for slow or fast shifting).
Automatic demeshing of low and reverse while in neutral or other speeds. Interlock prevents accidental slipping from gear-mesh in any speed.
Oversize ball thrust bearing with needle pilot bearing for main shaft.
Constant mesh gears, S.A.E. 3440 electric furnace steel.

UNIVERSALS

Roller bearing universal with tubular propeller shaft.

REAR AXLE

Semi-floating type with nickel molybdenum steel gears and shaft.
Spiral bevel final drive.
Standard ratio, 4-1/9 to 1.

SPRINGS

Long semi-elliptic type front and rear, shackled at both ends.
Rear springs have splayed mountings to materially increase spring space by transverse stability, eliminating roll and sway.
U-type self-adjusting spring shackles.
Springs covered to preserve initial riding qualities.
Improved oil-cushioned shock absorbers, adjustable for any type of ride desired.
Radial Safety Control with softer, smoother springs designed only for suspension of car, and not for torque duty.

BRAKES

Duo-Automatic Hydraulic brakes.
Internal expanding two-shoe design on all four wheels.
Supplementary mechanical service brakes, steel cable operated, with Mechanical equalizer on rear wheels.
Parking brake, steel cable operated, on rear wheels, with Mechanical equalizer.
Hand brake lever, under left front cowl—finger-touch release.

STEERING GEAR

Hour glass worm and sector type.
Reduction, 17 to 1.
Timken roller front wheel bearing.
Heavy ball-bearing tie rod.
17" steering wheel with natural finger grip.

FRAME

Rigid, box girder type 7" deep, with X-cross member in center and K-member at front end with triple strength at points of greatest stress.
Entire rear structure of frame stiffened by heavy plate cross member forming floor of body, providing unit-steel construction of body and chassis.
Front frame structure carries engine mounting of rubber.

WHEELS

16" steel balanced drop center type.

BODY

Steel roof, steel floor and body structure of steel, reinforced with steel; roof and body a single solid sheet of steel.
In unit with chassis—unit-construction principle utilizes floor of body as plate cross member of frame, giving unmatched rigidity.
Completely insulated and constructed throughout of steel in Hudson factory.
Box girder type construction with double structure throughout, reinforced at forward end by double bulkhead formed by dash and cowl.
Instrument panel provides rigid cross member.
Rear compartment houses tire and provides abundant luggage space —12⅓ cubic feet; 16⅓ cubic feet with trunk model.
Safety glass standard in windshield and wind deflectors and available for all windows.

BODY VENTILATION

Draftless type exclusive with Hudson-built cars.
Exclusive design wind deflectors in forward doors, raise and lower independently and can be dropped completely into body and can be regulated to act as ventilating deflectors or wind-scoops.
Automatic draft eliminator for winter driving; filtered air inlet.
Rear quarter windows open longitudinally, providing vacuum air exhaust. Controls *above* windows.
Welded body seams sealed with dum-dum.

LIGHTS

Headlamps streamlined to accord with body.
Toe switch on floor board for dim and bright.
Indirect lighting on instrument board with rheostat control for brightness.
Front compartment floor light behind cowl, with extension cord.
Twin tail lamps.
Signal light in instrument panel to show headlamp operation.

UPHOLSTERY

Boucle in De Luxe Hudson 8 and Custom Hudson 6 closed models; 2-way Twist in Hudson Custom 8 closed models; mohair optional in all closed models; leather in convertible coupe.
Form-fitting seats and back cushion.
Upholstered arm rests in rear seat.
Translucent rear curtains permitting following lights to shine through dimly at night.

EQUIPMENT

Two ash receivers in rear compartment.
Generous package locker.
Sun visor (two in Hudson 8 Custom models).
Thief-proof door lock.
Shim-adjustable steering column.
Steel cored, rubber covered steering wheel. Spring steel spoke wheel in Hudson 8 Custom model.
Vacuum windshield wiper. (Twin wipers on Hudson 8 Custom models.)
Rear vision mirror.
Speedometer.
Fuel level gauge.
Robe rail.
Radio standard equipment in Hudson 8 Custom models. Optional in other models.
Water temperature gauge.
Tell-tale lights for oil pressure and charging rate.
Arm rests in rear compartment.
Assist straps.
Foot rest.
Complete lock equipment for doors, package locker and rear compartment.
Twin horns. Twin air horns on Hudson 8 Custom models.

NOTE—*The Hudson Motor Car Company reserves the right to make changes in car design, equipment or color schemes at any time without incurring any obligation to install same on cars previously sold.*

INDEX TO QUESTIONS