CADILLAC

V-8

V-12 V-16

1934

FEATURES OF CONSTRUCTION

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CADILLAC MOTOR CAR COMPANY

DETROIT · MICHIGAN

DIVISION OF GENERAL MOTORS

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PROGRESS MEANS CHANGE and the World Moves On to New and Better Things

IN EVERY PERIOD of the World's history leaders have been recognized by their achievements. This is true of individuals and products alike, and leadership, whether vested in a man or a manufactured product, can only be retained by constant striving to surpass its own accomplishments. This perpetual struggle for leadership is what animates all progress, and through it the World moves on to new and better things.

Cadillac's leadership through its affiliation with General Motors has been established by a long record of pioneering developments that have contributed most to the real progress of the automobile industry. This policy of constant progress is again most impressively revealed in the four new lines of cars announced for 1934.

The new progressive 1934 Cadillac program is noticeably in contrast with the lack of new developments in other companies' programs which have been retarded due to economic conditions, and it again places Cadillac in a most advantageous position to further extend its leadership in the fine car market.

Each new line of 1934 Cadillac cars sets a new standard of value. The dynamic new beauty in coachcraft and body styling gives Cadillac a new, fresh spirit that sets it entirely apart from its competitive field in advanced modern style trend. The aerodynamics principle of modern styling in body design offers a definite utility value in the reduction of wind resistance and results in greater speed and economy of operation.

Cadillac's brilliant engineering excellence is again revealed in the revolutionary changes in chassis design that provide an entirely new standard of riding comfort. Through the development of an entirely new principle of mass and weight distribution and the adoption of a new and wholly different frame and front wheel spring construction and suspension, it introduces a new gliding ride. The discomfort of the former neck cracking and pitching motion still present in other cars with the old style front spring suspension, is now definitely eliminated in Cadillac.

Improvements in engines and carburetion contribute to new flashing performance. A new improved steering system also makes car control almost completely effortless. Each car offers greater safety, protection and security due to better road stability at all speeds.

In the interiors of both the new Cadillac Fisher and Fleetwood bodies, luxurious ease and comfort find their highest expression. In the Fleetwood bodies front and rear seats of Fleetwood bodies are much wider and bodies are longer. The driver's compartment in all bodies has been redesigned to give more legroom. Standard Fisher bodies in a wide choice of body styles, optional colors and upholstery are furnished only on the Cadillac V-8 128″ and 136″ wheelbase chassis. Fleetwood custom bodies are optionally available on the longer 146″ wheelbase Cadillac V-8, but are standard on the V-12 and V-16, in the most complete range of body styles, colors and finest woven fabrics offered by any manufacturer.

In all Cadillac history value has never been so evident and pronounced as in these new 1934 cars. At their new prices Cadillac offers the finest and most luxurious and modernized personal transportation. These new prices will open up broader markets for Cadillac in every community and increase the selling opportunities of every member of the Cadillac selling organization.

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Cadillac's 1934 objective is 50% of Price Class.

NEW FEATURES *for* 1934

1. An Entirely New Standard of Improved Riding Comfort

(a) Scientific redistribution of car weight by locating car units to give better riding balance.

(b) Independently sprung front wheels and elimination of front axle and unsprung weight.

(c) Changing of front and rear spring rates to nearly equal frequencies, to eliminate neck cracking and forward pitching motion to rear seat passengers.

(d) Reduction of body-roll through use of the ride stabilizer.

(e) Minimized road vibration through use of softer springs, frictionless coil front springs, rubber rear spring shackles and Hotchkiss Drive.

2. Greater Ease of Control

(a) *Improved Steering*

New type Worm and Double Roller Steering Gear mounted on ball bearings reduces physical effort to control car.

Increased steering ratio makes it easier to steer at any speed.

Reduction of turning radius making it possible to turn car in much smaller space and park with no more effort than smaller and shorter wheelbase cars.

Reduction of steering wheel whip through use of double tie-rods giving perfect steering geometry.

Shock eliminator spring in drag link to cushion road shocks before they reach the steering wheel.

(b) *Improved Lighting System*

Adoption of three beam multi-beam lighting system legal in all states.

Foot control of dimmer switch for country driving and passing beams.

Visible dial indicator on instrument panel to show kind of light beam being used.

(c) *Easier Starting*

Push type starter button located on instrument panel.

Semi-automatic choke to provide easy starting in coldest weather.

Current controlled generator automatically regulates charging rate to battery in proportion to lighting load and keeps battery at proper strength for necessary starting energy.

(d) *New Current Controlled Generator*

(e) *Improved Ride Control*

Manual and inertia controlled rear shock absorbers.

Ride stabilizer.

(f) *More Room in Front Compartment*

Removal of hand brake lever to the instrument panel and location of transmission lever forward in floor board gives more leg room in front compartment and provides comfortable seating accommodation for three people in front seat.

3. New Improved Performance

(a) Increased engine power by use of cold air intake to carburetor.

(b) Increased compression gives greater power efficiency for same amount of fuel mixture.

(c) Dual type valve springs (V-8).

(d) New type long wearing light weight anodized aluminum alloy pistons.

4. Greater Economy

(a) Better gasoline economy through cold air intake. Increased compression, higher spark advance, anodyzed aluminum alloy pistons, new designed combustion chambers.

(b) Reduced oil consumption by use of three compression and one oil ring made to more accurate standards.

New Features *for* 1934—*Continued*

5. New Beauty and Styling (Exterior)

(a) APPEARANCE

(1) *Bodies*

Completely new designed bodies with more steeply sloping windshields and beaver-tail rear decks that completely cover the chassis and reduce wind resistance.

Special spare wheel compartment in rear decks of Fleetwood bodies.

V-type windshields on special Fleetwood Custom Bodies.

(2) *Radiators*

New V-shaped radiators that slope steeply to the rear, with new design grille front and ornaments.

(3) *Hoods*

New long hoods that extend nearly to windshields, with shutter type louvers and new style hood emblems.

(4) *Bumpers*

New streamlined bumpers with concealed coil springs and specially shaped to deflect gravel and flying stones.

(5) *Front Fenders*

New air-foil type fenders with streamlined fronts that are brought low to cover chassis. The new design has a higher hood sill and moulds into the radiator replacing the splash shield.

(6) *Headlamps*

New tear-drop shaped lamps.

(7) *Running Boards*

New style running boards with heavy rubber mats effectively trimmed and requiring no visible dust shield.

(8) *Rear Fenders*

New air-foil shaped rear fenders to blend with streamlined tail lamps.

(b) CADILLAC 1934 BODY STYLING PROGRAM

(c) APPEARANCE COMPARISON OF FISHER AND FLEETWOOD BODIES

6. New 1934 Features Interior Body Comfort

Much roomier bodies with wider front and rear seats.

Increased legroom in front compartments of all bodies.

Newly shaped cushions and seat backs.

New pleated trimming (128″-136″ W. B.) Fisher Bodies.

New tufted and plain trimming (146″ and 154″ W. B.) Fleetwood Custom Bodies.

New appearance instrument panel.

New improved package compartment door mechanism.

New easy operating front seat adjustment.

3-passenger front seat (4 inch wider on 146″-154″ W. B.)

Special tonneau compartment on 5-passenger sedans.

Doors easier operating and hinged at center pillar.

New design door bolts.

New type inside door locks.

New special design striker plates—easier adjustment.

New type inside visors.

Improved Fisher No-Draft Ventilators—neater appearing rubber seals for ventilators.

Improved screen type rear opening cowl ventilators give more air.

7. New Mechanical Improvements

(a) CADILLAC CHASSIS

(1) Frame
(2) Wheelbase
(3) Springs
(4) Spring Lubrication
(5) Hotchkiss Drive
(6) Bumpers
(7) Shock Absorbers
(8) Ride Stabilizer
(9) Cable Brake Controls
(10) Steering
(11) Body Insulation

(b) ENGINE IMPROVEMENTS

(1) Engine Mountings
(2) Cylinder Heads
(3) Compression
(4) Semi-Automatic Choke
(5) Water Pump
(6) Pistons
(7) Dual Valve Springs
(8) Ball Bearing Fan
(9) Cold Air Intake

(c) ELECTRICAL

(1) Current Controlled Generator
(2) 3-Beam Headlights
(3) Locked Type Ignition Coil
(4) Battery Location

Progress *and* Development

Every Cadillac salesman should be familiar with Cadillac's established policy of continuous progressive design and development.

Through its affiliation with General Motors and the Research Division, Cadillac engineers carry on a continuous program of experimental work for the advancement of its product. This is reflected in the introduction of new developments that are generally one to three years in advance of competitors who are not as well equipped as Cadillac to do such work.

Such major developments as Electric Lighting and Starting, Thermostatic regulation of cooling, Closed Bodies, Security Plate Safety Glass, Syncro-Mesh Transmission, Cast Molybdenum Iron Brake Drums, Fisher No-Draft Ventilation, V-16 and V-12 Multi-Cylinder Engines, are only a few of the many advancements offered first by Cadillac ahead of any competitor.

When you talk to prospects (having cars from three to five years old) about the New 1934 Cadillac line be sure to also mention the many other improvements that were made prior to 1934, some of which are of equal interest to them even though they are not covered as new 1934 features.

• 1928-29 •

Adjustable Front Seats
Security Plate Glass
Fender Lamps
Chrome Plating
Syncro-Mesh Transmission
Rubber Engine Mountings
Safety Mechanical Brakes

• 1930-31 •

Body Insulation and Sound Proofing
Double Reduction Starter
Duodraulic Shock Absorbers
Harmonized Steering
V-12 and V-16 Engines
Air Intake Silencers
Hydraulic Valve Silencers
Dial Type Instruments
Metal Spring Covers

• 1932 •

Adjustable Inside Visors
Drip Mouldings Integral with Body Roof-rail Panel
Self-Adjusting Door Dovetails
Bronze Door Hinge-pin Bushings
30% Increased Vision
Large Area Clutch, 1928-29 two plate clutch
Large Size Batteries
Two Electric Horns
Hinged Gas Tank Cover
Wire Wheel Standard Equipment
Drop Center Wheel Rims
Fixed Adjustment Threaded Spring Shackles
Air Cooled Fuel Lines
Full Range Ride Regulator
Triple Silent Helical Syncro-Mesh Transmission Gears

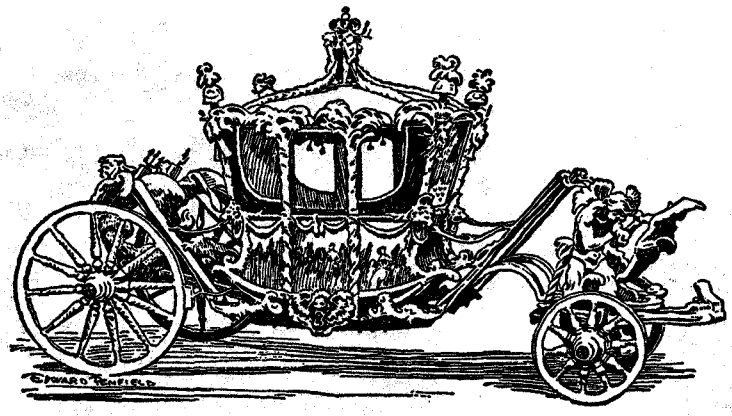
• 1933 •

Fuel Pump
Generator—Air Cooled
Front and Rear Fender Valances
New Heavy Steel Safety Running Boards
New Fisher No-Draft Individually Controlled Ventilation System
Increased "Elbow Width" in Rear Seat of all Models
New, Wider Side Arm-rests
New Windshield Construction—Stationary and Sealed

(1) Cadillac Now Offers an Entirely New Standard of Riding Comfort

Cadillac introduces in its new 1934 Cadillac and La Salle cars, a wholly new interpretation of luxurious riding comfort and ease that marks the greatest single improvement in automobiles during the past 20 years.

The springing of automobiles since their introduction has remained essentially the same as the springing of the 18th century four-horse coach. Both types of vehicles had front and rear axles with stiff front springs and soft rear springs under passengers.



At slow and moderate speeds this type of construction was tolerable but with the constant stepping up of speed in automobiles during the past decade, it has entirely changed the ride problem. The neglect of city streets has increased the problem of the boulevard ride and the rapid improvement of state highways with longer distances of travel at higher speeds, and increasing emphasis on safety, have each contributed to the demand for improved riding comfort in automobiles.

During the past three years Cadillac engineers have studied and concentrated on the development of improved riding comfort, to eliminate the disagreeable effects of the neck cracking and pitching motion of rear seat passengers, and find some solution that would give the same riding comfort in the rear seat as that enjoyed by the front seat passengers.

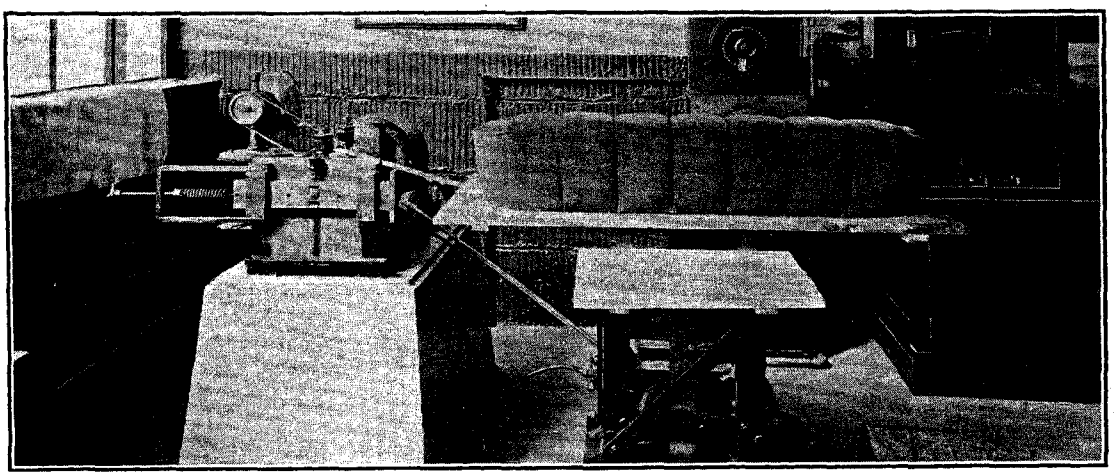
This experimental work *initiated and followed through by Cadillac Engineers* involved the adoption of revolutionary new principles in accomplishing the desired objective, and the introduction of this new improved riding comfort on the 1934 Cadillac cars, again typifies the leadership of Cadillac engineering that has been responsible in past years for the many other notable improvements Cadillac has contributed to the development of the automobile industry.

(1) Cadillac Now Offers an Entirely New Standard of Riding Comfort—*Continued*

Cadillac's Development of the Ride Problem

All previous developments in the approach to the problem of riding comfort were discarded and a new start made to determine the fundamentals of riding motions.

A bouncing chair was first designed in which many people were subjected to every conceivable kind of a bouncing ride to definitely determine and measure riding discomfort. These tests determined many interesting facts and revealed that the size of the bump was less important than its direction and the rapidity of its recurrence. Every kind of ride was analyzed to determine just how far, how fast and in what direction a passenger could be moved and still remain entirely comfortable.



Riding qualities in an automobile depend primarily on two factors:

(1) The flexibility of the front and rear springs.

(2) The mass weight distribution in the car.

The springs of the conventional car are of different stiffness, the front springs being between two and three times as stiff as the rear springs. The front springs have had to be stiff in order to hold the front axle in place for steering stability.

Since the front springs are stiffer than the rear springs the "frequency" or speed of the oscillations set up at either end of the car are different. Particularly in the rear seat of the car this difference is felt as an inharmonious or "discordant" movement.

Everyone has known ever since automobiles have been made that they have had the habit of riding hard in the back seat.

Experimental study was made of the ride curves obtained in a conventional car when the front spring "pitching" and rear spring "bouncing" movements were brought within 10% of the same frequency.

It was learned that it was neither the action of the front nor the rear springs alone, *but the fight set up by the combination of the two movements* which had subjected rear seat passengers to the uncomfortable "rabbit punching" and "neck snapping" with which we are all familiar.

Further experiments were made in which the mass weight of the car was redistributed and the front springs softened until their de-

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(b) Increased compression gives greater power efficiency for same amount of fuel mixture.

(c) Dual type valve springs (V-8).

(d) New type long wearing light weight anodized aluminum alloy pistons.

4. Greater Economy

(a) Better gasoline economy through cold air intake. Increased compression, higher spark advance, anodyzed aluminum alloy pistons, new designed combustion chambers.

(b) Reduced oil consumption by use of three compression and one oil ring made to more accurate standards.

New Features *for* 1934—*Continued*

5. New Beauty and Styling (Exterior)

(a) APPEARANCE

(1) *Bodies*

Completely new designed bodies with more steeply sloping windshields and beaver-tail rear decks that completely cover the chassis and reduce wind resistance.

Special spare wheel compartment in rear decks of Fleetwood bodies.

V-type windshields on special Fleetwood Custom Bodies.

(2) *Radiators*

New V-shaped radiators that slope steeply to the rear, with new design grille front and ornaments.

(3) *Hoods*

New long hoods that extend nearly to windshields, with shutter type louvers and new style hood emblems.

(4) *Bumpers*

New streamlined bumpers with concealed coil springs and specially shaped to deflect gravel and flying stones.

(5) *Front Fenders*

New air-foil type fenders with streamlined fronts that are brought low to cover chassis. The new design has a higher hood sill and moulds into the radiator replacing the splash shield.

(6) *Headlamps*

New tear-drop shaped lamps.

(7) *Running Boards*

New style running boards with heavy rubber mats effectively trimmed and requiring no visible dust shield.

(8) *Rear Fenders*

New air-foil shaped rear fenders to blend with streamlined tail lamps.

(b) CADILLAC 1934 BODY STYLING PROGRAM

(c) APPEARANCE COMPARISON OF FISHER AND FLEETWOOD BODIES

6. New 1934 Features Interior Body Comfort

Much roomier bodies with wider front and rear seats.

Increased legroom in front compartments of all bodies.

Newly shaped cushions and seat backs.

New pleated trimming (128″-136″ W. B.) Fisher Bodies.

New tufted and plain trimming (146″ and 154″ W. B.) Fleetwood Custom Bodies.

New appearance instrument panel.

New improved package compartment door mechanism.

New easy operating front seat adjustment.

3-passenger front seat (4 inch wider on 146″-154″ W. B.)

Special tonneau compartment on 5-passenger sedans.

Doors easier operating and hinged at center pillar.

New design door bolts.

New type inside door locks.

New special design striker plates—easier adjustment.

New type inside visors.

Improved Fisher No-Draft Ventilators—neater appearing rubber seals for ventilators.

Improved screen type rear opening cowl ventilators give more air.

7. New Mechanical Improvements

(a) CADILLAC CHASSIS

(1) Frame
(2) Wheelbase
(3) Springs
(4) Spring Lubrication
(5) Hotchkiss Drive
(6) Bumpers
(7) Shock Absorbers
(8) Ride Stabilizer
(9) Cable Brake Controls
(10) Steering
(11) Body Insulation

(b) ENGINE IMPROVEMENTS

(1) Engine Mountings
(2) Cylinder Heads
(3) Compression
(4) Semi-Automatic Choke
(5) Water Pump
(6) Pistons
(7) Dual Valve Springs
(8) Ball Bearing Fan
(9) Cold Air Intake

(c) ELECTRICAL

(1) Current Controlled Generator
(2) 3-Beam Headlights
(3) Locked Type Ignition Coil
(4) Battery Location

Progress *and* Development

Every Cadillac salesman should be familiar with Cadillac's established policy of continuous progressive design and development.

Through its affiliation with General Motors and the Research Division, Cadillac engineers carry on a continuous program of experimental work for the advancement of its product. This is reflected in the introduction of new developments that are generally one to three years in advance of competitors who are not as well equipped as Cadillac to do such work.

Such major developments as Electric Lighting and Starting, Thermostatic regulation of cooling, Closed Bodies, Security Plate Safety Glass, Syncro-Mesh Transmission, Cast Molybdenum Iron Brake Drums, Fisher No-Draft Ventilation, V-16 and V-12 Multi-Cylinder Engines, are only a few of the many advancements offered first by Cadillac ahead of any competitor.

When you talk to prospects (having cars from three to five years old) about the New 1934 Cadillac line be sure to also mention the many other improvements that were made prior to 1934, some of which are of equal interest to them even though they are not covered as new 1934 features.

• 1928-29 •

Adjustable Front Seats
Security Plate Glass
Fender Lamps
Chrome Plating
Syncro-Mesh Transmission
Rubber Engine Mountings
Safety Mechanical Brakes

• 1930-31 •

Body Insulation and Sound Proofing
Double Reduction Starter
Duodraulic Shock Absorbers
Harmonized Steering
V-12 and V-16 Engines
Air Intake Silencers
Hydraulic Valve Silencers
Dial Type Instruments
Metal Spring Covers

• 1932 •

Adjustable Inside Visors
Drip Mouldings Integral with Body Roof-rail Panel
Self-Adjusting Door Dovetails
Bronze Door Hinge-pin Bushings
30% Increased Vision
Large Area Clutch, 1928-29 two plate clutch
Large Size Batteries
Two Electric Horns
Hinged Gas Tank Cover
Wire Wheel Standard Equipment
Drop Center Wheel Rims
Fixed Adjustment Threaded Spring Shackles
Air Cooled Fuel Lines
Full Range Ride Regulator
Triple Silent Helical Syncro-Mesh Transmission Gears

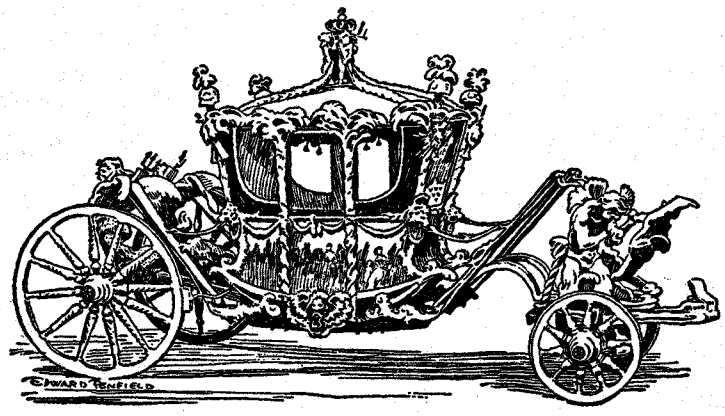
• 1933 •

Fuel Pump
Generator—Air Cooled
Front and Rear Fender Valances
New Heavy Steel Safety Running Boards
New Fisher No-Draft Individually Controlled Ventilation System
Increased "Elbow Width" in Rear Seat of all Models
New, Wider Side Arm-rests
New Windshield Construction—Stationary and Sealed

(1) Cadillac Now Offers an Entirely New Standard of Riding Comfort

Cadillac introduces in its new 1934 Cadillac and La Salle cars, a wholly new interpretation of luxurious riding comfort and ease that marks the greatest single improvement in automobiles during the past 20 years.

The springing of automobiles since their introduction has remained essentially the same as the springing of the 18th century four-horse coach. Both types of vehicles had front and rear axles with stiff front springs and soft rear springs under passengers.



At slow and moderate speeds this type of construction was tolerable but with the constant stepping up of speed in automobiles during the past decade, it has entirely changed the ride problem. The neglect of city streets has increased the problem of the boulevard ride and the rapid improvement of state highways with longer distances of travel at higher speeds, and increasing emphasis on safety, have each contributed to the demand for improved riding comfort in automobiles.

During the past three years Cadillac engineers have studied and concentrated on the development of improved riding comfort, to eliminate the disagreeable effects of the neck cracking and pitching motion of rear seat passengers, and find some solution that would give the same riding comfort in the rear seat as that enjoyed by the front seat passengers.

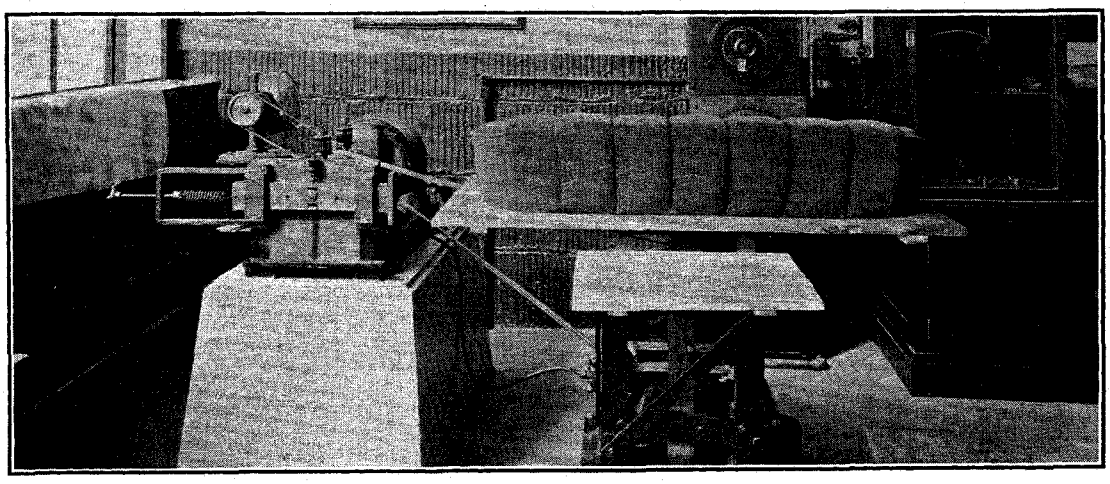
This experimental work *initiated and followed through by Cadillac Engineers* involved the adoption of revolutionary new principles in accomplishing the desired objective, and the introduction of this new improved riding comfort on the 1934 Cadillac cars, again typifies the leadership of Cadillac engineering that has been responsible in past years for the many other notable improvements Cadillac has contributed to the development of the automobile industry.

(1) Cadillac Now Offers an Entirely New Standard of Riding Comfort—*Continued*

Cadillac's Development of the Ride Problem

All previous developments in the approach to the problem of riding comfort were discarded and a new start made to determine the fundamentals of riding motions.

A bouncing chair was first designed in which many people were subjected to every conceivable kind of a bouncing ride to definitely determine and measure riding discomfort. These tests determined many interesting facts and revealed that the size of the bump was less important than its direction and the rapidity of its recurrence. Every kind of ride was analyzed to determine just how far, how fast and in what direction a passenger could be moved and still remain entirely comfortable.



Riding qualities in an automobile depend primarily on two factors:

(1) The flexibility of the front and rear springs.

(2) The mass weight distribution in the car.

The springs of the conventional car are of different stiffness, the front springs being between two and three times as stiff as the rear springs. The front springs have had to be stiff in order to hold the front axle in place for steering stability.

Since the front springs are stiffer than the rear springs the "frequency" or speed of the oscillations set up at either end of the car are different. Particularly in the rear seat of the car this difference is felt as an inharmonious or "discordant" movement.

Everyone has known ever since automobiles have been made that they have had the habit of riding hard in the back seat.

Experimental study was made of the ride curves obtained in a conventional car when the front spring "pitching" and rear spring "bouncing" movements were brought within 10% of the same frequency.

It was learned that it was neither the action of the front nor the rear springs alone, *but the fight set up by the combination of the two movements* which had subjected rear seat passengers to the uncomfortable "rabbit punching" and "neck snapping" with which we are all familiar.

Further experiments were made in which the mass weight of the car was redistributed and the front springs softened until their de-

(1) Cadillac Now Offers an Entirely New Standard of Riding Comfort—*Continued*

Cadillac's Development of the Ride Problem

flection was slightly greater that of the rear springs. As a result the ride curves were completely smoothed out giving a much closer approach to what the engineers term "simple harmonic motion."

In order to apply these results attention was then concentrated by Cadillac experimental engineers on a large seven-passenger sedan in which the long rear overhang of the body made rear seat riding comfort particularly difficult. The reasoning was, if the riding comfort could be made better in this type of car then it could be made relatively better in other types of cars in which conditions were more favorable.

A car was specially equipped with weights in which it was possible to reproduce almost any possible riding condition. In addition special springing was used with softer front springs so that front and rear spring motions were equal. This was done to investigate the conditions of harmonic motion in which spring deflections front and rear are equal.

The best results were obtained *with the front spring suspension being made softer than the rear* which caused the front end to lie flat on the road at all speeds on all sorts of surfaces.

Although an entirely new standard of riding comfort had been attained with the redistribution of weight and the softening of the front springs, the engineers were still a long way from the complete solution of the problem. The ride had been tremendously improved, but the controllability of the car had been impaired. This was due to the fact that the ride was obtained at the expense of considerable activity in the front springs. And conventional front suspension had never been designed for such active use.

Cadillac was then faced with the problem of incorporating the newly discovered ride in a car without sacrificing the car's controllability.

In other words, under the old-style construction the front springs had to do two jobs —they not only had to serve as springs but they had to keep the front end of the running gear in proper alignment.

These two jobs didn't mix very well because if you made the front springs stiff enough from a structural standpoint they'd be too stiff for riding comfort. On the other hand, if you made them soft enough to match up with the rear springs they'd be entirely too soft to give the proper stability on the road and the car would be very unsafe, especially when turning corners.

So we see that the old-fashioned system of springing the front end was a compromise at best.

The big problem was to divorce these two jobs from one another and deal with them separately.

It wasn't a matter of sticking in a coil spring and a couple of levers. It must be remembered that automobiles have been pretty satisfactory in the past—and all of the chassis engineering was definitely tied in with the tradition of a flat, stiff front spring construction.

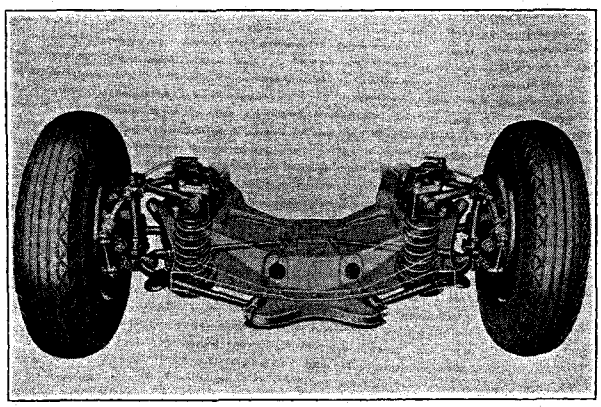
To change one thing would necessitate changing other things and to be basically sound, the new style front springs could not be tacked on just as an accessory or a "gadget." And since Cadillac wanted to gain the full advantages of the new construction without sacrificing anything else it had to measure the effects of these changes—not only within themselves—but in their relation to one another. This necessitated what amounted to a new and different approach to the overall problems of chassis design—which incidentally typifies the difference between Cadillac's sound, scientific approach to a problem and the "hit or miss" method.

(1) Cadillac Now Offers an Entirely New Standard of Riding Comfort—*Continued*

The Independent Front Wheel Suspension

Cadillac has answered this problem with an entirely new design of chassis with INDEPENDENT FRONT WHEEL SUSPENSION.

Independent Front Wheel Suspension, as used by Cadillac, is not merely a new type of spring design, it is the means of attaining a fundamental principle of such far-reaching effect that it has necessitated the redesigning of the entire car!



Independent front wheel suspension demands a better substitute for the conventional front axle and front springs.

The front wheels are now attached directly to the frame by means of sturdy forked arms and their movement is controlled by special helical springs. With the wheels fastened directly to the frame, the springs no longer have to hold the axle in place and absorb driving and braking twists.

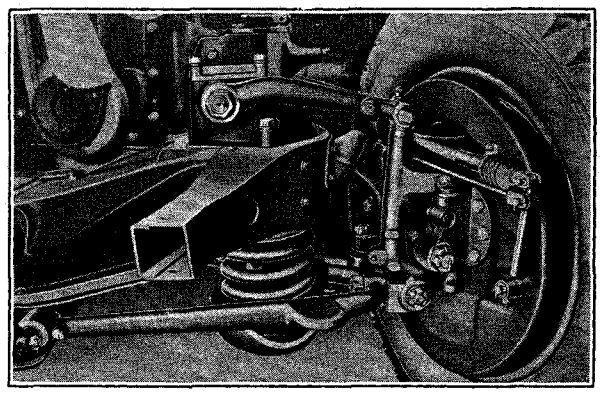
In the new chassis the springs have absolutely nothing to do except to spring the car. Consequently, they can be made as soft as desired. In addition, since each wheel is mounted independently of the other, either wheel can now ride over a bump without transferring the bump to the other wheel. This obviously, improves the car's roadability, especially over poor roads.

SAFETY

Independent Front Wheel Suspension also adds materially to *Safety.* In case of a blowout, the brakes can now be applied immediately without throwing the car off the road.

STEERING

The steering of the new Cadillac cars has also been greatly improved.



Formerly, owing to the fact that the motions of the front axle were indeterminate, it was absolutely impossible to design a truly accurate steering mechanism. Now, with the abolition of the front axle it has finally permitted the design of a new type of steering mechanism which accurately controls the geometrical relationships of the various parts.

A sturdy worm and double roller steering gear mounted on the left hand frame sidemember is connected to a steering link, which in turn operates a bell crank that is supported upon the massive frame front cross-member. To this bell crank are attached the two steering rods, each of which controls one of the front wheels. This is an entirely new type of steering mechanism and one which the owner will find a revelation in steering precision and ease when he accepts a demonstration.

(1) Cadillac Now Offers an Entirely New Standard of Riding Comfort—*Continued*

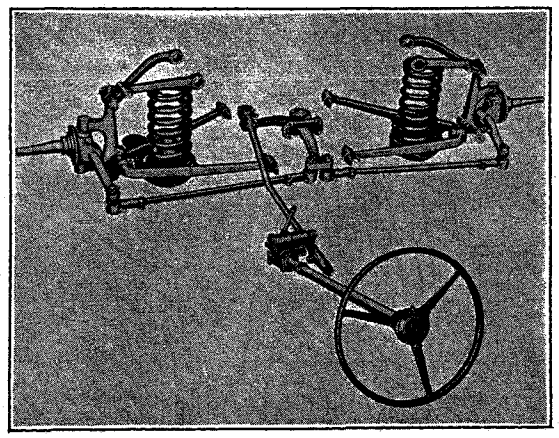
The Independent Front Wheel Suspension

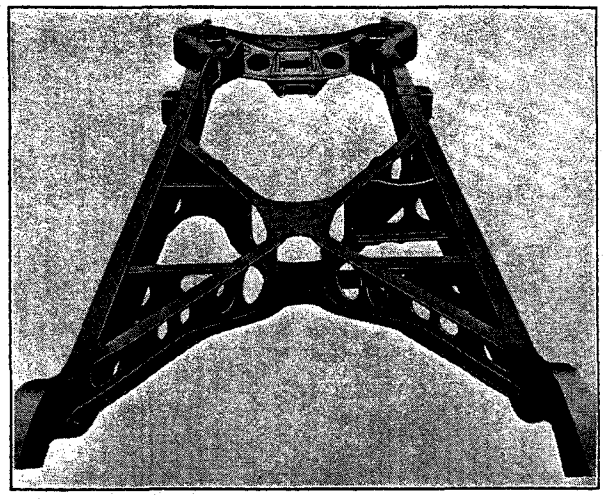
X-TYPE FRAME

Cadillac's new Front Wheel Suspension also lends itself to the design of an extremely rigid X-type frame, a frame in which every weak link has been avoided.

The X-member is not merely a re-enforcing member. It is a complete frame *in itself* and provides a frame within a frame. The forward members extend from the junction at the center to the frame side bars—then forward within the sidebars (forming a rigid, box-like section), to the front cross-member, to which they are attached.

The point of greatest stress in an X-member is at the center. In the Cadillac frame, the front and rear members are assembled back to back thus forming a section of double



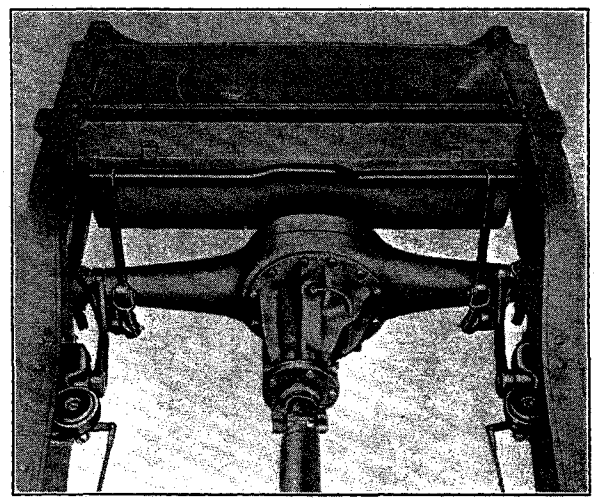


flange width. This construction is then further reinforced with heavy plates at top and bottom.

In addition—just behind the rear axle and extending across the frame—is a ride stabilizer.

Whenever the car has a tendency to roll it is opposed by the torsional resistance of the stabilizer cross shaft, which increases stability and adds a feeling of greater security, especially when making turns.

With the new frame design Cadillac engineers found that they could get the best results from the Gliding Ride by using a short sturdy tubular shaft with two universal joints. This was made possible by using an extension shaft between the transmission and the front end of the drive shaft.



(1) Cadillac Now Offers an Entirely New Standard of Riding Comfort—*Continued*

The Advantages of Independent Front Wheel Suspension

There are many important advantages derived from Cadillac's Independent Front Wheel Suspension:

1. An entirely new standard of riding comfort.

From now on, Cadillac's back-seat passengers will enjoy the comfort of a front seat ride and the front seat passengers will also have an unbelievably improved degree of riding comfort.

In addition the 1934 Cadillac cars are equipped with double acting shock absorbers front and rear, controlled from the driver's seat with the same system of full range ride regulation introduced by Cadillac in 1932.

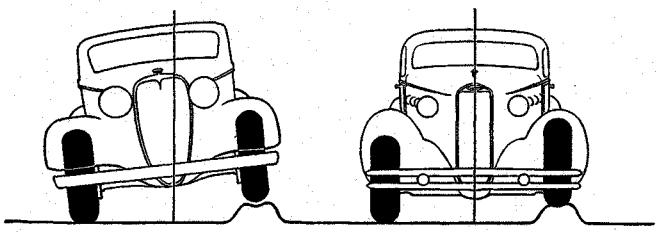
Supplementing this manual control the rear shock absorbers are also fitted with inertia control which acts to restrain the rebound of the car independently of the manual control.

2. Better Roadability.
The independently suspended front wheels, and the stabilizer cross shaft all play important parts in contributing to better roadability of the car.

3. Improved Steering.
In spite of the greatly softened front spring suspension the accuracy of steering in the car, particularly at high speed, is much greater than can possibly be obtained with a conventional axle.

4. Increased Safety.
The independently suspended front wheels have decreased the dangers resulting from tire blow-outs at high speed.

Out of all this Cadillac research work on improved riding comfort, an entirely new principle of chassis design has been adopted, and in the enjoyment of the delightful ease of these new cars there will be noticed three distinct improvements in the quality of riding motion.

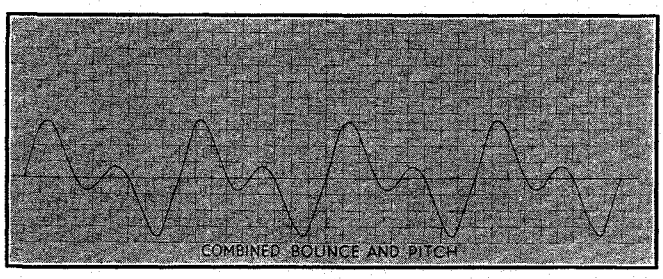


1. Passengers will note in striking a severe bump they will be lifted much more gently.

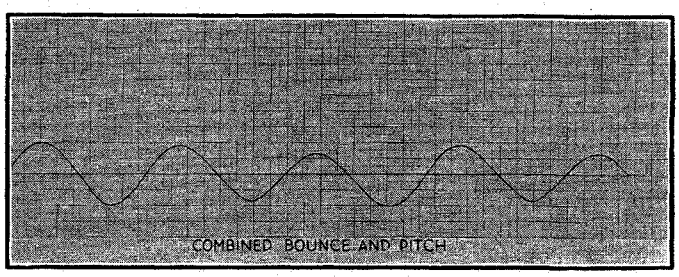


2. The motion will be vertical instead of the forward pitching and neck cracking motion previously experienced in coventional type cars.

OLD WAY



NEW WAY



3. The movement will be slight at the beginning and quickly smoothed out and at no time result in the usual rear seat "Interference Kicks" which have always been present.

Cadillac's *New* Standard *of* Riding Comfort

Must be Demonstrated to be Realized

LUXURIOUS ease and riding comfort are probably the strongest and most forceful buying appeals to any car purchaser and especially with purchasers of fine cars. Cadillac now offers a new standard of riding comfort that cannot be remotely approached by any competitive car and one that changes all previously accepted standards and sets Cadillac apart as an entirely different kind of car.



This new Cadillac selling feature is one of great strategic importance to every Cadillac Distributor, Dealer and Salesman.

It is a revolutionary new improvement and one that will quickly appeal to both men and women alike and should be capitalized to the fullest possible benefit by lots of demonstrating *while your competitors are not in a position to offer anything to favorably compare with it.*

Demonstrations Will Be Easy To Obtain

Thousands of prospective new car buyers and many others who may not now be in the market for a new car, will willingly accept your offer to demonstrate this new feature.

It Will Help Reduce Selling Resistance

This new *voluntary interest* on the part of the buying public not only reduces selling effort for the Cadillac salesman, but increases the selling resistance for competitive salesmen. It is a long time since anything has been done to so radically improve the demonstrating features in automobiles and it should, therefore, be aggressively followed up while it is an exclusive selling feature of Cadillac in the fine car field.

Demonstration Will Make Prospects Dissatisfied With Present Car

The exclusive selling advantage of this new standard of riding comfort in Cadillac is obvious. Demonstration will quickly prove to any car owner the great desirability of having this new riding comfort and help to increase his dissatisfaction with the old car.

Competitive Cars Cannot Be Considered As Modern

Description and explanation of this new feature are essential, of course. But a strong campaign of demonstrations is the only way to quickly prove to prospects *that other 1934 competitive cars which do not have what Cadillac offers cannot be considered as advanced or as modern motor cars.*

MAKE THE MOST OF YOUR OPPORTUNITY AND DEMONSTRATE

(2) Greater Ease of Control

(a) IMPROVED STEERING

Steering control in the modern motor car must be designed to turn the car at low speeds easily and quickly in confined spaces such as parking and dense traffic, and at high speeds it must have micrometer accuracy for quick and safe handling.

The new type of sturdy worm and double roller steering gear gives an improvement of 50% higher efficiency with greater ease of car control.

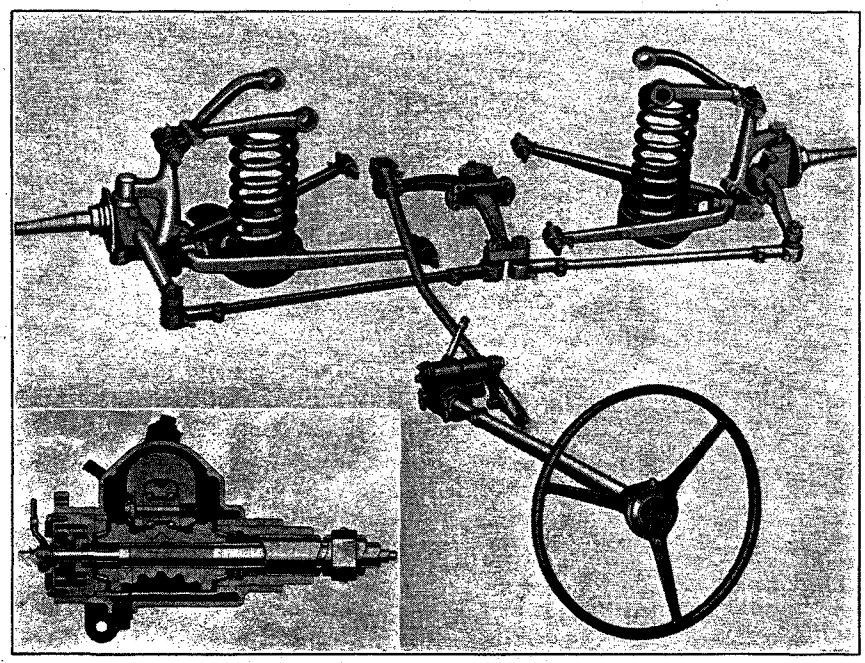
The motion of the conventional axle connected to the frame by flexible springs is indeterminate because the axle rolls forward under braking load causing a tendency to "wander" or pull from side to side, and when striking a bump the conventional front axle never moves in quite the correct curve to give exactly correct steering geometry thus causing steering wheel whip.

In the new Cadillac such objectionable action is avoided and the geometrical relationship of the various parts of the steering system is now accurately controlled. In the design of the new front spring suspension each front wheel is directly connected to the frame by rigid members that accurately control the motion under all circumstances.

The upper forked arm is shorter than the lower by just the right amount to maintain a constant tread regardless of spring deflection thus avoiding sidewise scrubbing of the tire upon the road surface if upper and lower arms were of equal length.

The two steering cross rods are of the same length and parallel to the lower forked arms which avoids errors in steering geometry.

The steering ratio has been changed on the V-8 from 18.6 to 20.6, V-12 from 18.6 to 20.9 which reduces the physical effort necessary to steer the car. On V-16 the ratio is changed from 22.5 to 20.9 due to the more efficient operation of the new worm and double roller type of steering gear.



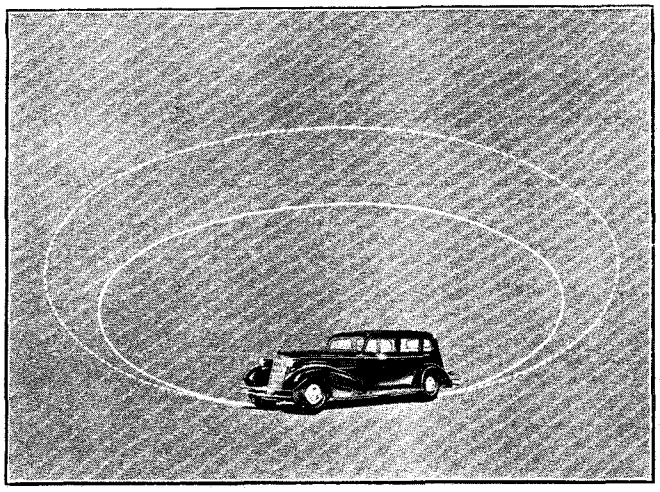
Picture of Steering Gear Complete

(2) Greater Ease of Control—*Continued*

(a) IMPROVED STEERING

The turning radius has also been materially reduced due to the narrower frame, making it possible to turn the car in a much smaller circle and park with greater ease in a shorter space.

This improvement in car control will be greatly appreciated by every driver and especially women drivers because it makes the handling of the heavier and longer wheelbase cars as easy as the much smaller and lighter weight cars.



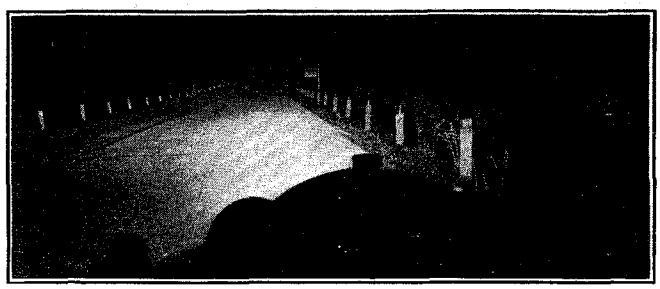
Turning Diameter

	RIGHT		*LEFT*	
	C Series	*D Series*	*C Series*	*D Series*
V-8	(134) 44′	(128) 42′	(134) 46′	(128) 42′
		(136) 44′		(136) 44′
	(140) 45′	(146) 44½′		(146) 44½′
V-12	(134) 44′		(134) 46′	
	(149) 45′	(146) 44½′	(140) 49′	(146) 44½′
V-16	(143) 47′		(143) 51′	
	(149) 48′	(154) 47′	(149) 54′	(154) 47′

(b) IMPROVED LIGHTING

The new Cadillac 3-beam "Multi-beam" lighting system provides additional safety and convenience in night driving.

More light is now thrown on the road. Three kinds of light beams are provided, one each for City and Country Driving and Country Passing. Selection of the City and Country driving beam is controlled by a switch on the steering wheel. A foot dimmer switch to the left of the clutch pedal controls the Country Passing beam when the Country driving beam is in use.



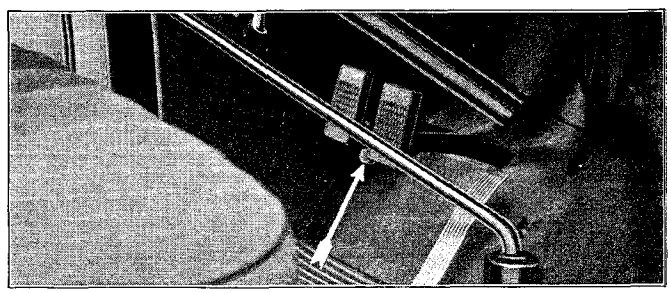
Country Driving



City Driving



Country Passing



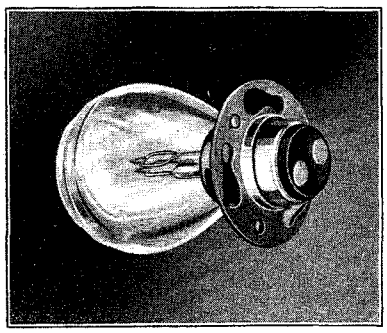
Foot Dimmer Switch

(2) Greater Ease of Control—*Continued*

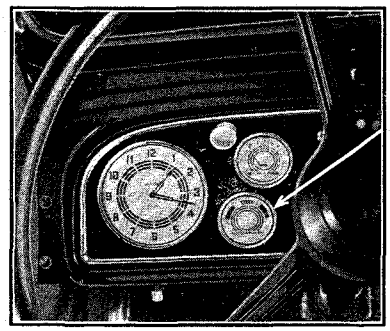
(b) IMPROVED LIGHTING

The visible headlamp beam indicator dial on the instrument panel shows which of the three light beams is being used. This novel feature overcomes the uncertainty and objectionable necessity of operating the foot switch to tell whether City or Country Driving or Country Passing beam is being used, as is necessary in most cars having a foot control switch.

Pre-focused two-filament lamp bulbs are now used instead of the three filament fixed focus type and the new system is legal in all states.



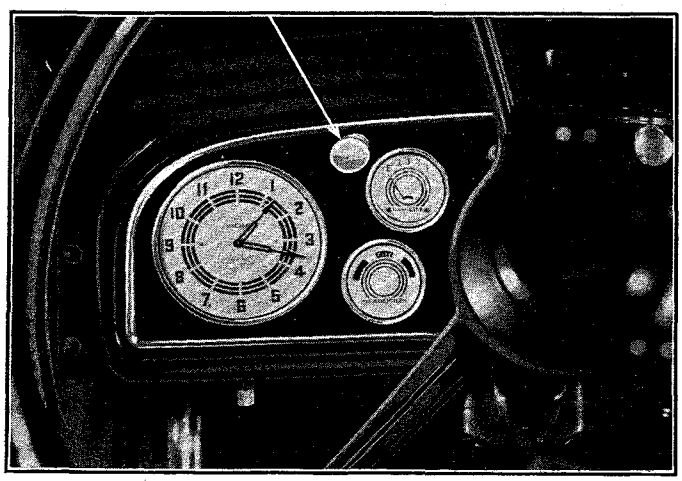
2-Filament Pre-Focused Bulb



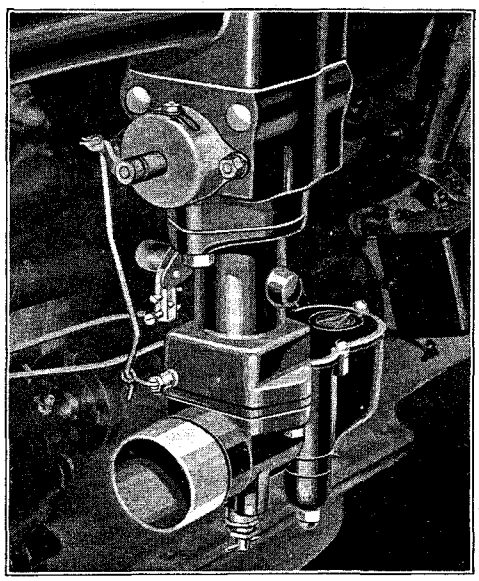
Headlamp Beam Indicator

(c) EASIER STARTING

The location of the starter button has been changed from the foot type on the floor board to the push button type on the instrument panel to make it easier and more convenient to operate. The two features of the double reduction gears and positive pre-engagement of the starter gear with the flywheel are still retained.



Push Button Type Starter



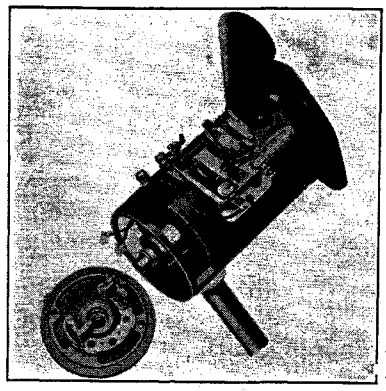
Semi-Automatic Choke

A semi-automatic choke has been added that assists in producing quicker warming up period of the engine without the continued use of the hand operated choke button and overcomes the difficulties of quick acceleration and practically discontinues the need of using the hand choke except at the time of starting.

(2) Greater Ease of Control—*Continued*

(d) THE NEW CURRENT CONTROLLED GENERATOR

In the new current controlled generator the charging rate does not fall off at higher speeds as was the case in the previous type of generator. The charging rate to the battery is now automatically regulated to keep the input to the battery in proportion to the lighting load so that proper battery strength is always available for required starting energy. This new feature will be particularly welcomed by car owners with radios and other electrically operated accessories.



Current Controlled Generator

(e) IMPROVED RIDE CONTROL

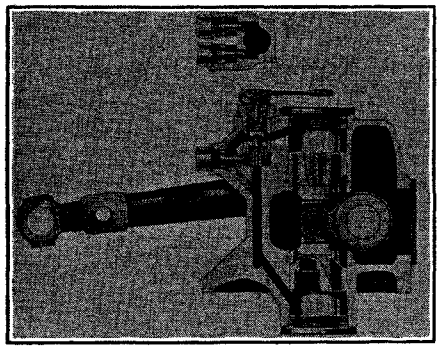
In the 1934 Cadillac there is introduced a new combination of manual and automatic ride control of rear shock absorbers. The action of the one is entirely independent of the other so that wherever the manual adjustment may be set, the passengers are also protected by the new type inertia weight control of rear shock absorbers, which snubs the rear spring movements on the long road waves that exist in even the best concrete roads.

The front shock absorbers are continued with manual control only. The inertia type automatic control shock absorber is not used because its action through being effectively set would interfere with the smooth riding that has been developed with the new type of independent front spring suspension.

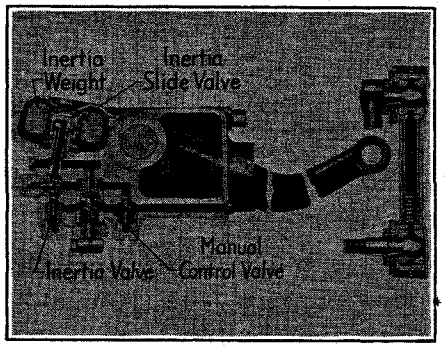
(1) *Manual and inertia controlled rear shock absorbers*

Cadillac has spent a lot of time on research with so-called automatic regulation of shock absorber action but has not yet found anything to give the desired results that are possible with ride regulation by manual adjustment of the actual pressure springs within the shock absorber.

The owner has got to have the power of adjusting his control of the shock absorbers to suit the road conditions and his method of driving.



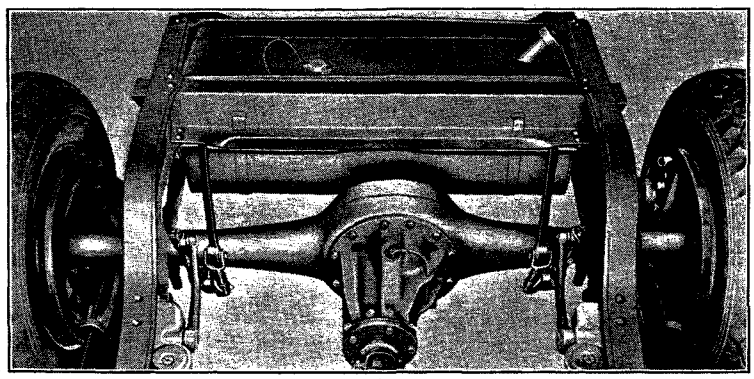
Front Shock Absorber (Manual)



Inertia Type (Manual & Automatic) Rear Shock Absorber

(2) *Ride Stabilizer*

A new ride stabilizer has been added to eliminate body roll or side sway. It is a cross-rod torsion spring mounted at the front of the rear crossmember of the frame, that increases the stiffness of the suspension and prevents car roll when turning corners or rounding curves at high speed.



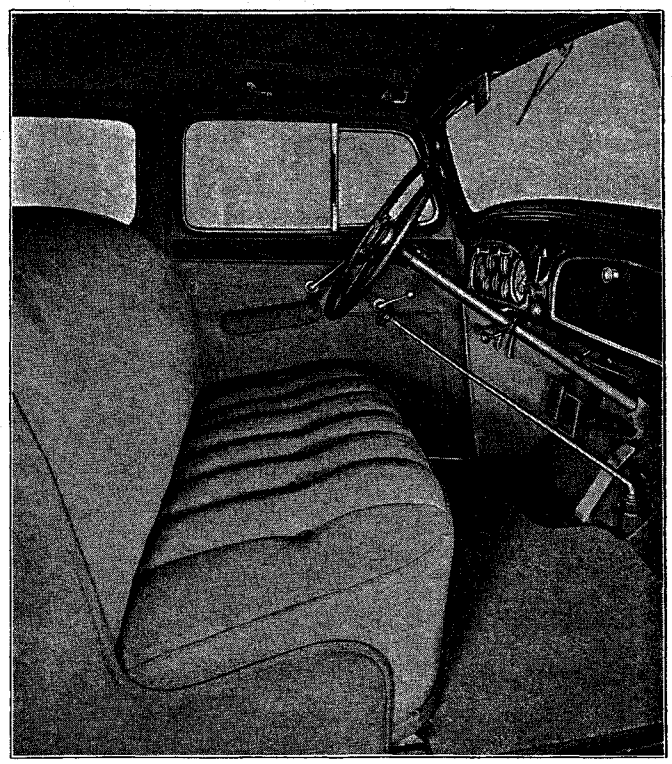
Ride Stabilizer

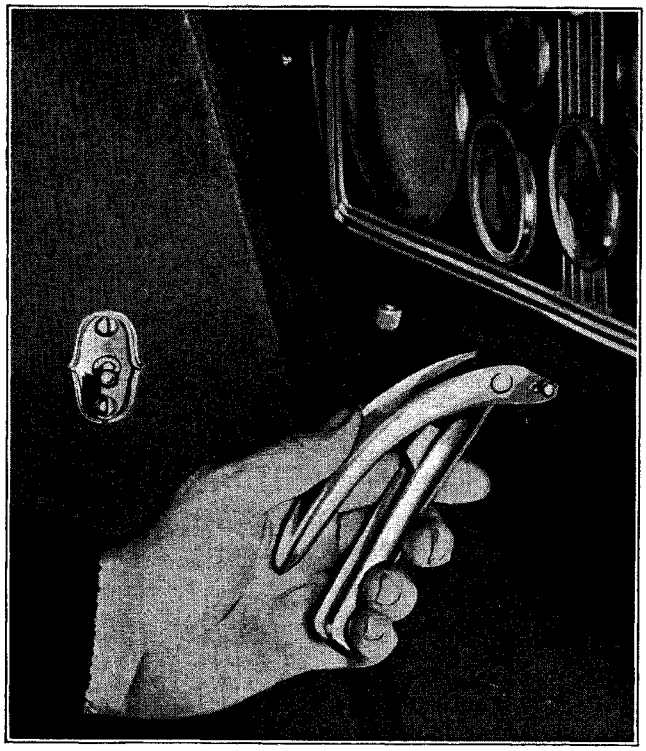
(2) Greater Ease of Control—*Continued*

(f) MORE ROOM IN FRONT COMPARTMENT

Two important changes have been made in the front compartment that will be appreciated by the driver and front seat passengers.

(1) The shifting gear lever has been moved forward from the center floor location and located in the toe-board so as to give more foot room in the front compartment. The location of the shift handle, however, remains in the same convenient position for the driver.





(2) The hand brake has been changed from the vertical pull type lever to an inverted lever and is connected by cables to the braking system. Its change of location from the center of the floor board to the instrument panel at the left of the steering column not only makes it easier to reach because it is more conveniently located, but its removal from the floorboard along with the gear shift lever gives additional legroom in the front compartment and provides comfortable seating accommodation for three people in the front seat.

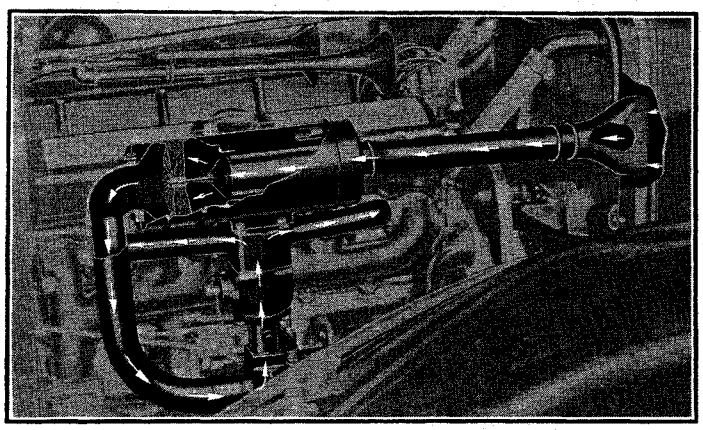
(3) New Improved Performance

Cadillac introduced the V-type engine in 1914 and for 19 years has constantly improved and refined it. This policy of continuous refinement and concentrated experience is again evidenced by the improvements that are offered in the engines of the new 1934 Cadillacs.

In presenting the new 1934 cars to prospective buyers, every salesman should stress the increased power performance and greater economy of operation which they offer, and be able to explain the changes that have been made which are responsible in accomplishing this result.

(a) INCREASED ENGINE POWER

Power in a gasoline engine is derived from the air and gasoline mixture drawn into the combustion chamber through the carburetor. A large engine delivers more power than a small one because it consumes more air. The fact that racing and aviation engines develop more power is largely due to the principle used of super-charging, which pumps a greater air mixture into the cylinders under pressure. Warm air is expanded and weighs less per cubic foot than cold air. By using cold air taken from the front of the car rather than warm air which has been heated by the radiator and engine, the air is heavier and, therefore, delivers more power.



New Cold Air Intake to Carburetor

Comparison of Warm and Cold Air Temperature

	WITH WARM AIR INTAKE	WITH COLD AIR INTAKE
Outside Temperature 50° Temperature at Carburetor Intake....	150°	60°

NOTE—Air Temperature at Carburetor Intake almost 100 degrees cooler than under the hood.

In the new 1934 Cadillac cars the engines deliver more power because of the novel arrangement of the carburetor air intake. Instead of taking the warm air from under the hood in the usual manner, cool air is now taken from behind the radiator grille, through a passage between the radiator core and casing into the carburetor through the air intake cleaner and silencer.

In contrast with the warm air temperature under the hood of 150°-160° when outside temperature is 50°, the temperature of the cold air intake at the carburetor is about 60° or practically 100° cooler than the temperature under the hood.

This cooler air permits a greater charge of the explosive mixture and results in greatly improved power and engine performance.

Changes made in the V-8, V-12 and V-16 engines step up the power development in each which will give each car everything that can be desired in acceleration, hill performance and sustained top speed ability.

	V-8	V-12	V-16
Increased Horsepower	115 to 130	135 to 150	165 to 185
Increased Top Speed	5 m.p.h.	5 m.p.h.	6 m.p.h.
Increased Acceleration and Hill Performance	8%	10%	12%

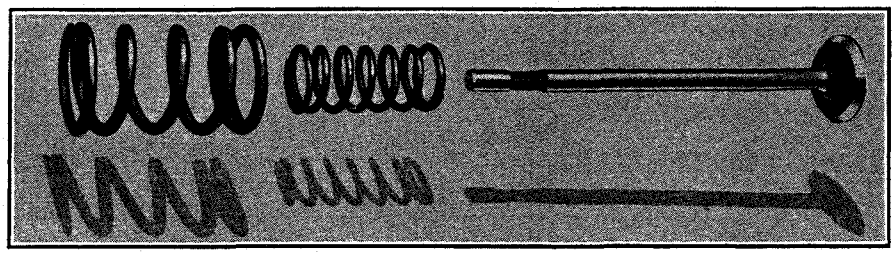
(3) New Improved Performance—*Continued*

(b) INCREASED COMPRESSION

The compression ratio on V-8, V-12 and V-16 engines has been increased which also gives a further increase in power due to the increased efficiency with which the air mixture is handled. The ratio has been increased to 6.25 to 1 on V-8 and to 6.00 to 1 on V-12 and V-16 engines.

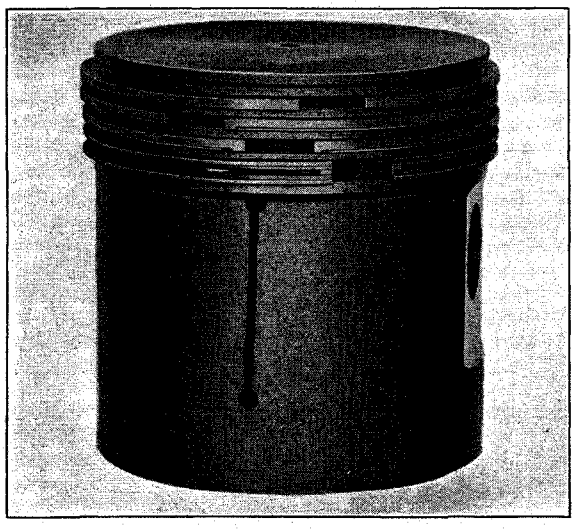
(c) DUAL VALVE SPRINGS

The valve springs of the Cadillac V-8 engine are now the dual type (two for each valve) the same as heretofore used on V-12 and V-16 engines. The use of dual valve springs not only prevents valve clatter at high speeds but also results in increased power.



(d) ANODIZED ALLOY PISTONS

For years Cadillac has conducted intensive research on piston material. Exhaustive tests have been run on pistons of various weights and metal alloys including aluminum and magnesium to find a piston material that would give excellent wearing quality as well as quiet operation.



New Anodized Alloy Piston

The new pistons used in the 1934 Cadillac are made of a tough and long-wearing alloy metal that has 20% less heat expansion than aluminum and will work in the cast iron cylinders with perfect results.

In the production of these pistons they are given a final treatment of alumilite. This is a special process that consists of the electrolytic treatment of the aluminum piston as an anode in the chemical bath, the chief constituent of which is sulphuric acid. With the passage of the current, the oxygen produced at the anode by electrolysis reacts with the aluminum forming a coating on the piston of aluminum oxide. Aluminum oxide is hard. It is the chief constituent of gems, such as the sapphire, which approaches the diamond in hardness.

Due to the way this aluminum oxide coating is deposited on the aluminum piston, it is hardest at

(3) New Improved Performance—*Continued*

(d) ANODIZED ALLOY PISTONS

the point next to the metal. In comparison with the hardness of other metals, Bierbaum micro character scratch hardness tests show the following comparison values:

Aluminum alloy	100-150
Razor steel	1550
Chromium (hardest form)	3100
Alumilite coating (used on Cadillac 1934 Pistons)	
Intermediate surface	3000
Base	4000

It will be quite evident, therefore, that this coating provides the necessary hardness to the outside wearing face of the aluminum-alloy piston to eliminate scoring and scuffing, which has been proved by exhaustive tests under the most severe conditions.

There is no danger of the separation of the coating on the piston, which is uniform on all surfaces, such as the ring groove and the piston pin bore, because it is the result of a chemical change of the piston metal itself. In contrast to the building up process of ordinary plating, it is the growth of the aluminum oxide coating as it progresses inwardly through the aluminum during which the piston metal itself is subjected to a complete chemical change.

The alumilited pistons are much lighter in weight than the molybdenum cast iron pistons formerly used. The new V-8 piston weighs 15.008 ounces as compared to 23.824 ounces in the old piston. This lighter weight increases the smoothness of engine operation and reduces excessive loads on bearings and wrist pins at the higher engine speeds now necessary. The lighter weight of the reciprocating parts greatly improves acceleration and all around engine performance.

The New Cadillac pistons do not use the invar strut.

Instead they have a T-slot in the skirt to allow for expansion and can therefore be closely fitted for quietness of operation.

Another special feature of these pistons is the way they are ground. In order to provide for expansion they are carefully ground elliptically six ten-thousandths (6/10,000) of an inch from a true circle so that when running in the engine, expansion from heat will make them perfectly round.

Because of the greater heat dissipating qualities of the alumilite plated aluminum alloy, pistons run cooler, thus permitting the use of a higher compression ratio and greater spark advance which give increased power and economy.

(4) Greater Economy

(a) BETTER FUEL ECONOMY

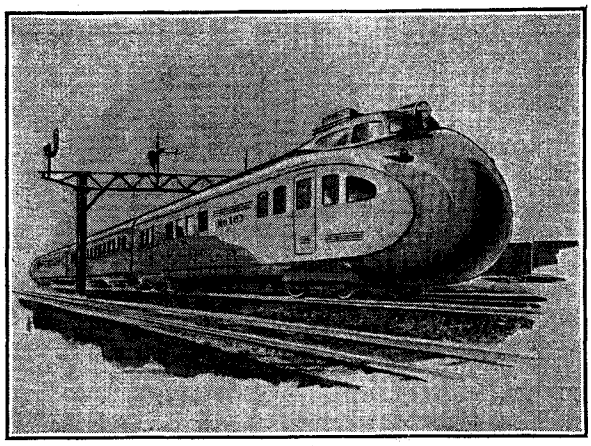
Due to the changes that have been made in the 1934 engines there is a marked improvement in fuel economy. These changes result from increased compression with high spark advance, permitted by (a) aluminum pistons, (b) cold air intake to carburetor (c) new design of combustion chamber.

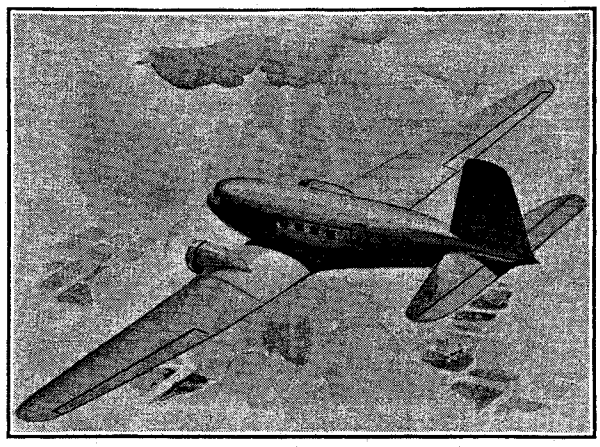
Generally speaking, increased power performance is usually accomplished by a corresponding reduction in fuel economy but it is important to emphasize to prospects that the 1934 Cadillac engines now operate with greater performance and an improvement in fuel economy of an average from ½ to 1½ miles per gallon.

(b) REDUCED OIL CONSUMPTION

Pistons now fitted with three compression and one oil ring above the piston pin and even more accurate workmanship in the making of the rings and refinements in the process of honing the cylinder bores have contributed to a worthwhile improvement in oil consumption.

(5) New Beauty and Styling





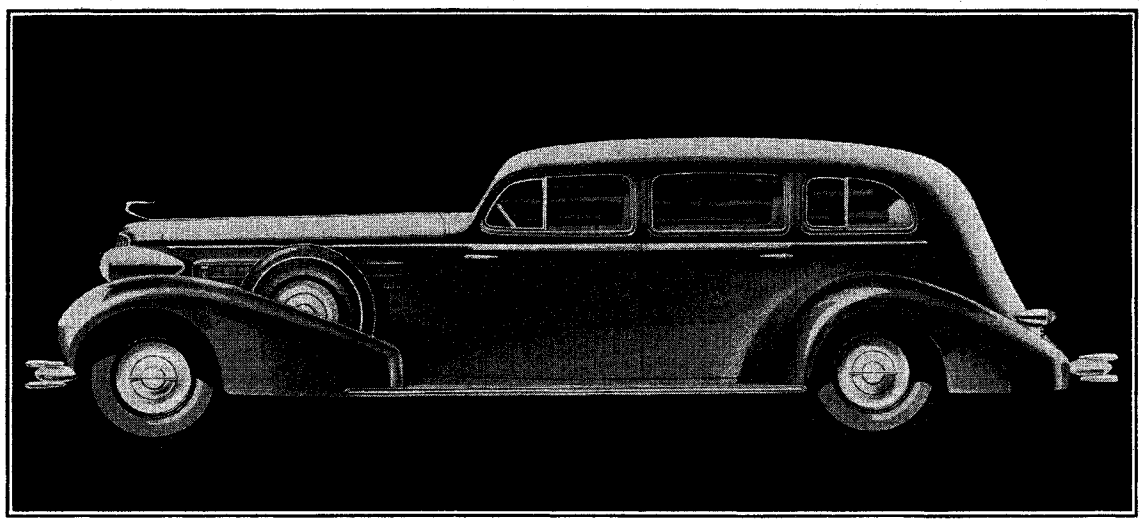
THE NEW 1934 CADILLACS set a new standard of advanced and modern body styling beauty in the interpretation of aerodynamics and streamlining.

The graceful flowing lines of the new bodies and fenders, that start with the sloping radiator and finish at the sloping sweep-tail back of the body, represent a perfect blending of harmonious and well-balanced design.

In these new Cadillac bodies every line and curve is fashioned to lessen wind resistance and air noise and increase the smooth passage of air currents. This new principle in automobile body design approximates the new fashioning and symmetry in other forms of fast transportation like the latest Douglas transport planes and the new air-streamed trans-Continental trains that are built for greater speed, greater safety, greater operating economy and finer riding comfort.

Cadillac body styling is advanced, modern and beautiful, but there has been no attempt to make it gaudy, extreme or freakish.

The new 1934 Cadillac bodies again create a new mode of beauty and styling for fine cars that puts them years in advance of competitive cars still offered with old-fashioned body styling which cannot be considered as advanced or as modern.



(5) New Beauty and Styling—*Continued*

(a) APPEARANCE



Cadillac V-8 Fisher Body

Aerodynamic Body Styling

Beaver Tail Rear Panels

Steeply Sloped Windshields

Distinctively Smart Radiators

Long Hoods with Shutter Type Louvers

Side Hood Emblems

New Shaped Air Foil Fenders

Double Coil Spring Bar Bumpers

Bullet Type Headlamps

New Style Utility Parking Lamps

Air Stream Design Rear Lamps

Running Boards

Air Foil Rear Fenders

Gas Tank Filler Cap

(5) New Beauty and Styling—*Continued*

(a) APPEARANCE

1. BODIES

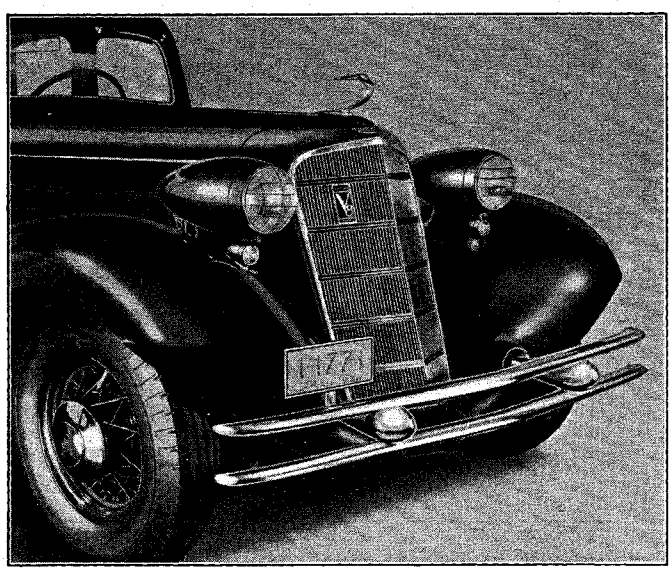
The new bodies are aerodynamic in styling and have more sloping windshields. The beaver-tail rear-decks completely cover the chassis and reduce wind resistance caused by vacuum when driving at high speeds.

Bodies are lower on the chassis without sacrifice of interior headroom, and are not only easier to get into but are safer because the center of gravity of the entire car has been lowered closer to the ground.

Windshields on the special Fleetwood Custom bodies are V-type instead of straight. Straight front windshields are used on the Fisher Bodies and regular Fleetwood Bodies.

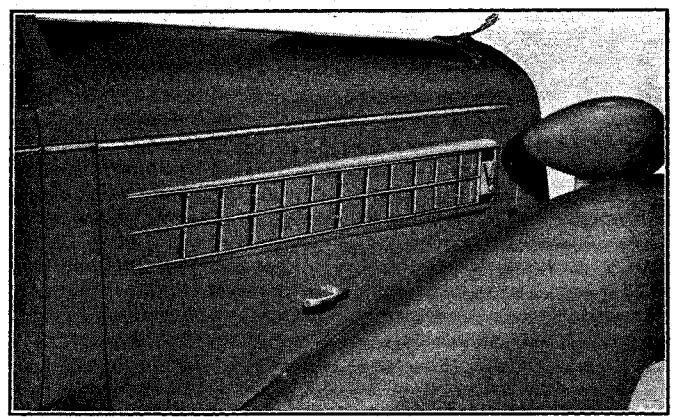
2. RADIATORS

The new V shaped radiators, with new style grid, add a new individual exclusiveness to Cadillac. They are sloped slightly backwards at the top and have new designed ornaments that are distinctive and attractive in appearance. The filler cap for the radiator is under the hood in the top radiator tank.



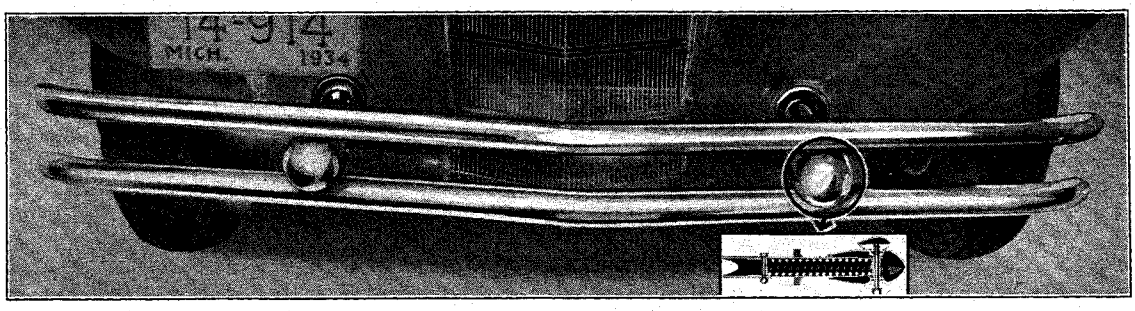
3. HOODS

The speedstream styling from the radiator to the body is emphasized by the new long hoods that extend nearly to the windshield. The new style of hood louvers have the shutter type openings instead of doors. A novel bit of attractiveness is the new style emblems on the side of the hood at the front. They are both individual and distinctive, and add one more Cadillac touch in appearance that is novel and different.



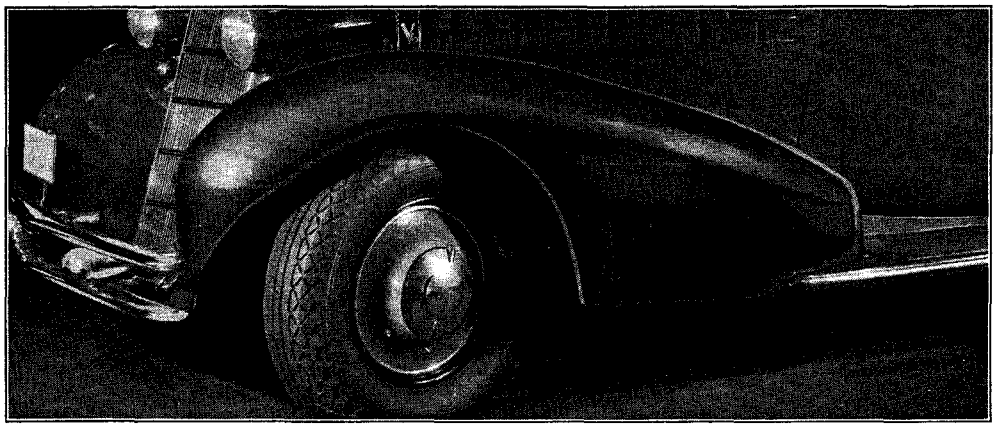
4. BUMPERS

The new Cadillac front and rear bumpers have been restyled. They are of the double bar type streamlined and have concealed coil springs in the brackets to cushion bumps. A special feature of these new bumpers is their shape which is designed to deflect flying gravel and stones.



(5) New Beauty and Styling—*Continued*

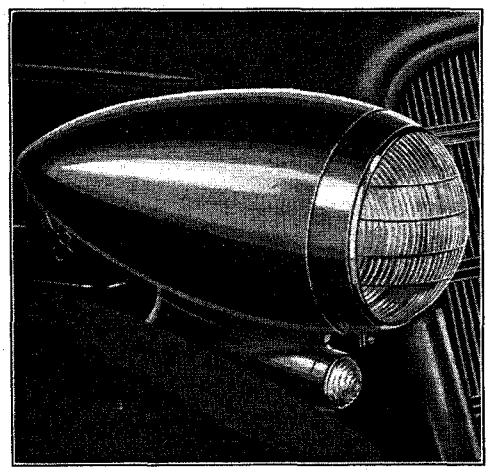
(a) APPEARANCE

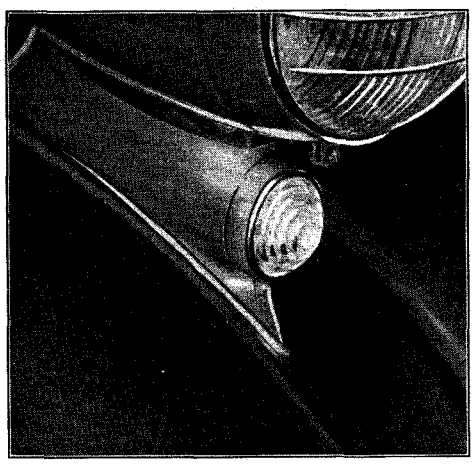


5. FRONT FENDERS

The new air foil type fenders have streamlined fronts that are brought low over the front and well down over the tires so as to cover the chassis running gear.

The new fenders eliminate the splash shield and have a higher hood sill that moulds into the radiator casing.





6. HEADLAMPS

The new bullet shaped headlamps are especially designed to harmonize with the windstream styling of the front end of the car. The lamps are finished in colored lacquer to match the finish of the hood and radiator.

7. THE NEW PARKING LAMPS

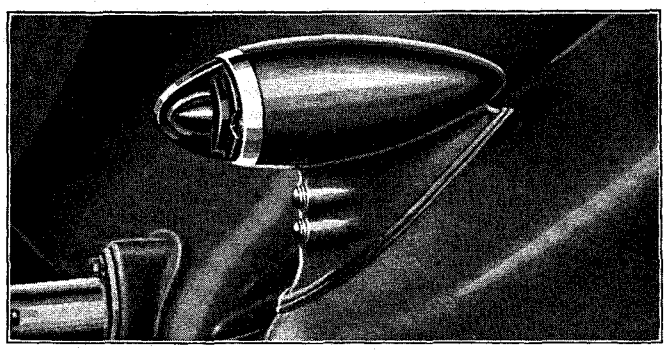
Are also streamlined in design. On the V-8 and V-12 they are carried in the headlamp supports, while on the V-16 they are built into the front part of the fenders.

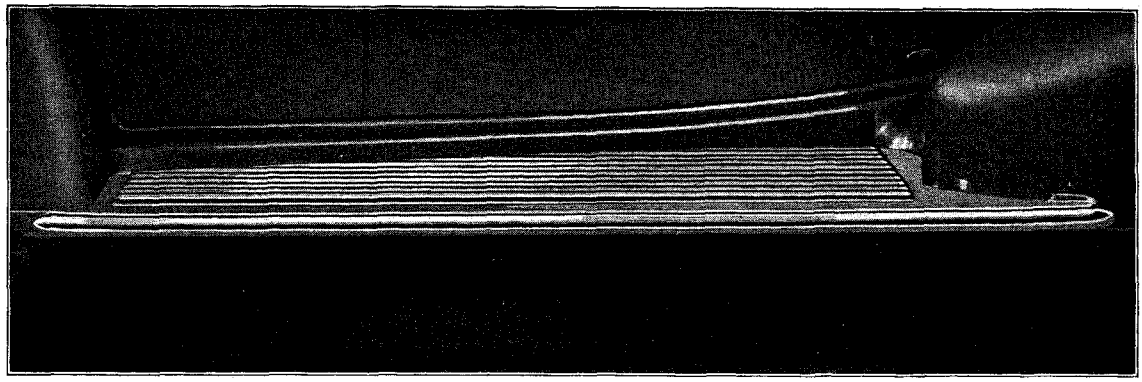
(5) New Beauty and Styling—*Continued*

(a) APPEARANCE

8. REAR FENDER LAMPS

The design of the rear fender lamps is entirely new to match the bullet-type headlamps and they are built into each rear fender to carry out the continuous flowing lines of the body. Both lamps have double reflector button lens underneath them for parking safety when rear lights are out. The rear lamp lens have an extension rib that completes the flow line and permits view of the car from the side as well as the rear. Headlamps can also be seen from the side on account of their convex shaped lens.

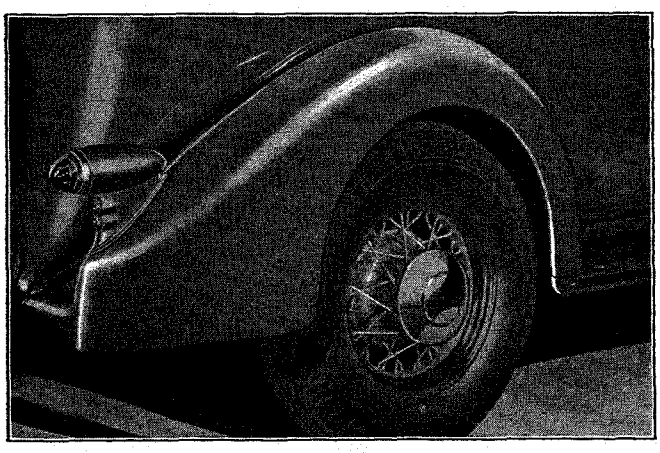




9. RUNNING BOARDS

The new styled running boards are molded on the inside to eliminate the use of the old style dust shield.

The heavy thick rubber mats are deeply grooved to increase safety from slippage. They are vulcanized to a separate metal plate and attached to the running boards. Replacement can be made without buying a complete running board.



10. REAR FENDERS

The new rear fenders are air foiled in shape with valances to protect the body from dust and dirt, and they mold into the rear of the body to carry out the flowing lines from the front to the rear of the car.

(5)—New Beauty and Styling — *Continued*

(b) CADILLAC'S 1934 BODY STYLING PROGRAM

CADILLAC'S body styling program for 1934 is the broadest and most comprehensive it has ever announced. A complete range of convertible and closed body styles is offered on each of the three lines of V-8, V-12 and V-16 chassis. With the ideal combination of advanced and distinctive body styling and greatly lowered prices it will increase the size of the Cadillac potential market and selling opportunities in every Cadillac outlet.

It is important to first understand the two separate groupings of bodies.

FISHER BODIES

The Fisher Bodies are available as standard equipment on the Cadillac V-8 chassis only. They are offered in 13 body styles in two different wheelbases. Series 10 on 128″ W.B. with 6 body styles. Series 20 on 136″ W.B. with 7 body styles. At their new lower prices they are the lowest priced and finest Cadillac cars ever offered on the Cadillac V-8 chassis.

FLEETWOOD CUSTOM BODIES

The Fleetwood Custom bodies are offered in two separate and distinct series.

(a) *Straight Front Windshield Group*

In this group there are six standard Cadillac Fleetwood body styles with *Straight Front* windshields. They have more limited options in upholstery, trim and appointments and are priced lower than the other group with V-type front windshields.

(b) *V-type Front Windshield Group*

In this group there are 14 special Fleetwood body styles with the V-type front windshields, that cover the complete range of owner and chauffeur driven cars.

This line of Special Fleetwood Custom bodies offers unlimited range of upholstery trim and finish options and is priced higher because they provide the buyer the most highly individualized and personalized transportation offered on any fine car. At their new prices these cars are the finest values in customized body styling without the usual excessive price premium for individualized body specifications charged by competition.

These two separate series comprising 20 Fleetwood Custom bodies are both available on the longer V-8 chassis 146″ W. B. and the regular V-12 146″ and V-16 154″ chassis.

The pictures on the following pages show the difference in exterior appearance that distinguishes the Fisher from the two Fleetwood Custom body groups.

NOTE—Complete detailed information on Fleetwood Custom bodies as to upholstery, trim and appointment options, is furnished in the section "Fleetwood Custom Bodies" in the Sales Kit or in the Book of Fleetwood.

(5) New Beauty and Styling—*Continued*

(b) CADILLAC'S 1934 BODY STYLING PROGRAM

Body Style Numbers

SERIES 10 CADILLAC V-8 FISHER BODIES

Body Style	*Job Number*
5-Passenger Convertible Sedan	34-721
2-Passenger Convertible Coupe	34-718
2-Passenger Coupe	34-728
5-Passenger Town Coupe	34-722
5-Passenger Town Sedan	34-702
5-Passenger Sedan	34-709

SERIES 20 CADILLAC V-8 FISHER BODIES

Body Style	*Job Number*
2-Passenger Convertible Coupe	34-668
5-Passenger Convertible Sedan	34-671
2-Passenger Coupe	34-678
5-Passenger Town Sedan	34-652
5-Passenger Sedan	34-659
7-Passenger Sedan	34-662
7-Passenger Imperial	34-663

CADILLAC FLEETWOOD BODIES (With straight front windshield)

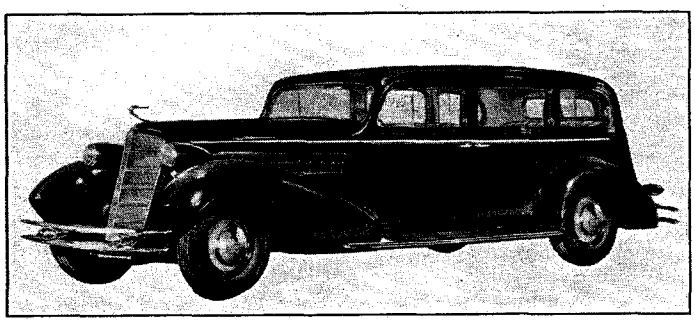
Body Style	*V-8 Style Numbers*	*V-12 Style Numbers*	*V-16 Style Numbers*
5-Passenger Town Sedan	6033-S	6133-S	6233-S
5-Passenger Sedan	6030-S	6130-S	6230-S
5-Passenger Imperial Cabriolet	6030-FL	6130-FL	6230-FL
7-Passenger Sedan	6075-S	6175-S	6275-S
7-Passenger Limousine	6075	6175	6275
7-Passenger Imperial Cabriolet	6075-FL	6175-FL	6275-FL

CADILLAC SPECIAL FLEETWOOD BODIES (With V-type front windshield)

Body Style	*V-8 Style Number*	*V-12 Style Number*	*V-16 Style Number*
2-Passenger Convertible Coupe	5635	5735	5835
5-Passenger Convertible (with division) Sedan	5680	5780	5880
5-Passenger Convertible Coupe	5685	5785	5885
2-Passenger Coupe	5676	5776	5876
5-Passenger Coupe (Aero Dynamic)	5699	5799	5899
Special 5-Passenger Town Sedan	5633-S	5733-S	5833-S
Special 5-Passenger Sedan	5630-S	5730-S	5830-S
Special 5-Passenger Imp. Cabriolet	5630-FL	5730-FL	5830-FL
Special 7-Passenger Sedan	5675-S	5775-S	5875-S
Special 7-Passenger Limousine	5675	5775	5875
Special 7-Passenger Imp. Cabriolet	5675-FL	5775-FL	5875-FL
5-Passenger Town Cabriolet	5612	5712	5812
7-Passenger Town Cabriolet	5625	5725	5825
7-Passenger Limousine Brougham	5691	5791	5891

(5) New Beauty and Styling—*Continued*

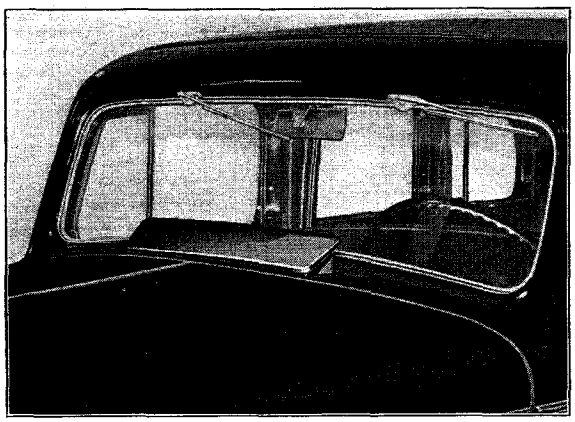
(c) Appearance Comparison of Fisher and Fleetwood Bodies



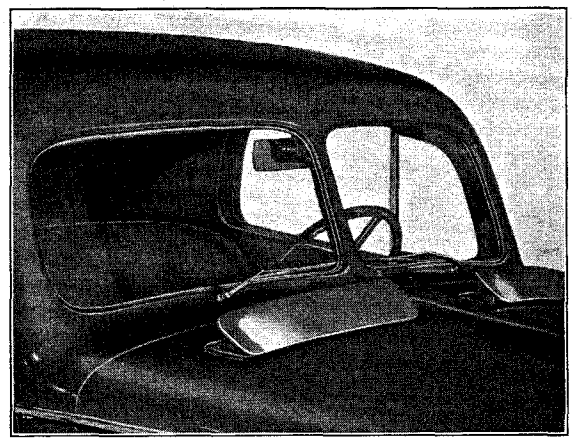
Cadillac V-8, 7-Passenger Sedan (Fisher Body)

Fisher Bodies are available only on Cadillac V-8. Series 10 on 128″ wheelbase with 6 body styles and Series 20 on 136″ wheelbase with 7 body styles.

Cadillac Fleetwood Bodies

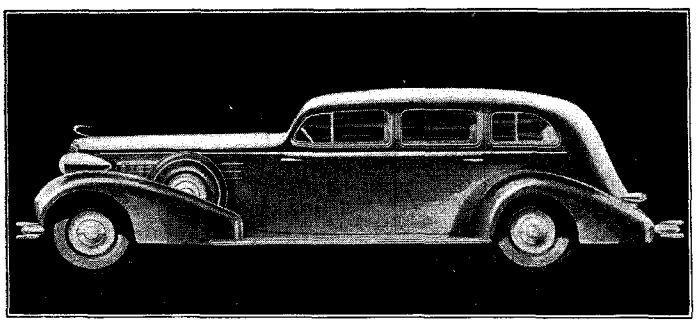


Fleetwood (Straight Front Windshield)



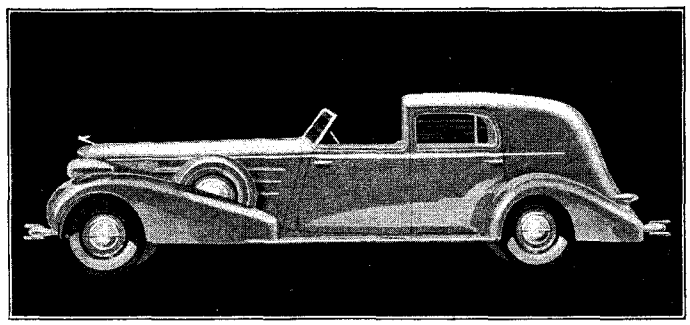
Fleetwood (V-Front Windshield)

Cadillac V-12 Fleetwood Group



The V-12 Cadillac line is available in one wheelbase 146″ long and with a choice of two groups of body styles of Fleetwood Custom Bodies. 6 Bodies with straight front windshields and 14 bodies with V-type front windshields.

Cadillac V-16 Fleetwood Group



The V-16 Cadillac line is continued as a special customized line with production limited to 400 cars for the year 1934.

It is available on one wheelbase 154″ long and with a choice of 6 Fleetwood bodies with straight front windshields and 14 bodies with V-type front windshields. Because of the greater variety of options offered in style of interior trim designs and selection of upholstery materials the V-type front windshield group offers the most highly personalized transportation of any fine car manufacturer.

(6) New 1934 Features of Interior Body Comfort

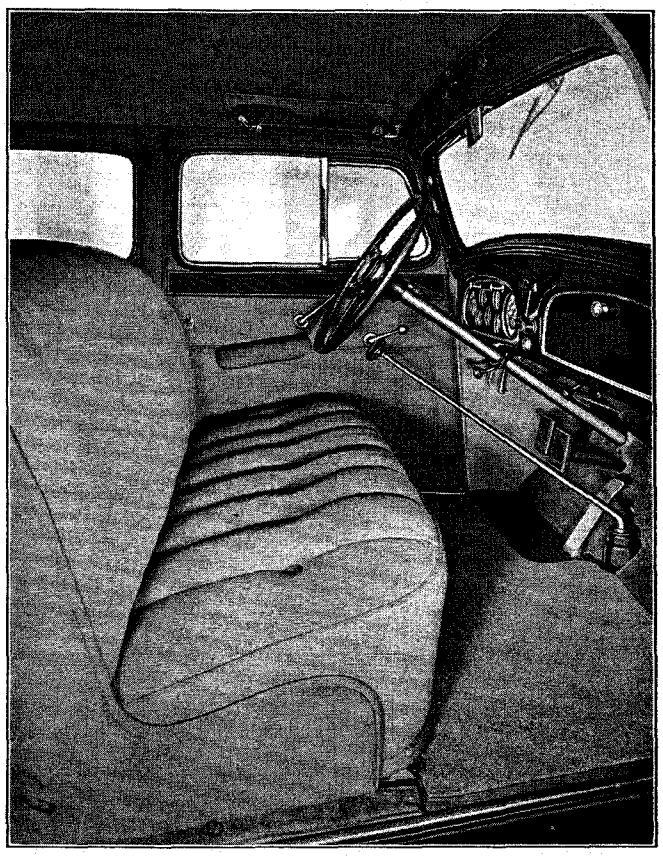
(Fisher Body)

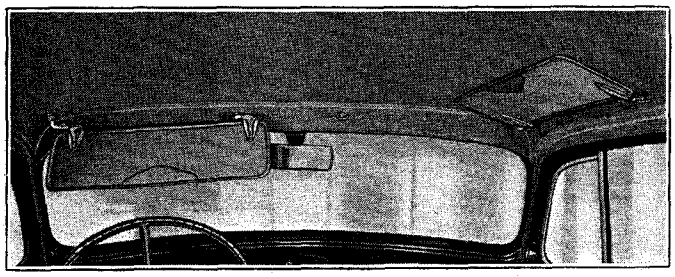
INCREASED LEGROOM

Two important changes have been made in the driver's compartment to give more legroom for front seat passengers.

(a) The shift gear lever has been moved forward from the center floor location and is now located in the toe-board.

(b) The hand brake lever has been removed from the floor board and changed from the vertical pull type lever to a straight pull type handle located on the instrument panel at the left of the steering column.





NEW TYPE VISORS

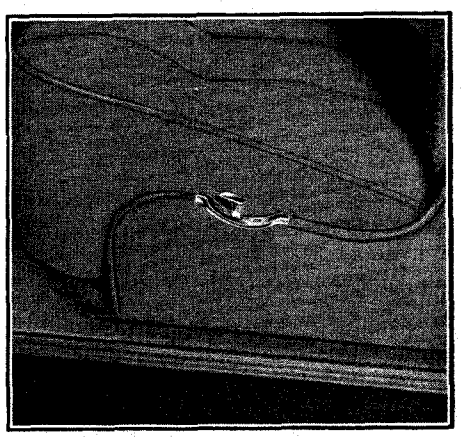
The two visors in the front compartment have been changed from the adjustable universal joint to the two position swing type making it possible for a front or side position adjustment of visors. These new type visors will greatly simplify the physical operation of adjustment.

FRONT SEAT ADJUSTMENT

The front seat adjustment mechanism has been changed to a push pull lever type which is now much more conveniently located on the left hand side of seat rail. It is considerably easier and quicker to adjust than the screw handle type formerly used. To operate, the lever is pulled up and the seat adjusted to the desired position, then the lever is pushed down to lock it and prevent the seat from moving.

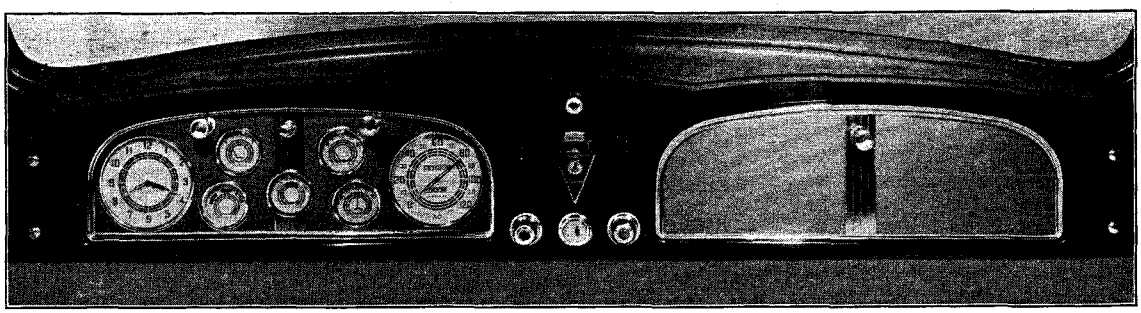
All bodies except Imperial Sedan has 4″ of seat adjustment. In the Imperial Sedan the front seats are the form fitting type and stationary.

The front seat has been redesigned as a single complete unit and is not attached to the center body pillars. The entire seat moves whenever the adjustment of position is changed.



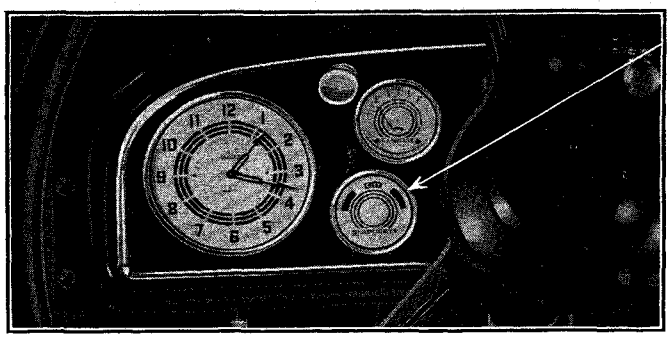
(6) New 1934 Features of Interior Body Comfort—*Continued*

(Fisher Body)



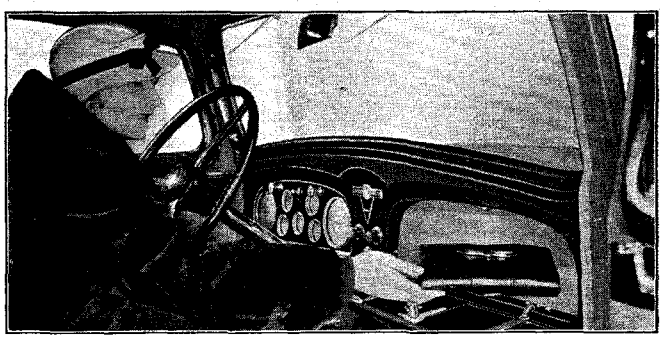
INSTRUMENT PANEL

The new instrument panel is changed in appearance with a pattern designed background and decorated with vertical chrome strips. The new instruments have different dials and pointers. The space formerly used for the center group of controls, i. e., cigar lighter, map light and switch key button has been left available for a radio control dial and the control group has been changed from the center vertical grouping and located across the bottom of the panel.



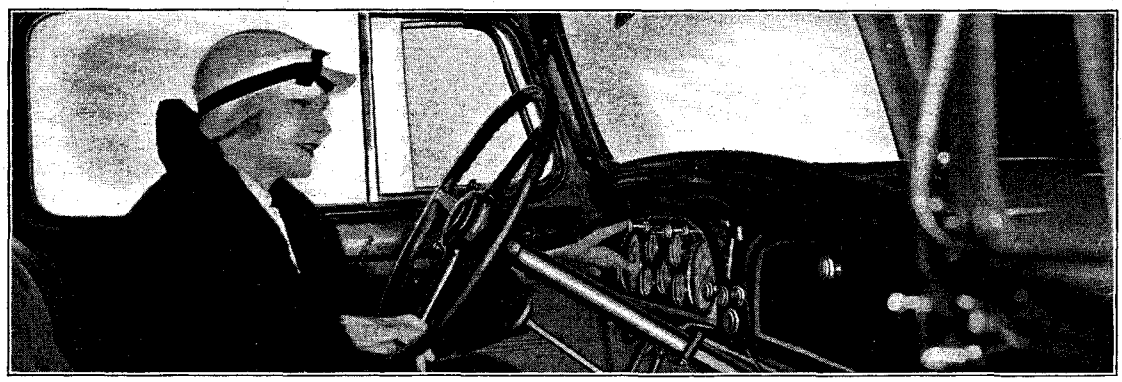
HEADLAMP BEAM INDICATOR

A new dial has been added to the instrument panel. The visible headlamp beam indicator shows which of the three light beams is being used and overcomes the uncertainty and necessity of operating the foot dimmer switch to tell which beam is being used.



PACKAGE COMPARTMENT

A new door mechanism is provided to eliminate any possible chance of rattles, and the compartment itself has been redesigned with sound-proof material instead of metal for greater quietness.



STARTER BUTTON

The starter button has been changed from the floorboard to the push button type on the instrument panel making it more convenient and easier to operate. The new solenoid starter retains the advantages of the positive pre-engagement of the starter gear with the flywheel before the starter operates.

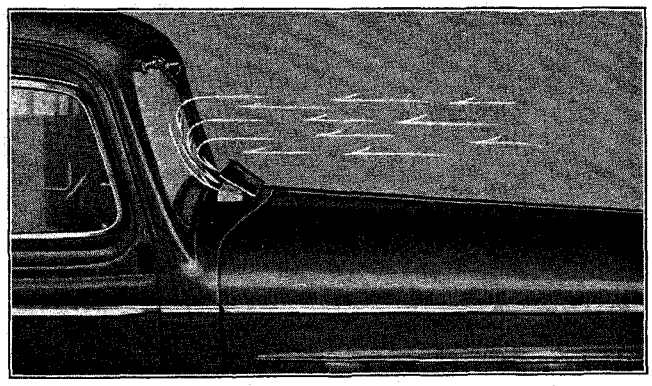
(6) New 1934 Features of Interior Body Comfort—*Continued*

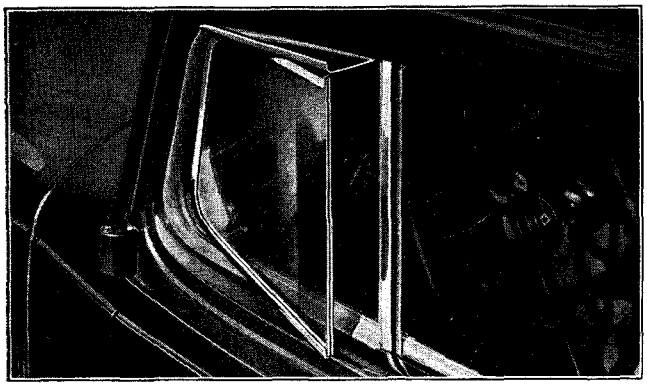
(Fisher Body)

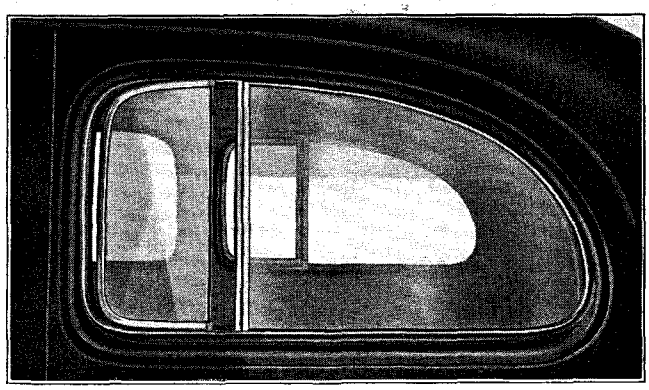
COWL VENTILATOR

A new design of cowl ventilator is used. It is located in the top of the cowl and the method of opening is reversed to give additional ventilation. The ventilator now opens towards the windshield and the force of air currents against the windshield increase the flow of air into the ventilator opening. The rain-proof cowl ventilator has been discontinued due to a rearrangement of accessory layout to provide necessary space for radio equipment when needed.

All cowl ventilators are now screened to keep out insects.







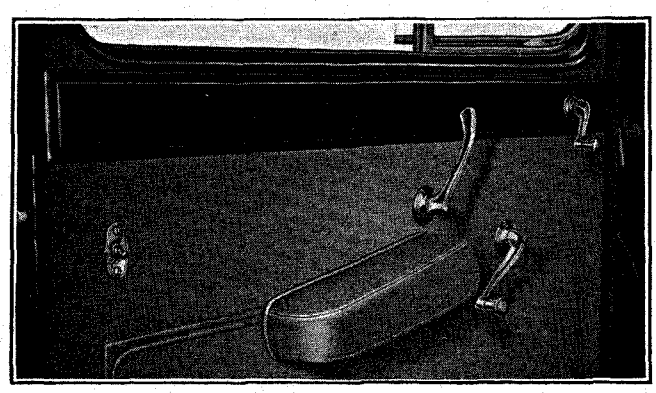
FISHER NO-DRAFT VENTILATORS

Refinements have been made in the Fisher No-Draft Ventilators with better shaped rubber seals and concealed pivot posts. These changes are for improved appearance.

A new drip shield has been added at the roof line over the front ventilators which permits the opening of ventilator windows in wet weather.

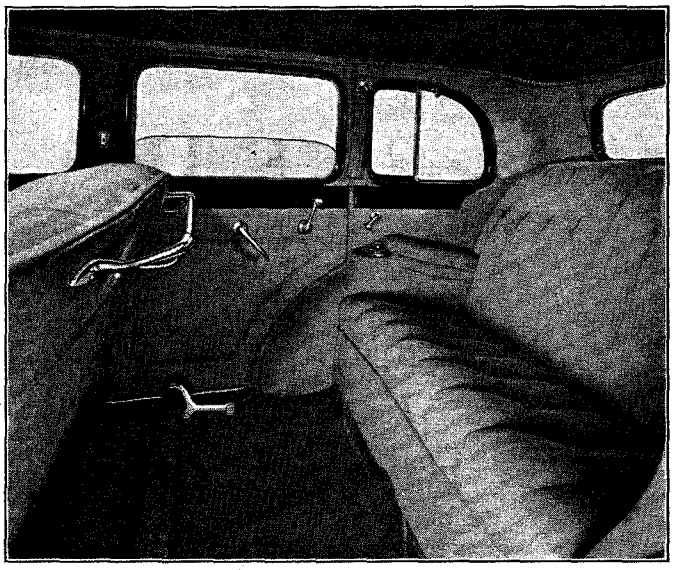
FRONT SIDE ARM REST

A new side arm rest has been placed on each door in the front compartment to provide additional comfort for front seat passenger and driver.



(6) New 1934 Features of Interior Body Comfort—*Continued*

(Fisher Body)



MORE COMFORTABLE CUSHIONS

The newly shaped cushions and seat backs have been materially improved in both design and construction to provide the most luxurious riding comfort possible. Three distinct and different improvements are incorporated in this new cushion design.

(1) A deep and thick layer of wool and cotton padding is placed over the Marshall Coil Springs to give softer tops to seat backs and cushions.

(2) The contours of seat backs and cushions have been changed. Careful attention has been given to the points requiring higher resistance and greater support for the driver and passenger's riding comfort.

(3) Changes in body manufacturing operations have been made to definitely control the angles of seat contours so as to prevent any variation in fixed standards of contour in each body style, which are designed for the best average riding comfort under all conditions.

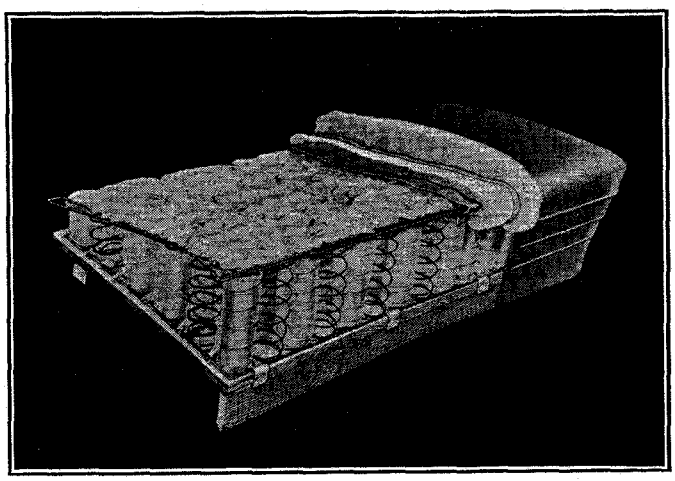
Each of these important changes have been made as a result of lengthy research development engineering in the study of greater riding comfort. Spring scale machines were used to test the variable rates of spring action at different points of the cushion and seat backs with different kinds of passengers and under different kinds of riding conditions. The results of these tests have been combined into a greatly improved standard of riding comfort in all Cadillac cars.

With the new arrangement and location of variable rate springs it gives the necessary high resistance and firmness of cushion where it is most needed, and at the same time gives a soft ride without the usual bottoming action of coil springs that are too soft and resilient.

PLEATED TRIMMING

New style of trimming in all Cadillac Fisher Bodies (excepting 7 passenger Imperial Sedan) will be pleated instead of the plain type. Pleats will be 5½" in width, and if any other style of trimming is desired it is optionally available at extra cost.

(*The 7-passenger Imperial Sedan has plain type trim with leather binding.*)



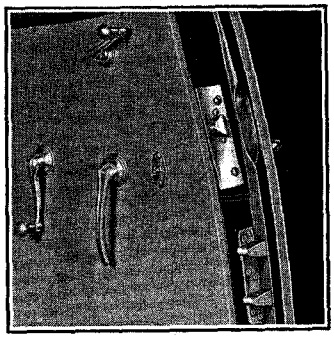
Marshall Springs in Seat Cushions

(6) New 1934 Features of Interior Body Comfort—*Continued*

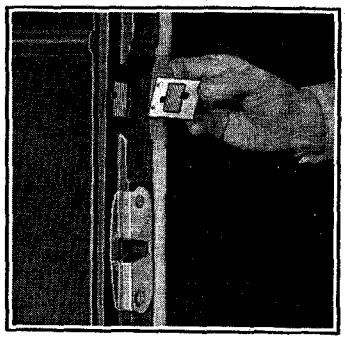
(Fisher Body)

EASIER OPERATING AND TIGHTER FITTING DOORS

DOOR BOLTS—The angle of the door bolts has been changed to reduce the pressure of the striking contact and make the opening and closing of doors easier.



Door Bolts



Striker Plates

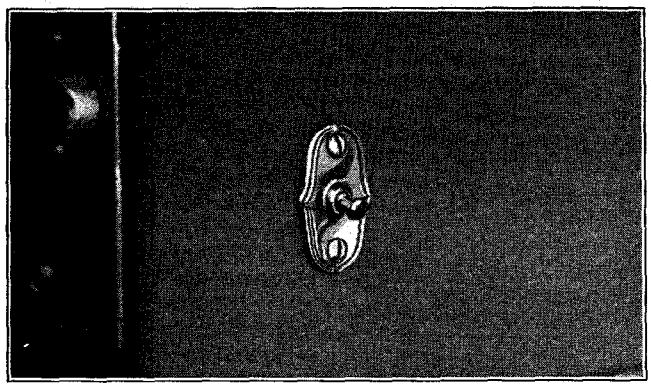
DOOR STRIKER PLATES—A new design of striker plate is used. It has a serrated or grooved surface on the back of it and provides a flexibility of adjustment position for the necessary take up adjustment to keep doors tightly fitted and prevent rattles.

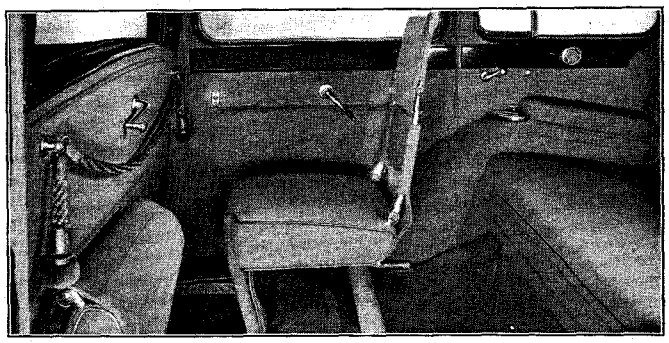
NEW TYPE INSIDE DOOR LOCKS

A trip button located on the door is now used instead of the former two position door handle.

When the trip button is set in the locking position the outside door handles turn freely and prevent damage to the door lock mechanism in case of attempted car theft by forcing the handle.

The driver cannot accidentally lock himself out. All trip locks are set from the inside after the door is closed with the exception of the front *right* hand door which is fitted with a lock and key. This door may be locked with the trip lock if desired by holding the outside door handle in the "down position" before setting the trip lock button, and then closing the door.





AUXILIARY SEATS

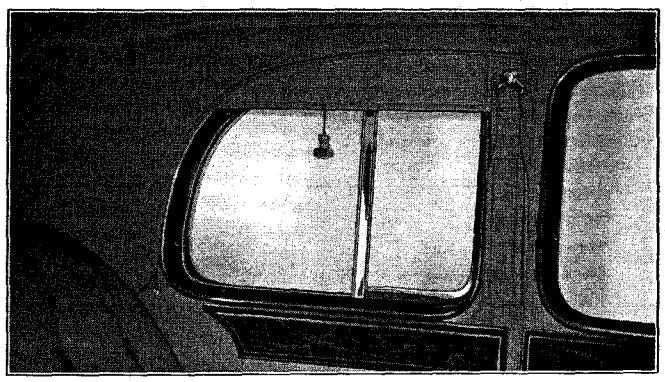
The auxiliary seats on the 7-passenger Sedan and Imperial Sedan fold into the back of the front seat and have a double back for additional support and increased passenger comfort.

ROBE RAILS

The robe rails are chrome plated all over except on 7-passenger Imperial body which has the cord type.

CLOCK

A clock is mounted in the rear of the front seat of the 7-passenger Imperial Sedan.



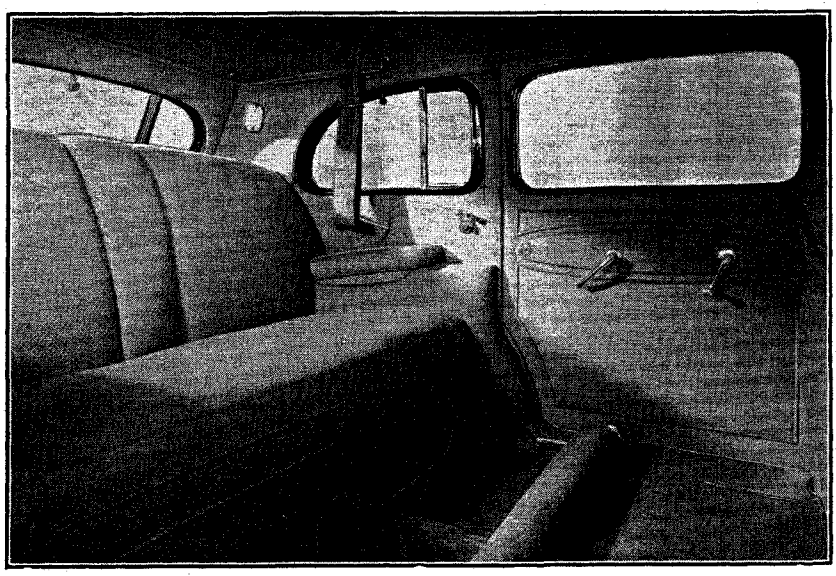
CURTAINS

A new style of concealed type curtain is used on the rear and rear quarter windows of sedans and in the rear window only of Town Sedans and Coupes.

(6) New 1934 Features *of* Interior Body Comfort — *Continued*

(Fleetwood Custom Bodies)

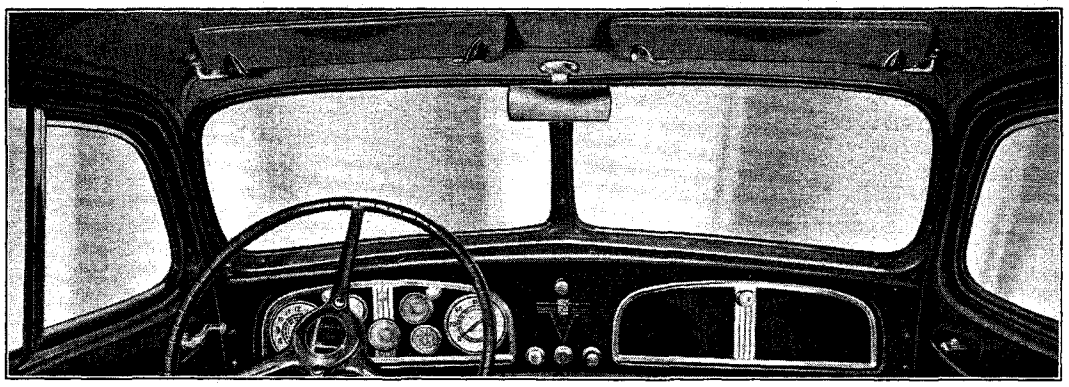
There is no phase of construction in a Cadillac that contributes so much to an owner's comfort and satisfaction as the personalized interiors of the Fleetwood Custom Bodies *built exclusively for Cadillac* in which there is an elegance of impression and a degree of luxury that is only available in other cars with custom bodies at much higher prices.



ROOMIER BODIES—In the 1934 Fleetwood bodies there is considerably more room than in any former Cadillac or Fleetwood Body. The front and rear seats are much wider, 2½″ at hips and 4″ wider in shoulder room. The front seat is also 4″ wider.

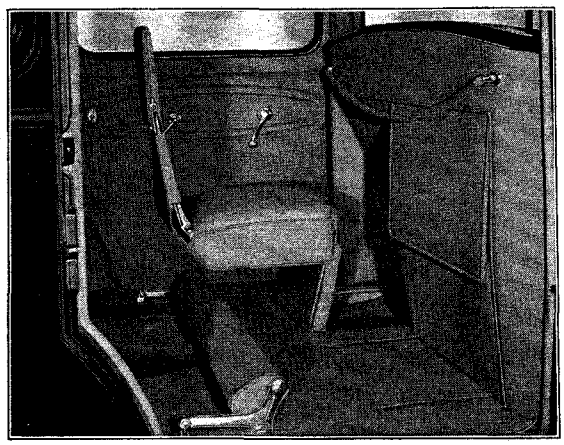
INCREASED LEGROOM—Considerably more legroom is another feature of comfort that will be appreciated. The new Fleetwood Custom Bodies are at least 2″ longer. *In the rear compartment* the floors have been sloped at a slight angle to give a more comfortable resting position for the feet. *In the front compartment* the removal of the hand brake lever from the floor to the instrument panel and the location of the transmission lever forward on the toe-board provides more legroom and comfortable seating room for three people in the front seat.

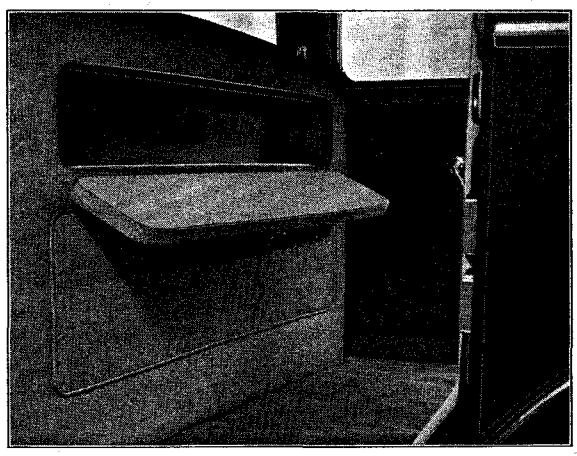
HEADROOM—While the new Fleetwood Custom Bodies are considerably lower in overall height from the ground, the generous amount of interior headroom has not been reduced.



(6) New 1934 Features *of* Interior Body Comfort — *Continued*

(Fleetwood Custom Bodies)





AUXILIARY SEATS

The auxiliary seats fold flush into a special seat well in the back of the front seat and are concealed when not in use. They are covered with flaps to give a finished tailored appearance. The seats are luxuriously upholstered with Marshall Springs and are 22¼" wide with seating space sufficient for three people when both are used. They have double backs for increased comfort.

FRONT SEAT ADJUSTMENT

Front seat frame is fastened to body pillars. Adjustment of front seat affects only the driver's seat cushion and back, which moves as a complete section instead of adjusting the back only.

HASSOCKS

Spring type, oval shaped and covered with carpet.

COMPARTMENTS

Two large cabinets are built into the back of the front seat of the Fleetwood 5-Passenger Sedan. Lower compartment large enough for golf bag. Both have locks. The Fleetwood Town Sedan has one large compartment.

GARNISH MOULDINGS

Across the back of the front seat in the Fleetwood 5-Passenger Sedan and Town Sedan are beautifully grained garnish mouldings of selected walnut and other fine woods to give an artistic finished appearance to the rear interior.

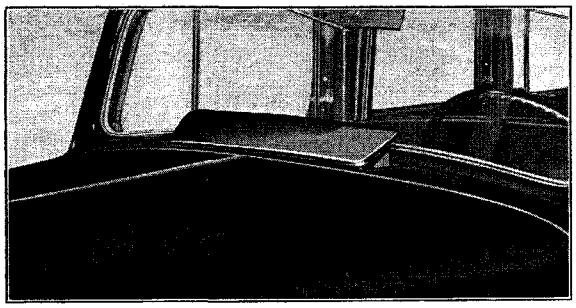
CURTAINS

Curtains are of pure high grade silk in harmony with the shade of interior trim used.

FOOT RESTS

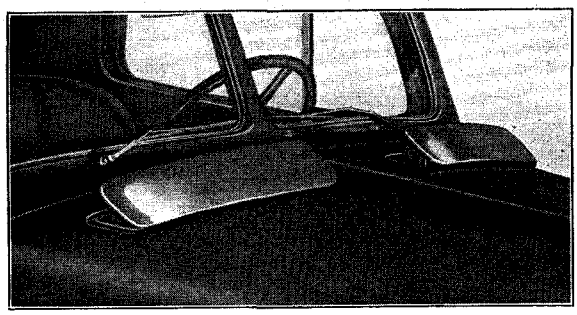
Oval shaped, double adjustment and filled with sponge rubber.

COWL VENTILATOR



(Straight Windshield Bodies)

One ventilator size 3⅝" x 17¾" on top of cowl. Opens toward windshield for better ventilation. Fully screened.



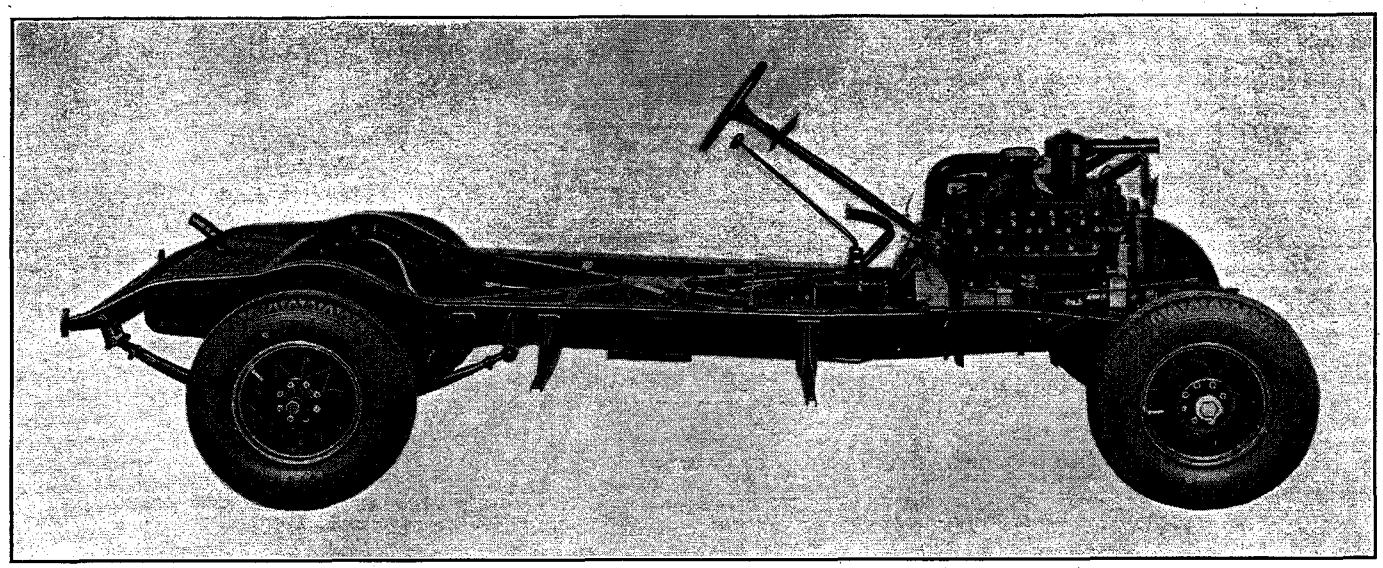
(V-type Front Windshield Bodies)

Two ventilators size 3⅝" x 14½" on top of cowl. (Otherwise same as single type.)

NOTE—Complete detailed information on Fleetwood Custom Bodies as to upholstery, trim and appointment options is furnished in the section "Fleetwood Custom Bodies" in the Sales Kit or in the "Book of Fleetwood."

(7) New Mechanical Features

(a) CHASSIS



In the new 1934 Cadillacs, chassis improvement keeps pace with the advanced engineering developments in bodies and power plants.

These improvements contribute to greater reliability, safety, quietness, smoothness, and operating convenience.

New Mechanical Improvements

(a) Cadillac Chassis

(1) Frame
(2) Wheelbase
(3) Springs
(4) Spring Lubrication
(5) Hotchkiss Drive
(6) Bumpers
(7) Shock Absorbers
(8) Ride Stabilizer
(9) Brake Cable Controls
(10) Steering
(11) Body Insulation

(b) Engine Improvements

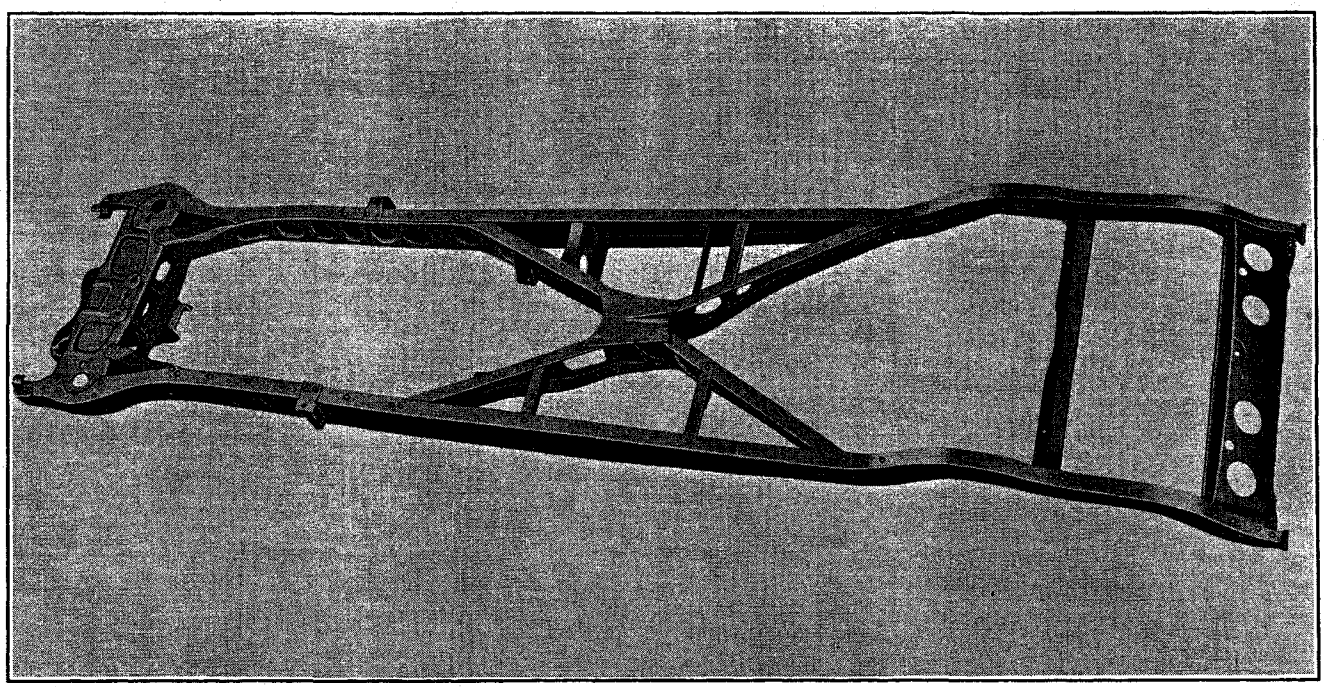
(1) Engine Mountings
(2) Cylinder Heads
(3) Compression
(4) Semi-Automatic Choke
(5) Water Pump
(6) Pistons
(7) Dual Valve Springs
(8) Cold Air Intake
(9) Ball Bearing Fan

(c) Electrical

(1) Current Controlled Generator
(2) 3 Beam Headlights
(3) Locked Type Ignition Coil
(4) Battery Location

(7) New Mechanical Features—*Continued*

(a) CHASSIS



1. FRAMES

The chassis frames of the V-8, V-12 and V-16 have been redesigned and incorporate many new and unusual features.

The rigidity of each frame has been increased many times over that of the previous models. This greater strength and rigidity eliminates frame flexing and twisting, relieving the body of weaving strains. It also increases the safety factor in the car and materially improves the riding comfort through the smothering of road vibrations and noise.

The new Cadillac frames each have a massive center X frame which is unlike the conventional X type construction used only as a reinforcing cross-member. Cadillac's new X frame member in V-12 and V-16 frames and V-8-146" W. B. is really a separate frame in itself with the arms extending to the side bars of the outside frame and then to the front and rear end crossmembers of it within them. (In Cadillac V-8 the arms extend to the front crossmember and about half way to the rear due to the shorter wheelbase.) Both frames are welded and riveted together forming a solid box-type girder construction, the strongest known.

An important feature of Cadillac's X-type frame is the center junction box construction. The front and rear arms of the X are assembled back to back, which forms a section of double flange width. These arms are also in the same straight line instead of being staggered which construction adds materially to the rigidity of the assembly.

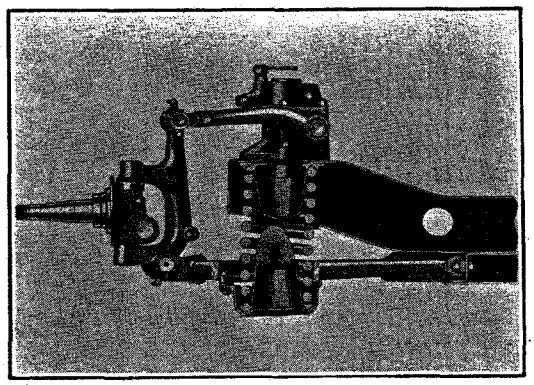
Heavy steel plates are welded top and bottom at the junction point, which ties the entire structure together into a single rigid unit. Additional crossmember arms connect the X-type center frame to the side rails on each side of the center junction box.

(7) New Mechanical Features—*Continued*

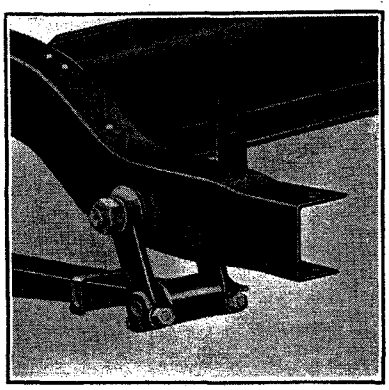
(a) CHASSIS

2. WHEELBASES

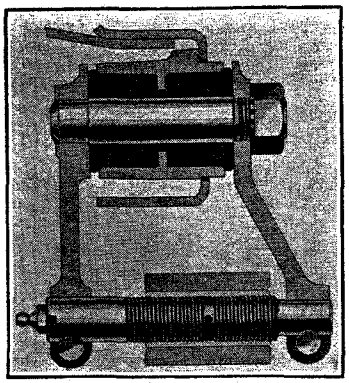
The V-16 and V-12 wheelbases have been lengthened and are now offered on one wheelbase only. V-16 is now 154″ W. B. V-12 is now 146″ W. B. The V-8 wheelbases have also been changed and are available in three sizes—128″, 136″ with Fisher Bodies and 146″ W. B. with Fleetwood Custom Bodies.



Front Helical Coil Spring



Rear Spring (Rear End)



Detail of Rear End Spring Shackle

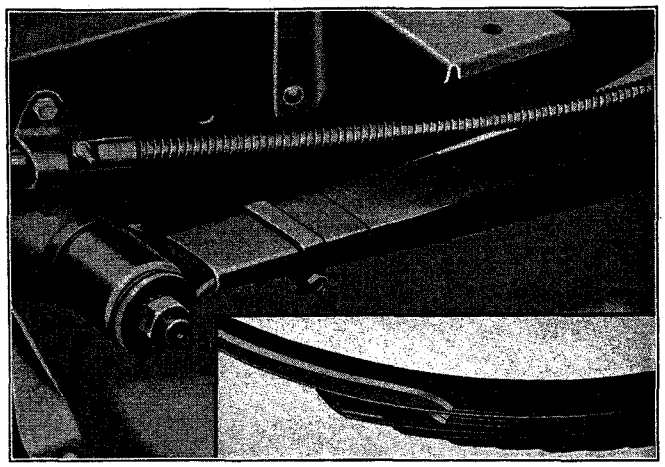
3. SPRINGS

Front springs have been changed from the semi-elliptic to the individual frictionless helical coil type and each front wheel is individually sprung. The former I-beam front axle is discontinued.

Rear Springs are continued as semi-elliptic but the method of mounting has been changed. Instead of being shackled front and rear the front end is attached and cushioned to the frame on a sturdy steel spring bolt covered with rubber. The rear end of the spring is shackled by a threaded anti-rattle bolt while the shackle is connected to the frame by a bolt cushioned in rubber. This new method of rubber mounting the rear springs at each end gives increased riding smoothness and quietness of operation and reduces shackle lubrication problems.

4. SPRING LUBRICATION

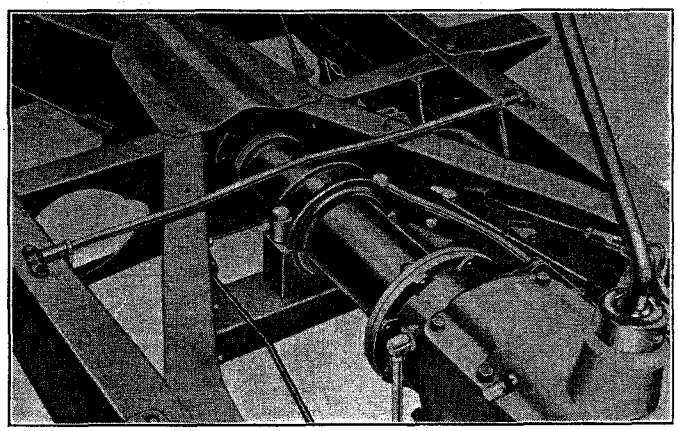
Another feature of improvement in the rear springs is the new simplified method of rear spring lubrication. The springs are enclosed in metal covers to keep out water and dirt and between each spring leaf there are two Graphite Bronze metal lubricating inserts (2″ square discs) that are permanently seated and require no attention. Between the main spring leaf and No. 2 leaf there is a rubber composition strip. With these two new features spring squeaks are eliminated and they will not require oil or grease lubrication throughout the life of the car.



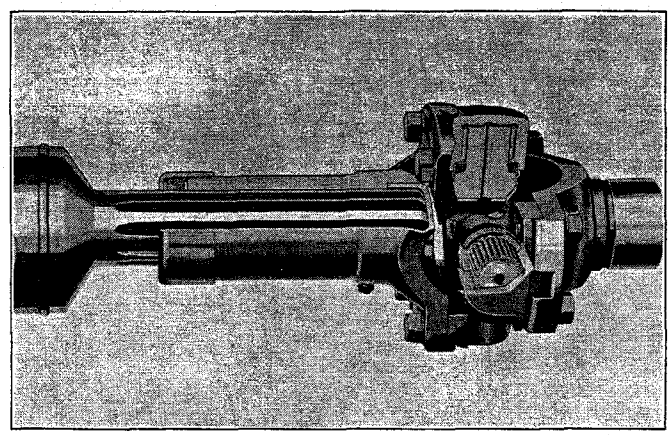
Front End of Rear Spring
Insert shows lubricating disc between spring leaves

(a) CHASSIS

(7) New Mechanical Features—*Continued*



Extension of Transmission Shaft and Forward End of Propeller Shaft



Universal Joint with Needle Roller Bearings

5. HOTCHKISS DRIVE

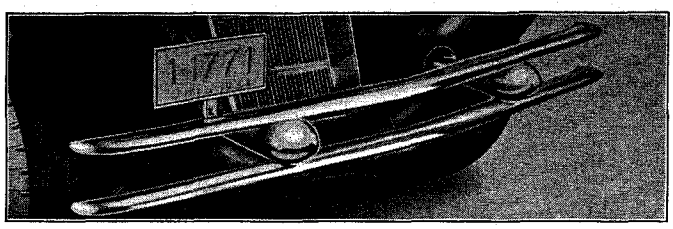
The introduction of the new standard of riding comfort in Cadillac cars has introduced several important changes in chassis design.

With the moving forward of the engine, the lengthening of wheelbase and the incorporation of the new X-type center frame, the Hotchkiss type of drive was found to be peculiarly well fitted to the needs of the new chassis.

With the Hotchkiss type drive the riding qualities of the car are greatly improved not only by a reduction of unsprung weight (weight not supported by the springs) but by the cushioning of the starting and stopping strains from the axle through the rear spring before they reach the frame. It also makes the action of the rear axle smoother on rough roads because it allows the wheels to more freely follow road irregularities.

In the application of Hotchkiss drive to the new Cadillacs the length of the main propeller shaft has been made much shorter by using a forward short propeller shaft carried on bearings in an extension tube between the transmission and the main drive shaft. The rear of the transmission is supported by a strong center cross-member in a rubber mounting and reduces the whip action of a long drive shaft.

The main propeller shaft has two universal joints (Mechanics Type) each of which have needle type roller bearings packed with lubricant when assembled, that need no further lubrication for at least a normal year's driving of 12,000 miles.

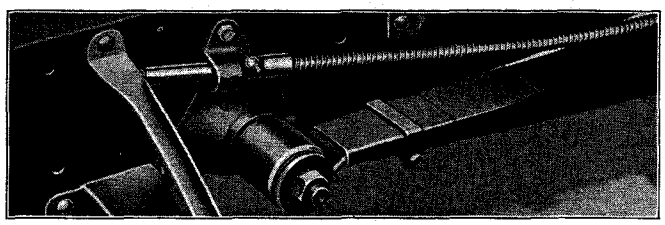


6. BUMPERS

The bumpers are entirely new and of much more expensive construction and are streamlined in appearance to match the new beauty in exterior body styling.

They are double bar type and are attached to the frame with chrome plated tubular steel mountings inside of which are coil spring shock absorbers.

These new bumpers are much stronger and give greater protection to the car.



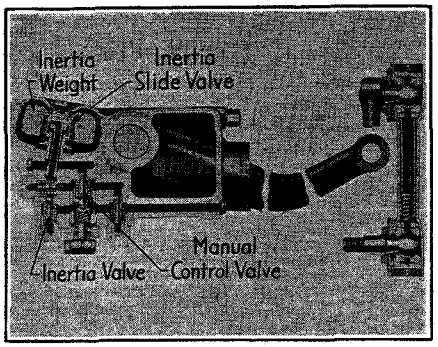
"BERLIN" EYE

The rear springs are perfectly flat at normal load and are 66″ long on 146″ and 154″ wheelbase Cadillac, 60″ long on all others.

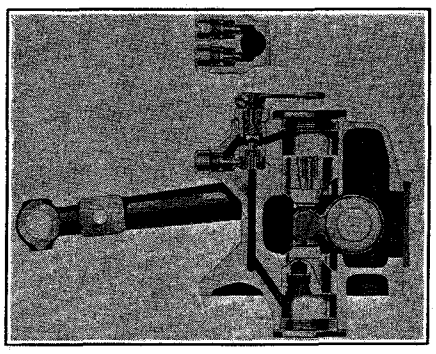
Rear springs have "Berlin" eyes to avoid rear axle geometry error which cause most Hotchkiss drive cars to steer badly at high speed. The "Berlin" eyes are formed with the center on the horizontal line of the main spring leaf. With this construction the rear axle moves in a nearly vertical line under all conditions.

(7) New Mechanical Features—*Continued*

(a) CHASSIS



Rear Shock Absorber Inertia and Manual Control

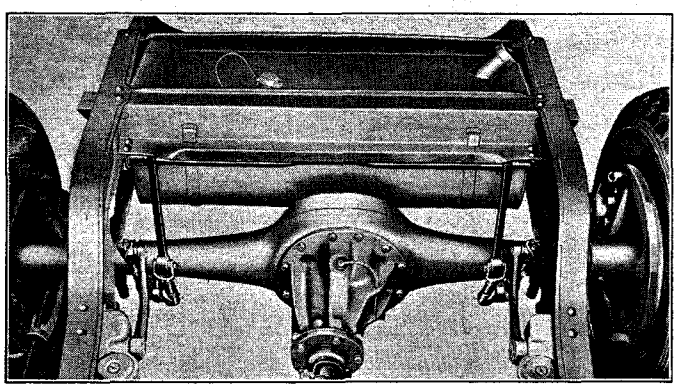


Front Shock Absorber (Manual Control)

7. SHOCK ABSORBERS

In the 1934 Cadillac there is introduced a new combination of manual and automatic ride control of rear shock absorbers. The action of the one is entirely independent of the other so that wherever the manual adjustment may be set, the passengers are also protected by the new type inertia weight control of rear shock absorbers which snubs the rear spring movements on the long road waves that exist in even the best concrete roads.

The front shock absorbers are continued with manual control only. The inertia type automatic control is not used because its action through being effectively set would interfere with the smooth riding that has been developed with the new type of independent front spring suspension.

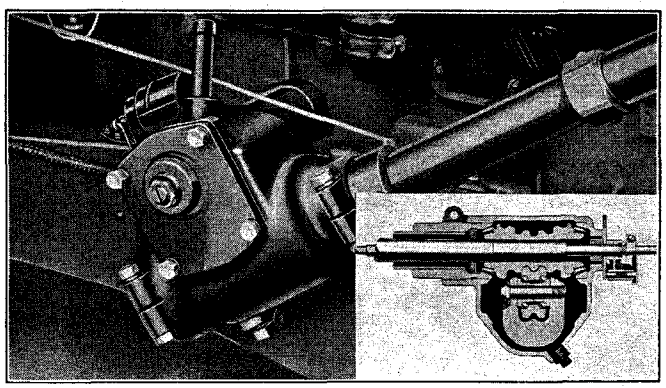


8. RIDE STABILIZER

A new ride stabilizer has been added to eliminate body roll or side sway. It is a cross-rod torsion spring mounted at the front of the rear cross-member of the frame, that increases the stiffness of the suspension when the car rolls in rounding curves.

9. CABLE BRAKE CONTROLS

The rear brake controls have been changed to the cable type, replacing the former rods and links. The use of the strong cable type control simplifies construction, eliminates joints and their lubrication and gives quiet, positive braking control at all times.



10. STEERING

In working out the easiest and most accurate steering for the new independent front wheel suspension the worm and double roller steering gear was adopted instead of the worm and sector.

The worm is mounted on 2 roller bearings. The roller on 2 ball bearings and the roller shaft on needle bearings and gives much easier steering. The friction at this point of the steering gear mechanism is reduced nearly one-third and consequent wear and adjustment are reduced proportionately.

11. BODY INSULATION

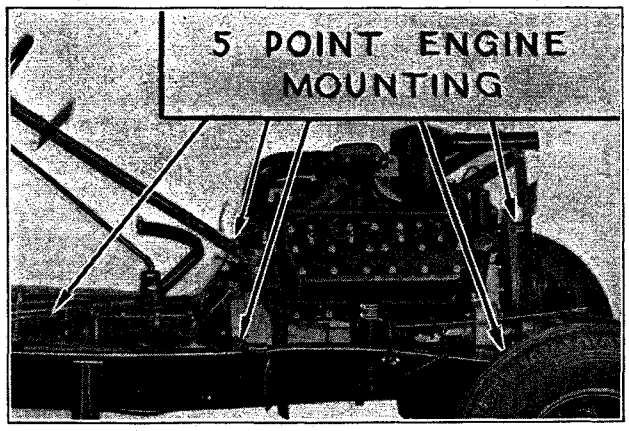
With the new type of narrower frames the body brackets have been increased in size and number. Insulation pads of live rubber and also composition fabric are used to provide a cushion between body and frame and retain the correct amount of rigidity in their attachment to the frame.

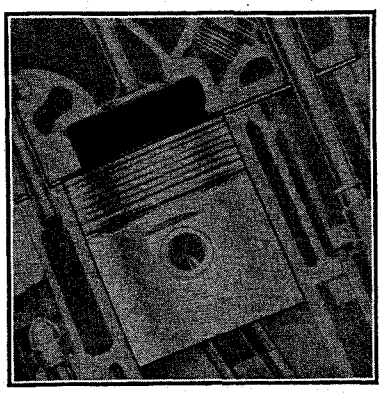
(7) New Mechanical Features—*Continued*

(b) ENGINE IMPROVEMENTS

1. ENGINE MOUNTINGS

The engines have rubber cushioned mountings at 5 points on the frame. These supports are located 2 at the front, 2 at the center of the engine and one large mounting at the rear of the transmission case supported in the center cross-member. The position, size and type of these mountings was developed in connection with the more rigid frame construction to provide the engine foundation with the maximum smoothness and quietness and give it the necessary stability.





2. CYLINDER HEADS

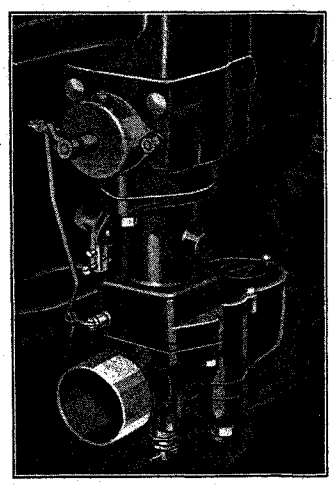
With the stepping up of compression in each engine the cylinder heads have been ribbed to increase strength and reduce distortion in manufacture, thereby permitting more accurate control of compression ratio.

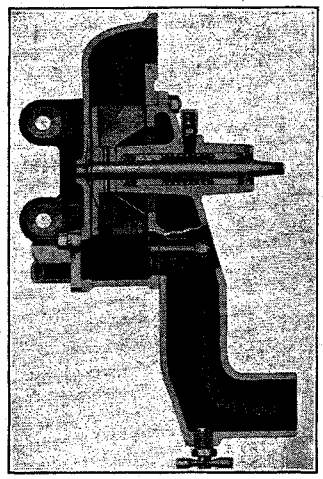
3. COMPRESSION

All engines have increased compression (6.25 to 1) which gives increased power efficiency from the fuel mixture.

4. SEMI-AUTOMATIC CHOKE

To assist in producing a quicker warming up period of the engine without the continued use of the hand operated choke button, the semi-automatic choke has been added. It overcomes the difficulties of quick acceleration and practically discontinues the need of using the hand choke except at the time of starting the engine.





5. WATER PUMP PACKING

A newly designed method of automatically adjusting water pump packing (V-12 and V-16) is now used. The packing box prevents the pump lubrication from mixing with the water and the packing is automatically kept tight by a spring pressure ring.

(7) New Mechanical Features—*Continued*

(b) ENGINE IMPROVEMENTS

6. ANODIZED ALLOY PISTONS

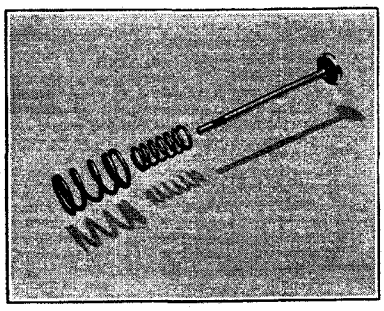


The new light weight pistons used in V-8, V-12 and V-16 engines are a new development in aluminum alloy metal. By a special manufacturing process the outside surface of the piston has been made hard, tough and long wearing and will work in cast iron cylinders with even less wear than cast iron pistons.

They weigh 15 oz. which is less than two-thirds of cast iron pistons and this increases the smoothness of engine operation and reduces loads on bearings, wrist pins and other reciprocating parts.

NOTE: Aluminum Piston Weighs 15.008 oz.
Cast Iron Piston Weighs 23.823 oz. } V-8

The pistons have a T slot in the skirt to allow for expansion and can, therefore, be closely fitted for quietness of operation. They are carefully ground elliptical six thousands of an inch from a true circle so that when running the expansion from heat will make them perfectly round.

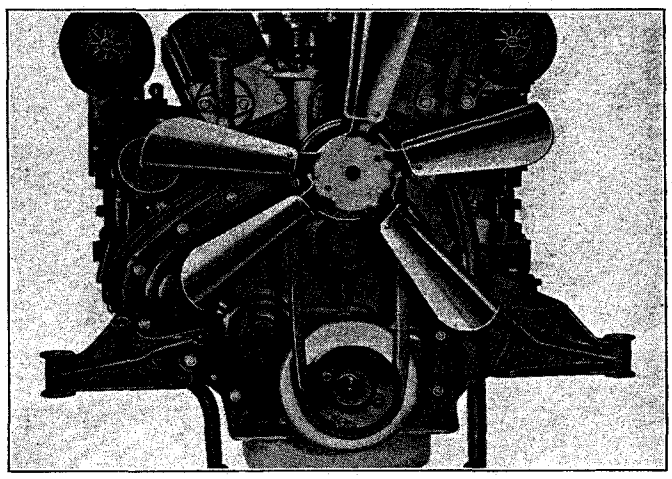


7. DUAL VALVE SPRINGS

Dual valve springs like those used in V-12 and V-16 engines have been added to the V-8 engine. They prevent valve clatter at high speeds and help to give increased power performance.

8. BALL BEARING FAN

The V-8 fan has been changed to the ball bearing type (same as used in V-12 and V-16). The irregular spacing of the fan blades on the fans used in all engines increases the amount of air disturbance and circulation in the engine compartment.



(7) New Mechanical Features—*Continued*

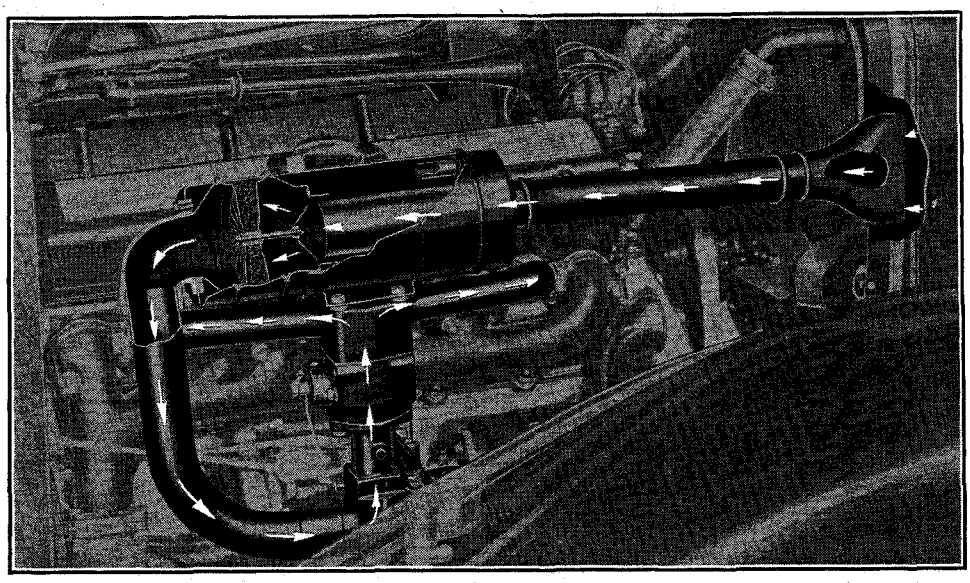
(b) ENGINE IMPROVEMENTS

9. COLD AIR INTAKE

The carburetor air intake now draws cool air from behind the radiator grill instead of taking warm or preheated air from under the hood.

This gives a greatly increased power and engine performance and permits higher compression and greater spark advance which increase the economy.

The difference in the air temperature is approximately 100 degrees. For example when outside air temperature is 50° the temperature of the air intake at the carburetor is about 60° as compared with the air temperature of 150-160° under the hood. The cooler air expands more and results in greatly improved power and engine performance.

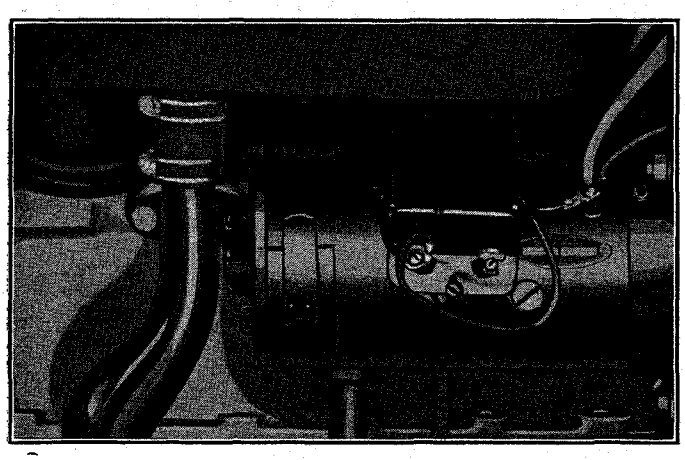


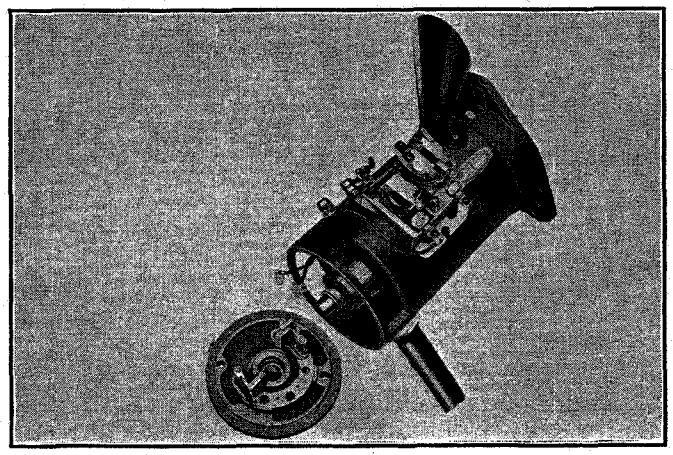
(c) ELECTRICAL

1. CURRENT CONTROLLED GENERATOR

The new current controlled (air-cooled) generator automatically regulates the charging rate to the battery and keeps the input to it in relation to the discharge when lights are being operated. A much greater reserve is available for accessories such as spotlights, radios and heaters.

With this new automatic generator charging rate control there is always sufficient strength in the battery for starting under normal operating conditions.





Current Controlled Air Cooled Generator

(7) New Mechanical Features—*Continued*

(c) ELECTRICAL

2. 3-BEAM HEADLIGHTS

The multi-beam headlighting system with the use of two filament lamp bulbs, pre-focused type, gives additional light on the road and improves safety in night driving.

Three kinds of beams are provided—city driving, country driving and country passing. Control switch on the steering wheel provides selection of beams and foot dimmer switch on toe-board at left side of clutch pedal controls the change from the country passing beam to the driving beam.

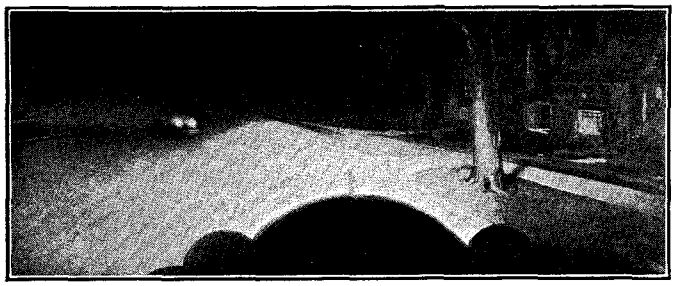
A visible headlamp beam indicator dial on the instrument panel shows the driver which of the three light beams is being used.



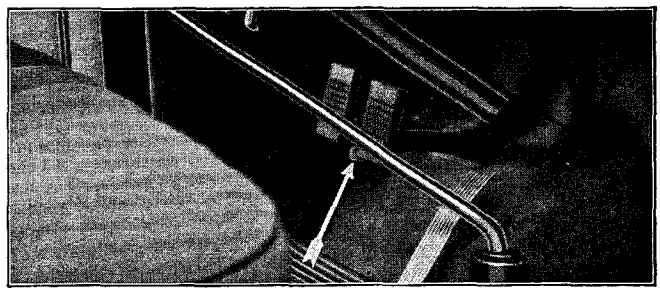
Country Driving



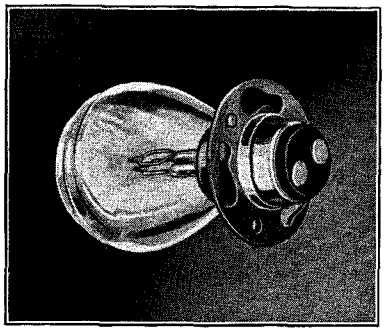
City Driving



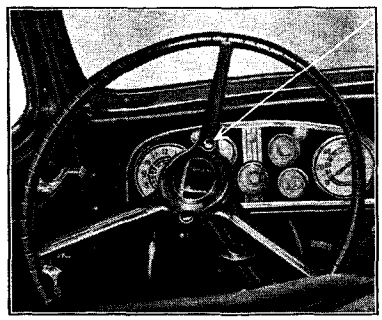
Country Passing



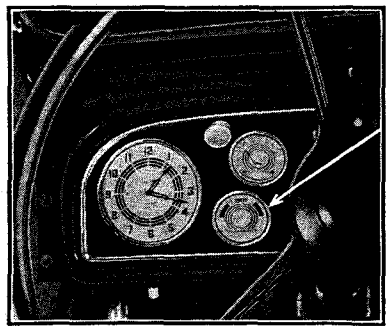
Foot Dimmer Switch



Two Filament Pre-focused Bulb



Light Switch



Head Lamp Beam Indicator

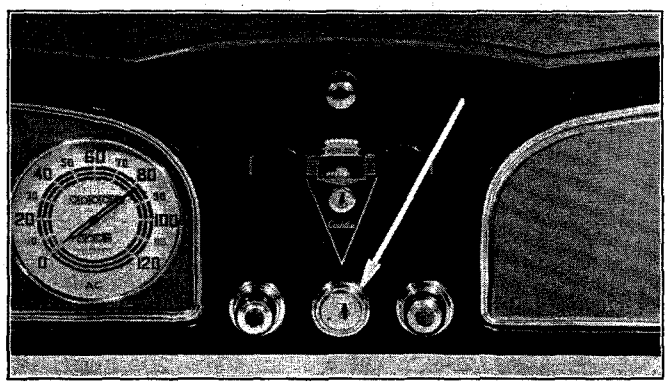
(7) New Mechanical Features—*Continued*

(c) ELECTRICAL

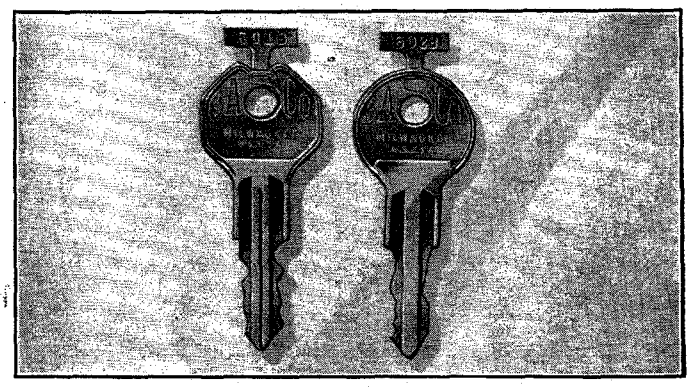
3. LOCKED TYPE IGNITION COIL

The new type ignition lock now locks the ignition switch and the ignition coil instead of the ignition switch and transmission. The lock is accurately made to very close limits and has a new type of double slotted key that makes it much more difficult to steal the car.

The new key has the number on an extension tab that is to be removed by the distributor or dealer before delivery of the car to owner. This removes all identification of key number and provides additional protection to owner against car theft.



Ignition Lock

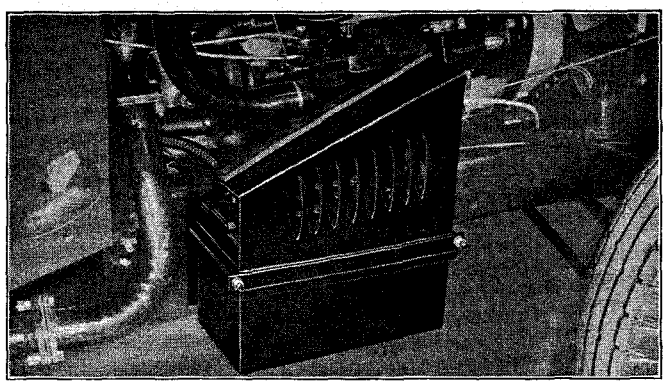


New Keys with Extension Tabs

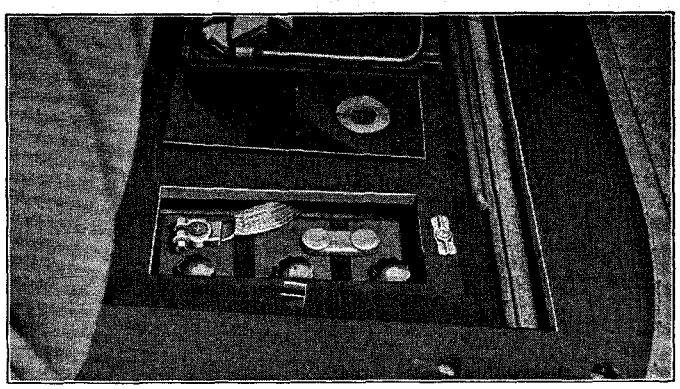
4. BATTERY LOCATION

In V-12 and V-16 the battery is located under right front fender. May be reached by lifting hood.

Battery location in V-8 is under right front fender on 146″ wheelbase. Under right hand side of front seat on 128″ and 136″ wheelbase.



Battery located under right front fender on V-12, V-16, V-8 146″ Wheelbase



Battery located under right hand side of front seat on V-8 128″ and 136″ Wheelbase

SALES APPEALS

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Three Phases *of* Constructive Selling



Studying Prospect Card



Showing the Prospect Features in Kit

ANALYZE EACH PROSPECT CAREFULLY BEFORE YOU CALL ON HIM

Determine whether he is a V-8, V-12 or V-16 buyer and then arrange your selling presentation to fit the advantages of that car to his requirements.

People want and graduate to the better things in life. Always try and sell them something finer and better first. Remember it is easier to sell them *down* and you always have lower priced cars to use as reserve selling strategy.

WHEN YOU TALK TO THE PROSPECT, TRY AND FIND OUT HIS PARTICULAR BUYING MOTIVES

What does he want most in a motor car: Style, prestige, comfort, performance or safety?

Concentrate your selling appeals on his strongest buying motives and sell him the features in a Cadillac that will satisfy those needs better than any other car.



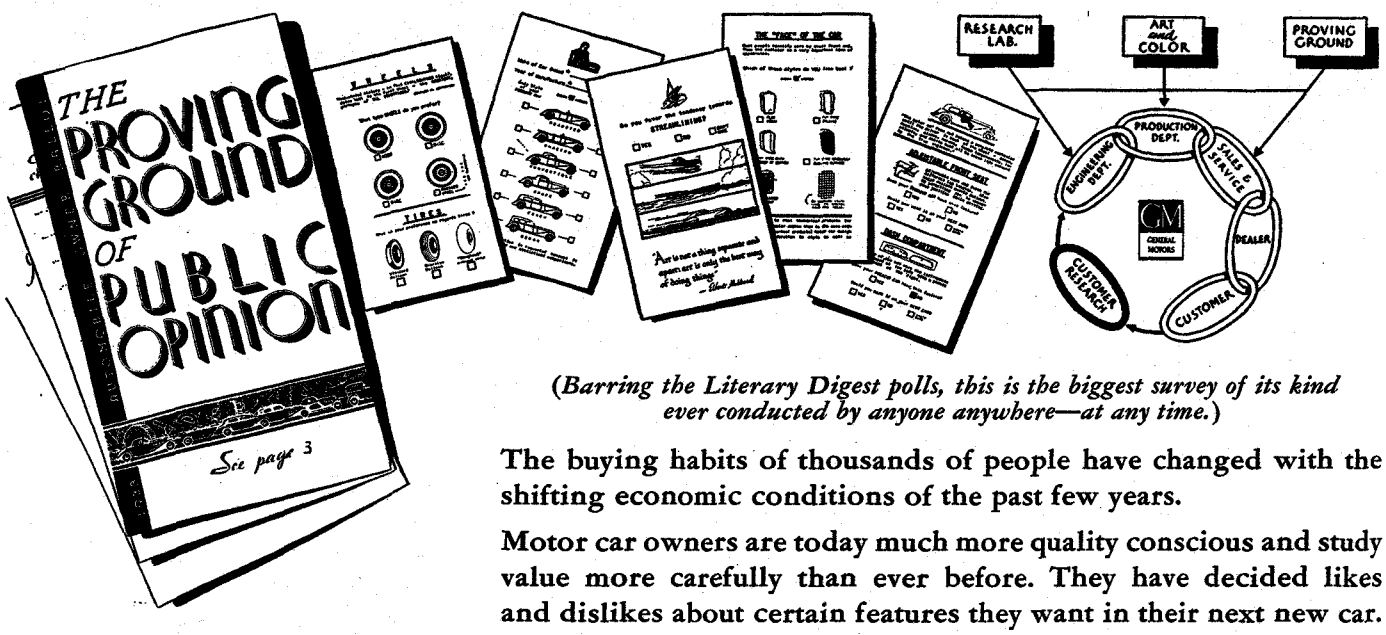
Giving the Prospect Demonstration

SELLING TALK, PICTURES AND ADVERTISING ALONE WILL NOT SELL THE MANY NEW 1934 EXCLUSIVE SELLING FEATURES. THEY MUST BE DEMONSTRATED

It is *what the car does* for a prospect in satisfying his buying urges that will make him want one of these 1934 cars enough to exchange his money for the satisfaction it will give him.

You have the advantage of being able to demonstrate new exclusive features on Cadillac that competitive salesmen cannot offer. You should make the most of your selling opportunity by making as many demonstrations as you possibly can to both Cadillac and competitive car owners. Remember, you have the advantage over the competitive salesmen. Demonstrate and prove it to the prospect.

General Motors Consumer's Research Surveys Will Help You in Your Selling Work



(Barring the Literary Digest polls, this is the biggest survey of its kind ever conducted by anyone anywhere—at any time.)

The buying habits of thousands of people have changed with the shifting economic conditions of the past few years.

Motor car owners are today much more quality conscious and study value more carefully than ever before. They have decided likes and dislikes about certain features they want in their next new car. The manufacturer who follows a progressive policy of product improvement and builds what they want is most likely to get their business.

General Motors, in a sincere effort to build its products to please and satisfy the buying public, conducts consumer surveys continuously through its Consumer's Research Division as an important part of its fact-finding activities.

These surveys are made to ascertain what people really want in their next new car and the information obtained is used in shaping engineering and manufacturing policies to try and satisfy those wants.

In planning its 1934 program, Cadillac has tried to build into its product, features that fine car buyers are most interested in.

As a result of surveys made during 1933 the following facts have been established, indicating the buying preferences of car owners in the various car groups.

A comparison of the preferences of fine car owners with those of less expensive cars, shows conclusively that an entirely different selling approach is necessary when selling a Cadillac car.

A careful study of these facts and the importance of understanding their relation to the selling job will be of considerable benefit to every Cadillac salesman.

WHAT PEOPLE WANT MOST IN THEIR CARS

The following tables show the difference in buying preferences between the general average car buyer and those of high priced car buyers exclusively.

General Average Buyer's Preference

1. Dependability
2. Operating Economy
3. Safety
4. Comfort
5. Appearance
6. Ease of Control
7. Smoothness
8. First Cost
9. Pick Up
10. Speed

Higher Priced Car Buyer's Preference

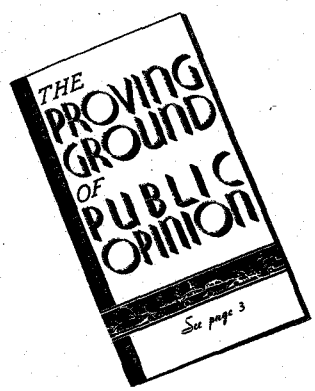
1. Dependability
2. Comfort
3. Appearance
4. Safety
5. Operating Economy
6. Ease of Control
7. Smoothness
8. Pick Up
9. First Cost
10. Speed

General Motors Consumer Research Surveys Will Help Build Owner Good-Will *for* Salesmen

There is another direct selling advantage to you as a salesman in the work being done by General Motors Consumer Research Surveys.

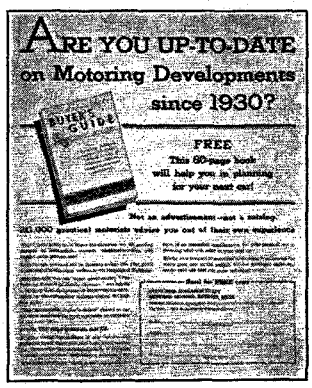
It is an active working force in building owner Good-Will in General Motors Cars direct with the owners of all makes of motor cars and if it is intelligently applied by the selling organization in the follow-up contact by salesmen, it will help make the selling job easier.

HERE ARE THE THREE STEPS FOR YOUR MOST EFFECTIVE USE OF THE GENERAL MOTORS CONSUMER RESEARCH



Proving Ground of Public Opinion

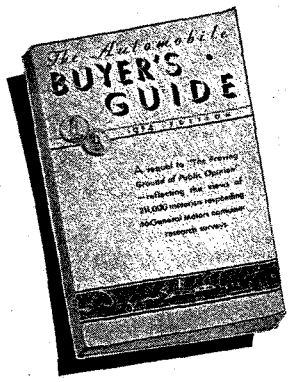
The "questionnaire" was mailed by General Motors to over a million people and gave them an opportunity to say what they preferred or disliked in motor cars.



Newspaper and Magazine Advertising

General Motors will run a series of magazine and newspaper institution advertising in leading cities with the opening of the 1934 season.

These ads will call attention to the "Buyer's Guide," explain to the public how General Motors is trying to build its cars to suit the Buyer's wants and they will offer to mail a copy of the "Buyer's Guide" to any person requesting it, as a practical Guide for people confronted with the problem of choosing a new car.



"Buyer's Guide"

The "Buyer's Guide" which is compiled by General Motors from the information contained in the hundreds of thousands of questionnaires, is mailed by General Motors to the many people who request it as a helpful source of information, in their selection of a new motor car.

THE SALES FOLLOW-UP BY THE SALESMAN

General Motors Consumer's Research is a plan of sales co-operation that can be used as an effective sales help by a salesman, if adapted to his requirements by intelligent application. It is not presumed that every prospect will be interested in it but there are thousands who have already requested a copy of the "Buyer's Guide."

When you contact your prospects, inquire if they received a copy of the "Buyer's Guide." It will open up a discussion of the features in which they are most interested and help you to understand exactly what they want in their new car.

NOTE: If they have not received or seen the "Buyer's Guide," show them a copy you carry and discuss it with them. It will help you simplify and focus your selling discussion on what the prospect wants in a new car.

Cadillac's 1934 Advertising will be a *Selling* Campaign Working for Salesmen



The direct relationship between the "advertised" selling appeals that the Cadillac factory advertising will use in 1934 and how they tie-up with the salesman's personalized selling appeals when he calls on prospects, is important to every Cadillac salesman.

The relative success of all advertising is determined by the extent to which it appeals to the "buying urges" of the public. Every piece of Cadillac advertising for 1934 will be forceful in its selling appeals to stir the "buying impulses" of people who want the kinds of cars that Cadillac manufactures.

A careful study of the planned sales thinking behind the 1934 Cadillac advertising program will show you that you, too, can adapt and apply the same principles in your selling work, and by aiming your selling appeals at the prospective buyer's "needs," you will make more progress in interesting him.

There is only one way in the world to sell anything, whether it be by advertising or by personal contact. You must prove to the prospect that the thing you are trying to sell will contribute something to his own peace and well-being. The buyer is interested only in himself. *What* you are, *who* you are, or *what* you have to *sell* does not concern him at all.

Can *you* make *him* happier—can *you* make *him* more comfortable—can *you* make *him* more secure? When you can offer *him* something to answer these questions, and others like them, in the affirmative, you have a better chance of interesting him.

The impulses that make a man or a woman long for something, can be more or less definitely tabulated, for they are all based on specific human urges. All the cravings for commercial commodities are due to

these impulses. Consequently, you can't hope to make a sale until you have stirred one or more of these buying urges.

Cadillac's selling appeals in its 1934 advertising will be confined to the use of those urges that can be translated by its readers into a desire for a fine motor car.

An analysis of the "Buying Urges" that are found to exist in the average American are given below in the order of their relative strength of appeal.

1. Bodily Comfort

The instinct to make our bodies at ease—to *favor* those things that give us rest, and to *shun* those things that make us in any wise physically uncomfortable.

2. Devotion

The instinct to do things for those we love—whether our husbands, our wives, our children or our fellow men in general.

3. Enjoyment

The instinct to have a good time—to do that which is a pleasure, in contrast with that which we must force and drive ourselves to undertake.

4. Superiority

The instinct to excel—to force the recognition that we are superior to other people in what we are, what we have, and what we do.

5. Ornamentation

The instinct to make ourselves stand out by physical trappings—and outgrowth of the instinct of Superiority—but strong enough to classify as an individual instinct.

6. Security From Harm

The instinct to preserve ourselves against all contingencies in life—whether physical, mental or moral. This instinct is more frequently expressed in *safety.*

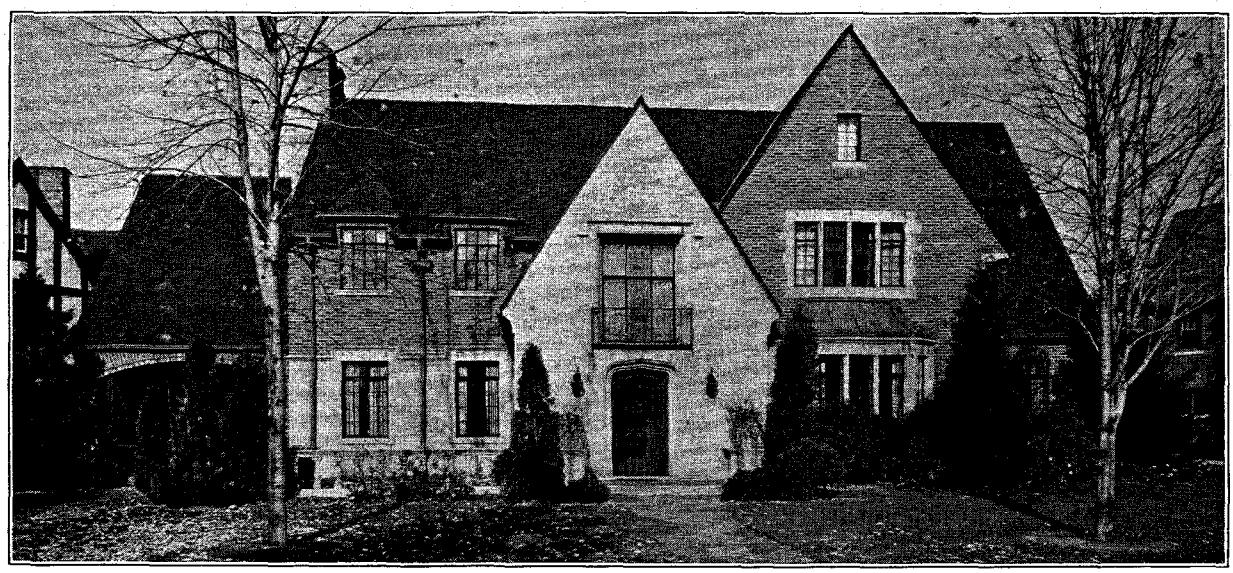
7. Emulation

The instinct to imitate—to follow some standard that we believe to be better than the standards we are able to set for ourselves—to follow the leader.

8. Curiosity

The instinct to find out things—to investigate—to try the new and different. Probably responsible for most of the world's progress—but a more potent influence on a race or a nation than on an individual.

THE CADILLAC SELLING APPEALS



A Typical Cadillac Owner's Home

The selling of Cadillac automobiles is a business that brings you in constant contact with people having keen and intelligent business judgment.

As a Cadillac salesman you enjoy definite advantages shared by salesmen of no other company. You sell the finest products of the largest and leading organization in the automobile industry.

Prospects and salesmen are different, and seldom are two sales made in exactly the same way. People buy for different reasons and the sales appeals to be used must be varied to fit each individual prospect.

For this reason no attempt is made by Cadillac to give a set form or "canned" sales talk. It is important, however, that every salesman must know his product thoroughly before he can do a constructive job of selling. Enthusiasm and personality are both essential of course, but it is seldom that the selling effort can be effective unless it is backed up by knowledge and facts about the product you are selling. *No salesman ever lost a sale by "knowing too much" about his product. It all depends on how he uses it.*

The following pages divide the features of a Cadillac car into various groups of selling appeals that fit an average buyer of a fine car. They are summarized as a list of features for your understanding and reference, and are also put into a conversational form of selling outline that may be helpful to you in suggesting ways to interpret these features in your own words, when you present them to a prospect.

You will notice the construction of these selling outlines is arranged entirely on the basis of what the features of a Cadillac car will do *for the buyer.*

You are selling the buyer a service when you sell him a Cadillac and you must make your sales presentation appeal to him, on the basis of *what the car will do for him,* to give him greater comfort, greater safety, and make him happier with it than any other car he may consider. Another way of putting it, is to say that when you are selling Cadillac, you are trying to do the buyer a service that must appeal to him enough to exchange the money he now has, for the benefits the Cadillac car will give him.

The Cadillac Selling Appeals—*Continued*

A careful study of these Cadillac sales appeals and an effort to constantly improve your methods of presenting them to your prospects, will, if they are backed up by common sense, tact, and the ability to fit your selling talk to the buyer's needs, determine the difference between good selling and "all other kinds." It follows, inevitably, that in order to sell a Cadillac, a salesman must also try and make his personal selling appeal to one or more of these "Buying Urges," otherwise, he will make no impression on the prospect and as a consequence, fail to sell him a car.

Following is a group arrangement showing how different are the buying instincts of different kinds of people. Things which interest some people most are of the least interest to others.

This information was obtained by personal contact with hundreds of car owners to find out those things that appealed to them most. It is the result of a study of their personal interests in their home, their office, their club and their whole plan of living.

It is interesting to compare the difference in the buying urges of the average man, the average Cadillac owner of wealth, and the "step-up buyer" who has previously owned cars in the Upper Medium Price Group and changes to a car in the Cadillac Price Group by purchasing it on the GMAC plan.

Obviously, a different type of selling appeal must be used to interest these different kinds of buyers.

Mr. Average Man	**Mr. Average Cadillac Owner**	**Mr. Average Step-Up Buyer**
1. Bodily Comfort	1. Superiority	1. Superiority
2. Devotion	2. Enjoyment	2. Ornamentation
3. Enjoyment	3. Bodily Comfort	3. Emulation
4. Superiority	4. Devotion	4. Devotion
5. Ornamentation	5. Security from Harm	5. Enjoyment
6. Security from Harm	6. Emulation	6. Bodily Comfort
7. Emulation	7. Curiosity	7. Security from Harm
8. Curiosity	8. Ornamentation	8. Curiosity

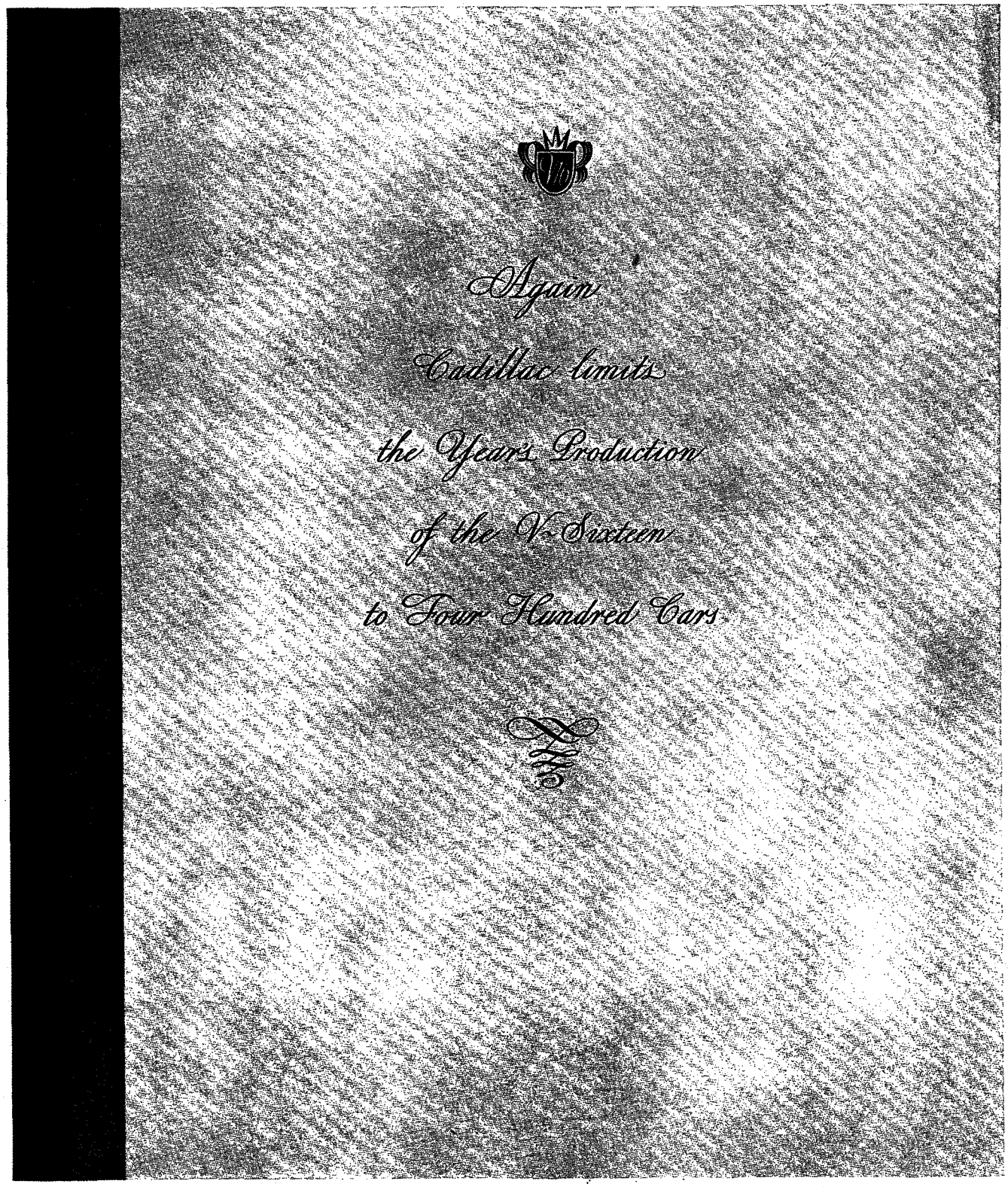
Note: The analysis of these Buying Urges is listed on Page 55

Cadillac selling appeals are grouped under the general classification of

Prestige
Comfort
Beauty and Styling
Ease of Operation
Safety
Long Life and Economical Maintenance

A knowledge of the selling features of Cadillac cars under each of these groups will assist you in showing your prospects what a Cadillac car will do for him instead of merely discussing the features on the basis of what they are.

The Sales Appeal of Prestige



The 1934 V-16 Announcement

The Sales Appeal of Prestige — *Continued*

CADILLAC prestige, as you may have observed, has grown with the years, and we believe that the 1934 models will greatly enhance the standing of Cadillac, not only in its home land but all over the world.

You may have remarked the fact that the fame and good name of this car reach far beyond those who know the Cadillac by intimate and often long-continued personal experience.

Good opinion of Cadillac pervades all classes. Men who have never owned a Cadillac —men who have never ridden in one and who do not expect ever to own one—think well of Cadillac.

Men who are on their way up the ladder vision Cadillac at the top as their ultimate motor car.

If you were to trace this esteem down to its source, you probably would find that source to be the same in every case—the car itself, its long and lustrous history, the notable contributions it has made to the betterment of all motor cars and all motoring over a long period of years, and the almost obvious fact of its fine precision manufacture.

From the very first, those at the head of Cadillac affairs have been animated by a spirit of progress. They recognize that progress means change, and they have embraced every opportunity to lead the forward march. But they have not moved until they were sure of their ground—until they were sure that the progress, the change, would work to the benefit of the man who would buy the car.

The thought of building a good car and a still better car for the individual man has been and is the driving power in Cadillac. The desire was there. The will was there. They are there today. Having will and desire, all that was left was to provide the physical facilities.

But it was not originally as easy as it sounds. Precision manufacturing is a difficult thing to achieve and then to maintain in any volume production. Men have to be trained to precision work. Inspectors must be eagle-eyed, even with all the mechanical gauges and proving machines and devices which are in use today.

"Craftsmanship a creed—and accuracy a law" mean, in the case of Cadillac, precisely what the words say. They concern the quality of the workmanship which produces the car. They define the purpose in the minds of the manufacturers. They aim at building a car as finely, as sound, as long-lived as a beautiful mechanism like an automobile can be built by men who are masters of their trade and masters of their machines.

This practice is for the benefit of the man who buys a Cadillac car for himself and his family. It was not intended to build prestige; but it is in reality the prime erector of that prestige which has come to the Cadillac and which in some subtle way confers a part of itself upon the Cadillac owner.

From the early days, Cadillac was recognized as a good car, a trustworthy car, among all the creations which by comparison with today's cars, are crude and cumbersome.

World-wide acclaim came to Cadillac and its precision processes of manufacture in 1908, when it was awarded the Dewar trophy by the Royal Automobile Club of Great Britain for standardization and interchangeability of parts.

The story of this award is interesting and impressive. Three Cadillac cars of an early type were offered in the competition for the Dewar trophy that year. They were driven to the famous Brooklands track and then around the track.

Following that run, the three cars were torn down. The engine parts were thrown indiscriminately into a common heap. Then the three cars were built up again, without regard

The Sales Appeal of Prestige—*Continued*

to which had originally possessed any particular part or parts. The three cars were taken out and run around the track again. Each ran perfectly. Cadillac was awarded the Dewar trophy and became the *Standard of the World.*

Meanwhile, Cadillac progressed. In 1908 came the first Cadillac Thirty, that doughty four-cylinder car which quickly made a wider place for Cadillac among the nation's car owners and spread the good name of Cadillac far beyond its previous limit.

It is no mere play on words to say that Cadillac electrified the motoring world in 1912 with the introduction of the electric starter, which banished the hand crank forever from the front of the motor cars. Cadillac had progressed again. Cadillac had changed —not only its own car but every car to come. Cadillac prestige broadened again.

Again, in 1914, Cadillac startled the motoring world, and opened up a new world of motoring comfort and efficiency, by introducing to this country the first V-type, eight-cylinder engine. Secret work for months preceded the sensational revelation in a day when only the venturesome, speaking generally, had dared to go beyond four cylinders to six. Again Cadillac had changed and progressed, and once more Cadillac prestige swept beyond previous boundaries.

That first V-8 was the opening wedge for the multi-cylinder cars which are the rule today. Cadillac introduced the principle and perfected it.

Again prestige rose when Cadillac devised and perfected the synchro-mesh transmission, with synchronized and noiseless gear shifting —the forerunner of the silent-gear transmissions we have today.

The thirst for progress led to the Cadillac V-16, the motor car's supreme expression of luxury and smooth, swift power, in 1930 and to the V-12 in 1931. With each forward step, new lustre has attached to the name of Cadillac.

The Cadillac owner of today has the supreme satisfaction of knowing that no motor car is built finer than the one which he possesses, and that few if any can match it for quality of engineering and manufacturing thought and progressiveness.

This satisfaction is so deep-rooted that there are thousands today who are permanently wedded to Cadillac, and who have given Cadillac their preference and their patronage for years.

You join a distinguished family when you become a Cadillac owner. There is more in that than may appear on the surface. Not everyone, regardless of his aspirations and his high opinion of Cadillac, can own a car of the illustrious name. The clientele is necessarily limited.

We have said that Cadillac confers some part of its own distinction upon those who use it. That is because it is Cadillac, and because Cadillac is the recognized *Standard of the World.*

The Sales Appeal *of* Comfort

There are two kinds of riding comfort:

(a) Mechanical construction comfort that is built into the design of the car in the Frame, Springs, Steering, Brakes, Ride Control of Shock Absorbers and Ride Stabilizers.

(b) Physical comfort that is provided by plenty of room to get in and out of the car, by proper seat cushion and back design and construction, by adequate driving vision and ventilation, by quietness through soundproofing and by the ease of controllability in operation.

(a) MECHANICAL CONSTRUCTION COMFORT

Car Springs — The gliding ride with new type soft helical coil front springs. No front axle. Knee action front wheels independently sprung and ride over bumps without jarring passengers.
Long squeak proof rear springs—always resilient and require no lurbication.

Frame — New X type center frame construction with many times greater rigidity.

Steering — Geometrically correct steering with no wobble, shimmy or road tramp due to independent front wheel suspension.

Brakes — Reaction from brake application is now taken by rigid forked arms connected positively to the frame. On the conventional axle brake application rolls the resiliently suspended axle forward with resultant loss of caster angle. This makes the car wander, an objectionable feature that has been entirely eliminated.

Ride Control of Shock Absorbers — Selective regulation of shock absorbers by driver for firm, regular or soft ride.

Ride Stabilizers — Cross rod torsion opposes action through resistance to twist when one spring deflected more than the other.

The Sales Appeal *of* Comfort—*Continued*

(b) PHYSICAL COMFORT IS PROVIDED BY:

DOORS

Wide, easy operating doors, easy to get in and out.

Snug fitting doors prevent drafts.

Adjustable striker plates eliminate rattles. Easily reached door controls.

Inside safety door locks (prevent being locked out).

SEATING COMFORT

Ample seating, elbow and shoulder room for three rear seat passengers.

Fleetwood bodies (4" wider at shoulders).

Unusually high seat back cushions for shoulder support.

Deep, thick soft seat cushions that retain their shape.

Seat backs and contours designed for resistance and softness where needed most.

Cushion contours and angles uniformly maintained to definite standards in manufacturing.

Marshall cushion springs of different types and sizes with variable rates of spring action used to give maximum seating comfort without the disagreeable bottoming of too soft cushion springs.

Wide lounge chair type arm rests with sponge rubber cushions.

Generous legroom (large 5-pass. sedan interior).

Generous headroom.

Wide auxiliary seats with double backs.

Wide front seat for three passengers.

Unobstructed front compartment. Shift lever forward in toe-board and hand brake below instrument panel.

UPHOLSTERY AND FITTINGS

Extensive optional choice of exclusive patterned upholstery materials.

Highest quality interior wood garnish mouldings.

Dome light operated manually and automatically by door action.

Rear quarter lights (on all Fleetwood closed bodies with exception of 2-passenger coupe also Fisher 7-passenger sedan and imperial sedan.)

Arm slings (Fleetwood).

Concealed window blinds.

Rear compartment clock in back of front seat (7-passenger sedan).

Substantial foot rests.

Spring type Hassocks (Fleetwood).

Robe rails and door hardware with round corners (prevent tearing clothes).

Lighter and ash tray at front of side arm rests.

VISION

Large windows of clear plate security glass.

Narrow windshield front pillar posts.

Clear driving vision with low cowl bar.

Seats high enough for full view of road ahead.

Stationary windshield reduced width of window frame.

Windshield wipers do normal work regardless of engine load.

Two inside sun visors to prevent glare day or night.

VENTILATION

Individually controlled no-draft ventilation in front door and rear quarter windows.

Reverse type opening cowl ventilator (screened) for maximum ventilation in front compartment.

QUIETNESS

Body panels soundproofed.

Body mounted to frame on live rubber pads.

Floor boards insulated and of sound-proofed material.

Dash between engine and front compartment thickly insulated.

Thick heavy dust and draft-proof carpets.

OPERATING CONTROLS

Visible Instrument Dial in front of driver.

Large control dials (pointer type for quick and easy reading).

All controls within easy reach with minimum body movement.

Ignition switch coincidental type (locks ignition and coil simultaneously).

Starter button on instrument panel.

Headlight beam indicator dial on instrument panel.

Clear vision 3-spoke steering wheel.

Brake and clutch pedals rubber covered.

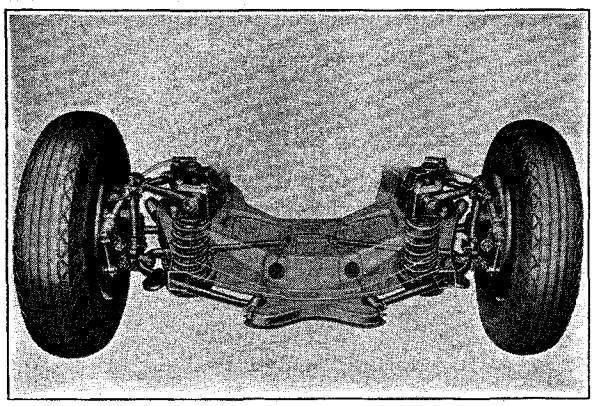
Hand brake lever below instrument panel easy to reach.

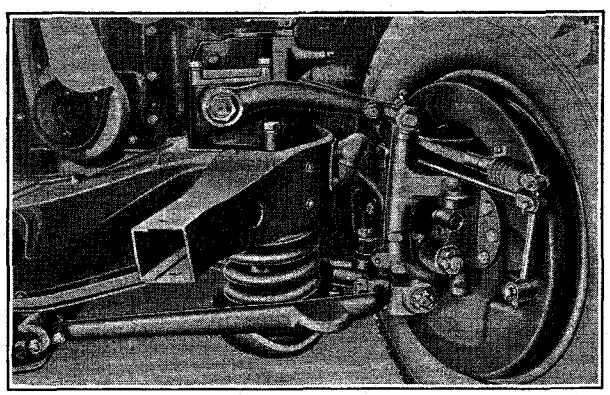
Ride regulation lever at left of steering column easy to reach.

Easy operating front seat adjustment.

The Sales Appeal of Comfort—*Continued*

(a) MECHANICAL CONSTRUCTION COMFORT





Cadillac has always provided its owners in the past with very fine riding comfort, but in the new 1934 cars Cadillac introduces an entirely new standard of luxurious riding comfort and ease that marks the greatest single improvement in automobiles during the past 20 years.

When you ride in the new Cadillac, and drive it, you will marvel at the great improvements which have been made in riding comfort compared to previous models. In these cars you get a wholly new interpretation of riding comfort through what is known as a gliding ride. Roughness in the road, trolley and railroad crossings seem to smooth out as you pass over them. No such riding comfort as you now get in Cadillac has ever before been built into a motor car. It is the result of three years of development initiated and followed through by Cadillac engineers.

When Cadillac decided to start research development of riding comfort they discarded all previous developments and began with an entirely new viewpoint of finding out what caused physical discomfort to people. Hundreds of people were subjected to a bouncing chair test while the engineers noted physiological reactions. The engineers went far beyond mere determination of the boundary line between comfort and discomfort. They analyzed causes of riding fatigue. They discovered that certain types of motion, not uncomfortable in themselves upon repetition became far more tiring than others.

From the result of these tests, Cadillac engineers defined the fundamentals of riding comfort. They knew just how far, just how fast, and in what direction you can be moved and still remain entirely comfortable.

Starting with the passenger they then studied the car design as to its distribution of mass weight and spring action. Finally it was determined that an entirely new kind of spring suspension and distribution of mass weight in the car was necessary. Consequently in the new Cadillac you get riding comfort that is the result of an entirely new principle and something which is not available on any competitive car. In enjoying the delightful and exclusive ease of these new cars, you will notice three distinct improvements. You will notice—

1. You are lifted more gently.
2. That the motion is vertical instead of the usual neck-cracking and forward pitching movement.

The Sales Appeal of Comfort—*Continued*

(a) MECHANICAL CONSTRUCTION COMFORT

3. That the disturbance, slight at the beginning, is quickly damped without the usual "interference kick" which has always been the bane of rear seat passengers.

In addition to these three improvements in riding comfort you will notice a great improvement in the ease of steering and control of the car as you drive smoothly over holes, ruts and rough roads.

Naturally you are curious to know how Cadillac has achieved such unprecedented results.

First: The mass weight distribution in the car has been entirely changed.

Second: The stiff front axle and the stiff semi-elliptic front springs are no longer employed. In their place we now use frictionless helical coil springs that are softer than the rear springs. With the new independent suspension of the front wheels, they are attached directly to the chassis frame by means of parallel and hinge-jointed upper and lower forked arms. This type of front wheel suspension permits an improved positive and accurate steering mechanism and the reduction of unsprung weight helps to keep the wheels in contact with the road at all times.

The Sales Appeal of Comfort—*Continued*

(b) PHYSICAL COMFORT

Cadillac engineers concentrate on the development of improvements with always the comfort of its users in mind. In the new 1934 cars they have now gone farther than ever in riding comfort and the same is true of the interior dimensions and arrangements which contribute to both physical and mental comfort.

As you enter and leave the car, you can hardly help commenting upon the generous width of the doors, and the ease with which they open and close. If you examine the doors closely you will see that they fit snugly and are so trimmed as to keep out drafts. The striker plates are adjustable; all door controls are arranged within easy reach; the safety inside locks of the doors furnish protection against intrusion and also prevent your being inadvertently locked out of your car.

There is plenty of room for you and two others to ride in the Cadillac rear seat in comfort. Seating space and elbow and shoulder room are ample. The Fleetwood bodies provide an extra four inches of shoulder room in the rear seat over previous cars. As you sit in the rear seat you can feel that the back cushions are unusually high to support your shoulders. Though deep and soft, the seat cushions retain their shape because they are scientifically built to definite contours that have been found to be the most pleasing to hundreds of owners. The Marshall cushion springs are of different types and sizes, with varying rates of yield, so that there is softness and resistance where each is most comfortable. Cadillac cushions are not too soft but are carefully designed to be sufficiently resilient to prevent the disagreeable bottoming which you may have previously experienced with some seat cushions.

The arm rests for the rear seat are of the wide lounge-chair type and have sponge rubber cushions to support your arm like your easy chair in your home.

Three people can ride comfortably in the front seat also. The front compartment legroom space has been enlarged by the removal of obstructions in the center of the floor. You will notice the gear-shift lever is in a new forward position on the toe-board, and the hand-brake lever is gone entirely from its usual place to a new position on the instrument panel.

Even the auxiliary seats in the seven-passenger bodies are extra wide and have double seat backs. They are substantially built and very comfortable for extra passengers in case of emergency. In upholstery, you have an extensive choice of exclusive patterned materials and the interior richness is further emphasized by the use of high quality garnish mouldings for all windows.

Door action automatically operates the dome lights. All the window blinds are concealed. Conveniently placed, you will notice the lighter and ash trays at the front of each side arm-rest. Substantial foot rests are provided for those in the rear seat; spring-type hassocks are provided in the Fleetwood bodies.

You will note that the robe rails and door hardware have rounded corners, which cannot catch and tear the clothing.

You can see easily out of all windows. The openings are large and the plate glass is clear. All the windows and the windshield are of Security plate glass, which gives you protection and safety. Driving vision is clear and easy. The front pillars

The Sales Appeal of Comfort—*Continued*

(b) PHYSICAL COMFORT

are narrow, the cowl bar low, and the front seat at the right height to give you a full view of the road. The rear window glass is also extra wide, which adds to the range of your rear view driving vision. The windshield cleaners maintain constant speed when in use, regardless of the speed of the engine; and two adjustable inside visors prevent glare by day and by night.

Fisher no-draft ventilation is provided in the windows of the front doors and in the rear quarter windows. With this unique system, you have fresh air as you like it and so do the others in the car, for it can be individually controlled. Its use prevents the fogging, steaming or frosting of the windows and keeps the air inside the car fresh and free of fumes and odor if you or any of your passengers wish to smoke.

Maximum ventilation of the front compartment is obtained by a reverse-opening cowl ventilator, which is screened against the entrance of insects in summer, and can be used for ventilation in wet weather.

Soundproofing is one of the important features of Cadillac bodies which you will appreciate most. The dash between the engine and the front compartment is thickly insulated; and the body panels are sound-deadened; the floorboards are of insulated sound-proof material and the thick, heavy carpets are proof against dust and drafts. These things make the interiors as quiet and enjoyable for conversation as your club or home.

When you take the driver's seat, you see how conveniently everything is arranged. The instrument dials are directly in front of you, large in size with pointers for quick, easy reading, through the clear-vision, three-spoke steering wheel. All the controls are reached with minimum movement of your body. The starter button and the hand-brake lever are on the instrument panel, and the ride regulation lever is at the left of the steering column, which enables you to select the kind of ride you prefer. The brake and clutch pedals are rubber covered for sure footing, and the front seat can be easily adjusted to your individual requirement.

The instrument panel includes a headlight beam indicator, which is illuminated and tells you which of the three headlight beams is in use at the moment.

Comfort for driver and all passengers is built into these new Cadillacs in a higher degree than in any previous models. The five-passenger sedan, for example, is a big five-passenger car. You find the legroom generous. There is no sense of being cramped or crowded, even with six passengers. Though the Cadillac is low as you look at it from the outside, you find generous headroom when you enter and sit down. Regardless of whatever body type you may choose, you will find Cadillac is a masterpiece in comfort engineering.

The Sales Appeal of Beauty and Styling

APPEARANCE

SIDE

Low overall height (2 inches lower)

Long wheelbases

Individual striking beauty in design

Scientific balance and harmonious proportions

Aerodynamic air-flowing lines

Streamline bullet type headlamps

Parking lamps under headlamps

Long unbroken hood line (nearly reaching windshield)

New type hood louvers with shutter openings on V front sloping windshield without exterior visor

New low sweeping air foil type fenders (Duco finished) completely cover frame and running gear

Narrow windshield pillar posts

Low coach sill body connects with running board

New type chrome body striping (increases appearance length)

Five demountable wire wheels standard. (On V-16 with disc plates.)

New chrome hub cap discs

New heavy steel running boards trimmed with stainless steel and covered with deep channel safety non-skid rubber mats

Built-in Fisher No-Draft ventilation

Clear plate safety glass

FRONT

New type chrome finished built-in radiator grid

Clean uncluttered front end

Horns concealed under hood

New crest mountings (gold plated)

New strong air foil type double bar bumpers with concealed springs and shaped to deflect gravel at rear

High front fender hood sill (eliminates splash shield)

Radiator filler cap concealed under hood

Radiator casing colored to match hood

Restricted use of chromium

Permanent type windshield (quiet and no drafts)

Reverse type screened cowl ventilator (increased ventilation)

Fleetwood windshields (V front 29½° and straight 25° front type)

Fisher windshields (V-8 only) straight front type 18°.

REAR

Air streamed design rear body panel

Wide vision rear window

Twin rear lamps with combination safety lens

Air foil rear fenders mould into body

New style full width double bar bumper

Bonderized sheet metal parts and fenders (prevent rust)

Exterior visible metal parts Duco finished

Concealed fuel tank

The Sales Appeal *of* Beauty and Styling—*Continued*

APPEARANCE

When you look at the new Cadillac whether from the side, front or rear, the impression is one of finely proportioned beauty and harmonious balance in every line of its appearance. The new body styling is modern, advanced and strikingly individual without any tendency toward the extreme or freakish. There is nothing externally to suggest bulk, yet the bodies have unusual interior roominess and their air-flowing lines blend one into another without having the obvious usual beginning and end of square corners at the front and rear of the body.

Notice how the long hood line unbroken by a radiator filler cap reaches almost to the windshield. The headlamps, too, are streamlined and the parking lamps are cleverly tucked away beneath them, so that there is no break or interruption in the flowing air stream lines. In the contour of the long and sweeping front fenders there is an entirely new beauty note. They are what is known as the air-foil type because they completely cover the running gear and chassis frame and eliminate any flat surfaces or air pockets that reduce speed through wind resistance. The new chromium striping on the hood and body increases the appearance of length.

The new chrome finished radiator grid is built into the radiator casing which is finished in color to match the hood. The restricted use of chromium is a feature that most all high priced car buyers prefer. The front of the car is beautiful, isn't it? The horns are concealed under the hood, like the radiator cap.

The new style full width double-bar front bumpers are also air-foil in design. They help to beautify and also protect the radiator and fenders. Their powerful coil springs are now concealed under the hood, like the radiator cap.

The new style full width double-bar front bumpers, are also air-foil in design. They help to beautify and also protect the radiator and fenders. Their powerful coil springs are now concealed and the gravel deflectors protect the car from being marred by stones thrown up from the surface of the road.

At the rear of the car you get the same impression of stability and of hammock comfort for those riding in the rear seat. It is scientifically air-streamed to eliminate back wind currents and the extra wide window affords splendid rear-vision of the road from the driver's seat.

The air foil rear fenders mold neatly into the body design which conceals the fuel tank. The twin rear lamps, one on each fender, are equipped with double lens underneath for safety and if the rear lamp bulbs should burn out in one or both lamps, the lenses pick up the beams of oncoming headlamps and flash back their red warning to the approching driver. The new double-bar bumpers are full width for protection to the fenders.

You know how ugly rust spots look on metal parts. Cadillac goes to the extra expense of bonderizing and rustproofing all metal parts to prevent rust before they are finished with Duco, instead of enamel, which, incidentally, is more expensive finish. It also harmonizes with the body color and gives the entire car a finished and tailored appearance. For anyone who loves beautiful things I am sure will be favorably impressed with the advanced styling of the new Cadillac which is in keeping with the policy that Progress Makes Change.

The Sales Appeal of Ease of Operation

Easy Engine Starting	Starter button on instrument panel. Semi-automatic choke. Current controlled generator. Large capacity battery. Double reduction gears and positive engagement of starting motor gear.
Easy Shifting	Syncro-mesh transmission permits silent, non-clashing gear shifting. Provides safety on hills, on ice or in traffic. It is always possible to change gears between 2nd and high instantly when desired.
Easy Steering	Hour-glass worm and double roller steering gear, mounted on roller ball and needle bearings. Wide tread and narrow frame makes shorter turning radius for parking and turning car around.
Visible Controls	Instrument panel with large pointer type dials grouped at left in front of driver. Easy to read. Well lighted for night driving. Headlamp beam indicator on instrument panel. Foot type control switch for dimming lights.
Ride Regulation	3-position ride regulator handle conveniently located in front of driver.
Braking	Vacuum brake assister, reduces brake pedal effort to minimum. 12 Roller bearings, in brake linkage, eliminate loss of pedal effort through friction. Hand brake lever on instrument panel easy to reach.
Engine Operation	Radiator shutters thermostatically operated. Cold air intake to carburetor.
Car Ventilation	Individually controlled no-draft ventilation. Window ventilators easily adjusted to any position to suit weather conditions. Reverse opening type screened cowl ventilator.
Protection From Glare	Inside adjustable visors. Windshield tilted at 18°, 25°, 29½° angle to prevent glare through rear window. (Multi-beam lighting gives greater night driving vision and protection.)

The Sales Appeal of Ease of Operation—*Continued*

There is a great difference in the handling ease of driving various cars. The larger and heavier the cars, naturally the more important it is that they be designed and made to handle with even greater ease than the smaller, shorter and lighter weight cars.

Cadillac engineers go to great lengths to design every part in the control features of Cadillac cars to provide the greatest comfort and reduce the physical effort of driving to the minimum. This is particularly true in the ease of starting, steering and stopping. A woman can handle a big Cadillac car without as much effort as it takes to operate lots of smaller cars that only weigh half as much.

Even though you have a chauffeur there are times when you may want to do some of the driving yourself and naturally, you want a car that either you or your wife or daughter can handle without exerting unnecessary physical effort. Every feature in the design of a Cadillac is designed to lessen physical effort in the ease of its control. That is why a Cadillac car is preferred by women drivers over other cars.

When you start the car you don't reach and stretch for a starter pedal on the toe-board. Directly in front of you on the instrument panel, is the starter button. You simply touch it and start the engine. The choke is used when starting in cold weather and after that its operation is semi-automatic, which eliminates its continued use.

Cadillac was first to design and perfect the non-clashing transmission, now widely used and known as syncro-mesh. It enables you to shift the gears quickly and positively without clashing. All forward speeds are quiet in the Cadillac due to the way the gears are made. There is safety, too—on hills, on icy or snowy pavements and in traffic, because you always have full control of the car and can use the engine power as a brake if you need it. You can always change gears instantly in the Cadillac—always with assurance and utmost ease and without fear of damage to the gears.

Steering has always been easy in Cadillacs, by reason of advanced engineering design and construction; but now it is easier than ever before. The wheel turns easily because the worm and roller steering gear is mounted on double-roller bearings. The new independent mounting of the front wheels provides even greater additional steering steadiness at all speeds when the car is in motion. You can park the Cadillac and make a full turn in much smaller space than any other car of similar size due to the narrow chassis frame, which gives more space for turning the wheels at a greater angle. It is always a pleasure to drive because you do not have to grope about from one instrument to another on the panel, or do more than glance to read them all. The large pointer-type dials are closely grouped in the left half of the instrument panel directly in front of you—easy to read at any time and well illuminated at night. There is even a dial on the instrument panel that tells you which of the three headlight beams is being used at night and when approaching another car you change the light beam by using the foot-control switch at the left of the clutch pedal without taking your hand from the steering wheel.

If the pavement or the road is rough you can adjust the shock absorber control of the springs to give you just the kind of a ride you want. The movement of the ride regulator handle located in front of the driver instantly changes the shock absorber control and makes it possible to have a firm, medium or soft ride, as you prefer.

In some cars, especially when driving at high speeds, stopping is more a matter of main strength than brake effectiveness. Not so in Cadillac. Your

The Sales Appeal of Ease of Operation—*Continued*

physical effort on the brake pedal is reduced to the very minimum, because the vacuum brake assister builds up your slight pressure on the pedal into a strong and powerful braking effort mechanically. None of the pedal effort is wasted by friction before it becomes operative, because Cadillac uses 12 anti-friction roller bearings in the brake linkage. This is a feature not found on many other cars.

There is plenty of legroom in the driving compartment in case three people want to ride in the front seat. The removal of the hand brake lever from its accustomed place in the center of the floor to a far more convenient position on the instrument panel and the placing of the shifting lever ahead in the toe-board, gives everybody plenty of room.

The engine is easy to handle both in summer as well as in winter. It quickly warms up to operating efficiency. The radiator shutters concealed behind the front grill are automatically operated by a thermostat in the cooling liquid and do not open fully until the engine is thoroughly warmed up. Cadillac also gives greater engine power by having the cold air intake into the carburetor, which provides greater power than do engines that use the warm air in the engine compartment.

Proper ventilation and the protection of your eyes from the glare are two comfort, safety and health factors which are essential to ease of operation from the driver's point of view—as well as the comfort of all others in the car.

When you drive or ride in a Cadillac you also have the distinct advantage of Fisher No-Draft Ventilation. The window ventilators are individually controlled and are easily adjustable to any position desired by those in the car to suit weather conditions, whether winter or in summer. It is just as important to have a comfortable car in hot weather as it is in cool weather. The Fisher No-Draft Ventilation system makes it possible to always have the proper amount of fresh air in the car without disturbing or chilling any of the occupants with violent drafts. Women particularly appreciate the comfort of being able to ride in a car without the discomfort of drafts, particularly when going to social engagements. The cowl ventilator is screened against the entrance of insects in summer and is opened away from the windshield to give even more air than is possible when opened at the front. It gives plenty of cool air in the driving compartment and does away with the use of the opening type of windshield that is hard to operate and always drafty when open.

Glare from lights ahead or in the rear is not only annoying, but unsafe. Cadillac provides two inside adjustable visors for protection against glare at the side as well as the front, either by day or at night, and the windshields are set at an angle to prevent glare from the headlights of cars behind. In night driving, Cadillac's multi-beam lighting system gives you better driving vision and greater protection. You always have plenty of light ahead and when passing cars the right side of the road is clearly visible for greater safety.

Because of motoring conditions today with faster driving and the need for quicker stopping and easier control of the car, you desire ease of operation, plus the added safety which it brings. Cadillac provides it in the highest degree.

The Sales Appeal *of* Safety

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There are two kinds of safety that are of interest to the buyer:

(a) *The safety of car operation and control.* In this group he will be interested in the safety of Visibility—Headlamp Lighting—Braking Effectiveness—Ease of Driving Control—Adequate Ventilation—Driving Comfort to prevent fatigue.

(b) *The safety of car construction.* In this group he will be interested in the safety of the built-in strength of the car construction. Frame, springs, wheels and tires, bumpers, running boards, bodies, brakes and steering.

(a) SAFETY OF CAR OPERATION AND CONTROL

Visibility

Correct height of seat cushion and cowl bar for clear driving vision.

Wide windshield glass and narrow pillar posts.

Large rear view window.

Sun visor adjustable to prevent front and side glare.

Windshield wipers that operate effectively regardless of engine load.

Headlamp Lighting

Multi-beam headlights for maximum open road lighting or when passing cars.

Foot dimmer light control switch.

Current controlled generator regulates current input to battery in proportion to lighting load.

Braking Effectiveness

Vacuum power brake assister lessens physical effort.

Brake drums of chrome-nickel cast iron prevent warping and out-of-roundness under sever usage.

Large diameter steel and aluminum brake shoes designed not to lose effectiveness when used continuously.

Articulated linkage assures full shoe contact.

Single nut outside simple adjustment on each wheel drum.

Ease of Driving Control

Clear vision instrument panel.

Pointer type dials for easy reading.

Narrow rim 3-spoke clear vision steering wheel.

Hourglass worm and double roller steering.

Wide tread and narrow frame for short turning radius and easy parking.

Convenient location of hand brake on dash.

Manually controlled shock absorbers.

Ride stabilizer automatically controls body roll or sidesway.

Easy front seat adjustment for necessary legroom and seating comfort.

The Sales Appeal *of* Safety—*Continued*

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(b) THE SAFETY OF CAR CONSTRUCTION

Frame

Strong—sturdy—non-flexing.

More rigid than other cars of similar weight.

X-type center frame with arms to front and rear welded to side members, makes strongest known box-girder type construction. 5-point engine mounting and extra wide front end cross-member make front end rigid.

Chassis construction close to ground with low center of gravity.

Springs

Helical coil type front springs with independent front wheel suspension.

Strong semi-elliptic rear springs cushioned in rubber. Threaded type hardened steel spring bolt at rear spring eye.

Wheels and Tires

Large, sturdy reinforced wheel hubs with more and heavier bolts.

Short spokes and drop center rims.

Tires—best balanced combination of fabric and rubber (6-ply).

Bodies

Welded steel panels and strong hardwood and steel frame construction. Double strength. Security clear plate safety glass throughout.

Heavy bow and slat roof construction.

Welded steel unit construction of cowl and front pillar posts.

Bumpers

Strong double-bar full-width front and rear bumpers with coil spring shock absorbers.

Running Boards

Strong one-piece heavy steel running boards give side protection.

Deep channel rubber mats for safety prevention against slippage.

Ventilation

Fisher No-Draft Ventilation prevents air pollution and fatigue in stormy weather.

Screened cowl ventilator keeps out insects.

Permanent position windshield eliminates drafts and does not require hand control.

Brakes

Chrome-nickel cast iron brake drums.

Steering

Double steering tie-rods protected by location between frame.

Transmission

Syncro-mesh transmission permits silent, non-clashing gear changing. Provides safety on hills, on ice or in traffic. Always possible to change gears instantly when desired and retain complete control of the car.

The Sales Appeal *of* Safety—*Continued*

(a) SAFETY OF CAR OPERATION AND CONTROL

WITH the changing traffic conditions and faster driving speeds on the highways, you will be vitally interested in what Cadillac offers to give you in greater safety when driving. In a motor car there are two entirely different groups of things that contribute to safety. One group is concerned with the safety features of car operation and control—the other with the safety and built-in strength of the car's construction.

In the first group you are particularly concerned with visibility, the ease of driving control, the positive sure and quick braking, the headlamp efficiency, adequate ventilation and in general everything that concerns effortless driving comfort with the idea of preventing fatigue.

When you drive the new Cadillac you will be instantly impressed with the safety and the feeling of great security. It is a combination of many things each in itself important, but when you consider them collectively you will agree they contribute to greater safety. Sitting at the wheel, you will notice the very wide range of clear visibility both front and rear. The seat cushion and the cowl bar are carefully and correctly positioned for clear driving vision of the road immediately in front of the car without stretching or craning your neck.

The wide windshield and narrow front pillars prevent blind spots and give maximum driving vision. The rear window has also been made extra wide to give an adequate rear view of traffic. The windshield cleaners are designed to always give clear vision when used, regardless of whether the engine is idling, accelerating at the start, or pulling up a stiff grade, because a special vacuum pump furnishes extra vacuum for the operation.

You will also appreciate the care that has been taken to prevent glare when driving. The two adjustable sun visors prevent glare from either the front or the sides; and the windshield is sloped at the necessary angle to eliminate the light reflections and glare from the headlamps of following cars. You can read the pointed type dial instruments at a glance because they are compactly grouped directly in front of you and are clearly visible through the narrow rim steering wheel. You will find the steering almost unbelievably easy, whether on the straightaway or maneuvering into a cramped parking space because the steering gear is mounted on roller and ball bearings. Even after a long day's run you will notice the absence of fatigue.

The combination of a very wide wheel tread and narrow frame affords an unusually short turning radius that facilitates the ease of parking and handling the car in small spaces or heavy traffic. You can quickly and easily adjust the front seat to your own requirements for legroom or a change in seating comfort when desired. The hand brake is easy and convenient to reach on the dash and you can select the particular kind of ride you desire for any road condition by the use of this handle that regulates the action of the shock absorbers. A ride stabilizer on the frame at the rear automatically controls body roll and prevents sidesway on curves at high speed and at all other times.

When the need arises for quick stopping you will find Cadillac brakes stop the car easily, smoothly and effectively. The physical effort of braking is reduced to almost nothing by the vacuum power brake assister. The brake drums made of chrome nickel are much longer wearing than ordinary steel. Even when used continuously, they do not warp or lose their effectiveness, a most important feature of safety. The brake shoe design is also unusual and different from other cars, because the brake shoes are of steel and aluminum to equalize heat expansion with

The Sales Appeal *of* Safety—*Continued*

(a) SAFETY OF CAR OPERATION AND CONTROL

the drums and prevent loss of brakes when used continuously. Another feature is the articulated brake linkage that always assures full contact of the shoes with the drums. Brake adjustment is easy and quickly made by means of an adjustment screw located on the outside of each wheel drum.

Cadillac's multi-beam headlighting gives you more than the usual amount of light on the road. It provides three beams—city, country driving and country passing. You select city and country beams by means of the switch on the steering wheel. The passing beam is controlled by the foot switch at the left of the clutch pedal. On the instrument board the visible headlamp beam indicator dial shows quickly what type of beam you may be using and when the headlamps are in use it eliminates uncertainty when approaching oncoming cars. You can always be sure that the battery is being properly charged when headlamps are in use because the charging rate of the electric generator is automatically regulated and increased to compensate for the volume of the current used for lighting.

(b) Safety of Car Construction

In the manufacture of Cadillac cars the careful metallurgical research, fine engineering and precision manufacturing used assures you of the structural safety of the car which you can accept as a matter of course. Nevertheless, you will be interested in some of the details at least as to the strength of the frame, springs, wheels and tires, brakes, steering and so on.

The frame is unusually strong. It has an "X" type frame which is in reality a frame within a frame because the arms extend to the front and rear and are welded to the side members, which makes the frame a solid, sturdy and rigid unit of construction capable of standing unusual strains.

With the new independent suspension of the front wheels the front springs are only required to support the weight of the frame.

All former braking and twisting strains are now taken by the forged arms that connect the wheels directly to the frame.

The wheels, tires, running boards and bumpers are all unusually strong and were designed for maximum safety. The bodies are strongly constructed of steel with the panels welded in a unit type construction. The cowl, windshield pillar posts and front body brackets are also welded together into a single unit that gives unusual strength and safety.

The syncro-mesh transmission permits you to shift positively without clashing and when driving on hills, on ice or in snow it provides additional safety in giving you complete and instant control of the gears at all times under all conditions.

The cause of numberless accidents on the highways is driver fatigue. One of the many important things that contributes most to fatigue is the lack of good ventilation and constant circulation of air within the body. Cadillac cars are equipped with the Fisher No-Draft ventilation system that always assures a constant supply of fresh air and plenty of ventilation without drafts. Ventilator windows are provided in both front *and rear* compartments and may be individually controlled by the driver or the rear seat passengers without any discomfort. It is without question the greatest advancement ever introduced in closed cars for the health, comfort and safety of passengers and driver.

So you see when we talk of safety in a Cadillac car we really have many important features of safety that are of vital importance for you to consider. Safety is priceless to you and your family and in no other car will you find as many features that protect your safety as well as in Cadillac.

The Sales Appeal of Long Life *and* Economical Maintenance

(a) Engineering Design and Research. Constant research analysis and fatigue testing of all kinds of material by Cadillac's Metallurgical Department before approved for design and use by Cadillac Engineers.

(b) Cadillac Engineering Division maintains its leadership through a policy of constant progress by continuous work on designs and developments.

(c) General Motors Research Laboratories. Effort is devoted to new development and the solution of basic research problems for future use of the engineers of General Motors units. Its entire engineering and research activities are part of General Motors and, therefore, available to Cadillac.

(d) General Motors Proving Grounds, the world's largest outdoor scientific testing laboratory in the automotive industry. Cadillac engineers supplement their own testing with the experience and data of the Proving Grounds' engineers who conduct independent tests on all makes of vehicles. This policy of Cadillac engineering keeps Cadillac in advance of competition and assures satisfaction in new principles, designs and improvements before they are put into production.

(e) Cadillac Craftsmanship and Precision Manufacturing. The Cadillac factory is a model of modern manufacturing efficiency. Cadillac production methods are scientifically controlled and safeguarded by the finest precision standards of manufacturing and most rigid inspection systems for rejection of any parts not up to these standards.

(f) Product Features for Economical Maintenance. Every unit desiged with large factor of extra strength.

Careful balancing of units to minimize friction and reduce wear.

Full pressure lubrication to all moving parts in engine—bearings, piston pins, timing chains, etc.

Positive crankcase lubrication prevents dilution of engine lubricating oil. Reduces oil change to every 2,000 mile period which is only half as frequently as some cars.

Air cleaner and fuel filter purifies air, and fuel used in engine, prevents wear and prolongs life of precision fitted parts.

Engine water temperature thermostatically controlled by radiator shutters.

Current controlled generator air cooled to prolong life of generator. Charging rate to battery automatically controlled in proportion to lighting load.

Pistons for long wear and light weight on bearings and reciprocating parts.

Semi-automatic choke reduces need for hand operated choke button when starting.

Ball and tapered roller bearings in major units such as transmission, clutch, wheels and universal joints.

Threaded spring shackle and rubber mounted spring bushings eliminate friction and wear.

Chrome-nickel cast-iron brake drums prevent scoring and uneven wear common to less expensive construction.

(g) Cadillac Service Policy provides Cadillac purchasers maximum service protection at lowest possible cost for maintenance and protects owner's investment further than competitive policies.

The Sales Appeal of Long Life and Economical Maintenance—*Continued*

When you invest in a motor car you are entitled to a satisfactory return on that investment in the terms of long life and economical maintenance which, in Cadillac, is pre-determined by the thoroughness of its engineering design and research and the excellence of its manufacture.

Cadillac goes to every possible length to safeguard your investment by insuring long life and economical maintenance long before you take delivery of your car. For example—

(a) **Cadillac's Metallurgical Department** devotes its entire time to research analysis and fatigue testing of all kinds of materials before they are even approved for design and use by the Engineering Department. If you were to visit the Cadillac plant in Detroit, you would see in constant use all the devices which science has perfected for finding out about the life and wear of materials. This is done to find out what will take place in the cars before they are even manufactured. Such information is assurance to you that Cadillac knows that the materials it selects will prove satisfactory to the purchasers in the terms of long life.

(b) **The Cadillac Engineering Division** is known and respected as a leader in the motor car industry. It is the work of the Engineering Division to think in terms of the future and to constantly strive for progress, in advanced designs and mechanical developments. Such a purpose increases the efficiency of the product, and its satisfaction to the buyer.

(c) **General Motors Research Laboratories** devote their efforts to basic research problems for future use by the engineers of Cadillac and other General Motors units. The facilities of the laboratories for engineering research and experimentation are all-embracing. Since the Laboratories are owned and operated in their entirety by General Motors, the benefits of their conclusions and findings are always available to Cadillac for the continuous improvement and advancement of its product.

(d) **General Motors Proving Grounds** are the largest and most complete outdoor testing laboratory in the motor car industry. Cadillac engineers do their own exhaustive testing and supplement their findings with the information and experience gained by the Proving Grounds engineers. Their methods of test are impartial and every car whether built by a General Motors unit or by some other manufacturer, must show what it is made of and what it can do. Through such extensive testing and research work Cadillac engineers are not only assured that new principles and their application will be successful and satisfactory to you, but they are in position to continuously keep in advance of competition, and pass the benefits of this knowledge on to you and all other Cadillac owners.

(e) **Cadillac craftsmanship and precision manufacturing** are famed throughout the world. Every year hundreds of visitors from all parts of this country and from all over the world go to the Cadillac plant in Detroit. The plant is known as a model of modern manufacturing accuracy and efficiency where production methods are scientifically controlled and safeguarded by the finest precision inspection standards.

The Sales Appeal of Long Life and Economical Maintenance—*Continued*

(f) PRODUCT FEATURES FOR ECONOMICAL MAINTENANCE

Long Life and economical maintenance, as interpreted by Cadillac engineering and manufacturing, requires a large factor of extra strength in every unit of its construction. This is seldom expressed in weight or size, but is determined by metallurgical and engineering science that knows how to provide strength with fine alloys and analysis rather than resorting to weight and bulk.

In the construction of the engine the reciprocating and operating parts are balanced to the smallest fractions of an ounce, to minimize friction and reduce wear. Full pressure lubrication is provided to all moving parts such as main and connecting rod bearings, piston pins, timing chains, camshaft bearings. Positive crankcase ventilation prevents dilution of the engine lubricating oil, thereby reducing wear and lengthening the life of the lubricant. It also increases the periods for complete draining of the crankcase and replenishing with new oil, to every 2000 miles—which is only half as frequently as with many cars—an economy feature which will appeal to you.

The oil, air and fuel which are used in the Cadillac engine are strained, filtered and cleaned. The oil is screened as it is recirculated by the pump to the various engine parts. The air cleaner removes the dust from the air drawn into the carburetor and prevents microscopic abrasive material from reaching the surfaces of precision fitted parts, thereby prolonging their life and efficiency.

The fuel filter removes any particles of dirt and water from the gasoline which, if permitted to remain, often cause engine stoppage.

Cadillac has carried on research on aluminum alloy pistons for years and has overcome the disadvantages of earlier designs. We use pistons of aluminum alloy which is alumilite plated and has excellent wearing qualities due to its hard, tough and long wearing wall surface. They are ground slightly elliptical in shape, with such precision that when they expand with heat in operation, they become perfectly round. With these pistons you are assured of long wear—and the special design of the rings gives you the further satisfaction of lower oil consumption.

An internal combustion engine cannot develop its greatest efficiency in power unless its temperature is at the approximately correct point. The Cadillac radiator shutters are thermostatically regulated so that the engine reaches that point quickly, thus reducing the "warming up" period, especially in cold weather. The radiator shutters maintain the correct temperature and their operation is wholly automatic. All of this means greater fuel economy to you.

If you have ever experienced the inconvenience of a run-down battery, you will be interested to know that the new Cadillac provides for keeping the battery charged with more current than is used when the lights are on. In other cars the generator's charging rate to the battery drops as current is used for the headlights. In the Cadillac

The Sales Appeal of Long Life and Economical Maintenance—*Continued*

(f) PRODUCT FEATURES OF ECONOMICAL MAINTENANCE

generator the amount of current to the battery is automatically increased to compensate for the outgo. The generator is air-cooled to prolong its life.

Continued use of the hand-operated carburetor choke, in starting the engine and in cold weather driving, is reduced by Cadillac's new semi-automatic choke. In midwinter it automatically provides summer flexibility and efficiency to the engine after it is started.

Ball and tapered roller bearings are used in the major units, such as transmission, clutch, rear axle and wheels to minimize friction and prolong life of the moving parts.

Cadillac's chrome nickel brake drums are proof against the scoring and the uneven wear which are common to less costly material and construction. Cadillac brake drums completely enclose the brake mechanism at each wheel, protecting it from water and dirt.

Threaded spring shackles and rubber mounted spring bushings eliminate friction, noise and wear at the points where the rear springs are attached to the frame. They require no adjustment because between each spring leaf graphite bronze discs are used to give adequate lubrication and eliminate the need for spring lubrication.

Cadillac service policy. With all of this care in the design and manufacture of Cadillac cars you can be assured of getting the best return on your investment in terms of quality and long life. In addition to this, however, Cadillac goes one step further and backs up the car after it is put into service by the owner with the finest service policy of any company in the automobile business. Cadillac service men are well trained and constantly given help and education on the best methods of service maintenance so that Cadillac owners will derive the utmost in economical upkeep and carefree service from their cars.

(g) CADILLAC SERVICE POLICY

Service rendered according to Cadillac standards by Authorized Cadillac-La Salle Service Stations provides for car salesmen an additional and effective sales story, and also contributes definite sales assistance by fostering good will and by maintaining customer interest in Cadillac during the interval between successive new car purchases.

The sales story in regard to Cadillac-La Salle service includes the nation-wide features of the Cadillac service policy as presented on the next page and the advantages to the owner of well-organized Authorized Service Stations, which are as follows:

Authorized Cadillac-La Salle Service Stations have a more sincere interest in the operation of the Cadillac owner's car than anyone else could have. Their personnel are specialists, having had more experience on Cadillac and La Salle cars than anyone could have who

The Sales Appeal of Long Life and Economical Maintenance—*Continued*

(g) CADILLAC SERVICE POLICY

works on all makes of cars. Furthermore, their personnel secures the benefit of continuous factory training, through the medium of up-to-date, expert information on Cadillac adjustments and service methods, supplied exclusively to them by the Cadillac factory in regular publications and special bulletins.

The most valuable contribution of Authorized Cadillac-La Salle Service to the salesmen, however, is in retaining the car owner's good will and interest in Cadillac. Authorized Service helps to accomplish this by keeping the car in satisfactory operating condition at a minimum of cost and inconvenience, and by providing a means of maintaining regular contact with each car purchaser.

Salesmen can utilize the aids provided by Authorized Service to best advantage by doing the following things:

Adopt the proper attitude toward service in every contact with prospects and owners. This means pointing out to each purchaser that his car is a piece of fine machinery and, as such, will require a certain amount of regular service. Then sell each prospect on Cadillac service as well as on the Cadillac car.

Know the selling points of your own local service station. Know the advantages which it possesses by virtue of its being an Authorized Service Station; know its facilities, its personnel and its high grade of work; and make sure that your prospects know these things also.

Use service as a reason for making additional sales calls. You can call upon and interview an owner on service at times when a strictly sales message might not supply a plausible entry. You can use service as a "door opener" to interview those owners who declare that they are not in the market.

Re-emphasize the superiority of Authorized Service in all of these calls, and exert your efforts to make regular service customers of those owners who are not. By so doing, you will increase the likelihood of their being satisfied with their cars and enthusiastic about Cadillac, which means that your sales efforts with these owners will be more successful.

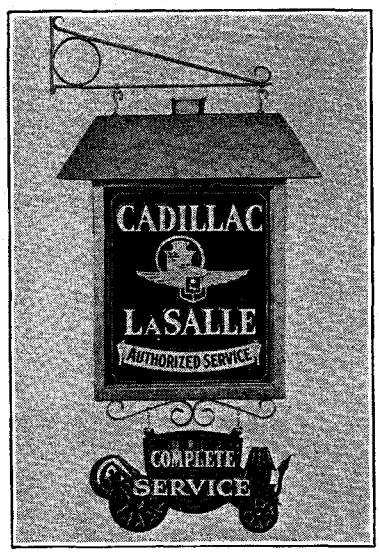
Sales of new cars to former Cadillac and La Salle owners and to their friends, constitute by far the greater part of our new car sales. Each one of these sales is made primarily because of the good will which these customers hold toward both the Cadillac car and the local Cadillac organization. This good will is fostered in several different ways; of which one of the most effective is good service.

The Sales Appeal *of* Long Life and Economical Maintenance—*Continued*

(g) CADILLAC SERVICE POLICY

Cadillac Service Policy is Nationwide

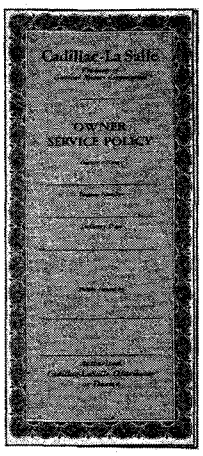
The remarkably superior Cadillac design and manufacture is backed up by equally superior service. Cadillac service is the same all over the country; it is based on a national standard Service Policy which has one purpose—to guarantee uninterrupted use of Cadillac and LaSalle cars with maximum performance and minimum expense to their owners.



Cadillac's Service Warranty

1. *Free Adjustment*—For the first ninety days after delivery, provided the car has not been driven to exceed 4,000 miles and is in the hands of the original purchaser, the owner will receive free inspections and adjustments: first between 500 and 1,000 miles, second between 1,000 and 2,000 miles, and the third between 2,000 and 4,000 miles. These to be given without charge to the owner provided the work is not made necessary by misuse, negligence or accidents.

2. *Free Replacement*—For ninety days after delivery, provided the car has not been driven to exceed 4,000 miles, any parts (including all original equipment except tires) which have proved defective in either material or workmanship will be replaced or repaired by any Cadillac-LaSalle dealer in the United States and Canada without any charge to the owner for the material or labor.



3. *Free Inspections*—Throughout the life of the car the owner is entitled to have his car tested and inspected without charge every 30 days or 1,000 miles by any authorized Cadillac-La Salle Service Station, provided such inspection or testing requires no dismantling of parts.

The owner's obligation to his car, so that he may get the above three things, is simple:

1. He is asked to have his car inspected by an authorized Cadillac Service Station every 1,000 miles.

2. He is to have his car lubricated every 1,000 miles at an authorized Cadillac Service Station.

3. He is to have the crankcase drained and refilled every 2,000 miles and to maintain the proper oil level in the crankcase.

4. He is asked to keep the radiator supplied with water (adding anti-freeze in winter) and to keep the battery supplied with distilled water.

Cadillac Owner Identification Service Card Service Policy Certificate

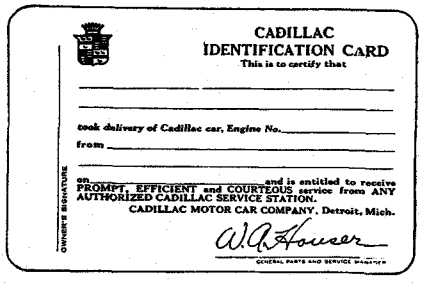
Soon after his car is delivered to him, he will get an Identification Card direct from the Cadillac Motor Car Company. This card enables him to secure the service to which he is entitled from any authorized Cadillac Service Station in the country. He will also get a Certificate telling him details of Cadillac's Uniform Service Policy, most appreciated when touring (show certificate).

Replacement Policy at Home or When Touring

If a part requires replacement because of defect within the warranty period (90 days or 4,000 miles) and the owner should be away from home with his car, that replacement will be made by any one of the many Cadillac authorized Service Stations, and he does not have to pay for it simply because he is away from home.

Change of Residence

In case he changes his residence from one location to another before the warranty period has expired, the authorized Cadillac-La Salle Station serving the locality into which he moves will, upon presentation of the Identification Card, render any no-charge service to which he may be entitled as outlined in the Service Policy.


CADILLAC
IDENTIFICATION CARD
This is to certify that

took delivery of Cadillac car, Engine No.
from
on and is entitled to receive PROMPT, EFFICIENT and COURTEOUS service from ANY AUTHORIZED CADILLAC SERVICE STATION.
CADILLAC MOTOR CAR COMPANY, Detroit, Mich.

OWNER'S SIGNATURE

Uniform Parts Prices

When he buys parts outside the Service Policy terms, he pays the same price everywhere. Cadillac does not add shipping or handling charges to parts prices.

Flat Rate Repair Charges

Service charges on Cadillac cars are based on a standard schedule furnished by the Cadillac Motor Car Company. Virtually every service job has a flat price that includes both labor and material. This means that a definite understanding can be had with the owner because he can be quoted an exact price for any service work before the work is begun.

The Sales Appeal of Long Life and Economical Maintenance—*Continued*

(g) CADILLAC SERVICE POLICY—LUBRICATION AGREEMENT

The Cadillac Lubrication Agreement is Cadillac feature which, by providing Cadillac owners with a superior and less expensive way of having their cars lubricated, gives Cadillac salesmen another advantage over competitive car salesmen.

The Cadillac Lubrication Agreement provides a definite and systematic plan for having a Cadillac or LaSalle car thoroughly lubricated with approved lubricants at the specified 1,000 mile intervals, and at slight expense.

It also provides the owner with an incentive that will assure his bringing his car to the service station every 1000 miles, where he will secure, along with the complete lubrication operations, the regular inspections to which he is entitled and which will permit him to secure the preventive service that will keep his actual service expenditures at a minimum.

Lack of regular lubrication or improper lubrication are responsible for a large percentage of all motor car repair costs, whereas correct lubrication, especially when coupled with thorough inspections, assures smooth, uninterrupted performance and long life. The Lubrication Agreement assures this regular lubrication and inspection by the most convenient and least costly method.

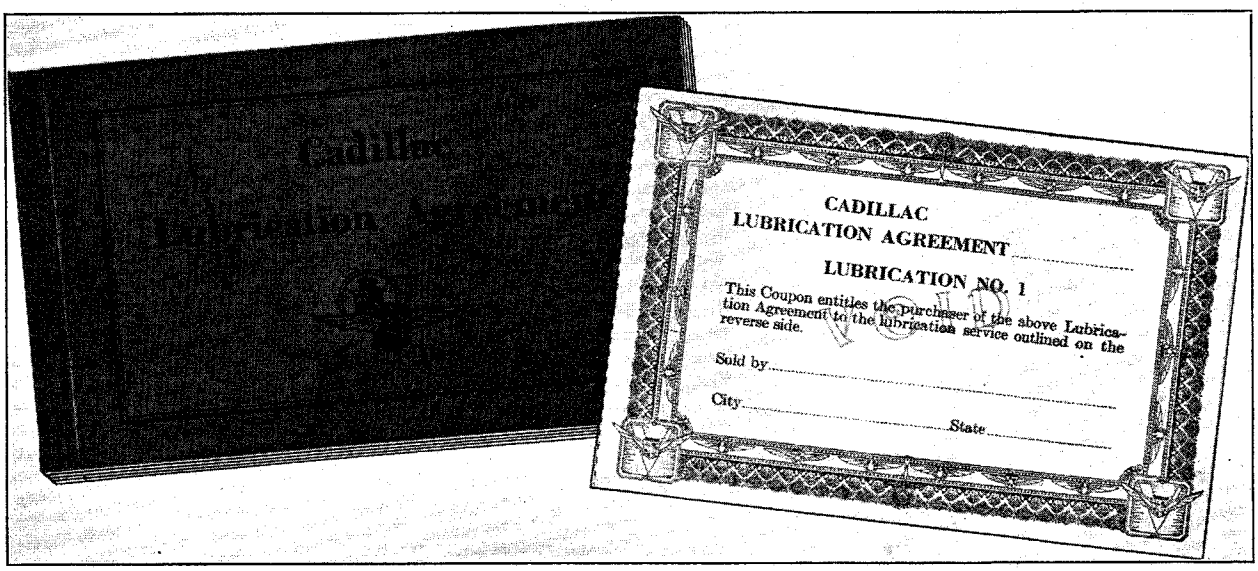
Under the terms of the Cadillac Lubrication Agreement, the owner purchases from his distributor or dealer either 6 scheduled lubrications, to be performed within a period of not over 6,000 miles or 9 months' time, or 12 scheduled lubrications, to be performed within a period not to exceed 12,000 miles or 18 months.

The owner pays in advance for this lubrication, but the price he pays is considerably less than the already low price of the Cadillac lubrication operations, and a great deal less than the owner would have to pay anywhere else for the same grade of lubrication work.

When an owner purchases an Agreement, he receives as his receipt the coupon book illustrated on this page. This book will contain either 6 or 12 coupons, one for each lubrication operation included in the Agreement purchased. Each time that a lubrication operation becomes due, the owner merely takes his car to the service station, asks for "schedule lubrication" and pays for the lubrication work by turning in the correct coupon.

The Lubrication Agreement, furthermore, is honored at every Authorized Cadillac-LaSalle service station in the United States. If a scheduled lubrication becomes due while an owner is on tour, he need only go to the nearest Authorized Service Station, where he can have the necessary lubrication work performed without any additional charge merely by presenting the Agreement coupon in the same manner as if he were at his home service station.

In summary, the Cadillac Lubrication Agreement is advantageous to Cadillac owners because it provides: exactly correct lubrication, assured regular inspection, the most convenient lubrication plan, nation-wide tourist privilege, and a minimum of lubrication expense.



The Sales Appeal *of* Long Life and Economical Maintenance—*Continued*

(g) CADILLAC SERVICE POLICY

1. Delivery:

The Dealer will see that the car is properly prepared before delivery to the owner, in accordance with Standard Factory Instructions.

2. Parts and Labor:

For ninety days after delivery, provided the car has not been driven to exceed 4,000 miles, any parts (including all original equipment except tires) which have proved defective in either material or workmanship will be replaced or repaired by any Cadillac-LaSalle dealer in the United States and Canada without any charge to the owner for the material or labor.

3. Adjustments:

For the first ninety days after delivery, provided the car has not been driven to exceed 4,000 miles and is in the hands of the original purchaser, the owner will receive three inspections and adjustments; the first between 500 and 1,000 miles, second between 1,000 and 2,000 miles, and the third between 2,000 and 4,000 miles. These to be given without charge to the owner provided the work is not made necessary by misuse, negligence or accidents.

4. Inspections:

Throughout the life of the car the owner is entitled to have his car tested and inspected without charge every 30 days or 1,000 miles by any authorized Cadillac-LaSalle Service Station, provided such inspection or testing requires no dismantling of parts.

5. Service Identification Card:

At the time of delivery the owner will be provided with a service identification card which will introduce him to any authorized Cadillac-LaSalle Service Station and entitle him to receive service in accordance with this policy. This card should be kept at all times in the holder provided for it on the car.

6. Tourist Privileges:

When touring, the owner is entitled, upon presentation of his identification card, to all of the benefits of this policy at any Authorized Cadillac-LaSalle Service Station in the United States and Canada.

7. Change of Residence:

In case the owner changes his residence from one location to another before the warranty period has expired, the Authorized Cadillac-LaSalle Service Station serving the locality into which the owner moves will, upon presentation of the Identification Card, render any no-charge service to which the owner may be entitled as outlined in paragraphs two and three.

8. Regular Maintenance Parts and Service Charges:

For the benefit of the owner, the Cadillac Motor Car Company has provided established parts and labor prices on regular maintenance work. Genuine Cadillac-LaSalle parts are sold only through Authorized Cadillac-LaSalle Service Stations, and can be secured at the published list price anywhere in the United States and Canada, and there are no additional charges for freight, express, handling, or additions of a similar nature.

INSTITUTIONAL DATA SECTION

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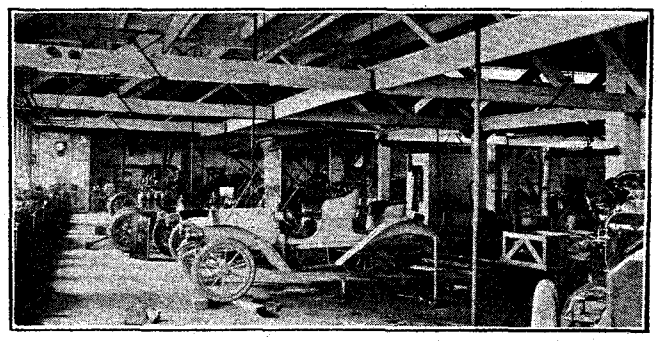
CADILLAC HISTORY



Building Cadillacs in 1906

THE CADILLAC MOTOR CAR COMPANY dates from 1895, when the Leland & Faulconer Manufacturing Company was organized to build high grade machinery. Henry M. Leland, prominently identified with the industry for years, was the practical man of the venture. In 1899 this company became the Detroit Automobile Company, organized to build complete automobiles, followed in 1902 by the formation of the Cadillac Automobile Company.

The name Cadillac was chosen in honor of Antoine de La Mothe Cadillac, French explorer who founded the city of Detroit in 1701; his coat of arms was adopted as the emblem which each Cadillac should bear. In September, 1902, work was started on the first Cadillac automobile, a Model A one-cylinder car. In 1904 the Model B one-cylinder Cadillac was introduced. There were 16,126 one-cylinder Cadillacs manufactured including both Model A and Model B. Production continued about five years.

The year 1905 saw the introduction of the four-cylinder Cadillac, which proved a success from the start. A total of 67,167 units of this type was produced. In 1908, Cadillac won the Dewar Trophy awarded by the Royal Automobile Club of London, England, for the greatest advance by any motor car during the year. Cadillac was the first American car to win this award. In 1910 Cadillac experienced another important change when it was purchased by General Motors. In the same year it startled the industry by placing the first "big" order for closed cars (150 bodies) with the Fisher Body Corporation.

Two years later Cadillac developed electrical starting, lighting and ignition. For this development it again was awarded the Dewar Trophy, thus enabling itself as the only car in the world to win this coveted honor twice. In 1914, Cadillac introduced the first 90-degree V-type eight-cylinder engine ever built in this country. The introduction of this car is regarded as the greatest single factor in Cadillac's success.

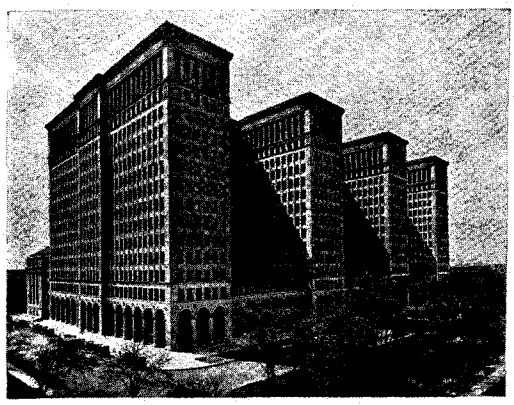
In 1925, Mr. Lawrence P. Fisher was made president of the Cadillac Motor Car Company; under his leadership Cadillac has added steadily to its reputation as a builder of quality cars and surged far ahead in the field of pioneering. In 1927, the La Salle V-Eight was introduced as a companion car to the Cadillac V-Eight. Inheriting Cadillac quality and prestige, it immediately established a sales record of its own for new cars of its price class, and brought the sales of V-Eight cars produced by the Cadillac Motor Car Company to the amazing total of more than 500,000 at the end of 1931.

In 1928, Cadillac perfected the famous syncro-mesh transmission, and during this same year, Cadillac took another important step in the direction of safety when it equipped all of its cars with non-shattering glass. Recognizing the trend toward multi-cylinder cars which Cadillac had been establishing from its beginning, Mr. Fisher started the company's engineers on experiments with 12 and 16-cylinder V-type engines. After three years' experimental work, during which time the 16-cylinder power plant was perfected, Cadillac announced America's first 16-cylinder automobile, the Cadillac V-16, in January, 1930. In October, 1930, the Cadillac V-12 was presented which had been perfected about the same time as the V-16. This car brought Cadillac's distinguished family to four fine automobiles, all equipped with V-type multi-cylinder engines, and established Cadillac as the first manufacturer to completely cover the fine car field.

STABILITY

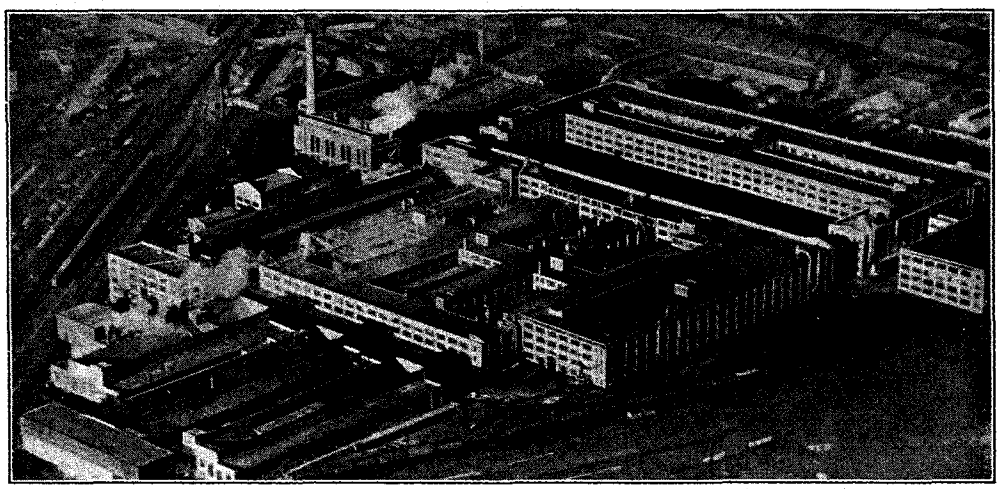
Every car buyer wants the assurance of security for his investment. In the fine car field Cadillac offers this security in greater measure than any other car.

CADILLAC *and* GENERAL MOTORS



GENERAL MOTORS BUILDING, DETROIT

CADILLAC LEADERSHIP IN THE FINE CAR FIELD IS SOMETHING THAT NEVER COULD HAVE BEEN ATTAINED ALONE . . . IT IS DUE TO CADILLAC'S AFFILIATION WITH GENERAL MOTORS



CADILLAC MOTOR CAR COMPANY FACTORY DETROIT

THE ADVANTAGES TO THE PURCHASER ARE:

1. PERMANENCE *of* ORGANIZATION
2. WORLD WIDE MARKETS
3. VOLUME PRODUCTION
4. FINANCIAL STRENGTH
5. COMBINED PURCHASING POWER
6. ENGINEERING EXCELLENCE

ROLL CALL

Many Started—Few Remain

(This list by courtesy of Automotive Daily News)

~~'09 ABBOTT DETROIT~~
~~'20 ACE~~
~~'04 ACME~~
~~'04 ADAMS FARWELL~~
~~'08 ADRIA~~
~~'06 AEROCAR~~
~~'04 AJAX~~
~~'25 AJAX~~
~~'01 AKRON~~
~~'07 ALBANY~~
~~'09 ALCO~~
~~— ALDEN SAMPSON~~
~~'14 ALLEN~~
~~'08 ALLEN KINGSTON~~
~~— ALMA~~
~~'11 ALPENA~~
~~'16 ALTER~~
~~'21 AMBASSADOR~~
~~'02 AMERICAN ELEC.~~
~~'03 " GAS~~
~~'03 " STEAM~~
~~'01 "~~
~~'17 "~~
'30 " AUSTIN
~~— FIAT~~
~~'06 " MORS~~
~~'00 " SIMPLEX~~
~~— " UNDERSLUNG~~
~~'10 AMPLEX~~
~~'09 ANCHOR~~
~~'16 ANDERSON~~
~~'08 ANGUS~~
~~'10 ANHUT~~
~~'01 APPERSON~~
~~— ARBENZ~~
~~'05 ARDSLEY~~
~~'12 ARGO ELEC.~~
~~— ATLANTIC~~
~~'07 ATLAS~~
~~'14 ATLAS KNIGHT~~
'03 AUBURN
~~'06 AURORA~~
~~'04 AUSTIN~~
~~'99 AUTOCAR~~
~~'01 AUTO DYNAMIC~~
~~'01 AUTOMOTOR~~
~~'03 AUTO VEHICLE~~
~~'06 BABCOCK ELEC.~~
~~'01 BACHELLES~~
~~— BADGER~~
~~'07 BAILEY ELEC.~~
~~'09 BAKER~~

~~'01 BALDNER~~
~~'00 BALDWIN~~
~~'08 BARLEY~~
~~'18 BARNES~~
~~'08 BARTHOLOMEW~~
~~'04 BATES~~
~~— BAUER~~
~~'07 BAY STATE~~
~~— BEAVER~~
~~'20 BEGGS~~
~~'07 BELDEN~~
~~'15 BELL~~
~~'08 BENDIX~~
~~'17 BENHAM~~
~~'17 BEN HUR~~
~~'08 BENN JR.~~
~~'02 BERG~~
~~'09 BERGDOLL~~
~~'05 BERKSHIRE~~
~~— BERLIET~~
~~'04 BEVERLY~~
~~'15 BIDDLE~~
~~— BIMEL~~
~~'08 BINNEY-BURNHAM~~
~~'21 BIRCH~~
~~'08 BLACK~~
~~'07 BLACK CROW~~
~~'04 BLACK DIAMOND~~
~~'03 BLACKHAWK~~
~~'29 BLACKHAWK~~
~~'06 BLISS~~
~~'05 BLOMSTROM~~
~~'03 BLOOD~~
~~'08 BOLTE~~
~~— BORLAND~~
~~'13 BORLAND~~
~~— GRANNIS~~
~~'08 BOSTON HIGH~~
~~— WHEEL~~
~~'15 BOUR DAVIS~~
~~'22 BOWMAN~~
~~'20 BRADLEY~~
~~'02 BRAMWELL~~
~~'03 BRAZIER~~
~~'02 BRECHT~~
~~'05 BREEZE &~~
~~— LAWRENCE~~
~~'04 BREW & HATCHER~~
~~'16 BREWSTER-KNIGHT~~
~~— BRIGGS-DETROITER~~
~~'14 BRIGHTON~~
~~'14 BRISCOE~~

~~'03 BRISTOL~~
~~— BROC ELECTRIC~~
~~— BRODESSER~~
~~'08 BROOK~~
~~— BROWN~~
~~'08 BROWNIEKAR~~
~~'07 BRUSH~~
~~'03 BUCKMOBILE~~
~~'07 BUCMOBILE~~
~~'01 BUCKEYE~~
~~'01 BUFFALO ELEC.~~
~~'01 BUFFALO~~
~~'02 BUFFUM~~
'04 BUICK
~~'12 BURG~~
'02 CADILLAC
~~'03 CAMERON~~
~~'14 CAMERON~~
~~'17 CAMPBELL~~
~~'01 CANADA~~
~~'02 CAPITOL~~
~~'11 CARHARTT~~
~~'12 CARNATION~~
~~'07 CARTERCAR~~
~~— CARTHAGE~~
~~'10 CASE~~
~~'07 CATO~~
~~— CAVAC~~
~~'02 CENTAUR~~
~~'01 CENTURY GAS~~
~~'01 CENTURY ELEC.~~
~~'01 CENTURY STEAM~~
~~'08 C. T.~~
~~'05 CHADWICK~~
~~'08 CHALMERS~~
~~'09 CHAMPION~~
~~'12 CHANDLER~~
~~'01 CHAPMAN ELEC.~~
~~'03 CHELSEA~~
'12 CHEVROLET
'24 CHRYSLER
~~'03 CHURCH~~
~~'13 CHURCH FIELD~~
~~'03 CINCINNATI ST'M~~
~~— CINCO~~
~~— CINO~~
~~'01 CLARK~~
~~'08 CLARK CARTER~~
~~'02 CLARKMOBILE~~
~~'02 '19 CLEVELAND~~

~~'00 CLIMBER~~
~~'03 CLOUGHLEY~~
~~'00 COATES GOSHEN~~
~~'02 COATES STEAM~~
~~'11 COEY~~
~~'07 COLBURN~~
~~'11 COLBY~~
~~'09 COLE~~
~~'01 COLLINS ELEC.~~
~~'21 COLONIAL~~
~~'08 COLT~~
~~'98 COLUMBIA ELEC.~~
~~'00 COLUMBIA GAS~~
~~'16 COLUMBIA~~
~~'16 COLUMBIA~~
~~— KNIGHT~~
~~'02 COLUMBUS~~
~~'13 COMET~~
~~'17 COMMONW'LTH~~
~~'04 COMPOUND~~
~~'01 CONRAD~~
'32 CONTINENTAL
~~'02 CORBIN~~
~~'11 CORBITT~~
'29 CORD
~~'08 CORINTHIAN~~
~~'08 CORREJA~~
~~'07 COSMOPOLITAN~~
~~'01 COTTA~~
~~'04 COURIER~~
~~'09 COURIER~~
~~'22 COURIER~~
~~'01 COVERT~~
~~'00 C. P.~~
~~'06 CRAIG TOLEDO~~
~~'12 CRANE~~
~~'05 CRAWFORD~~
~~— CRESCENT~~
~~'02 CREST~~
~~'01 CRESTMOBILE~~
~~'11 CRICKET~~
~~— CROW~~
~~'01 CROWDUS ELEC.~~
~~'11 CROW ELKHART~~
~~'07 CROWN HIGH~~
~~— WHEEL~~
~~— CROXTON~~
~~'09 CROXTON KEETON~~
~~'05 CULVER~~
~~'01 CUNNINGHAM~~
~~— STEAM~~
'11 CUNNINGHAM

~~'00 CUTTING~~
~~'07 C. V. I.~~
~~'03 D. A. C.~~
~~'00 DAGMAR~~
~~'11 DALTON~~
~~'15 DANIELS~~
~~'01 DARLING~~
~~'03 DARROW~~
~~'02 DAVENPORT~~
~~'10 DAVIS~~
~~'09 DECAUVILLE~~
~~'02 DECKER~~
~~'06 DEERE~~
~~'07 DE LUXE~~
~~'10 DEMOT~~
~~'04 DESBERON~~
~~'06 DE SHAW~~
~~'19 DE SOTO~~
'28 DE SOTO
~~'09 DE TAMBLE~~
~~'00 DETROIT~~
~~'12 DETROIT CHATHAM~~
~~'09 DETROIT DEARBORN~~
~~'07 DETROIT ELECTRIC~~
~~'12 DETROITER~~
~~'34 DE VAUX~~
~~— DIAMOND T~~
~~'25 DIANA~~
~~— DIEXEL~~
~~'14 DILE~~
~~'17 DISBROW~~
~~'11 DISPATCH~~
~~'16 DIXIE FLYER~~
~~'10 DOBLE STEAM~~
'14 DODGE
~~'09 DODO~~
~~'04 DOLSON~~
~~'06 DORRIS~~
~~'15 DORT~~
~~'19 DOUGLAS~~
~~'07 DRAGON~~
~~'21 DRIGGS~~
~~'16 DRUMMOND~~
~~'07 DUER~~
'20 DUESENBERG
'20 DUPONT
~~'12 DUQUESNE~~
~~'21 DURANT~~
~~'27 DURANT~~
~~'07 DUROCAR~~
~~'93 DURYEA~~
~~'02 DYKE~~

~~'05 EAGLE~~
~~'17 EAGLE ROTARY~~
~~'08 EARL~~
~~'21 EARL~~
~~'02 ECLIPSE~~
~~'06 ECONOMY~~
~~'10 EDWARDS KNIGHT~~
~~'09 ELCAR~~
~~'03 ELDRIDGE~~
~~'16 ELGIN~~
~~'01 ELMORE~~
~~'00 E. M. F.~~
~~'98 EMPIRE~~
~~'14 EMPIRE~~
~~'09 ENGER~~
~~'26 ERSKINE~~
~~'01 ESSEX~~
'17 ESSEX
~~'09 EVERITT~~
~~'08 EVERYBODY'S~~
~~— EWING~~
~~'17 FAGEOL~~
~~'00 F. A. L.~~
~~— FALCAR~~
~~'22 FALCON~~
~~'26 FALCON KNIGHT~~
~~'01 FANNING~~
~~'15 FARMAC~~
~~'08 FARMOBILE~~
~~'06 FEDERAL~~
~~'17 FERGUS~~
~~'00 FERRIS~~
~~'07 FIRESTONE~~
~~— COLUMBUS~~
~~'08 FISCHER~~
~~'10 FLANDERS~~
~~— FLANDERS ELEC.~~
~~'02 FLINT~~
~~'23 FLINT~~
'03 FORD
~~'01 FOSTER~~
~~'06 FOSTORIA~~
~~'11 FOUR WHEEL~~
~~— DRIVE~~
~~'21 FOX~~
'02 FRANKLIN
~~'04 FRAYER~~
~~'02 FREDONIA~~
~~'23 FREMONT~~
~~'02 FRIEDMAN~~
~~'20 FRIEND~~
~~'07 FRITCHIE ELEC.~~

~~'14 F. R. P.~~
~~'08 FULLER~~
~~'08 FULTON~~
~~— GAETHE~~
~~'02 GAETHMOBILE~~
~~'04 GALE~~
~~'10 GARDNER~~
~~'07 GARFORD~~
~~'00 GASMOBILE~~
~~'14 GAYLORD~~
~~'07 GEARLESS~~
~~'03 GENERAL~~
~~'01 GENEVA~~
~~'19 GERONIMO~~
~~'17 GHENT~~
~~'04 GIBBS ELECTRIC~~
~~— G. J. G.~~
~~— GLEASON~~
~~'03 GLIDE~~
~~— GRABOWSKY~~
~~'05 GRAHAM~~
~~'09 GRAHAM FOX~~
'27 GRAHAM
~~— GRAMM~~
~~— GRAMM LOGAN~~
~~'10 GRANT~~
~~'22 GRAY~~
~~'03 GREAT~~
~~— (PIERCE ARROW)~~
~~'14 GREAT EAGLE~~
~~'11 GREAT SMITH~~
~~'11 GREAT SOUTHERN~~
~~'00 GREAT WESTERN~~
~~'03 GREELEY~~
~~'03 GRIDE~~
~~'07 GRISWOLD~~
~~'97 GROUT~~
~~'00 GURLEY~~
~~'15 HACKETT~~
~~'16 HAL~~
~~'07 HALLADAY~~
~~'05 HAMMER~~
~~'21 HANDLEY KNIGHT~~
~~'20 HANSON~~
~~'16 HARROUN~~
~~'15 HARVARD~~
~~'07 HATFIELD~~
~~'11 HAVERS~~
~~'07 HAY-BERG~~
~~'13 HAYWARD~~
~~'04 HAYNES~~

~~'95 HAYNES~~
~~— APPERSON~~
~~— HAZARD~~
~~'20 H. C. S.~~
~~'08 HEINE VELOX~~
~~'12 HENDERSON~~
~~'11 HENRY~~
~~'14 HERFF BROOKS~~
~~'09 HERRESHOFF~~
~~'06 HERTZ~~
~~'06 HEWITT~~
~~'01 HOFFMAN STEAM~~
~~'03 HOFFMAN GAS~~
~~'01 HOLLEY~~
~~'16 HOLLIER~~
~~'10 HOLMES~~
~~'05 HOLSMAN~~
~~'00 HOLYOKE~~
~~'16 HOMER~~
~~— LAUGHLIN~~
~~'09 HAUPT~~
~~'03 HOWARD~~
~~'01 HUDSON STEAM~~
'09 HUDSON
~~— HUDSON~~
~~— FRANKLIN~~
~~'00 HUFFMAN~~
'08 HUPMOBILE
~~'14 HUP YEATS ELEC.~~
~~'00 IMPERIAL~~
~~'07 IMPERIAL~~
~~'01 INTERNATIONAL~~
~~'00 INTER STATE~~
~~'05 IROQUOIS~~
~~'99 JACKSON~~
~~'03 JAXON~~
~~'08 JEFFERY~~
~~'00 JENKINS~~
~~'06 JEWELL~~
~~'22 JEWETT~~
~~'05 JOHNSON~~
~~'16 JONES~~
~~'02 JONES CORBIN~~
~~'11 JONZ~~
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~~'22 KELSEY~~
~~'09 KENMORE~~
~~'03 KENSINGTON~~
~~'16 KENT~~
~~'20 KENWORTHY~~
~~'11 KERMATH~~

~~— KERMET~~
~~'14 KERNS~~
~~'01 KEYSTONE~~
~~'01 KIDDER~~
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~~'06 KISSEL~~
~~'24 KLEIBER~~
~~'09 KLINE~~
~~'00 KNOX~~
~~'03 KONIGSLOW~~
~~'21 KURTZ~~
~~'09 K-R-I-T~~
~~'00 KUNZ~~
~~'20 LAFAYETTE~~
~~'04 LAMBERT~~
~~'09 LANE STEAM~~
~~'05 LA PETITE~~
'27 LA SALLE
~~'16 LAUREL~~
~~'02 LAW~~
~~'09 LEACH~~
~~'20 LEACH BILTWELL~~
~~'11 LEADER~~
~~'11 LENOX~~
~~'01 LEWIS~~
~~'13 LEWIS~~
~~'09 LEXINGTON~~
~~'16 LIBERTY~~
~~'08 LINCOLN~~
'21 LINCOLN
~~'07 LION~~
~~'12 LITTLE~~
~~'00 LITTLEMAC~~
~~'02 LOCOMOBILE~~
~~'04 LOGAN~~
~~'21 LONE STAR~~
~~'23 LONG~~
~~'02 LONG DISTANCE~~
~~— LONGEST~~
~~'00 LOOMIS~~
~~'00 LORRAINE~~
~~'20 LORRAINE~~
~~'02 LOZIER~~
~~'06 LUVERNE~~
~~'04 LYMAN~~
~~'00 LYON~~
~~'14 LYONS ATLAS~~
~~'14 LYONS KNIGHT~~
~~'03 MACKLE~~
~~— THOMPSON~~
~~'17 MACON~~
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~~'04 MAHONING~~
~~'16 MAIBOHM~~
~~'09 MARATHON~~
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~~— HANDLEY~~
~~'08 MARLBORO~~
'03 MARMON
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~~'05 MARSH~~
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~~'19 MARTIN WASP~~
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~~'29 MARQUETTE~~
~~'26 MARVEL~~
~~'08 MARYLAND~~
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~~'04 MAXWELL~~
~~'04 MAXWELL~~
~~— BRISCOE~~
~~— MAYTAG~~
~~'08 McCUE~~
~~'10 McFARLAN~~
~~'09 McINTYRE~~
~~'15 MECCA~~
~~'07 MEDIA~~
~~'04 MERCEDES~~
~~'04 MERCURY~~
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~~'21 MERCER~~
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~~'06 METEOR~~
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~~'22 METROPOLITAN~~
~~'09 METZ~~
~~'03 MICHIGAN~~
~~'08 MIDLAND~~
~~'08 MIER~~
~~'19 MIGHTY~~
~~— MICHIGAN~~
~~'15 MILLBURN~~
~~— MILLER~~
~~'00 MILWAUKEE~~
~~'03 MITCHELL~~
~~'99 MOBILE~~
~~'03 MODEL~~
~~— MOGUL~~
~~'03 MOHAWK~~
~~'05 MOLINE~~
~~'11 MOLINE~~

~~'12 MOLINE KNIGHT~~
~~'06 MONARCH~~
~~'01 MONCRIEF~~
~~'15 MONITOR~~
~~'15 MONROE~~
~~'06 MOON~~
~~'06 MOORE~~
~~'07 MORA~~
~~— MORGAN~~
~~'04 MORSE~~
~~'11 MOTORETTE~~
~~'14 MOUNT~~
~~— PLEASANT~~
~~'02 MOYEA~~
~~'12 B. E. F. MOYER~~
~~'06 MUNCIE~~
~~'16 MURRAY~~
~~— NANCE~~
~~'08 BYRIDER~~
'17 NASH
~~— CALIFORNIA~~
~~'05 NATIONAL~~
~~'17 NELSON~~
~~'03 NEUSTADT-PERRY~~
~~'16 NEW ERA~~
~~'01 NEW HOME~~
~~'02 NIAGARA~~
~~'19 NOMA~~
~~'08 NORTHERN~~
~~'21 NORTHWAY~~
~~— NORTHWESTERN~~
~~'01 NORTON~~
~~'12 NORWALK~~
~~'12 NYBERG~~
~~'07 OAKLAND~~
~~'07 '08 OAKMAN~~
~~'16 OGREN~~
~~'08 OHIO ELEC.~~
~~'09 OHIO GAS~~
~~'07 OKEY~~
'97 OLDSMOBILE
~~'97 OLYMPIAN~~
~~'12 OMAHA~~
~~'00 ORIENT~~
~~'04 ORMOND~~
~~'09 OTTO~~
~~'03 OVERLAND~~
~~'08 OVERLAND~~
~~'04 OWEN~~
~~'05 OWEN MAGNETIC~~
~~'00 OWEN THOMAS~~
~~'06 OXFORD~~

'99 PACKARD
~~'06 PAGE~~
~~'09 PAIGE~~
~~'06 PALMER~~
~~'08 PALMER-SINGER~~
~~'10 PAN~~
~~'08 PAN AMERICAN~~
~~'17 PAN AMERICAN~~
~~— PANHARD~~
~~'06 PARAGON~~
~~'21 PARENTI~~
~~'14 PARRY~~
~~— PARTIN~~
~~'13 PARTIN PALMER~~
~~'08 PATERSON~~
~~'11 PATHFINDER~~
~~'07 PAYNE MODERN~~
'00 PEERLESS
~~'11 PENN~~
~~'13 PENNSY~~
~~'07 PENNSYLVANIA~~
~~— PENN THIRTY~~
~~'01 PEOPLES~~
~~'00 PERFECTION~~
~~'12 PERFEX~~
~~— PERU~~
~~'00 PETREL~~
~~'02 PHELPS~~
~~— PHIANNA~~
~~'11 PICKARD~~
~~'10 PIEDMONT~~
'02 PIERCE-ARROW
~~'16 PILGRIM~~
~~'16 PILLIOD~~
~~'11 PILOT~~
~~'98 PITTSBURGH~~
~~'06 PLANCHE~~
'28 PLYMOUTH
~~'02 POMEROY~~
~~'16 PONDER~~
~~'08 PONTIAC~~
'25 PONTIAC
~~'97 POPE HARTFORD~~
~~'02 POPE ROBINSON~~
~~'01 POPE TOLEDO~~
~~'04 POPE TRIBUNE~~
~~'19 PORTER~~
~~— POSS~~
~~'07 POSTAL~~
~~'11 PRATT~~
~~'03 PREMIER~~
~~'22 PREMOCAR~~

~~'02 PRESCOTT~~
~~'05 PRINCESS~~
~~'07 PULLMAN~~
~~'04 PUNGS FINCH~~
~~'05 QUEEN~~
~~'20 RALEIGH~~
~~'00 RAMBLER~~
~~— RANDOLPH~~
~~'20 R & V KNIGHT~~
~~'21 RANGER~~
~~'05 RAINIER~~
~~'03 RAPID~~
~~'05 RAUCH & LANG~~
~~'11 RAYFIELD~~
~~'14 R. C. H.~~
~~'13 READ~~
~~'01 READING~~
~~'03 REBER~~
~~'08 REEVES~~
~~'08 REGAL~~
~~'03 REGAS~~
~~— RELIABLE~~
~~— DAYTON~~
~~'04 RELIANCE~~
~~'01 REMINGTON~~
~~— RENAULT~~
'04 REO
~~'14 REPUBLIC~~
~~'18 REVERE~~
~~'22 RICHELIEU~~
~~'00 RICHMOND~~
~~'22 RICKENBACKER~~
~~'16 RIDDLE~~
~~'08 RIDER LEWIS~~
~~'99 RIKER~~
~~'14 ROADER~~
~~'16 ROAMER~~
~~'01 ROBINSON~~
~~'20 ROCK FALLS~~
'31 ROCKNE
~~'11 ROGERS~~
~~'01 ROGERS &~~
~~— HANFORD~~
~~'23 ROLLIN~~
'21 ROLLS-ROYCE
~~'29 ROOSEVELT~~
~~'15 ROSS~~
~~'04 ROTARY~~
~~'04 ROYAL TOURIST~~
~~'22 RUBAY~~
~~'03 RUSSELL~~
~~'29 RUXTON~~

~~'99 ST. LOUIS~~
~~'09 SALTER~~
~~'04 SAMPSON~~
~~'08 SANDUSKY~~
~~'03 SANTOS DUMONT~~
~~'11 SAXON~~
~~'17 SAYERS~~
~~'04 SCHACHT~~
~~'14 SCRIPPS BOOTH~~
~~'01 SEARCHMONT~~
~~'00 SEBRING~~
~~'08 SELDEN~~
~~'09 SELLERS~~
~~'06 SENATOR~~
~~'17 SENECA~~
~~'21 SEVERIN~~
~~'10 S. G. V.~~
~~'17 SHAD-WYCK~~
~~'05 SHAIN~~
~~'09 SHARP-ARROW~~
~~'21 SHAW~~
~~'06 SHAWMUT~~
~~'02 SHELBY~~
~~'21 SHERIDAN~~
~~'07 SHOEMAKER~~
~~'06 SILVER KNIGHT~~
~~'18 SIMPLEX CRANE~~
~~'09 SIMPLICITY~~
~~'16 SINGER~~
~~'07 SINGLE CENTER~~
~~'20 SKELTON~~
~~'00 SKENE~~
~~'06 SMITH~~
~~'01 SMITH & MABLEY~~
~~'19 SPACKE~~
~~'00 SPAULDING~~
~~'16 SPAULDING~~
~~'04 SPEEDWAY~~
~~'00 SPEEDWELL~~
~~'21 SPENCER~~
~~'22 SPERLING~~
~~'14 SPHYNX~~
~~'09 SPOERER~~
~~'04 SPRINGER~~
~~'07 SPRINGFIELD~~
~~'11 STAFFORD~~
~~'02 STANDARD~~
~~'17 STANDARD EIGHT~~
~~'96 STANLEY STEAMER~~
~~'20 STANWOOD~~
~~'22 STAR~~
~~'10 STATES~~

~~'06 STAVER~~
~~'02 STEAMOBILE~~
~~'90 STEARNS STEAM~~
~~'00 STEARNS GAS~~
~~'11 STEARNS KNIGHT~~
~~'16 STEPHENS~~
~~'09 STERLING~~
~~'23 STERLING KNIGHT~~
~~'02 STEVENS DURYEA~~
~~'16 STEWART~~
~~'00 STILSON~~
~~'05 STODDARD~~
~~— DAYTON~~
~~'11 STODDARD~~
~~— KNIGHT~~
~~'02 STORCK~~
~~'08 STUDEBAKER ELEC.~~
~~'09 STUDEBAKER E.M.F.~~
'04 STUDEBAKER
~~'04 STURTEVANT~~
'12 STUTZ
~~'11 STUYVESANT~~
~~— SUBURBAN~~
~~'06 SUCCESS~~
~~'08 SULTAN~~
~~'16 SUN~~
~~'06 SUNSET~~
~~'04 SYNNESTEVDT~~
~~'20 TARKINGTON~~
~~'01 TAUNTON~~
~~'18 TEMPLAR~~
~~'21 TEXAN~~
~~'08 THOMAS~~
~~— THOMAS DETROIT~~
~~'00 THOMSON~~
~~'03 TINCHER~~
~~'03 TOLEDO~~
~~'12 TOURAINE~~
~~'03 TOURIST~~
~~— TRAVELER~~
~~'13 TRIBUNE~~
~~'14 TRIUMPH~~
~~'14 TRUMBULL~~
~~'17 TULSA~~
~~'14 TWOMBLY~~
~~'02 TWYFORD~~
~~'02 UNION~~
~~'02 UPTON~~
~~'08 U. S.~~
~~'05 VAUGHAN~~
~~'09 VELIE~~
~~'08 VICTOR~~

~~'08 VIKING~~
~~'29 VIKING~~
~~'11 VIRGINIAN~~
~~'14 VIXEN~~
~~'21 VOGUE~~
~~'19 VULCAN~~
~~— WAGENHALL~~
~~— WAHL~~
~~'01 WALLS~~
~~'00 WALTHAM~~
~~'22 WALTHAM~~
~~'03 WALTHER~~
~~'05 WALWORTH~~
~~'05 WARD LEONARD~~
~~'11 WARREN~~
~~'09 WARREN DETROIT~~
~~'01 WARWICK~~
~~'09 WASHINGTON~~
~~'00 WASP~~
~~'04 WAVERLY ELEC.~~
~~'04 WAYNE~~
~~'03 WELCH~~
~~— WELCH DETROIT~~
~~— WELCH PONTIAC~~
~~'10 WESTCOTT~~
~~'16 WHIPPET~~
~~'02 WHITE STEAM~~
~~'09 WHITE~~
~~'11 WHITING~~
~~'02 WHITNEY~~
~~'02 WICK~~
~~'09 WILCOX~~
~~'02 WILDMAN~~
~~'22 WILLS STE. CLAIRE~~
'13 WILLYS-KNIGHT
'18 WILLYS SIX
'30 WILLYS
~~'29 WINDSOR WHITE~~
~~— PRINCE~~
~~'21 WINTHER~~
~~'97 WINTON~~
~~'07 WOLF~~
~~'04 WOLVERINE~~
~~'27 WOLVERINE~~
~~'01 WOODS~~
~~'18 WOODS~~
~~— WOODS~~
~~— MOBILETTE~~
~~'03 YALE~~
~~'05 YORK~~
~~'02 ZENTMOBILE~~
~~'09 ZIMMERMAN~~

CADILLAC WAS ONE OF THE PIONEERS IN THE INDUSTRY

OUT OF 500 COMPANIES THAT HAVE BEEN ORGANIZED, ONLY 19 ARE NOW DOING BUSINESS

THIRTY HIGH PRICE CARS IN 1914

AUSTIN *{Discontinued}*
CADILLAC
CUNNINGHAM
CHALMERS *{Discontinued}*
CHANDLER *{Discontinued}*
DORRIS *{Discontinued}*
FIAT *{Discontinued}*
FIRESTONE-COLUMBU *{Discontinued}*
FRANKLIN
HAYNES *{Discontinued}*
HUDSON
KISSELL *{Discontinued}*
LEXINGTON *{Discontinued}*
LOCOMOBILE *{Discontinued}*
LYONS KNIGHT *{Discontinued}*
MARMON
McFARLAN *{Discontinued}*
MOLINE KNIGHT *{Discontinued}*
NATIONAL *{Discontinued}*
OLDSMOBILE
PACKARD
PEERLESS *{Discontinued}*
PIERCE-ARROW
S. G. V. *{Discontinued}*
SIMPLEX *{Discontinued}*
STEARNS *{Discontinued}*
STEVENS-DURYEA *{Discontinued}*
STUTZ
WHITE *{Discontinued}*
WINTON *{Discontinued}*

HIGH PRICE CARS IN 1933

SURVIVORS FROM 1914

CUNNINGHAM
FRANKLIN
MARMON
PACKARD
PIERCE-ARROW
STUTZ
CADILLAC

NEW ENTRANTS SINCE 1914

CHRYSLER IMPERIAL
CORD
LA SALLE
LINCOLN
DUESENBERG

CADILLAC POLICIES ARE SOUND—ITS PRODUCTS ARE OF THE HIGHEST QUALITY—AND ITS ORGANIZATION IS NATION-WIDE AND WELL ESTABLISHED.

CADILLAC IS ONE OF THE IMPORTANT UNITS OF GENERAL MOTORS.

GENERAL

80 different companies together comprise General Motors.

They unite their purchasing power to assure quality materials at favorable prices.

They exchange engineering talent and manufacturing experience.

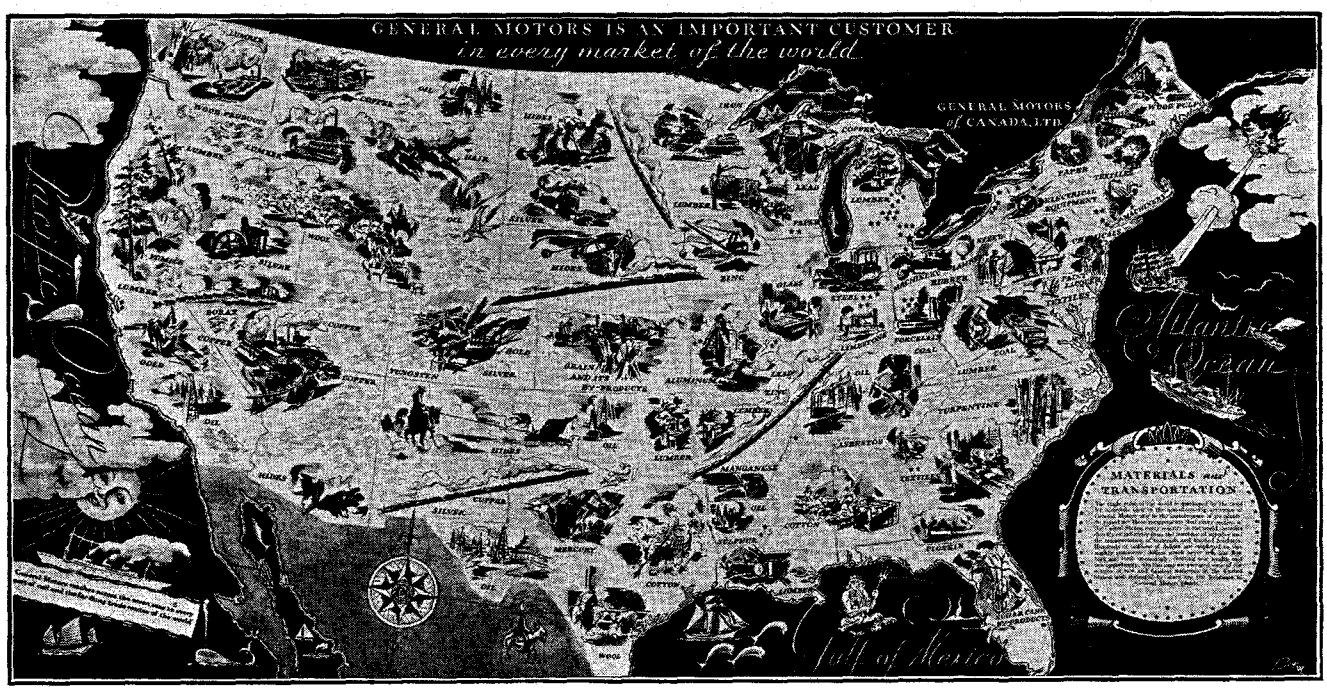
They join every resource for producing higher values and better service.

Thus "General Motors Products have outstanding value."

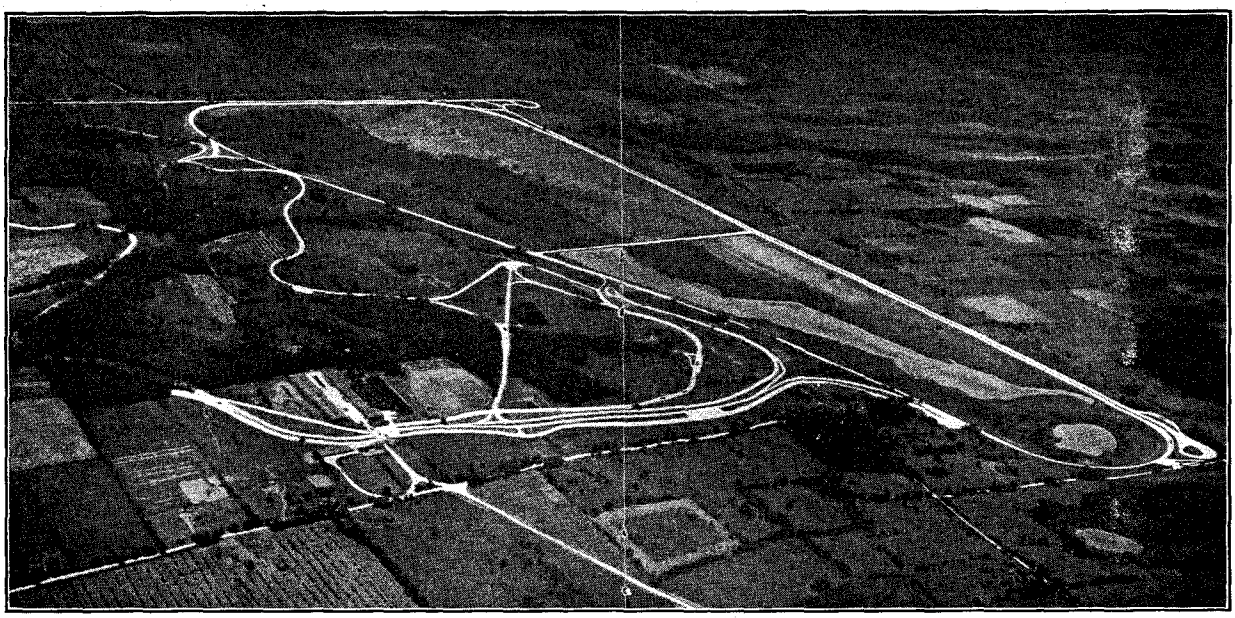
MOTORS

GM

GENERAL MOTORS



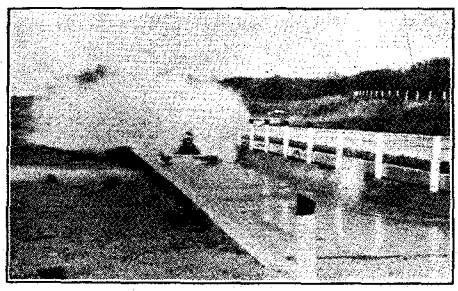
General Motors Proving Ground

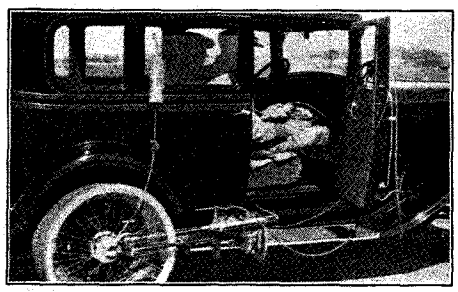


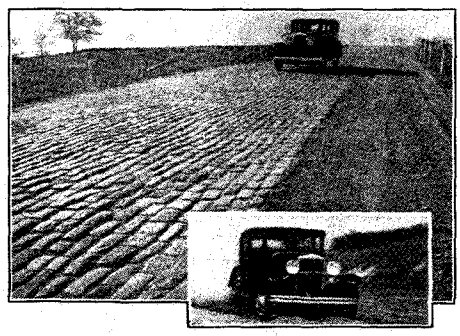
Looking into the future, it is the belief of General Motors that the greatest progress in automobile design will inevitably be made by those in possession of the most authentic, up-to-date facts about the qualities which make a car desirable.

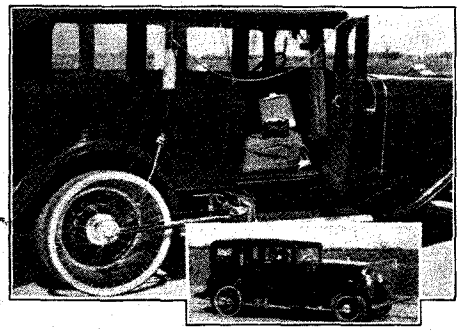
Such facts obtained from practical operating tests are continuously being developed and supplied by the Proving Grounds to Cadillac and other members of the General Motors Corporation.

To the public at large, the Proving Ground gives assurance that each series of General Motors cars has been measured in relation to other cars of the same price range, and has established its all-round excellence. It has passed with high honors, not by one spectacular performance, but by repeated scientific tests of all the things a car should be and do.

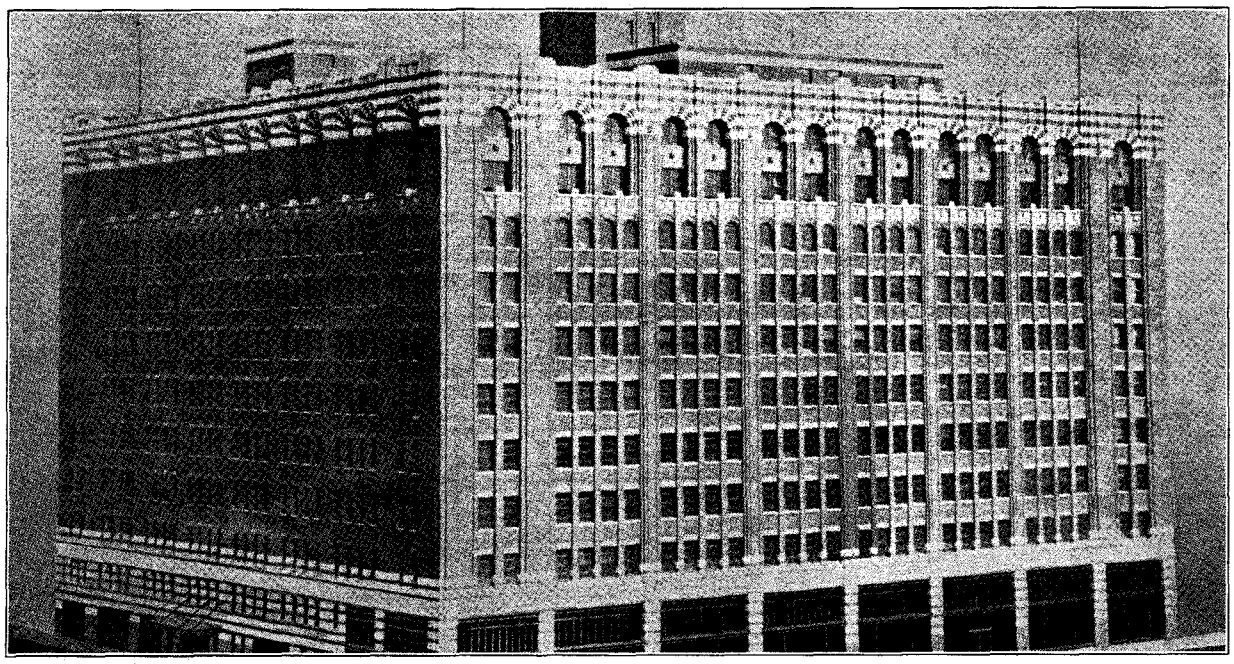








GENERAL MOTORS RESEARCH



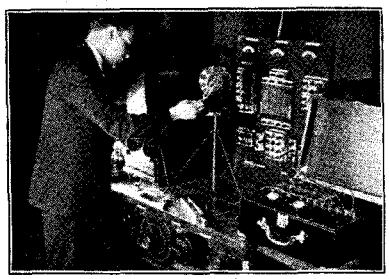
THE greater part of Cadillac's engineering and research is carried on by the Cadillac Engineering Department. In addition it shares the facilities of the General Motors Research Laboratories to help them whenever and however possible.

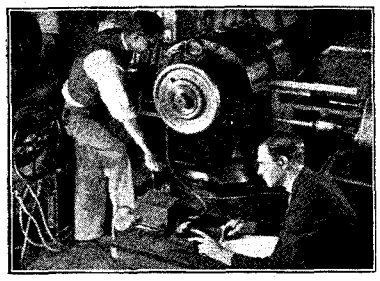
The General Motors Research Laboratories act in a consulting capacity and are continuously searching for new principles and ideas of a more scientific nature than would be possible for any of the individual engineering departments of the various units.

None of the individual manufacturing divisions of General Motors alone could shoulder the responsibility of the Research Laboratories and Proving Grounds, but the varied activities of General Motors make their existence practicable and necessary to progress.

Because of the large financial resources of General Motors these two important activities are an asset to all the divisions, and as such are shared in fully by Cadillac.







THE PENALTY *of* LEADERSHIP

IN every field of human endeavor, he that is first must perpetually live in the white light of publicity. ❦ Whether the leadership be vested in a man or in a manufactured product, emulation and envy are ever at work. ❦ In art, in literature, in music, in industry, the reward and the punishment are always the same. ❦ The reward is widespread recognition; the punishment, fierce denial and detraction. ❦ When a man's work becomes a standard for the whole world, it also becomes a target for the shafts of the envious few. ❦ If his work be merely mediocre, he will be left severely alone—if he achieve a masterpiece, it will set a million tongues a-wagging. ❦ Jealousy does not protrude its forked tongue at the artist who produces a commonplace painting. ❦ Whatsoever you write, or paint, or play, or sing, or build, no one will strive to surpass or to slander you, unless your work be stamped with the seal of genius. ❦ Long, long after a great work or a good work has been done, those who are disappointed or envious continue to cry out that it cannot be done. ❦ Spiteful little voices in the domain of art were raised against our own Whistler as a mountebank, long after the big world had acclaimed him its greatest artistic genius. ❦ Multitudes flocked to Bayreuth to worship at the musical shrine of Wagner, while the little group of those whom he had dethroned and displaced argued angrily that he was no musician at all. ❦ The little world continued to protest that Fulton could never build a steamboat, while the big world flocked to the river banks to see his boat steam by. ❦ The leader is assailed because he is a leader, and the effort to equal him is merely added proof of that leadership. ❦ Failing to equal or to excel, the follower seeks to depreciate and to destroy—but only confirms once more the superiority of that which he strives to supplant. ❦ There is nothing new in this. ❦ It is as old as the world and as old as the human passions—envy, fear, greed, ambition, and the desire to surpass. ❦ And it all avails nothing. If the leader truly leads, he remains—the leader. ❦ Master-poet, master-painter, master-workman, each in his turn is assailed, and each holds his laurels through the ages. ❦ That which is good or great makes itself known, no matter how loud the clamor of denial. ❦ That which deserves to live—lives.

This text appeared as an advertisement in The Saturday Evening Post, January 2nd, in the year 1915.

Copyright, Cadillac Motor Car Company

For eighteen years Cadillac has progressed and constantly refined the V-type engine. This long experience in building over 500,000 V-type engines was the foundation for Cadillac's development of the V-12 and V-16 multi-cylinder engines introduced in 1930. Today, seven out of eight competitive manufacturers in Cadillac's price group have adopted V-type engines for their most expensive models. Cadillac is still the leader—not only in its exclusive use of V-type engines—but also leader in sales of all manufacturers in the fine car price group.

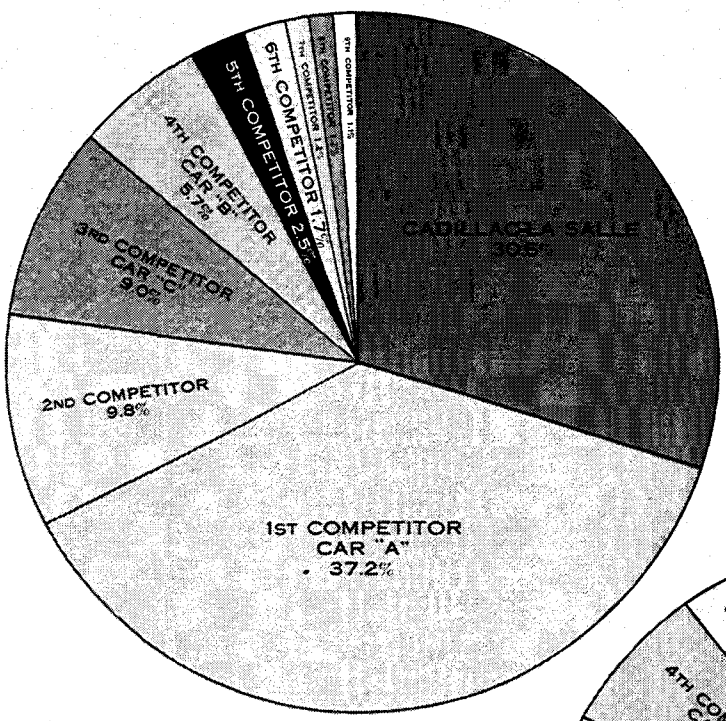
CADILLAC LEADERSHIP NATIONALLY IN 1932 BY STATES

STATE	1st	2nd	3rd	4th	5th
ALABAMA	**Cad.-La Salle**	Packard	Lincoln	Chrysler	Franklin
ARIZONA	**Cad.-La Salle**	Packard	Lincoln	Franklin	Pierce-Arrow
ARKANSAS	**Cad.-La Salle**	Lincoln	Packard	4*Pierce-Arrow	4*Chrysler
CALIFORNIA	**Cad.-La Salle**	Packard	Lincoln	Pierce-Arrow	Chrysler
COLORADO	**Cad.-La Salle**	Packard	Pierce-Arrow	Lincoln	Franklin
CONNECTICUT	**Cad.-La Salle**	Packard	Franklin	Pierce-Arrow	Lincoln
DELAWARE	**Cad.-La Salle**	Packard	Lincoln	Franklin	Chrysler
DIST. OF COL.	Packard	**Cad.-La Salle**	Lincoln	Pierce-Arrow	Franklin
FLORIDA	**Cad.-La Salle**	Packard	Franklin	Lincoln	Pierce-Arrow
GEORGIA	**Cad.-La Salle**	Packard	Franklin	Lincoln	Pierce-Arrow
IDAHO	**Cad.-La Salle**	Lincoln	Franklin	4*Packard	4*Chrysler
ILLINOIS	**Cad.-La Salle**	Packard	Lincoln	Pierce-Arrow	Franklin
INDIANA	**Cad.-La Salle**	Packard	Lincoln	Franklin	Pierce-Arrow
IOWA	**Cad.-La Salle**	Packard	Lincoln	Chrysler	Pierce-Arrow
KANSAS	**Cad.-La Salle**	Pierce-Arrow	Lincoln	Packard	Franklin
KENTUCKY	Packard	**Cad.-La Salle**	Lincoln	Franklin	Pierce-Arrow
LOUISIANA	**Cad.-La Salle**	Packard	Lincoln	Franklin	Pierce-Arrow
MAINE	**Cad.-La Salle**	Packard	Franklin	4*Pierce-Arrow	4*Lincoln
MARYLAND	**Cad.-La Salle**	Packard	Pierce-Arrow	Franklin	Chrysler
MASSACHUSETTS	**Cad.-La Salle**	Packard	Pierce-Arrow	Lincoln	Franklin
MICHIGAN	**Cad.-La Salle**	Packard	Lincoln	Chrysler	Pierce-Arrow
MINNESOTA	**Cad.-La Salle**	Packard	Lincoln	Pierce-Arrow	Chrysler
MISSISSIPPI	Lincoln	2***Cad.-La Salle**	2*Packard	Pierce-Arrow	Franklin
MISSOURI	**Cad.-La Salle**	Pierce-Arrow	Packard	Lincoln	Chrysler
MONTANA	1***Cad.-La Salle**	1*Franklin	3†Packard	3†Pierce-Arrow	Lincoln
NEBRASKA	**Cad.-La Salle**	Lincoln	Packard	4*Pierce-Arrow	4*Franklin
NEVADA	**Cad.-La Salle**	Packard	3*Lincoln	3*Chrysler	Franklin
NEW HAMPSHIRE	Packard	**Cad.-La Salle**	Franklin	Lincoln	Chrysler
NEW JERSEY	**Cad.-La Salle**	Packard	Pierce-Arrow	Lincoln	Franklin
NEW MEXICO	**Cad.-La Salle**	Packard	3*Pierce-Arrow	3*Franklin	3*Lincoln
NEW YORK	**Cad.-La Salle**	Packard	Lincoln	Pierce-Arrow	Franklin
NORTH CAROLINA	**Cad.-La Salle**	Packard	Lincoln	Chrysler	Pierce-Arrow
NORTH DAKOTA	Lincoln	2***Cad.-La Salle**	2*Packard	2*Chrysler	Pierce-Arrow
OHIO	**Cad.-La Salle**	Packard	Lincoln	Franklin	Pierce-Arrow
OKLAHOMA	**Cad.-La Salle**	Packard	Pierce-Arrow	Lincoln	Chrysler
OREGON	**Cad.-La Salle**	Lincoln	Packard	Franklin	Pierce-Arrow
PENNSYLVANIA	**Cad.-La Salle**	Packard	3*Franklin	3*Lincoln	Chrysler
RHODE ISLAND	**Cad.-La Salle**	Pierce-Arrow	Franklin	Packard	Lincoln
SOUTH CAROLINA	**Cad.-La Salle**	Packard	Lincoln	4*Pierce-Arrow	4*Franklin
SOUTH DAKOTA	**Cad.-La Salle**	Packard	Lincoln	Pierce-Arrow	Chrysler
TENNESSEE	**Cad.-La Salle**	Packard	Lincoln	4*Pierce-Arrow	4*Franklin
TEXAS	**Cad.-La Salle**	Packard	Pierce-Arrow	Lincoln	Chrysler
UTAH	Packard	**Cad.-La Salle**	Lincoln	Franklin	Pierce-Arrow
VERMONT	1***Cad.-La Salle**	1*Packard	3†Pierce-Arrow	3†Franklin	Lincoln
VIRGINIA	**Cad.-La Salle**	Packard	3*Pierce-Arrow	3*Lincoln	Franklin
WASHINGTON	**Cad.-La Salle**	Packard	Franklin	Lincoln	Chrysler
WEST VIRGINIA	**Cad.-La Salle**	Packard	Lincoln	Cord	Franklin
WISCONSIN	**Cad.-La Salle**	Packard	Pierce-Arrow	Lincoln	Chrysler
WYOMING	**Cad.-La Salle**	Packard	Pierce-Arrow	Chrysler	Lincoln
TOTAL	**Cad.-La Salle**	Packard	Lincoln	Pierce-Arrow	Franklin

*or †—Tied.

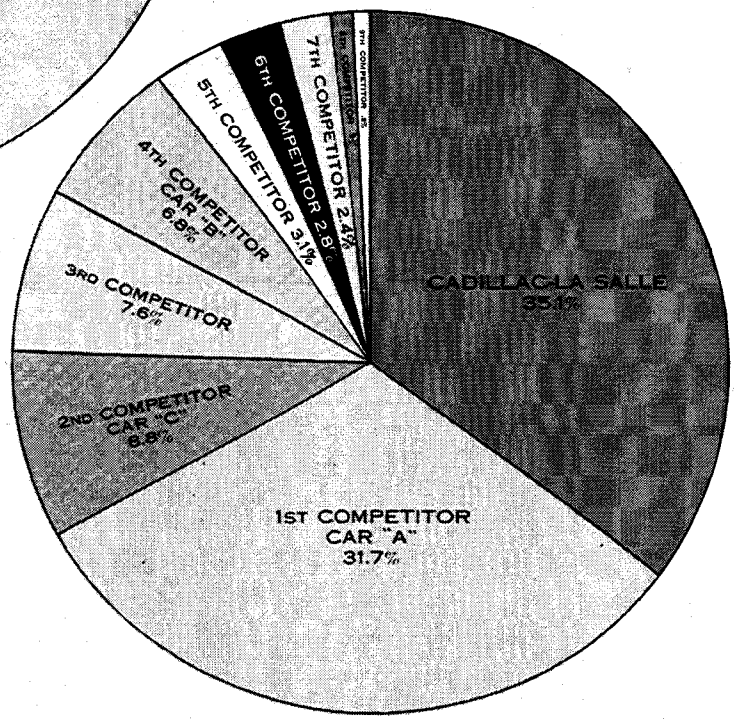
1931—1st in 27 states. 2nd in 21 states. 4th in 1 state.
1932—1st in 41 states and tied in 2 others. 2nd in 4 states and tied in 2 others.

CADILLAC'S PROGRESS



1930

In 1930, Cadillac-La Salle registrations represented 30.6% of the total registrations in the high price group.



1931

Registration figures in the high price group for 1931 gave Cadillac-La Salle 35.1% of the total registrations.

The above percentages were based on R. L. Polk official registration figures for the years 1930 and 1931 for all cars selling for more than $2000 *list price at factory.*

CADILLAC'S INCREASING SHARE OF THE FINE CAR BUSINESS

1930—30.6% 1931—35.1% 1932—39.4%

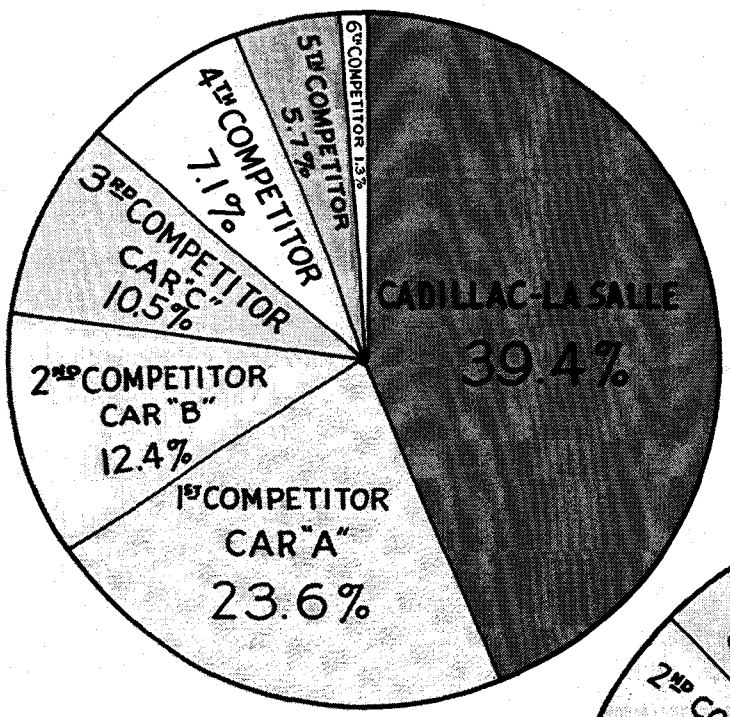
In a period of careful buying, it is significant that Cadillac should steadily increase its share of the fine car business while that of its competitors has decreased.

Only through leadership in design, manufacture and value can such popularity be attained and Cadillac-La Salle's increasing Leadership in fine car sales is the most tangible evidence of their growing popularity. This Leadership is convincing proof that Cadillac-La Salle cars do provide the desired fine car qualities in greater measure than are offered in any other car.

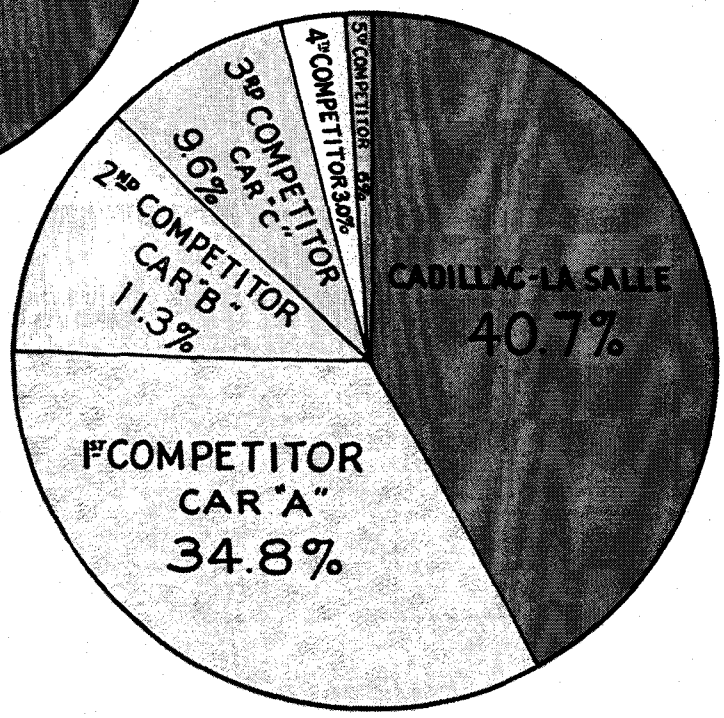
CADILLAC'S NATIONAL LEADERSHIP IN 1932-33

MOST PEOPLE BUY WHERE THE GREATEST VALUE EXISTS

DURING 1932, CADILLAC-LASALLE PATRONAGE ALONE WAS VIRTUALLY AS GREAT AS THAT ACCORDED TO ITS THREE LARGEST COMPETITORS.



1932



1933

(for period January 1 - August 31)

1932-33 NATIONAL REGISTRATIONS IN THE HIGH PRICE GROUP

The above percentages were based on R. L. Polk official registration figures for the years 1932 and 1933 (from Jan. 1-Aug. 31) for all cars selling for more than $2000 list price at factory.

COMPANIES DOING BUSINESS IN 1933

MANUFACTURER	1929		1930		1931		1932		1933	
	Percent of Entire Industry	Rank	Percent of Entire Industry	Rank	Percent of Entire Industry	Rank	Percent of Entire Industry	Rank	Percent of Entire Industry	Rank
GENERAL MOTORS	**32.76**	**2**	**34.48**	**2**	**43.26**	**1**	**41.47**	**1**		**1**
FORD (ALL DIVISIONS)	33.64	1	40.35	1	27.88	2	23.91	2		2
CHRYSLER (ALL DIVISIONS)	8.89	3	8.55	3	11.97	3	17.45	3		3
STUDE.-PIERCE-ARR.-ROCKNE	2.36	7	2.41	6	2.68	6	4.07	4		4
HUDSON-ESSEX	6.55	4	3.57	4	3.24	4	3.41	5		5
WILLYS-KNIGHT (ALL DIV.)	5.16	5	2.50	5	2.69	5	2.36	6		6
NASH	2.72	6	1.95	7	2.06	7	1.85	7		7
GRAHAM	1.55	8	1.15	8	1.01	9	1.17	8		8
AUBURN-CORD	.48	11	.50	12	1.62	8	1.09	9		9
PACKARD	1.15	10	1.08	9	.85	11	1.01	10		10
HUPP	1.33	9	.92	10	.91	10	.99	11		11
REO	.44	12	.44	11	.35	12	.35	12		12
TOTAL OF 12 COMPANIES	97.03		97.90		98.52		99.13			
MISCELLANEOUS	2.97		2.10		1.48		.87			
TOTAL	100%		100%		100%		100%		100%	

COMPANIES IN THE HIGH PRICE GROUP

MANUFACTURER	1929			1930			1931			1932			1933		
	Percent of Price Group	Percent of Entire Ind.	Rank	Percent of Price Group	Percent of Entire Ind.	Rank	Percent of Price Group	Percent of Entire Ind.	Rank	Percent of Price Group	Percent of Entire Ind.	Rank	Percent of Price Group	Percent of Entire Ind.	Rank
CADILLAC-LA SALLE	**31.6**	**.91**	**2**	**30.7**	**.89**	**2**	**35.1**	**.95**	**1**	**39.4**	**.92**	**1**			**1**
PACKARD	40.1	1.15	1	37.2	1.08	1	31.7	.85	2	23.6	.55	2			2
LINCOLN	5.5	.16	5	5.7	.17	5	6.8	.18	5	12.4	.29	3			3
PIERCE-ARROW	7.5	.22	4	8.9	.26	4	8.8	.24	3	10.5	.25	4			4
FRANKLIN	9.6	.28	3	9.8	.28	3	7.6	.20	4	7.1	.17	5			5
CHRYSLER IMPERIAL	1.7	.05	7	1.7	.05	7	3.1	.08	6	5.7	.13	6			6
CORD	.7	.02	8	2.5	.07	6	2.8	.07	7	1.3	.03	7			7
MARMON 8 AND 16	*	*	*	1.2	.03	8	2.4	.07	8	Volume too small to be recognized.			Volume too small to be recognized.		
PEERLESS (M. AND C.)	.6	.02	8	1.2	.03	8	.9	.02	9						
STUTZ	2.7	.07	6	1.1	.03	8	.8	.02	10						
TOTAL	100%	2.88		100%	2.89		100%	2.68		100%	2.34		100%	0.00	

*Not in Price Group.

WHERE CADILLAC BUSINESS COMES FROM

	Year	La Salle	Cad. V-8	Cad. V-12	Cad. V-16	All Lines
CADILLAC-LA SALLE OWNERS	1932	53.7	55.6	64.6	65.0	57.4
	1931	44.3	51.9	67.0	57.6	52.5
	1930	42.1	57.7	72.9	62.6	54.1
	1929	39.5	60.5	—	—	51.4
COMPETITIVE OWNERS	1932	16.6	18.8	22.3	26.7	19.3
	1931	15.5	20.2	21.0	30.0	19.0
	1930	14.4	15.4	18.1	24.4	18.7
	1929	12.2	13.0	—	—	12.5
MAKES BELOW PRICE GROUP	1932	29.7	25.6	13.1	8.3	23.3
	1931	40.2	27.9	12.0	12.4	28.5
	1930	43.5	26.9	9.0	13.0	27.2
	1929	48.3	26.5	—	—	36.1

THE ABOVE FIGURES INDICATE THREE IMPORTANT FACTS

1. OWNER LOYALTY

   The strongest endorsement for any product is the continued good-will of its users.

   The fact that Cadillac continues to get an increasing share of its business from its own owners is the most substantial proof that Cadillac-La Salle cars do provide the most satisfactory performance and the highest quality.

   Cadillac-La Salle owner good-will is a priceless selling asset and offers Cadillac salesmen one of the most logical reasons for a more aggressive solicitation of business from owners of competitive cars.

2. COMPETITIVE OWNERS

   When any product obtains an increasing share of its business year after year from competitive owners it is obvious that the product must have offered superior value and performance.

   The fact that Cadillac-La Salle has obtained an increasing share of its total business from competitive car owners, and that this business has been secured not on any one of its cars but on each of the four lines, is in itself the strongest proof that Cadillac-La Salle cars offered superior value and performance to competitive cars when the time came for these buyers to decide on their new cars.

3. UPPER MEDIUM PRICE GROUP OWNERS

   The graduation of owners of Upper Medium Price Group Cars such as Buick, Nash, Studebaker, etc., into the Cadillac-La Salle price group is one of the important factors in a constantly broadening market for Cadillac-La Salle business.

   Owners of such cars who spend from $1,800 to $2,500 for medium price group cars in the most expensive body styles, find that a Cadillac or La Salle is a more profitable and sound investment at the slightly higher cost.

   The combined share of La Salle and Cadillac V-8 business that comes from Upper Medium Price Group Owners is the best evidence that this market does provide a big opportunity for an increased owner clientele in Cadillac-La Salle and that it is a development market that should be constantly worked by Cadillac salesmen.

   It is also an even more impressive fact that over 13% of Cadillac V-12 and 8% of Cadillac V-16 business should be secured from owners of Upper Medium Price Group cars.

   Thousands of people who bought Upper Medium Price Group cars during the years 1929-1933 will graduate into the high price group market when they buy their next car.

CAR MODELS—EQUIPMENT PRICES AND G.M.A.C.

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The Cadillac Line *for* 1934

Body Styles and Prices (List F.O.B. Factory)

SERIES 10 CADILLAC V-8 FISHER BODIES

Body Style	*List Price*
5-Passenger Convertible Sedan	$2695
2-Passenger Convertible Coupe	2495
2-Passenger Coupe	2395
5-Passenger Town Coupe	2545
5-Passenger Town Sedan	2545
5-Passenger Sedan	2495

SERIES 20 CADILLAC V-8 FISHER BODIES

Body Style	*List Price*
5-Passenger Convertible Sedan	$2895
2-Passenger Convertible Coupe	2695
2-Passenger Coupe	2595
5-Passenger Town Sedan	2745
5-Passenger Sedan	2695
7-Passenger Sedan	2845
7-Passenger Imperial	2995

CADILLAC FLEETWOOD BODIES (With straight front windshield)

Body Style	*V-8 List Price*	*V-12 List Price*	*V-16 List Price*
5-Passenger Town Sedan	$3345	$4045	$6700
5-Passenger Sedan	3295	3995	6650
5-Passenger Imperial Cabriolet	3695	4395	7050
7-Passenger Sedan	3445	4145	6800
7-Passenger Limousine	3645	4345	7000
7-Passenger Imperial Cabriolet	3845	4545	7200

CADILLAC SPECIAL FLEETWOOD BODIES (With V-type front windshield)

Body Style	*V-8 List Price*	*V-12 List Price*	*V-16 List Price*
5-Passenger Convertible Imp. Sedan	$4295	$4995	$7850
2-Passenger Convertible Coupe	4045	4745	7600
2-Passenger Coupe	3895	4595	7450
5-Passenger Convertible Coupe	4295	4995	7850
5-Passenger Coupe (Aero Dynamic)	4295	4995	7850
Special 5-Passenger Town Sedan	3795	4495	7350
Special 5-Passenger Sedan	3745	4445	7300
Special 5-Passenger Imp. Cabriolet	4145	4845	7700
Special 5-Passenger Sedan	3895	4595	7450
Special 7-Passenger Limousine	4095	4795	7650
Special 7-Passenger Imp. Cabriolet	4295	4995	7850
5-Passenger Town Cabriolet	5495	6195	8850
7-Passenger Town Cabriolet	5595	6295	8950
7-Passenger Limousine Brougham	5495	6195	8850

Cadillac 1934 Body Styles

The 1934 Cadillac Body Program consists of

Cadillac V-8

Series 10—128″ W.B.—6 Fisher Body Styles
Series 20—136″ W.B.—7 Fisher Body Styles
Fleetwood Custom—146″ W.B. { 6 Fleetwood Custom Bodies (Straight Front Windshield)
15 Fleetwood Custom Bodies (V-type Front Windshield)

Cadillac V-12

Fleetwood Custom—146″ W.B. { 6 Fleetwood Custom Bodies (Straight Front Windshield)
15 Fleetwood Custom Bodies (V-type Front Windshield)

Cadillac V-16

Fleetwood Custom—154″ W.B. { 6 Fleetwood Custom Bodies (Straight Front Windshield)
15 Fleetwood Custom Bodies (V-type Front Windshield)

SERIES 10 CADILLAC V-8 FISHER BODIES

5 Passenger Convertible Sedan
2 Passenger Convertible Coupe
2 Passenger Coupe
5 Passenger Town Coupe
5 Passenger Town Sedan
5 Passenger Sedan

SERIES 20 CADILLAC V-8 FISHER BODIES

5 Passenger Convertible Sedan
2 Passenger Convertible Coupe
2 Passenger Coupe
5 Passenger Town Sedan
5 Passenger Sedan
7 Passenger Sedan
7 Passenger Imperial

CADILLAC FLEETWOOD BODIES

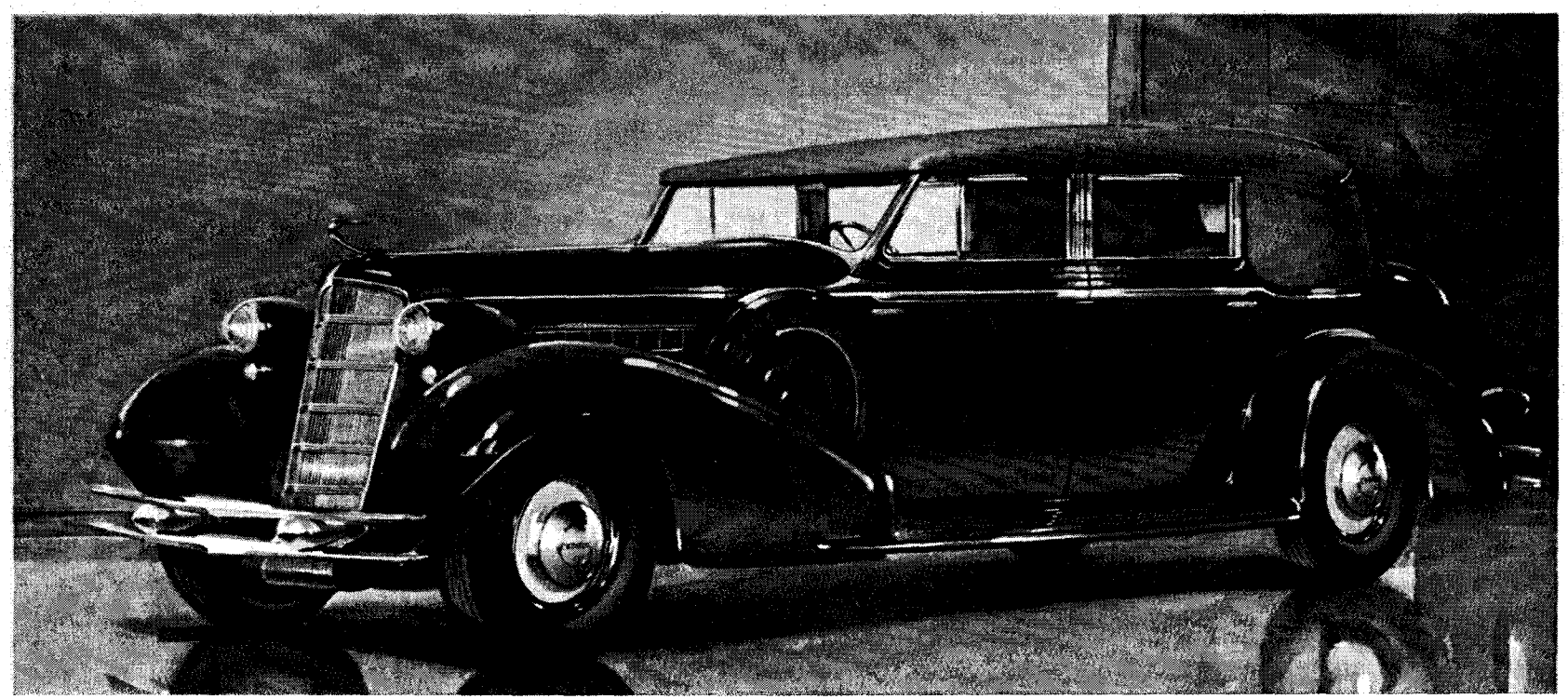
Straight Front Windshield
V-8, V-12 and V-16

5 Passenger Town Sedan
5 Passenger Sedan
5 Passenger Imperial Cabriolet
7 Passenger Sedan
7 Passenger Imperial
7 Passenger Imperial Cabriolet

V-Type Front Windshield
V-8, V-12 and V-16

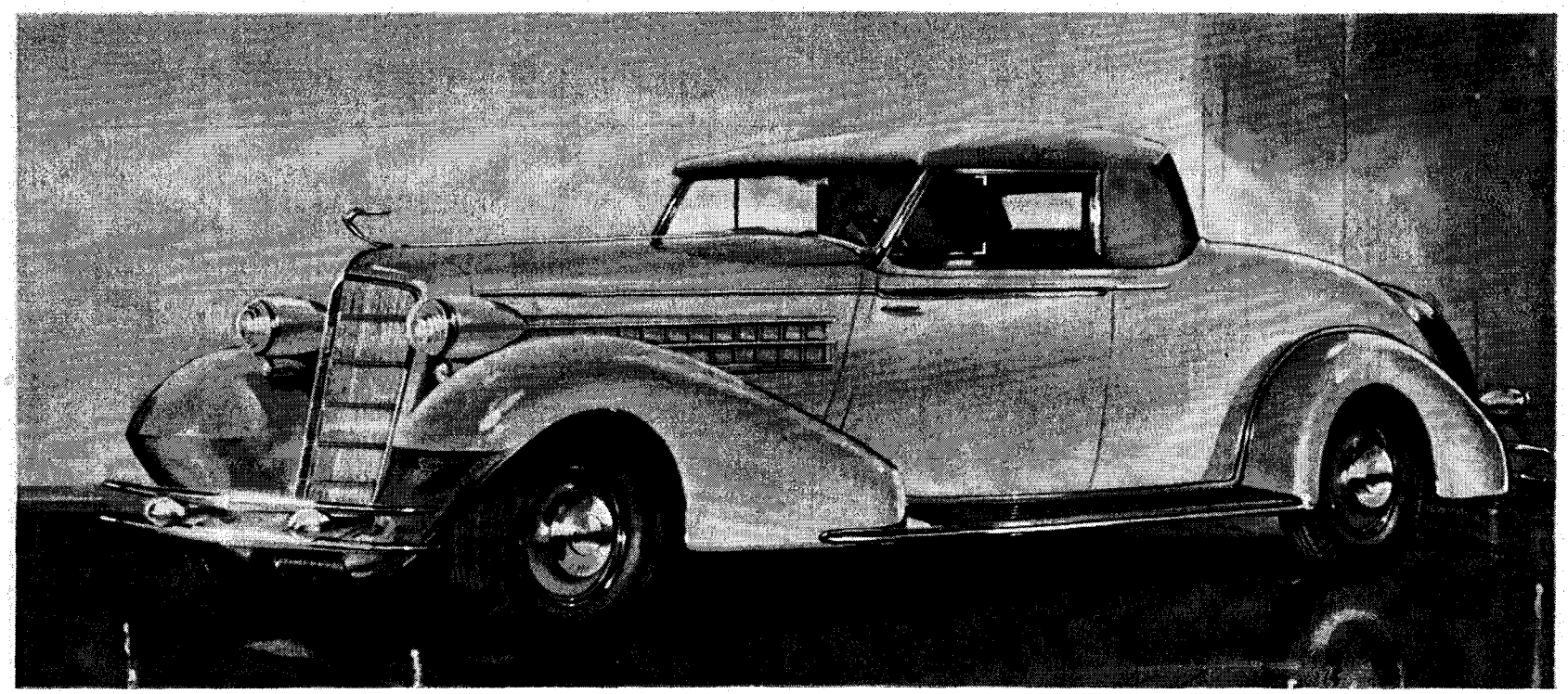
5 Passenger Convertible Sedan
5 Passenger Convertible Imperial Sedan
2 Passenger Convertible Coupe
2 Passenger Coupe
5 Passenger Convertible Coupe
5 Passenger Coupe
Special 5 Passenger Town Sedan
Special 5 Passenger Sedan
Special 5 Passenger Imperial Cabriolet
Special 7 Passenger Sedan
Special 7 Passenger Limousine
Special 7 Passenger Imperial Cabriolet
5 Passenger Town Cabriolet
7 Passenger Town Cabriolet
7 Passenger Limousine Brougham

NOTE: For complete information and details on Fleetwood Custom Bodies on V-8, V-12 and V-16 see Book of Fleetwood or Fleetwood Custom Bodies Section of Sales Kit.



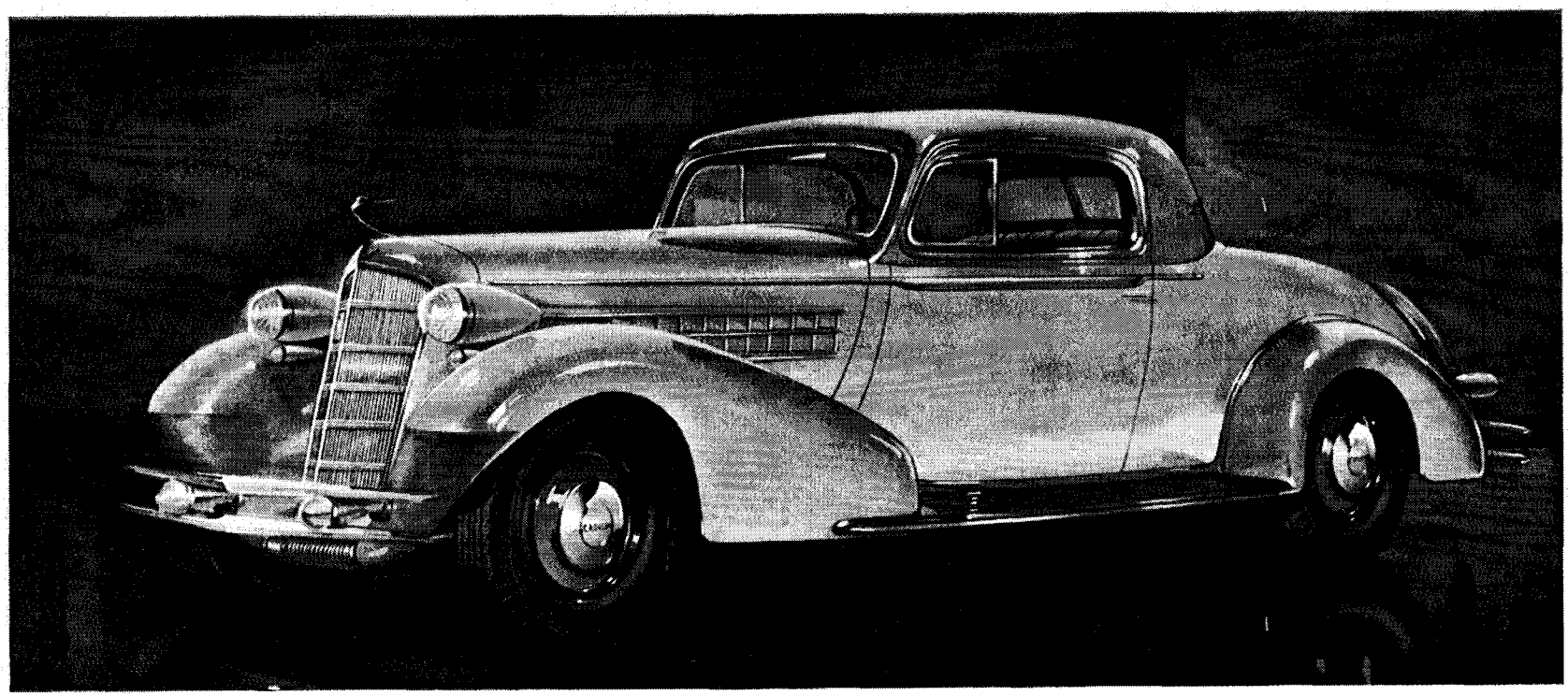
CADILLAC V-8 5-PASSENGER CONVERTIBLE SEDAN

SMART and practical, the Cadillac Convertible Sedan grows more popular each year at leading clubs and other exclusive gathering places. Fisher, with its finest of design and precision body-manufacture, builds into this Cadillac Convertible all the dash and verve of the sport type. Custom effects are afforded by numerous options. Four colors in leather and three patterns in whipcord are available for upholstery. Ten striking color combinations have been selected for the finish, subject to the buyer's choice. Other colors may be specified, without extra charge, for deferred delivery. Knee-Action Wheels afford a degree of riding ease entirely unknown until their recent development. At small additional cost, disc-covered wheels and fender wells, as illustrated, are supplied. Shown here on the Series 20 chassis, the Convertible Sedan is also available on the Series 10 chassis.



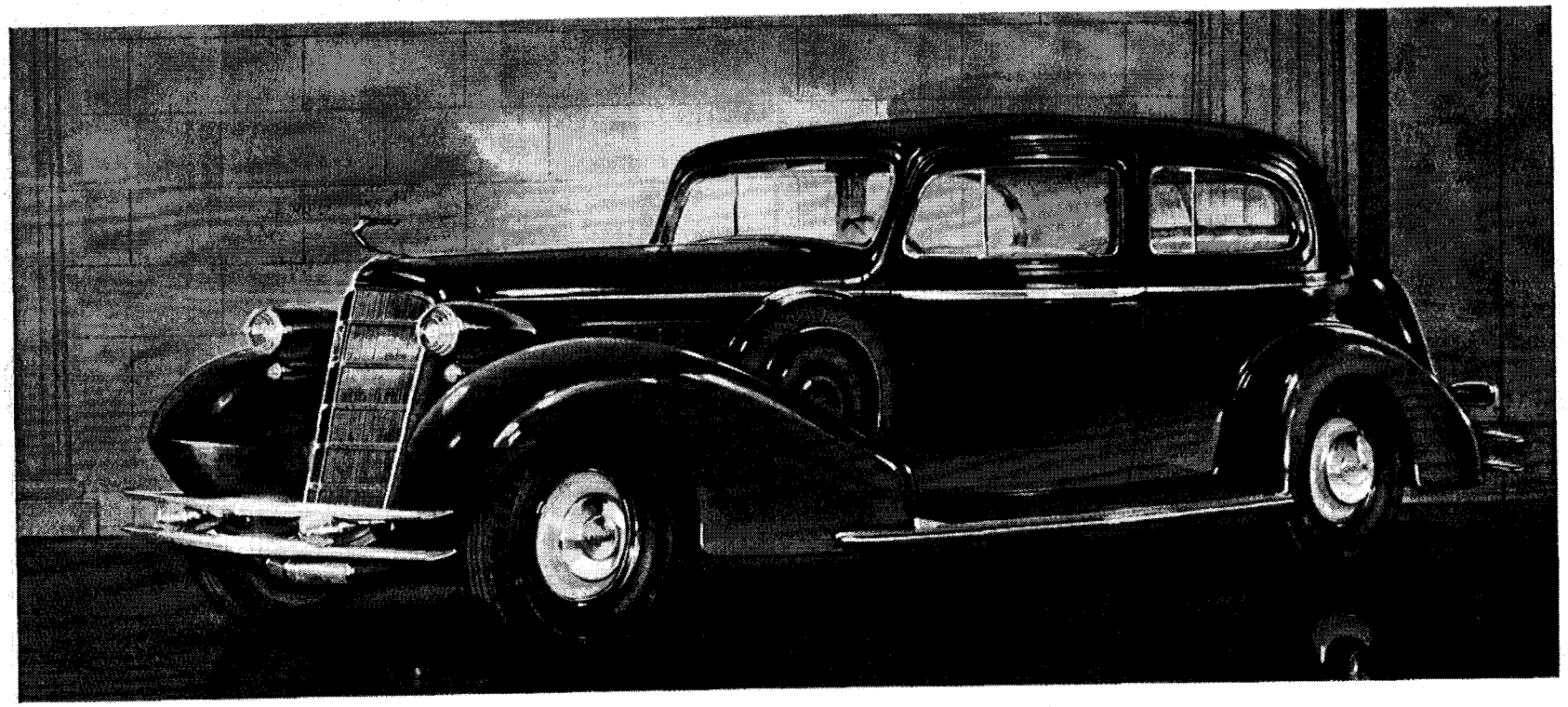
CADILLAC V-8 2-PASSENGER CONVERTIBLE COUPE

COUPE and roadster in one is the ultra-smart Cadillac 2-passenger Convertible Coupe, available on the Series 10 chassis as well as the Series 20. As a coupe, all the weather-insulation of a permanently closed car is afforded by the thoroughness of Fisher design and construction. The rumble seat provides richly cushioned comfort for two additional passengers. With Knee-Action Wheels, as developed by Cadillac, a marvelous new ease and steadiness of riding and driving are achieved. In upholstery and finish the buyer has custom privileges, choosing one of four fine colored leathers; or from three lovely patterns in whipcord. For the finish, two options are offered. Buyers who desire prompt delivery choose from ten attractive color schemes; otherwise, color choice is unrestricted. Five wire wheels are standard, with a small extra charge if disc covers, as illustrated above, are preferred.



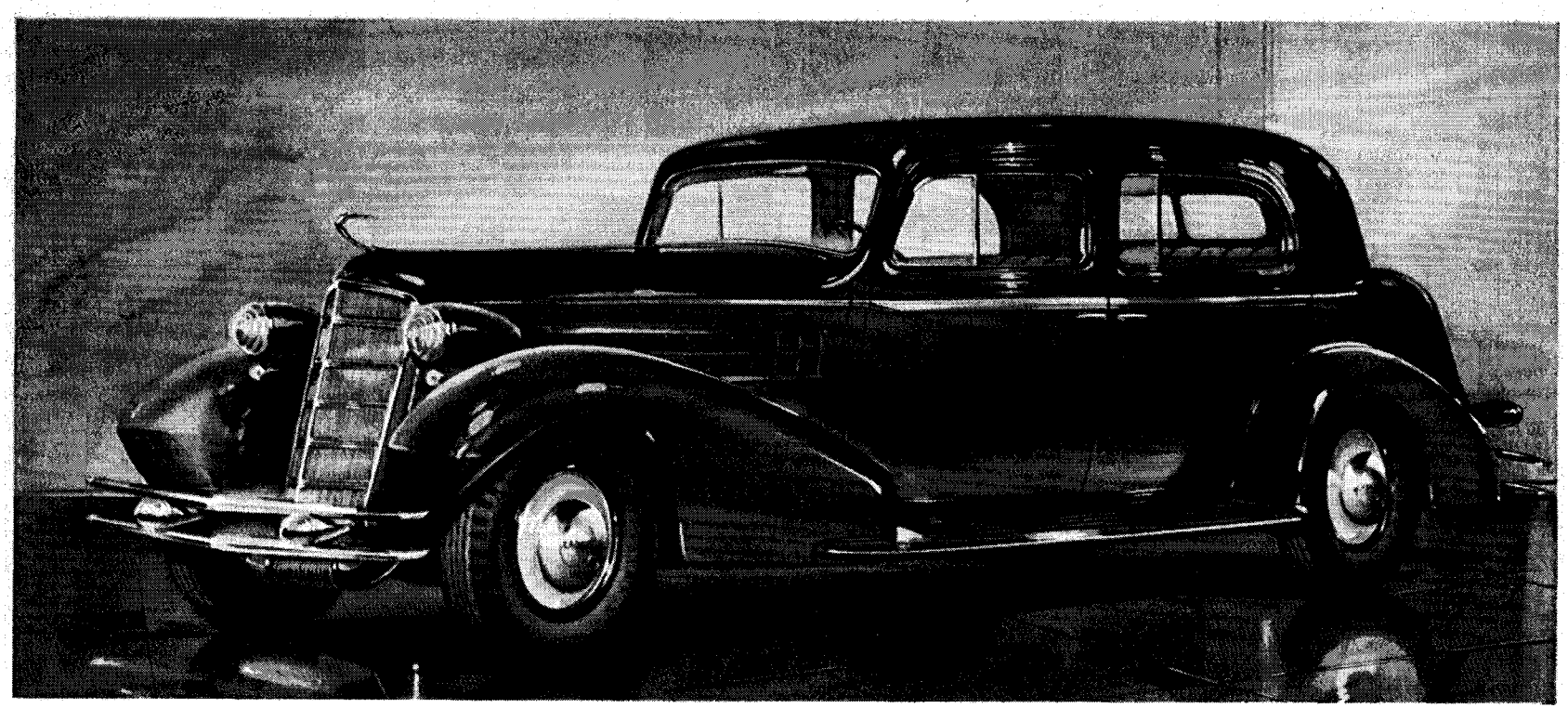
CADILLAC V-8 2-PASSENGER COUPE

AS A PERSONAL car, the Cadillac Coupe for two is greatly favored by women, by doctors and other professional men, and by business men. This sleek, Fisher-built Coupe captures all the smart exclusiveness of this style. The driver's seat adjusts instantly for individual comfort. Appointments are rich, and the new Fisher No Draft Ventilation shields driver and passenger from violent blasts of air. Cadillac's newly developed Knee-Action Wheels provide entirely new riding and driving ease. The occasional rumble seat rider is afforded *true comfort*. Upholstery options include five modish broadcloths and whipcords—and for finish, ten beautiful colors are available. When later delivery is agreeable, the color selection is unlimited. Five wire wheels are standard, with a small charge for disc covers. Illustrated on the Series 20 chassis, the Coupe is mounted on the Series 10 chassis also.



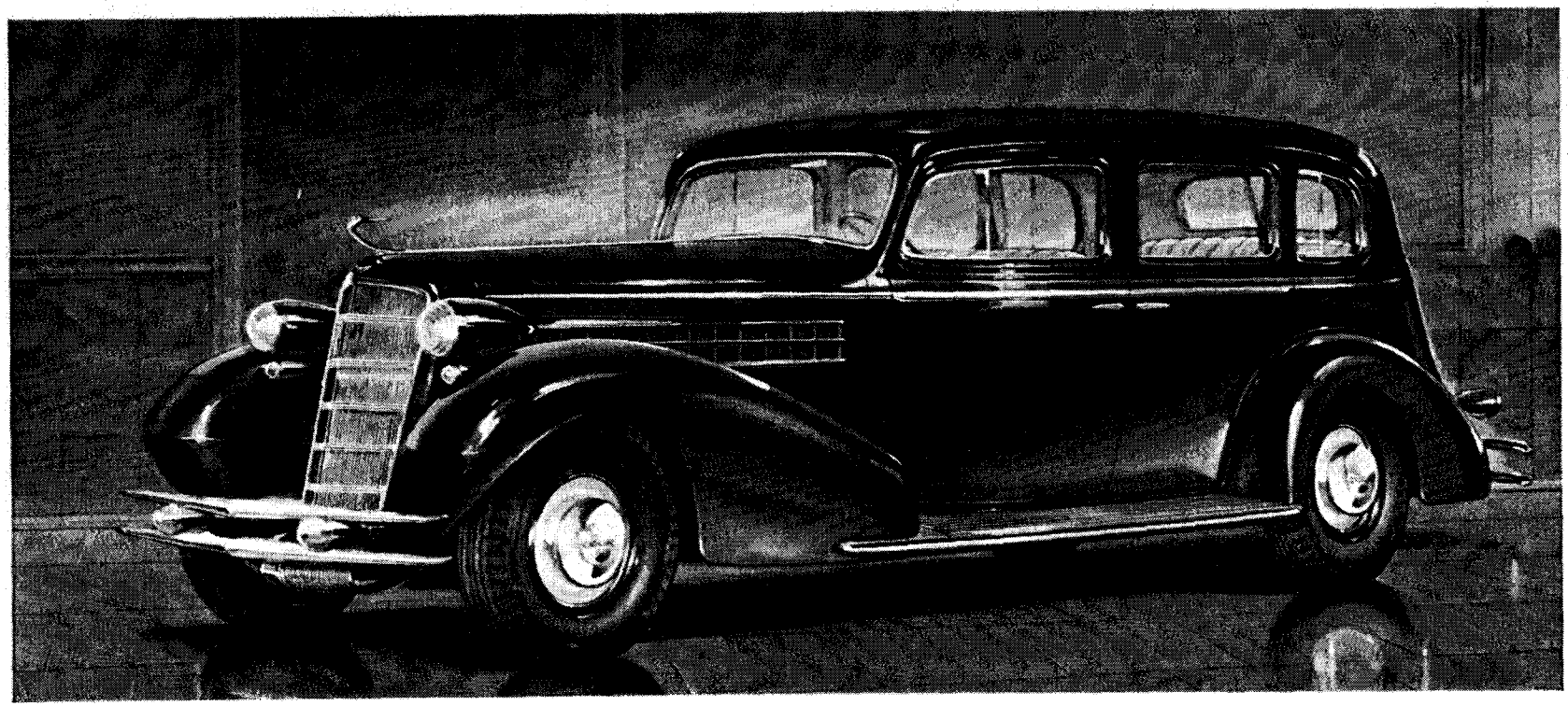
CADILLAC V-8 5-PASSENGER TOWN COUPE

IN DIGNIFIED elegance and luxury, the Town Coupe is close kin to a fine custom creation. Five ride in pleasant intimacy, yet with complete comfort. Motoring's latest great advancement—Knee-Action Wheels—gives a steadiness and ease of riding far beyond any previous achievement. Fisher designers give to this car the distinction of beautiful, long, flowing lines. Fisher No Draft Ventilation provides fresh air without sharp and chilling blasts. The built-in trunk is extra large. For upholstery, you may choose from five charming patterns, two in broadcloth and three in whipcord. A choice of ten attractive color combinations is offered for exterior finish. When delivery can be reasonably deferred, the color option is unlimited. Five wire wheels are standard equipment, but disc covers, illustrated, can be supplied at small extra cost. The Town Coupe is mounted on the Series 10 chassis.



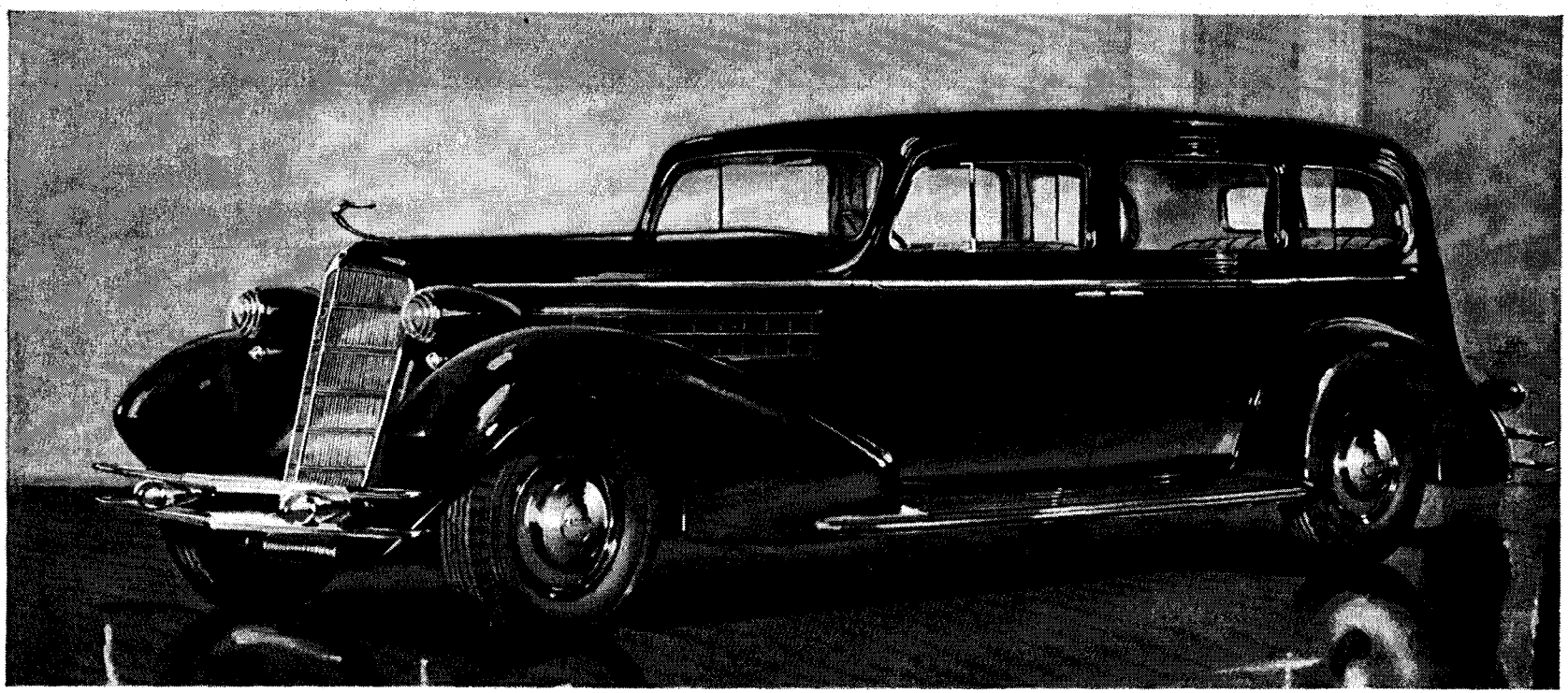
CADILLAC V-8 5-PASSENGER TOWN SEDAN

MANY buyers choose the 5-passenger Town Sedan for its ultra-smart style. In upholstery and exterior finish, options include five charming patterns of broadcloth and whipcord, and ten lovely color schemes. Unlimited color choice is given when later delivery can be arranged. Those who tour extensively are particularly partial to the unusually large built-in trunk. Fisher's finest body craftsmanship is evident, and the new Fisher No Draft Ventilation protects all of the passengers from chilling gusts of air. Extraordinary riding ease is assured by Knee-Action Wheels, in whose development Cadillac pioneered. Five wire wheels are standard, the fender wells illustrated being special equipment. Disc-covered wheels (illustrated) are also to be had at small additional cost. The Town Sedan is here shown on the Series 10 chassis. It is also available on the Series 20 chassis.



CADILLAC V-8 5-PASSENGER SEDAN

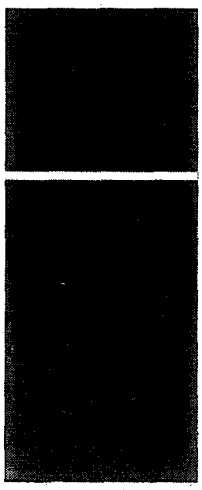
WIDELY favored as a family car, the 5-passenger Sedan is richly commodious, fitted and equipped as becomes Cadillac. Foremost among advanced comfort details is the new Fisher No Draft Ventilation, built integrally with the beautiful Fisher body. Seats are wide, deep, soft—and sloped at the most restful angle. As in every new Cadillac, riding qualities are the finest in motoring. Knee-Action Wheels contribute a smooth, level ease heretofore unknown. Purchasers have custom leeway in choosing broadcloth or whipcord upholstery, in five special patterns. Exterior finish is also at choice from ten beautiful colors for prompt delivery. Color choice is unlimited for later delivery. If disc-covered wheels, as illustrated, are preferred to the standard wire wheels, there is a small additional charge. The Sedan is pictured on the Series 10 chassis. It is available on the Series 20 chassis as well.



CADILLAC V-8 7-PASSENGER SEDAN

IN BEAUTY and elegance, the 7-passenger Imperial and 7-passenger Sedan are identical. Between the front and rear compartments of the Imperial, a division glass raises to the roof and lowers flush with the body division. Seating, head room and leg room —even with seven passengers—are most generous; the new Knee-Action Wheels provide the finest of riding. Extra passengers have auxiliary chairs, unusually wide and deeply upholstered. Fisher No Draft Ventilation, in its new form, admits fresh air as passengers desire, but prevents uncomfortable drafts. Buyers have the option of five excellent patterns in whipcord and broadcloth upholstery, and ten charming colors for finish. There is no color restriction when later delivery is satisfactory. For disc-covered wheels instead of the standard wire type, there is a small charge. Both the Imperial and the Sedan are mounted on the Series 20 chassis.

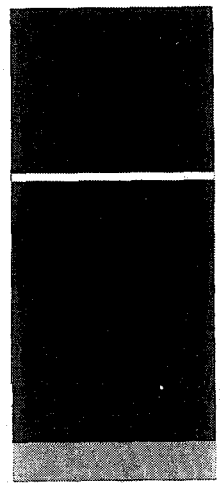
CADILLAC STANDARD COLORS



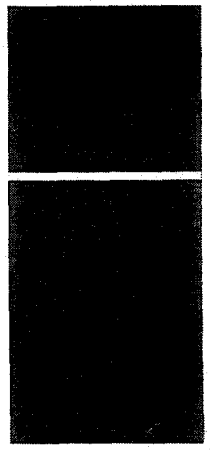
Combination No. 62
Body and Fenders—Classic Blue
Wheels—Classic Blue

Ten attractive colors have been selected for Cadillac cars for 1934, ranging from Black and conservative shades of Blue, Maroon and Green to lighter hues appropriate for sport types. Scheduled cars will be brought through in these colors. Other colors may be specified without extra charge, but subject to some delay in bringing the cars through production.

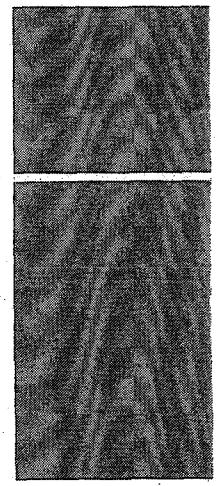
The design of the new Cadillac is such that single color application is imperative, there being no mouldings to definitely establish the distribution of two-tone color application to the car.



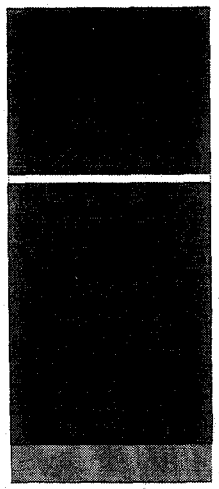
Combination No. 67
Body and Fenders—Parkdale Blue
Wheels—Malay Brown Light



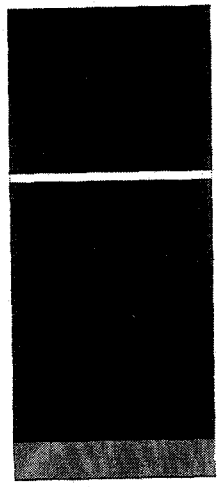
Combination No. 70
Body and Fenders—Gettysburg Blue
Wheels—Italian Cream



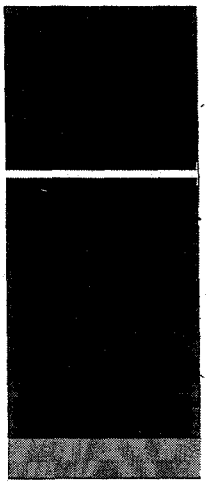
Combination No. 68
Body and Fenders—Pony Brown
Wheels—Sealing Wax Red



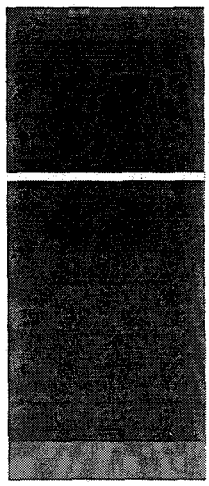
Combination No. 69
Body and Fenders—Huron Green
Wheels—Ski Green



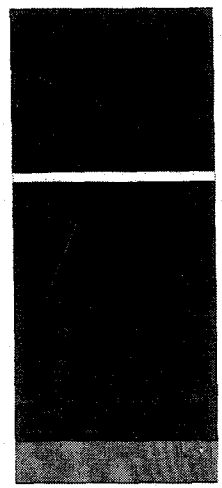
Combination No. 63
Body and Fenders—Marshall Maroon
Wheels—Vincennes Red



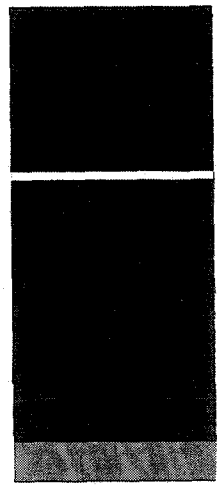
Combination No. 61
Body and Fenders—Black
Wheels—Black
Wheel Options—Red or Green



Combination No. 65
Body and Fenders—Clio Brown Dark
Wheels—Lamar Tan



Combination No. 66
Body and Fenders—Cathedral Gray
Wheels—Vincennes Red



Combination No. 64
Body and Fenders—Thessalon Green
Wheels—Ski Green

The above colors are identical with those that will be used on the cars. Bottom color strip represents wheel combination.

OPTIONAL AND EXTRA EQUIPMENT

The following options or extra equipment is available at the extra f. o. b. factory price listed below:

WHEELS

CADILLAC V-8 SERIES 10 AND 20—Standard Equipment—5 wire wheels with extra wheel mounted on carrier at rear (outside).

Optional Equipment—(at additional cost) 6 wire wheels with 2 extra wheels and tires carried in fenderwells.

Chromium finish trim rings available for wire wheels at $1.50 list per wheel.

NOTE—Cadillac Series 10 and 20 Convertible Sedans are built with fenderwell equipment only.

CADILLAC V-8 AND V-12 FLEETWOOD—Standard Equipment—5 wire wheels with extra wheel carried in compartment at rear (inside).

Optional Equipment—(at additional cost) 6 wire wheels with 2 extra wheels and tires carried in fenderwells.

Disc covers are available at extra cost for Cadillac V-8 and V-12.

Wood wheels are not available.

WHEEL FINISH

CADILLAC—Each standard color combination has a standard wheel color. Any other single durable color (except opalescent) may be specified without extra charge, but such orders are not subject to cancellation after order has been started in production.

Stainless steel spoke wire wheels available at extra charge.

COLOR

CADILLAC—10 Standard color options.

Or any single durable color may be had without extra cost, subject to the usual delay for special color and such orders are not subject to cancellation after order has been started in production.

Opalescent Finish—Available at extra charge and not subject to cancellation after order has been started in production.

Fenders—Standard practice is to finish in same color as body panels. Black may be specified without extra charge but subject to delay.

UPHOLSTERY MATERIALS

CADILLAC V-8 SERIES 10 AND 20—For closed bodies—2 broadcloths and 3 whipcords.

For convertible bodies—3 whipcords and 4 leathers.

CADILLAC V-8 AND V-12 FLEETWOOD—For closed bodies—6 broadcloths and 2 whipcords.

For convertible bodies—2 whipcords and 4 leathers.

Special upholstery materials may be specified at extra charge subject to delay in procuring the required material.

MISCELLANEOUS

RADIATOR SHELL AND LAMPS—Standard practice is to finish same color as body. Chromium plated optional at extra charge except on V-16.

MONOGRAMS—⅜″ three-letter block monogram in any color except silver or gold leaf—$10.00 list and net.

TIRES—Cadillac—Firestone, Goodyear or U. S. Royal. Block side wall.

GEAR RATIO—Cadillac V-8 Series 10 and 20—4.36 or 4.60.

Cadillac V-8 and V-12 Fleetwood—4.60 or 4.80.

Cadillac V-16—4.31 or 4.64.

Upholstery *and* Trim Materials

Cadillac V-8 Fisher Bodies

MATERIALS

Fisher Closed Bodies

2 T 134	Brown Plain Broadcloth
6 T 134	Gray Plain Broadcloth
19 T 134	Brown Bedford Cord
20 T 134	Gray Bedford Cord
37 T 134	Tan Bedford Cord

Fisher Convertible Coupes and Sedans

1 T 1334	Black Leather
2 T 1334	Tan Leather
3 T 1334	Gray Leather
6 T 1334	Green Leather
19 T 134	Brown Bedford Cord
20 T 134	Gray Bedford Cord
37 T 134	Tan Bedford Cord

Pleated style with 5½" pleats and large buttons. Center arm rest included. Except the 7-passenger Imperials which are trimmed in plain style with French seaming.

Fleetwood Custom Bodies

V-8 and V-12 Fleetwood Bodies

For the V-8 and V-12 Cadillac Fleetwood, eight (8) exclusive upholstery materials are offered as follows:

Wiese 4542	Taupe Plain Broadcloth
Wiese 4543	Gray Plain Broadcloth
Wiese 4540	Taupe Whipcord
Wiese 4541	Gray Whipcord
Wiese 4538	Taupe Pin Stripe Broadcloth
Wiese 4539	Gray Pin Stripe Broadcloth
Wiese 4536	Taupe Mixture Broadcloth
Wiese 4537	Gray Heather Broadcloth

All other upholstery materials are subject to extra charge.

V-16 Fleetwood Bodies

For all V-16 Cadillac Fleetwood Models and the three V-8 and V-12 Cadillac Fleetwood Town Car types, and Aero Dynamic 5-passenger Coupe, nine (9) exclusive upholstery materials are offered. A number of these materials can be used throughout the body, or in combination with plain materials of matching color:

Wiese 4306	Brown Vogue Weave Broadcloth
Wiese 4307	Gray Vogue Weave Broadcloth
Wiese 4308	Brown Plain Broadcloth
Wiese 4310	Gray Plain Broadcloth
Wiese 4568	Tan Crenalure Cloth
Wiese 4370	Tan Demi-Cordo
Wiese 4571	Tan Plain Broadcloth
Wiese 4567	Gray Crenalure Cloth
Wiese 4569	Gray Demi-Cordo

In addition, any of the materials in the current Wiese Collection No. 70 can be specified in all V-16 Cadillac Fleetwood models and the three V-8 and V-12 Cadillac Fleetwood Town Car Types and Aero Dynamic 5-Passenger Coupe, without extra charge, but subject to some delay in procuring the required material and the necessary matched accessories.

FLEETWOOD LEATHERS

For Fleetwood Convertible and All Weather Phaeton types, on all Cadillac chassis, Cadillac offers four special high-grade Eagle Ottawa top grain leathers as follows:

E. O. No. 814	Black
E. O. No. 815	Tan
E. O. No. 816	Green
E. O. No. 817	Gray

Also, for the chauffeur's compartment in all Fleetwood Town Car types and the V-16 Cadillac Fleetwood Limousine and Imperials, a soft Black down cushion leather (Eagle Ottawa R 31) is offered, and will be used as standard in these body types.

NOTE: For complete information and details on Fleetwood Custom Bodies on V-8, V-12 and V-16 see Book of Fleetwood or Fleetwood Custom Bodies Section of Sales Kit.

Upholstery Trim *and* Materials—*Continued*

METHOD OF TRIM FOR FLEETWOOD BODIES

V-8 and V-12 FLEETWOOD BODIES

The style of trimming used in the *V-8 and V-12 Cadillac Fleetwood* models will be plain with French seaming, including center folding arm rest in the rear seat. (See page 00.)

Fleetwood method No. 402 of pleating and tufting (see page 00), can be specified in these bodies, including center folding arm rest in the rear seat, without extra charge, but subject to delay in bringing the body through production. Any other method of trimming in V-8 and V-12 Cadillac Fleetwood bodies will be subject to extra charge.

When preferred, Fleetwood five and seven passenger closed car body types for the V-8 and V-12 Cadillac chassis, can be brought through an order with interior panels Style 401-A.

These interior panels have a center of straight grained walnut on bias four ways, with a border of ebony to match the garnish mouldings. A polished stainless steel stripe will run lengthwise through the center of each panel.

The panels, when used, will be placed on the doors and quarter windows only, there being no provision made for the installation of a panel on the division or back of front seat.

V-16 FLEETWOOD BODIES

V-16 Cadillac Fleetwood models and the three V-8 and V-12 Fleetwood Town Car types and Aero Dynamic 5-passenger Coupe, may be brought through in any of the accepted Fleetwood methods of trimming without extra charge.

Any of the accepted Fleetwood methods of trim (see Fleetwood Custom Body Book for illustrations) may be ordered without extra charge.

Other options without extra charge, on V-16 Cadillac Fleetwood models and the three V-8 and V-12 Cadillac Fleetwood Town Car types and Aero-Dynamic 5-Passenger Coupe, include any variation in the finish or coloring of the regular Fleetwood design hardware, but not including special design.

Also, interior wood paneling, if desired, can be had in any finish (walnut, mahogany, ebony, etc.) as well as variations of design of panels. Body appointments may include:

Grip handles, assist cords or assist loops.

Hassocks, foot rail, or carpet covered spring foot rail.

Seats, stationary or adjustable.

(Front seats in Imperial, Limousine and Town Car types cannot be built adjustable.)

Sheepskin rear floor rugs and parcel hammocks, if desired.

On V-16 Cadillac cars, the number of the particular car involved will be inscribed on the horn button. The name of the owner will be inscribed on the button, when so specified.

PLEASE USE THE SPECIAL FORM PROVIDED FOR V-16 CADILLAC ORDERS, SO THAT THE FACTORY WILL RECEIVE COMPLETE SPECIFICATIONS WITH EACH ORDER.

LOCAL DELIVERED PRICES—CADILLAC V-8

CASH *or* GMAC TERMS

THESE PRICES ARE FOR CARS WITH STANDARD EQUIPMENT INCLUDING THE FOLLOWING EXTRA EQUIPMENT:

Time prices also include APD (Accidental Physical Damage) insurance including fire, theft, and collision insurance ($.... deductible) and additional coverage, for 1 year on 12 months' terms, and for 2 years on 16 and 18 months' terms.

Body Numbers	MODEL	List Price (f. o. b. Detroit)	Cash Delivered Price	GMAC TIME PRICE			
				⅓ Down	Balance Monthly for Period of		
					12 Months	16 Months	18 Months
	SERIES 10—128″ WHEELBASE (Body by Fisher)						
34-721	5-Pass. Convertible Sedan	$2,695					
34-718	2-Pass. Convertible Coupe	2,495					
34-728	2-Pass. Coupe	2,395					
34-722	5-Pass. Town Coupe	2,545					
34-702	5-Pass. Town Sedan	2,545					
34-709	5-Pass. Sedan	2,495					
	SERIES 20—136″ WHEELBASE (Body by Fisher)						
34-671	5-Pass. Convertible Coupe	$2,895					
34-668	2-Pass. Convertible Coupe	2,695					
34-678	2-Pass. Coupe	2,595					
34-652	5-Pass. Town Sedan	2,745					
34-659	5-Pass. Sedan	2,695					
34-662	7-Pass. Sedan	2,845					
34-663	7-Pass. Imperial	2,995					
	146″ WHEELBASE (Fleetwood Body) (Straight Type Windshield)						
6033-S	5-Pass. Town Sedan	$3,345					
6030-S	5-Pass. Sedan	3,295					
6030-FL	5-Pass. Imperial Cabriolet	3,695					
6075-S	7-Pass. Sedan	3,445					
6075	7-Pass. Limousine	3,645					
6075-FL	7-Pass. Imperial Cabriolet	3,845					
	146″ WHEELBASE (Fleet. Custom) (V-Type Front Windshield)						
5680	5-Pass. Conv. Imperial Sedan	$4,295					
5635	2-Pass. Conv. Coupe	4,045					
5676	2-Pass. Coupe	3,895					
5685	5-Pass. Conv. Coupe	4,295					
5699	5-Pass. Coupe (Aero Dynamic)	4,295					
5633-S	Special 5-Pass. Town Sedan	3,795					
5630-S	Special 5-Pass. Sedan	3,745					
5630-FL	Special 5-Pass. Imperial Cabriolet	4,145					
5675-S	Special 7-Pass. Sedan	3,895					
5675	Special 7-Pass. Limousine	4,095					
5675-FL	Special 7-Pass. Imperial Cabriolet	4,295					
5612	5-Pass. Town Cabriolet	5,495					
5625	7-Pass. Town Cabriolet	5,595					
5691	7-Pass. Limousine Brougham	5,495					

Remember to mention that GMAC charges may be distributed over the term of payments.

LOCAL DELIVERED PRICES
CADILLAC V-12
CASH *or* GMAC TERMS

THESE PRICES ARE FOR CARS WITH STANDARD EQUIPMENT INCLUDING THE FOLLOWING EXTRA EQUIPMENT:

_____

_____

Time prices also include APD (Accidental Physical Damage) insurance including fire, theft, and collision insurance ($.... deductible) and additional coverage, for 1 year on 12 months' terms, and for 2 years on 16 and 18 months' terms.

Style Numbers	MODEL	List Price (f. o. b. Detroit)	Cash Delivered Price	GMAC TIME PRICE			
				⅓ Down	Balance Monthly for Period of		
					12 Months	16 Months	18 Months
	146″ Wheelbase (Body by Fleetwood Straight Type Windshield)						
6133-S	5-Pass. Town Sedan	$4,045					
6130-S	5-Pass. Sedan	3,995					
6130-FL	5-Pass. Imperial Cabriolet	4,395					
6175-S	7-Pass. Sedan	4,145					
6175	7-Pass. Limousine	4,345					
6175-FL	7-Pass. Imperial Cabriolet	4,545					
	146″ Wheelbase (Body by Fleetwood V-type Windshield)						
5780	5-Pass. Conv. Imp. Sedan	$4,995					
5735	2-Pass. Conv. Coupe	4,745					
5776	2-Pass. Coupe	4,595					
5785	5-Pass. Conv. Coupe	4,995					
5799	5-Pass. Coupe (Aero Dyn.)	4,995					
5733-S	Special 5-Pass. Town Sedan	4,995					
5730-S	Special 5-Pass. Sedan	4,445					
5730-FL	Special 5-Pass. Imp. Cabr.	4,845					
5775-S	Special 7-Pass. Sedan	4,595					
5775	Special 7-Pass. Limousine	4,795					
5775-FL	Special 7-Pass. Imp. Cabr.	4,995					
5712	5-Pass. Town Cabriolet	6,195					
5725	7-Pass. Town Cabriolet	6,295					
5791	7-Pass. Lim. Brougham	6,195					

Remember to mention that GMAC charges may be distributed over the term of payments.

LOCAL DELIVERED PRICES
CADILLAC V-16
CASH *or* GMAC TERMS

THESE PRICES ARE FOR CARS WITH STANDARD EQUIPMENT INCLUDING THE FOLLOWING EXTRA EQUIPMENT:

Time prices also include APD (Accidental Physical Damage) insurance including fire, theft, and collision insurance ($.... deductible) and additional coverage, for 1 year on 12 months' terms, and for 2 years on 16 and 18 months' terms.

Style Numbers	MODEL	List Price (f. o. b. Detroit)	Cash Delivered Price	GMAC TIME PRICE			
				⅓ Down	Balance Monthly for Period of		
					12 Months	16 Months	18 Months
	154″ Wheelbase (Fleetwood Body) (Straight Type Windshield)						
6233-S	5-Pass. Town Sedan	$6,700					
6230-S	5-Pass. Sedan	6,650					
6230-FL	5-Pass. Imperial Cabriolet	7,050					
6275-S	7-Pass. Sedan	6,800					
6275	7-Pass. Limousine	7,000					
6275-FL	7-Pass. Imperial Cabriolet	7,200					
	154″ Wheelbase (Body by Fleetwood) (V-Type Windshield)						
5880	5-Pass. Conv. Imp. Sedan	$7,850					
5835	2-Pass. Conv. Coupe	7,600					
5876	2-Pass. Coupe	7,450					
5885	5-Pass. Conv. Coupe	7,885					
5899	5-Pass. Coupe (Aero Dyn.)	7,850					
5833-S	Special 5-Pass. Town Sedan	7,350					
5830-S	Special 5-Pass. Sedan	7,300					
5830-FL	Special 5-Pass. Imp. Cabr.	7,700					
5875-S	Special 7-Pass. Sedan	7,450					
5875	Special 7-Pass. Limousine	7,650					
5875-FL	Special 7-Pass. Imp. Cabr.	7,850					
5812	5-Pass. Town Cabriolet	8,850					
5825	7-Pass. Town Cabriolet	8,950					
5891	7-Pass. Limo. Brougham	8,850					

Remember to mention that GMAC charges may be distributed over the term of payments.

COMPARISON OF LOCAL DELIVERED PRICES

CADILLAC V-8 {Fisher} UPPER MEDIUM PRICE GROUP

(USE 5 PASS. SEDAN PRICE)	Cad. V-8 (128" W. B.) Series 10	Cad. V-8 (136" W. B.) Series 20	Buick	Stude.	Nash	Franklin 6	Chrysler
List Price F. O. B. Factory (5 wire wheels)							
Extra Equipment							
Freight and Handling							
Total Cash Delivered Price							
Local Delivered Time Price							
Finance Charge							

CADILLAC V-8 {Fisher} PRICE GROUP

(USE 5 PASS. SEDAN PRICE)	Cad. V-8 (128" W. B.) Series 10	Cad. V-8 (136" W. B.) Series 20	Packard Std. 8	Lincoln	Pierce 8 (836)	Chrysler Imp. Cust.	
List Price F. O. B. Factory (5 wire wheels)							
Extra Equipment							
Freight and Handling							
Total Cash Delivered Price							
Local Delivered Time Price							
Finance Charge							

CADILLAC V-8 {Fleetwood Custom Body} PRICE GROUP

(USE 5 PASS. SEDAN PRICE)	Cadillac V-8 (146" W. B.)	Packard De Luxe 8	Lincoln	Pierce 8(836)	Pierce 12 (1236)	Chrysler Imp. Cust.
List Price F. O. B. Factory (5 wire wheels)						
Extra Equipment						
Freight and Handling						
Total Cash Delivered Price						
Local Delivered Price						
Finance Charge						

COMPARISON OF LOCAL DELIVERED PRICES

CADILLAC V-12 PRICE GROUP

(USE 5 PASS. SEDAN PRICE)	CADILLAC V-12		FRANKLIN V-12	LINCOLN V-12	PIERCE V-12 (1242)	PACKARD V-12
List Price F. O. B. Factory						
Extra Equipment						
Freight and Handling						
Total Cash Delivered Price						
Local Delivered Time Price						
Finance Charge						

CADILLAC V-16 PRICE GROUP

(USE 5 PASS. SEDAN PRICE)	CADILLAC V-16	LINCOLN V-12 Custom	PIERCE V-12 Custom	PACKARD V-12 Custom		
List Price F. O. B. Factory						
Extra Equipment						
Freight and Handling						
Total Cash Delivered Price						
Local Delivered Time Price						
Finance Charge						

G. M. A. C.

A large percentage of your prospects expect to buy their cars on the time payment plan of purchase. You should understand and be prepared to use the selling advantages of the G. M. A. C. plan in developing new prospects and closing deals.

Advantages to Cadillac-La Salle Salesmen

1. A WIDELY KNOWN PAYMENT PLAN.

   More people know about the G. M. A. C. Plan than any other method of buying on time, because over seven million people have used it to buy cars. Thousands of bankers who regularly invest in G. M. A. C. short term investment certificates, recognize the importance of the deferred payment plan to the industry.

2. LOW FINANCING COST TO THE PURCHASER.

   G. M. A. C.'s low rates which include valuable insurance, enable you to take full advantage of the opportunity offered by time sales.

3. PROTECTS OWNER GOOD WILL.

   Because G. M. A. C. is a unit of General Motors you can be assured that its policies and practices are such as to protect and develop the owner good will, which is one of your and Cadillac's greatest assets.

4. PROVIDES STRONG RETAIL SELLING POINTS.

   G. M. A. C. has published a booklet entitled, "Selling Points for Use with Three Out of Five Prospects." It is filled with valuable retail selling points you should use daily. Be sure to get a copy and study it carefully.

5. FLEXIBILITY.

   No sale of a new or used car should ever be lost on account of terms as long as the purchaser's credit is good! Know the many ways in which G. M. A. C. terms can be fitted to the purchaser, and call your local G. M. A. C. Branch to figure irregular transactions before you let any prospect decide he cannot buy on account of regular time payment terms.

Advantages to Cadillac-La Salle Purchasers

1. LOW TIME PRICES.

   Frequently there is a difference of from $10.00 to as much as $100.00 or more between the total cost of a Cadillac or La Salle financed through G. M. A. C. and a competitive car of the same list price financed by other companies.

2. TERMS TO FIT THE NEEDS OF THE PURCHASER.

   Be sure you know the four ways G. M. A. C. terms can be fitted to your purchasers.
   (a) Standard Monthly Payments.
   (b) Special Cadillac low cost Single Payment G. M. A. C. Plan.
   (c) The So-Called "Farmer Plan."
   (d) Irregular Payments which your G. M. A. C. Branch will gladly figure for you.

3. INSURANCE PROTECTION.

   Cadillac-La Salle purchasers appreciate, more than any other class of owners, the extra protection and many unusual features of the insurance included in the G. M. A. C. Plan provided through G. E. I. C., (General Exchange Insurance Corporation) a unit of General Motors.

4. FRIENDLY, HELPFUL SERVICE.

   Cadillac-La Salle purchasers appreciate the type of finance company relationship which they know they can expect, when dealing with a unit of General Motors.

5. CONSIDERATION OF PURCHASER ON COLLECTIONS.

   The close co-operation between the dealer and G. M. A. C. on collections, assures due consideration of the purchaser's interest in collection procedure and protects his investment.

WHAT TO DO TO GET THE FULL BENEFIT FROM THE G. M. A. C. PLAN

1. Be prepared to quote regular terms promptly—at least on volume selling models without figuring them in detail.
2. When the prospect asks for the price always include a quotation of terms by saying "This car sells for $....., $.....down and $.....per month."
3. Know how to figure G. M. A. C. time payments. Get your dealer, sales manager, or G. M. A. C. representative to show you.
4. Always be sure to ask your G. M. A. C. branch to figure deals for you which require irregular terms.
5. Know and tell your prospects the many retail selling points in the G. M. A. C. Plan.

Answers *to* G.M.A.C. Questions Which Salesmen Ask Every Day

1. What is the most liberal contract G. M. A. C. will purchase?

This question cannot be answered by stating any specific terms because G. M. A. C. prefers that the plan be fitted to the individual purchaser. There is a great deal of difference between the credit standing of purchasers. In most every community there are a few well-known individuals who enjoy an extremely good reputation and whose credit is so well recognized that there would be practically no question in accepting any contract which they might request. There are others to whom your dealer might hesitate to extend even the customary terms of ⅓ or more down and 12 months in which to pay.

The best policy for the salesmen is always to advise the prospect to pay as much down and make his monthly payments as large as possible and then to submit the proposition to his dealer.

2. Why are terms usually more liberal on new cars than on used?

The answer to this question is found in the experience on repossessions. Approximately 80% of all cars repossessed are used cars. Also, when a loss occurs in the sale of a repossessed car, it is usually on a repossessed used car instead of a repossessed new car.

It is obvious from the above that greater caution should be observed in granting terms on used cars.

3. Why does G. M. A. C. have more than one payment chart?

G. M. A. C. uses two charts, because there are two kinds of items which make up the total time price differential. There are those which are more or less the same, country wide, and others which vary considerably territorially. The latter are called territorial differentials and include insurance premiums. If only one chart were used, these territorial differential would have to be averaged and as a result, some purchasers would pay considerably less than they should and others would pay considerably more. It is G. M. A. C.'s constant endeavor to see that the differentials in its payment charts are always as low as possible so that your time prices can be made as low as possible.

4. Why did G. M. A. C. make A. P. D. (Accidental Physical Damage) Insurance a part of the standard G. M. A. C. Plan?

Fire and theft insurance was made a part of the G. M. A. C. Plan a number of years ago. In 1930 A. P. D. was added. During the first eight months of 1932, loss records show that on a like number of cars, collision losses were greater by 15% in number and by 65% in dollars per car than were the combined losses from fire and theft. It is obvious, therefore, that there is even greater need for collision insurance than there is for fire and theft, and that is the reason it was included in the plan.

In addition, it was found, in planning this extra insurance feature, that protection against a number of other forms of accidental physical damage could be included at a cost generally less than the usual cost of collision alone to the purchaser, thereby giving him protection against practically any accidental physical damage which can happen to his car. The value of this additional protection is indicated by the fact that, in one year, 50,000 automobiles were seriously damaged by hail, windstorm, flood, tornado, earthquake and other hazards, exclusive of fire, theft and collision, which are covered by A. P. D. insurance.

5. If a prospect can go to his bank and borrow the money, should he be urged to buy his car on time?

No. If the purchaser can borrow money at the bank, it is cheaper for him to do so and pay cash for his car as long as he is not using his bank credit to the extent that none is available for other purposes at a later date.

In some instances, it might be advisable to point out to such a prospect the features of your time payment plan including insurance. If he wishes to relieve his credit at the bank, he may welcome the opportunity to buy his car on a sound plan.

When a prospect says he will borrow money at the bank, ask him to sign the order and make a small deposit. This will assure you he is sincere and is not merely making a postponement excuse.

6. What can I do to assure my time sale contract being accepted after I have obtained the order?

A very easy thing but an important one for you to do is to fill out the purchaser's statement completely and as accurately as you can. In other words, obtain all the facts. This will help your dealer and G. M. A. C., to promptly and thoroughly analyze the purchaser's responsibility. Otherwise, a decision may have to be postponed until additional information is obtained. Larger down payments and larger monthly payments always go a long way toward assuring that the deal will go through. Many salesmen make it a practice on trade-in deals to obtain some cash in the down payment whenever possible to do so. This is particularly advisable where the value of the used car traded barely equals the required down payment.

Here is another thing which many salesmen do that assures the acceptance of time sales which otherwise might not go through. When they see that there is some question as to the purchaser's credit standing, they obtain additional security by having another individual join the purchaser in signing the purchase contract. In some instances they will merely say to the prospect, "Now it is customary to have someone sign this contract with you." Or, "It will help me put this deal through and get a prompt delivery of your new car if we have another individual sign with you."

7. How does G. M. A. C. handle a purchaser's contract?

The purchaser's time payment contract is of course made with the dealer. Then G. M. A. C. buys the contract from the dealer. Before accepting the purchaser's contract from the dealer, G. M. A. C. verifies from the purchaser's statement and contract that the papers are made out properly and that the purchaser's credit standing is good. When the contract is accepted, a check for the proceeds is mailed

Answers *to* G.M.A.C. Questions Which Salesmen Ask Every Day—*Continued*

to the dealer. G. M. A. C. then holds the purchaser's contract and proceeds to collect it according to its terms.

Promptly after the purchaser's contract is accepted G. M. A. C. mails the purchaser a folder explaining its relationship. Enclosed with the folder is a purchaser's Coupon Book.

When the purchaser makes his monthly payments, he fills out a coupon and either mails it with his payment or takes it to the branch personally. This makes it unnecessary for G. M. A. C. to mail monthly statements to purchasers.

He also receives an insurance policy which either is enclosed with the coupon book or mailed direct by the General Exchange Insurance Corporation.

When the purchaser has completed his payments, the contract is marked paid-in-full and mailed to the dealer. The dealer then returns the contract to the purchaser either by mail, through personal delivery by the salesman, or writes the purchaser to call at the salesroom to obtain it. G. M. A. C. recommends the last method because it gives the dealer and salesman the best opportunity to sell the owner a new car, get the names of prospects from him, or sell him service.

8. What happens when a purchaser fails to make his payments to G. M. A. C.?

Approximately 5 days after a monthly payment is due, the delinquent purchaser receives a courteous reminder. This is followed a few days later by a second, and later by a third, each of which though showing every courtesy to the purchaser, becomes stronger in its urge for him to either send in his payment or get in touch with the G. M. A. C. branch office.

If the purchaser does not pay then, G. M. A. C. advises the dealer and writes the owner a personal letter, again endeavoring to secure the payment or obtain from him a statement of the reasons for his delay. If results are not obtained by mail, the purchaser is called on by a representative.

Sometimes it is found that by rearranging the purchaser's payments, G. M. A. C. can enable him to complete his contract, while otherwise, the instalments would be too large for him. This, however, is only done when the purchaser has a sufficient investment in the car to warrant this action and there is good reason to believe that he will be able to complete his payments on the revised basis.

There is real value in the considerate treatment which purchasers receive when their contracts are purchased by G. M. A. C. In 1932, 113,000 people, who said they could not complete their payments, actually finished paying for their cars that year because their dealers and G. M. A. C. went to the trouble of finding a way for them to continue their payments.

9. Why does G. M. A. C. consider it so important to avoid repossessions whenever possible to do so?

There are three principal reasons. One is, that when a repossession can be avoided it eliminates the expense of time, effort and money in reselling the car to someone else.

The second is one which warrants a great deal more attention on the part of salesmen and dealers. When an owner loses his car through repossession, it usually calls for some explanation to his friends and acquaintances. Many such owners, instead of telling their friends and acquaintances their car was repossessed, will say that they disposed of it or turned it back to the dealer because it proved so unsatisfactory. This tears down good-will for the dealer and salesman and good-will for the car itself.

The third reason is that the owner whose car has been repossessed sooner or later buys another one, but he feels it necessary to go to a competitive dealer because his credit has been injured with the dealer who sold him the car which was repossessed.

By avoiding repossessions whenever possible, G. M. A. C. is able to keep a large number of owners in the General Motors Family who otherwise would be lost as repeat buyers.

10. Why is it that many repossessions occur before the purchaser makes a monthly payment?

G. M. A. C.'s experience indicates that more than 1 out of 5 used car repossessions are made because the purchaser fails to pay the first instalment; also 3 out of 4 used car repossessions show 4 monthly payments or less.

There are 5 outstanding causes:

1. Inadequate Down Payments.
2. Overpriced Cars.
3. Dissatisfaction due to—
   Mechanical condition of the car, or
   Misrepresentation in the sale.
4. Accidents.
5. Inability to make monthly payments.

Here are 5 ways to correct them:

1. Secure adequate Down Payments.
2. Avoid the inflation of trade-ins. Get some cash on each deal if possible.
3. Avoid overselling.
4. Use the G. M. A. C. Plan including A. P. D. (Accidental Physical Damage) Insurance.
5. Check the prospect's ability to pay the first instalment.

Salesmen should co-operate with their dealers in correcting the causes of repossessions.

The G. M. A. C. offices in various sections of the Country made a study of over a thousand people who have bought and are paying for a new Cadillac or La Salle on the time payment plan, and the facts show some buying trends that may be helpful in gauging the buying ability of some of your Cadillac prospects.

1. Eighty-six per cent are men.
2. Fourteen per cent are women.
3. Sixty-two per cent own their homes.
4. Thirty-eight per cent are renters.
5. The average income is $12,000—$14,000.
6. The average age is 43 years.
7. Ninety-two per cent are married.
8. Eight per cent are single.
9. The average monthly payment is $85.00.
10. Few people under 30 buy either Cadillac or La Salle.
11. The best buying age is 40-50.

Auxiliary Equipment for CADILLAC-LASALLE MOTOR CARS

THE wide range of personal preference makes it impractical to build Cadillac-La Salle motor cars with standard equipment which will meet each owner's idea of a completely equipped automobile. Some owners would include a heater, another a spotlight, a third a radio, in his description of a completely equipped motor car.

Cadillac believes, even though they cannot standard equip every car to everyone's complete satisfaction, that it is their responsibility to provide a complete assortment of this auxiliary equipment for the owner's selection. And, of course, it must be engineered by Cadillac and for Cadillac, so that it harmonizes perfectly with the exterior or interior appearance, and when installed becomes an integral part of the motor car.

That is the reason for Exclusive Cadillac Accessories—to offer the new Cadillac-La Salle owner an opportunity to equip his car to his individual taste and satisfaction with the same quality auxiliary equipment as standard.

When the owner is selecting the color, upholstery, wheel equipment, and other features of his new car, the salesman should present this Cadillac Service. It is rarely considered as a service, but that is truly what it is—another example of the lengths to which Cadillac goes to serve and satisfy its owners.

In the following pages are illustrated the most important Exclusive Cadillac Accessories with a brief description of their purpose and function. A complete price list is also included, together with a chart of the most popular items by series and body style.

Price List

(Prices subject to change)

All Prices Include Complete Installation

La Salle Torpedo Ornament		$ 20.00
Cadillac Goddess Ornament		20.00
Cadillac Wheel Discs—Series 355-D, 370-D	Set of 5	25.00
	Set of 6	30.00
Cadillac Metal Tire Covers for La Salle with Fenderwells	Pair	35.00
For Cadillac V-8, V-12 or V-16 with Fenderwells	Pair	40.00
For Cadillac V-8—Series 10 and 20, Rear Mount	Each	20.00
Cadillac Metal Cover Mirrors	Pair	20.00
Cadillac Hinge Mirror		8.00
Cadillac License Frames	Pair	7.00
Cadillac Moto-Pack		5.85
Cadillac Motor Car Radio—Master		74.50
Standard		64.50
Cadillac Steam Heater		44.50
Cadillac Trunks and Cases—		
Standard Trunk Only		85.00
Equipped with 3 Standard Cases		122.00
Equipped with 4 Standard Cases		134.00
Equipped with 3 Standard Long Cases		130.00
Equipped with Genuine Cowhide Cases		195.00
Equipped with Aerotype Linen Cases		175.00
Cadillac Fleetwood Trunk and Cases—		
Fleetwood Trunk Only		85.00
Equipped with 3 Standard Cases		119.00
Equipped with 2 Standard Long Cases		115.00
Cadillac Lorraine Driving Light		24.50
Cadillac Fleetwood Robe		45.00
Cadillac Double Alpaca Robe		20.00
Cadillac Alpaca and Plush Robe		20.00
La Salle Steel Tire Chains		8.00
Cadillac Steel Tire Chains—V-8, V-12		9.00
Cadillac Steel Tire Chains—V-16		13.50

CHART *of* *Popular Auxiliary Equipment* *by* BODY STYLES

LA SALLE

	SEDANS	COUPES AND CONVERTIBLES
Five-Wheel Equipped	FLEXIBLE STEERING WHEEL LICENSE FRAMES HINGE MIRROR Radio Heater Luggage Robe	FLEXIBLE STEERING WHEEL LICENSE FRAMES HINGE MIRROR Radio Heater Luggage Driving Light
Six-Wheel Equipped	FLEXIBLE STEERING WHEEL LICENSE FRAMES METAL COVERS METAL COVER MIRRORS Radio Heater Luggage Robe	FLEXIBLE STEERING WHEEL LICENSE FRAMES METAL COVERS METAL COVER MIRRORS Radio Heater Luggage Driving Light

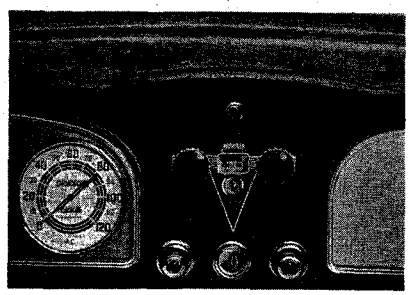
CADILLAC *{V-8—Series 10 and 20}*

	SEDANS AND IMPERIALS	COUPES AND CONVERTIBLES
Five-Wheel Equipped	WHEEL DISCS FLEXIBLE STEERING WHEEL LICENSE FRAMES METAL COVER HINGE MIRROR Radio Heater Robe	WHEEL DISCS FLEXIBLE STEERING WHEEL LICENSE FRAMES METAL COVER HINGE MIRROR Radio Heater Driving Light
Six-Wheel Equipped	WHEEL DISCS FLEXIBLE STEERING WHEEL LICENSE FRAMES METAL COVERS METAL COVER MIRRORS Radio Heater Luggage Carriers Robe	WHEEL DISCS FLEXIBLE STEERING WHEEL LICENSE FRAMES METAL COVERS METAL COVER MIRRORS Radio Heater Luggage Carriers Driving Light

CADILLAC *{V-8—V-12—Fleetwood Series}*

	SEDANS AND IMPERIALS	COUPES AND CONVERTIBLES
Five-Wheel Equipped	WHEEL DISCS FLEXIBLE STEERING WHEEL LICENSE FRAMES HINGE MIRROR Radio Heater Luggage Robe	WHEEL DISCS FLEXIBLE STEERING WHEEL LICENSE FRAMES HINGE MIRROR Radio Heater Luggage Driving Light
Six-Wheel Equipped	WHEEL DISCS FLEXIBLE STEERING WHEEL LICENSE FRAMES METAL COVERS METAL COVER MIRRORS Radio Heater Luggage Robe	WHEEL DISCS FLEXIBLE STEERING WHEEL LICENSE FRAMES METAL COVERS METAL COVER MIRRORS Radio Heater Luggage Driving Light

RADIO



Cadillac Motor Car Radios are available in two models—the Master and the Standard—each the finest in its class.

Installation is very simple—all current Cadillac and LaSalle cars having been designed with space allotted for the radio. The controls are mounted in the center of the instrument panel as illustrated. Removal of the standard escutcheon plate reveals spaces stamped in all cars for radio control installation.

Both Cadillac Radios are all electric, with tone selector and all the refinements of the finest house radio.

The outstanding feature of the Master Model is its unmatched beauty and clarity of tone. Sensitivity, selectivity and volume of both sets are equal to every comparison.

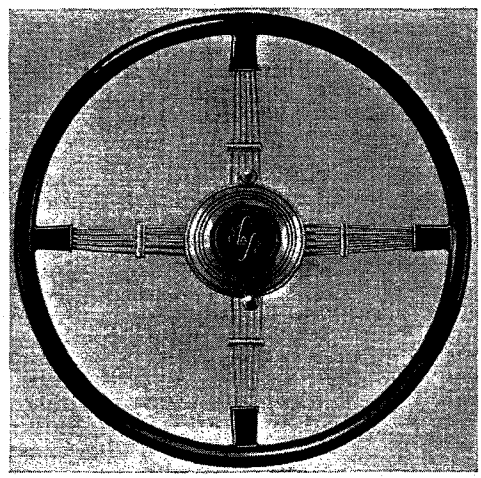
Cadillac Radios are developed exclusively for Cadillac and La Salle Motor Cars and are available only through Cadillac Distributors and Dealers.

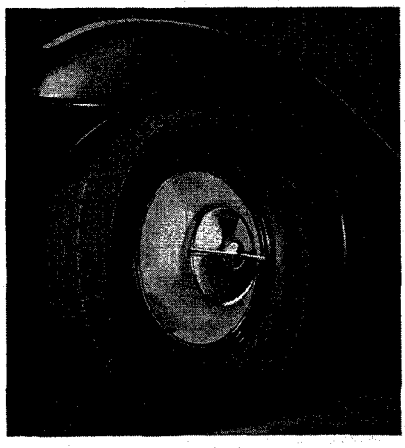
FLEXIBLE STEERING WHEEL

This unusual steering wheel is available as optional equipment at extra charge on all La Salles and Cadillac V-8's and V-12's. The rim is rubber and is flexible, while the spokes—of tempered steel—flex in an up and down motion *parallel* to the steering column, but will not flex in a circular motion around the steering column.

In other words, the wheel is flexible in every direction save the direction of turning the wheel when steering the car—there is no give or twist on either the clockwise or anti-clockwise rotary movements.

It is the same flexible wheel used by most Continental racing drivers and to its advantages of ease of operation and comfort must be added exceptional smartness, distinction, and originality.

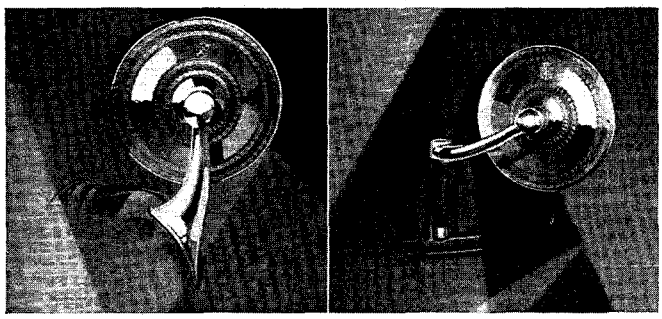




WHEEL DISCS

On the 1934 Cadillac V-8 and V-12 cars, wheel discs are an accessory and are available in all standard colors.

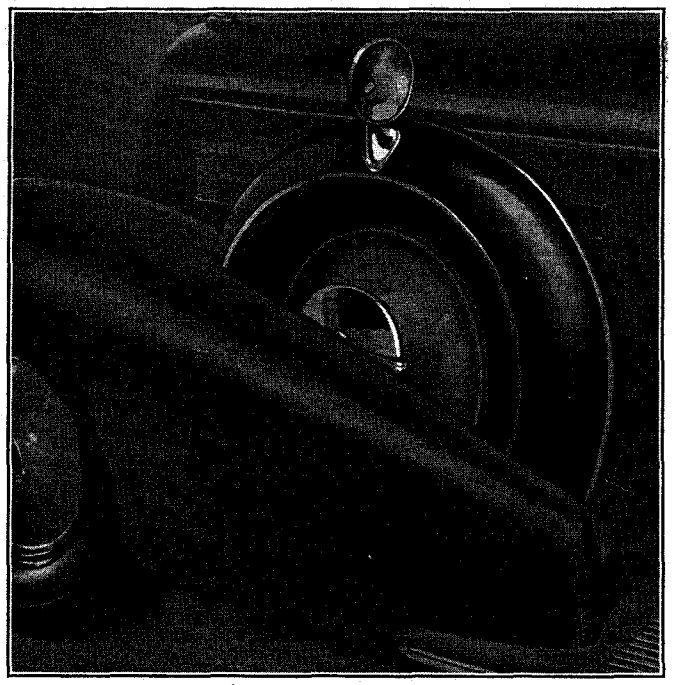
These discs are fine steel shells of extremely durable construction and fit snugly over the standard wire wheel, adding unusual smartness and distinction to the complete car.



MIRRORS

METAL COVER HINGE

Cadillac Metal Cover and Hinge Mirrors provide the extra rear vision necessary for safety in present day traffic. Finely etched designs enhance their graceful appearance, yet they are ruggedly built to stand long wear.



METAL COVERS

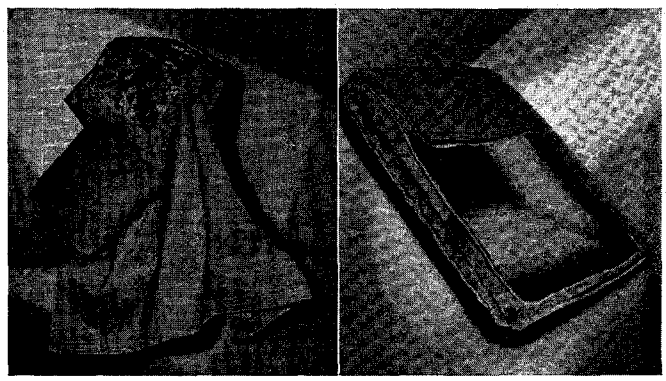
Cadillac Metal Tire Covers are available for all 6-wheel equipped Cadillac and La Salle cars, and for rear mounted spare wheels on Cadillac Series 10 and 20.

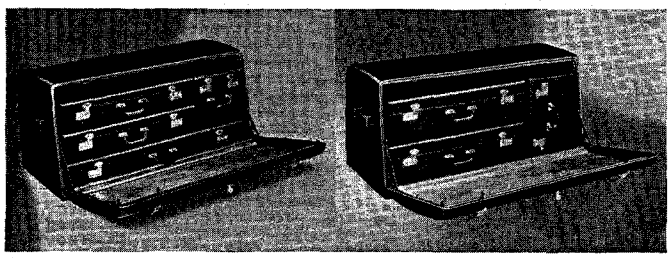
Made of one piece of durable steel curved to perfectly fit the contour of the tire and thoroughly blend with the body lines and general appearance, Cadillac Metal Covers are a necessity to a completely equipped car.

On side mounts Cadillac Metal Cover Mirrors are available to add the final note of smartness.

ROBES

Cadillac Motor Robes are custom tailored of the identical fabrics used in upholstering Cadillac-La Salle bodies. Linings are of silk plush or alpaca. Double Alpaca Robes of various colors are also available. Custom robes of any style or material can be supplied on order.





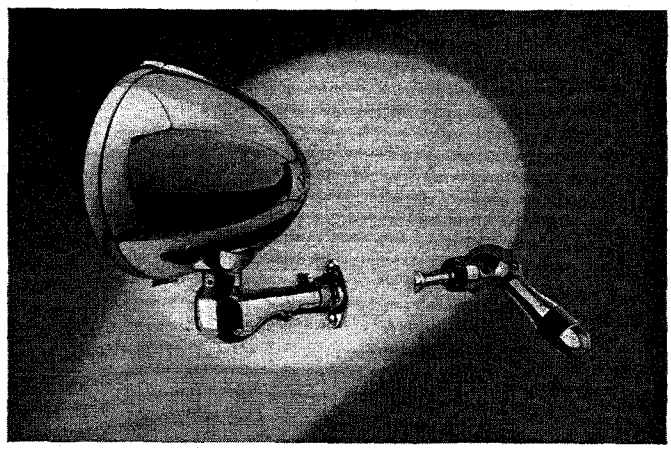
TRUNKS AND CASES

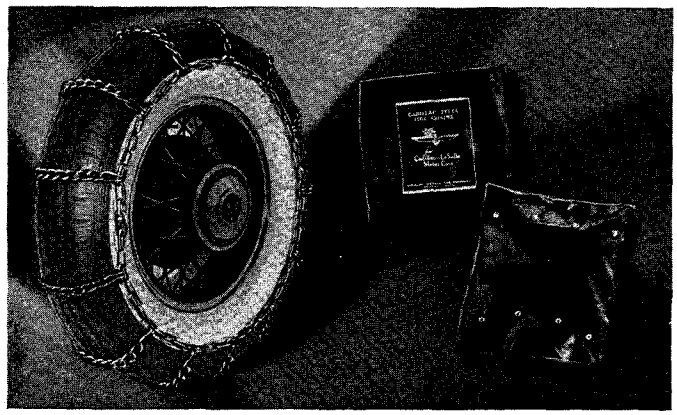
Trunks are available in two sizes and seven case combinations to meet every individual requirement. Standard size trunk fits all cars, equipped with trunk rack. Its construction is composite—like an automobile body—rugged wooden frame covered with a solid welded steel shell. Hardware and fittings exactly match standard body hardware. Cases of various sizes and leathers to fit Town sedan trunks and other built in luggage space are also available.

DRIVING LIGHT

The Cadillac Lorraine Spotlight, completely controlled from within the body of the car, supplies all the auxiliary lighting equipment needed for night touring, emergencies, etc.

Installation is comparatively easy and can be effected on all body styles.



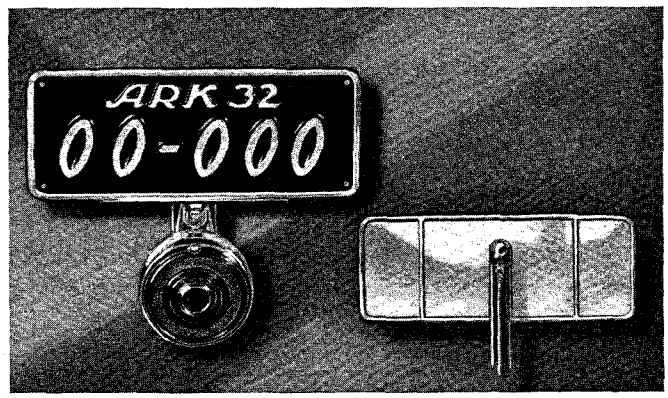


CHAINS

Cadillac Steel Tire Chains are designed to fit the exact requirements of weight and braking power of Cadillac-La Salle cars. Strong welded one piece steel links with a patented fastener make them easy to install and remove. They are packaged in an entirely new type of container—so compact and strongly made—so convenient to handle, thay every objectionable feature is eliminated.

LICENSE FRAMES

Cadillac has solved the problem of a distinctive license frame. It has a solid metal back with trimly rounded edges. Adjustable to length, light and durable. Heavy chromium plating over brass insures fine appearance always.

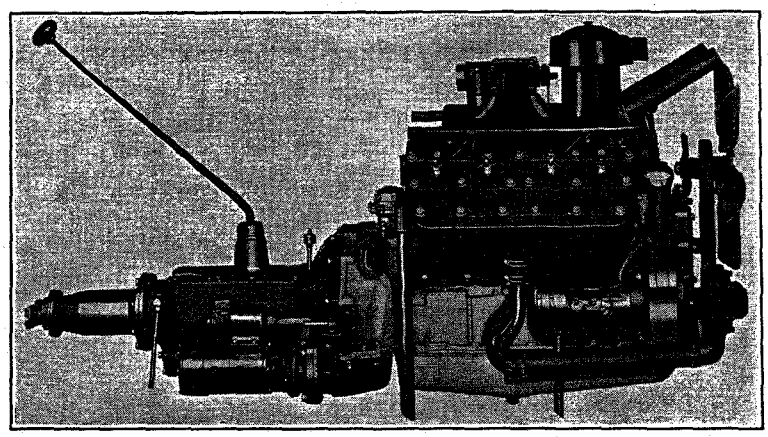


Body and Mechanical Construction Data

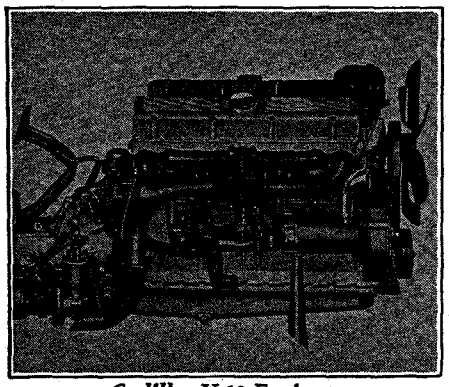
CADILLAC V-8
CADILLAC V-12
CADILLAC V-16



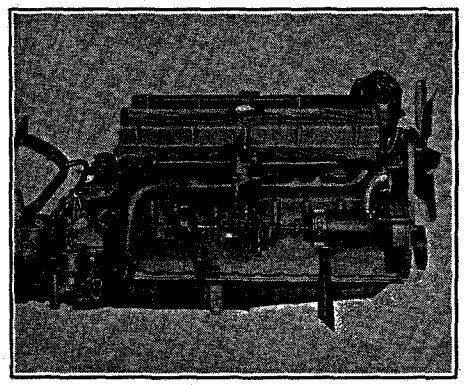
The Cadillac Engine



Cadillac V-8 Engine



Cadillac V-12 Engine



Cadillac V-16 Engine

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
ENGINE			
Make	Own	Own	Own
No. of cylinders	8	12	16
Valve arrangement	L-head	I-Overhead	I-Overhead
Angle between cylinder blocks	90°	45°	45°
Bore	3⅜″	3⅛″	3″
Compression ratio—			
Standard	6.25 to 1	6.0 to 1	6.0 to 1
Optional	5.75 to 1	5.6 to 1	.....
Horsepower—			
Rated (taxable)	36.45	46.9	57.5
Developed at 3000 R. P. M.	.....	.....	.....
Developed at 3400 R. P. M.	130	150 at 3600 R.P.M.	156 at 1000 R.P.M. 171 at 3200 R.P.M. 185 at 3800 R.P.M.
Model	355-D	370-D	452-D
Stroke	4 13/16″	4″	4″
Piston displacement in cubic inches	353	368	452
Point of suspension, number of	5	5	5
Engine mounting	Bolts thru rubber	Bolts thru rubber	Bolts thru rubber
Firing order— 355-D—1-2-7-8-4-5-6-3 370-D—1-4-9-8-5-2-11-10-3-6-7-12 452-D—1-8-9-14-3-6-11-2-15-10-7-4-13-12-5-16	NOTE: Cylinders are numbered from the front, alternating between the two sides. On 355-D, No. 1 is *right* front; on 370-D and 452-D, No. 1 is *left* front.		

V-Type Engine Design Leadership

In 1934 Cadillac enters its 20th year of Leadership in V-type engine design. The first V-type Cadillac 8, Model 51, was introduced in October, 1914. Since that time Cadillac has produced over 500,000 V-type engines. Thus Cadillac has established a V-type engine experience and manufacturing record unequalled by any other fine car manufacturer.

Since 1914 Cadillac has constantly improved and perfected V-type engine design, and in 1930 firmly proved its confidence in the V-type principle by designing and building the V-16, and within a year followed it with its great companion car, the V-12.

The introduction of V-16 and V-12 engines proved that they performed so much better and were so much more dependable than any other type of engine, that competitors were forced to change their programs to meet Cadillac's new competition.

In 1932 Cadillac's three largest competitors, Packard, Lincoln and Pierce-Arrow, all adopted V-type 12-cylinder engines for their most exclusive lines. The one obvious fact that only in V-type engines is it possible to keep adding cylinders for greater power and smoothness, without increasing engine length to a prohibitive degree, is now recognized by a whole industry.

Today with the V-type principle endorsed by every fine car builder in America, it is logical to consider the many advantages this engineering leadership brings to the Cadillac organization.

Cadillac is entering its twentieth year of manufacture with the V-type engine principle, whereas competitive manufacturers are merely beginning with it. Therefore, it should be perfectly obvious under the circumstances that no other manufacturer can approximate Cadillac's long experience in V-type engines either in designing, manufacturing, or in the experience and facilities for servicing them. In this Cadillac enjoys a priceless advantage, and every buyer of a fine car should be acquainted with these facts of Cadillac superiority in experience when comparing 1934 motor car values.

V-Type Engine Design History

CADILLAC

1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
V-8	V-8	V-8	V-8	V-8	V-8	V-8	V-8	V-8	V-8	V-8	V-8	V-8	V-8	V-8	V-8	V-8 V-12 V-16	V-8 V-12 V-16	V-8 V-12 V-16	V-8 V-12 V-16

PIERCE ARROW

1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
6 CYL. T-HD.	6 CYL. T-HD.	6 CYL. T-HD.	6 CYL. T-HD.	6 CYL. T-HD.	6 CYL. T-HD. DUAL VALVES.	6 CYL. T-HD. DUAL VALVES.	6 CYL. T-HD. DUAL VALVES.	6 CYL. T-HD. DUAL VALVES.	6 CYL. T-HD. DUAL VALVES.

1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
6 CYL. T-HD. DUAL VALVES.	6 CYL. L-HD. 6 CYL. T-HD. DUAL VALVES.	6 CYL. L-HD. 6 CYL. T-HD. DUAL VALVES.	6 CYL. L-HD. 6 CYL. T-HD. DUAL VALVES.	6 CYL. L-HD. 6 CYL. T-HD. DUAL VALVES.	6 CYL. L-HD. STRAIGHT 8. L-HEAD.	STRAIGHT 8. L-HEAD.	STRAIGHT 8. L-HEAD.	STRAIGHT 8. V-12. L-HEAD.	STRAIGHT 8. V-12. L-HEAD.

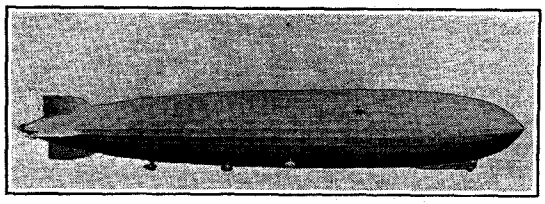
PACKARD

1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
6 CYL. L-HD	V-12 L-HD.	V-12 L-HD	V-12 L-HD	V-12 L-HD	V-12 L-HD.	V-12 SINGLE 6. L-HEAD	V-12 SINGLE 6. L-HEAD.	V-12. SINGLE 6. L-HEAD.	STRAIGHT 8. SINGLE 6. L-HEAD.

1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
STRAIGHT 8. SINGLE 6. L-HEAD.	STRAIGHT 8 SINGLE 6. L-HEAD.	STRAIGHT 8. SINGLE 6. L-HEAD.	STRAIGHT 8 SINGLE 6. L-HEAD.	STRAIGHT 8 L-HEAD.	STRAIGHT 8. L-HEAD.	STRAIGHT 8. L-HEAD.	STRAIGHT 8. L-HEAD.	V-12 TWIN SIX STRAIGHT 8 L-HEAD.	V-12 TWIN SIX STRAIGHT 8 L-HEAD.

V-TYPE ENGINES HOLD WORLD'S RECORDS

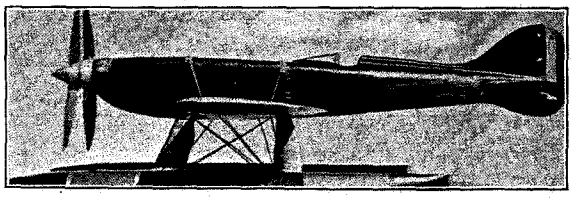
in the air, on the land, and on the water.



IN THE AIR

The Graf Zeppelin, first lighter-than-air craft to encircle the world, had five V-type engines.

Warrant Officer Francesco Agello, of Italy, holds the world's aeroplane speed record at 433.77 miles an hour. His plane had V-type engines.

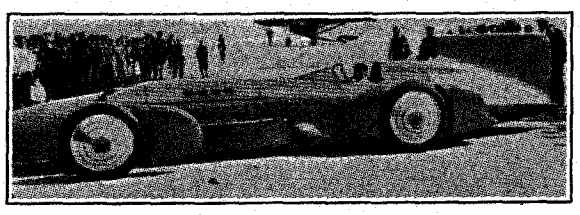


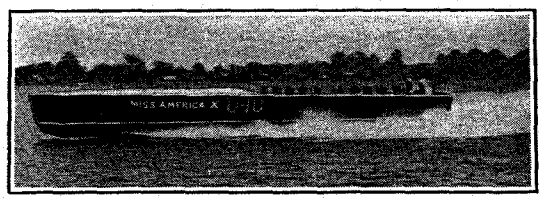


The new U. S. N. Dirigible Macon, the world's largest airship, is powered with V-type engines.

ON LAND

The automobile Bluebird, driven by Campbell at 272.108 miles an hour, established the world's speed record on land. It had V-type engines.





ON THE WATER

The world's power-boat speed record of 124.91 miles an hour was made by Gar Wood in a boat with V-type engines.

V-8, V-12 *and* V-16 Engines

The V-16 Engine

No other engine produced in the entire automobile industry is as smooth, flexible and silent as Cadillac V-16.

It is the supreme achievement of the industry and offers performance that literally is beyond any comparison with any other automobile engine.

The V-12 Engine

The Cadillac V-12 engine inherits many of the superlative qualities of the Cadillac V-16, because it was designed concurrently with the V-16 and shares the same development experience that was responsible for its superior design and efficiency.

The V-8 Engine

The V-8 engine is built to the same high standards of precision and quality as V-12 and V-16, and passes the same stringent tests for accuracy. It also shares the advantage of improvements and refinements in experimental engine design that were developed and incorporated in V-12 and V-16 engines when they were introduced.

Mechanical Features

Both the V-16 and V-12 engines have the same basic principle of engine design. While they differ in size and power development, both engines incorporate the same features of advantage that are responsible for their supremacy over competitive engines of the same size and power rating.

Crankcase

The crankcase forms the base for the entire power plant, as it supports the crankshaft, cylinder blocks and other essential parts of the engine.

It is made of aluminum alloy which gives maximum strength and light weight. The case is non-resonant, and the walls supporting the crankshaft and camshaft bearings are heavily reinforced by ribbing for rigidity. The crankcase and cylinder blocks are separate units, a most important factor in good engine design.

The lower half of the crankcase forms the oil reservoir. In the V-16 it is cast aluminum with ribs on the outside to assist cooling. On the V-8 and V-12, pressed steel. It may be removed without disturbing any other parts for complete inspection of rods and bearings. Baffle plates prevent oil surge on hills or quick stops.

Engine Mounting

The engines are mounted in the chassis at five points in live rubber. Two supports at the front, two at the center and one at the rear of the transmission. This gives frame rigidity, without sacrificing smooth engine operation.

Cylinder Blocks

Cylinder blocks are made of nickel iron—more expensive than gray iron. Cylinder walls are ground and honed to a glass-like smoothness. This gives exceptional wearing quality and long life, and assures close fitting of pistons that contribute to continued smoothness and quietness. Blocks are interchangeable, and are staggered on the crankcase to permit side-by-side mounting of connecting rods.

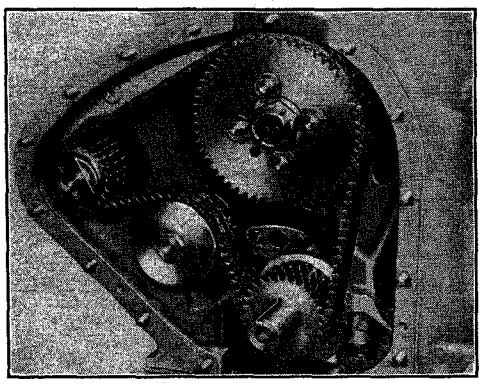
Cylinder Heads

Cylinder heads are detachable and the combustion chambers are machined over their entire surface to enable accurate control of compression pressure and gives uniformity to combustion characteristics.

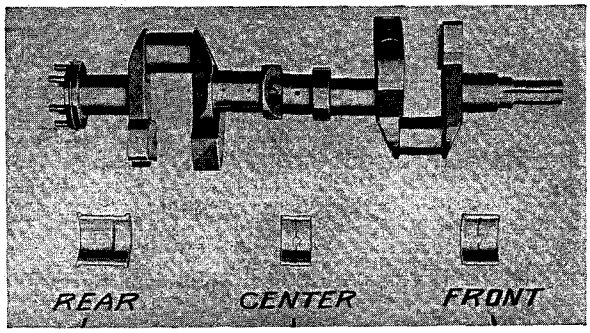
Compression Ratio

Compression ratio is 6.25 to 1 on the V-8, 6.0 to 1 on V-12 and V-16. Optional compression ratio on the V-8 is 5.75 to 1 and on the V-12 is 5.6 to 1.

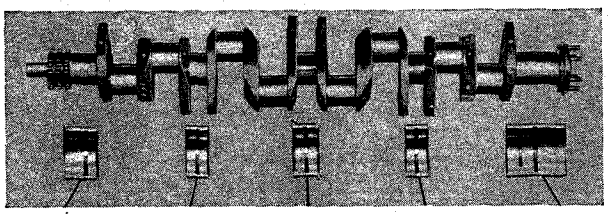
Crankshaft, Camshaft and Front End Drive



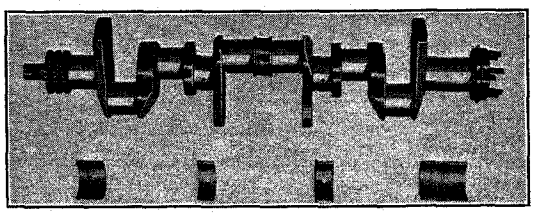
Silent Chain Drive



Three Bearing V-8 Crankshaft



Five Bearing Cadillac V-16 Crankshaft



Four Bearing V-12 Crankshaft

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
Crankshaft and Main Bearings—			
Crankshaft weights used, number of	4	7 forged integral	4
Main bearing clearance	.0015"	.001"	.002-.004"
Main bearing material	Babbitt—bronze backed	Babbitt—steel backed	Babbitt—steel backed
Main bearing shim	None	None	None
Diameter and length of main bearing journals—			
No. 1	2⅜ x 1 31/32"	2⅝ x 2 1/16"	2⅝ x 2 1/16"
No. 2	2⅜ x 1 11/16"	2⅝ x 1 1/2"	2⅝ x 1 1/2"
No. 3	2⅜ x 2⅞"	2⅝ x 1 1/2"	2⅝ x 1 1/2"
No. 4		2⅝ x 3 1/16"	2⅝ x 1 1/2"
No. 5			2⅝ x 3.690
Diameter and length of crankpin journal	2⅜ x 2¾"	2½ x 2¼"	2½ x 2¼"
Harmonic balancer used	No	Yes	Yes
Length of crankshaft—overall	28 23/32"	35 13/16"	44 1/16"
Length of crankshaft—front to rear bearings inclusively	23 23/32"	30 23/32"	39 1/32"
Number of main bearings	3	4	5
Combined bearing length—			
Total bearing area (sq. inches)			
Number and diameter of bearing studs—			
Front	2—½"	2—½"	2—½"
Front center		2—½"	2—½"
Center	2—½"		2—½"
Rear center		2—½"	2—½"
Rear	4—½"	4—½"	4—½"
Camshaft—			
Generator gear material	Steel	Steel	Steel
Material weight			
Diameter and length of bearings—			
No. 1 (front)	1¼ x 1 11/16"	2 x 3"	2 x 3"
No. 2	2 11/16 x 1⅛"	2⅛ x 1 3/16"	2⅛ x 1 3/16"
No. 3	2 11/16 x 1⅛"	2⅛ x 1 3/16"	2⅛ x 1 3/16"
No. 4	1⅝ x 1 11/16"	2⅛ x 2 11/16"	2⅛ x 1 3/16"
No. 5			2⅛ x 2 11/16"
Front End Drive—			
Camshaft chain—			
Timing chain length, inches	27	41¼	41¼
Timing chain adjustment	None	Automatic	Automatic
Type—Morse No.	766	766 Duplex	766 Duplex
Number of links	54	110	110

V-8, V-12 and V-16 Engines—*Continued*

Crankshaft

Crankshafts are forged from carbon steel of high tensile strength, and after being machined to fine precision limits they are minutely balanced on a special balancing machine to $\frac{1}{16}$ ounce inch limit. The short overall length and large diameter reduce torsional vibration and crankshaft whip to a minimum. The shafts are inherently designed with compensators to reduce bearing loads. To further reduce torsional vibration a special Amplex (rubber) balancer is used on the front end of the V-12 and V-16 crankshafts.

The V-16 cylinders are set at a 45° angle which gives a light power impulse every $\frac{1}{8}$ turn of the crankshaft providing smoothness unequalled in any other type or size of engine.

Main Bearings

The V-8 crankshaft is supported on three main bearings, V-12 on four main bearings and V-16 on five main bearings. They are steel backed, babbitt lined bearings in V-12 and V-16, and bronze backed in V-8. Due to the special design of the short crankshafts they are relieved of all loads other than the weight of the parts and the power impulses.

Thrust in V-8, V-12 and V-16 crankshaft is on No. 3 bearing.

Because of the sturdy, rigid crankshaft, the fewer bearings necessary are wider and retain lubrication much better than a greater number of narrow bearings as used in competitive engines. Fewer bearings are easier to align and this also reduces service costs in maintenance.

Camshaft

Camshafts are forgings of high carbon steel drilled from end to end to provide an oil passage. They are driven by chain from camshaft.

Eccentric for driving fuel pump is on distributor shaft. Distributor drive gear is a separate unit on end of the camshaft and can be replaced without installing a new camshaft.

Cams are of special contour to provide quiet operation and so designed that roller tappets are raised and lowered before final lift takes place.

The cam lift on V-12 and V-16 is $\frac{11}{32}$," V-8 $\frac{23}{64}$".

Timing Chain

In the V-8 a silent timing chain drives the camshaft from the crankshaft. A chain is quieter than gears and will retain its quietness throughout its life.

A separate chain is used to drive the water pump and generator more positively than by belts as used by competitors. Adjustment of the water pump position and generator mounting provides for take-up in chain length. By the use of two chains it gives longer life and distributes the load on each chain.

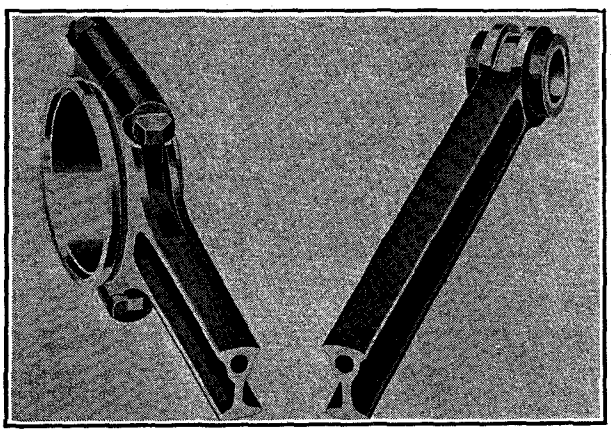
In the V-12 and V-16 engines, one chain, driven from the crankshaft, drives the camshaft and generator as separate units. An idler gear with an automatic spring tension adjustment takes up any chain wear. Water pump has positive drive from the engine through the chain driven generator shaft.

Anodized Alloy Pistons

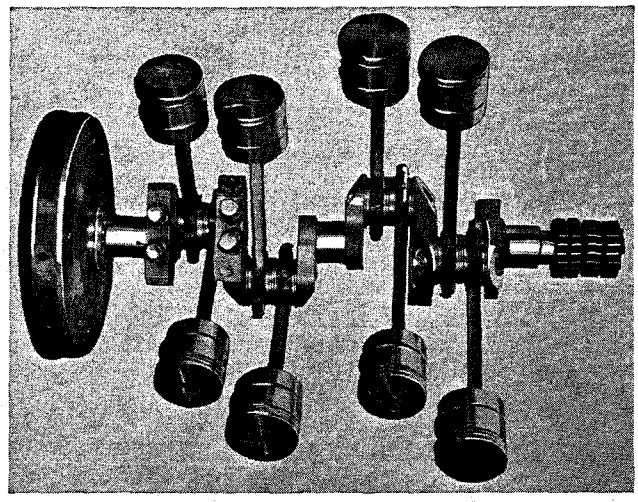
For years Cadillac has conducted intensive research on piston material. Exhaustive tests have been run on pistons of various weights and metal alloys including aluminum and magnesium to find a piston material that would give excellent wearing quality as well as quiet operation.

The new pistons used in the 1934 Cadillac are made of a tough and long wearing alloy metal that has 20% less heat expansion than

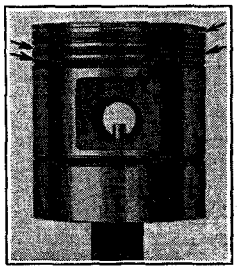
Pistons, Pins, Rings and Connecting Rods



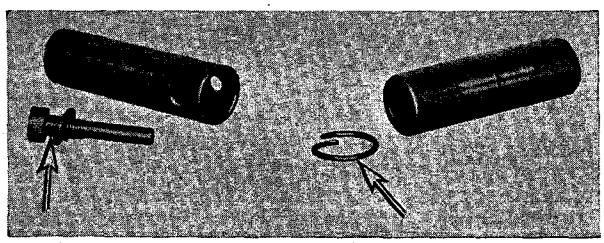
Gun-Drilled Connecting Rods



V-8 Crankshaft with Piston and Rod Assembly



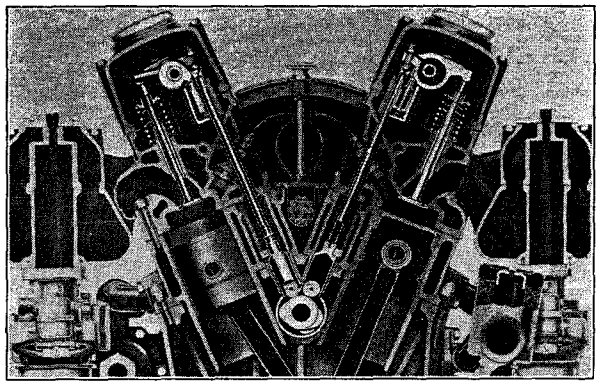
Pistons with 4 Rings

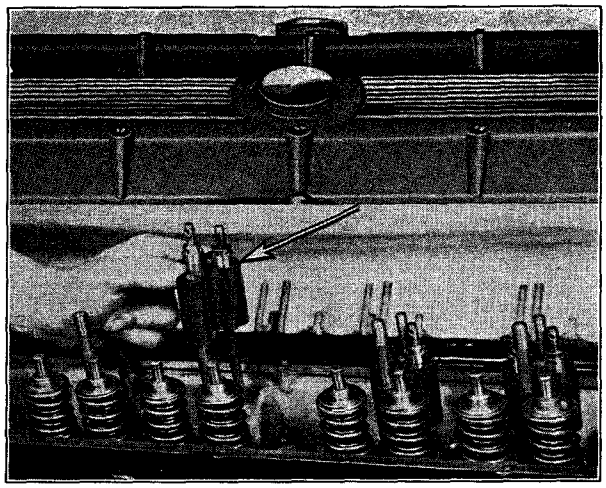


(Left) Cadillac—Piston Pin Bolted Securely in Piston
(Right) High-Priced Competitive Car Uses Spring Locking Ring Only

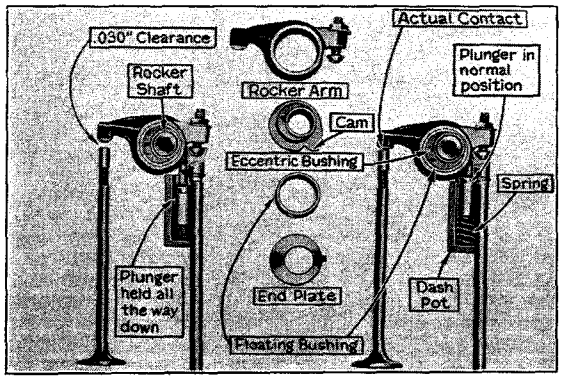
SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
PISTON PINS			
Diameter—standard	.8742-.8744	.8742-.8744	.8742-.8744
PISTONS AND RINGS			
Pistons—			
Material	Anodized Alum. Alloy	Anodized Alum. Alloy	Anodized Alum. Alloy
Features	T-Slot	T-Slot	T-Slot
Clearance at top	.019″	.019″	.018″
Clearance at bottom	.0023″	.0020″	.0018″
Length	$3\frac{21}{32}$″	$3\frac{5}{16}$″	$3\frac{5}{16}$″
Weight	15.008	12.048	.....
Rings—			
Number of compression rings	3	3	3
Number of oil rings	1	1	1
Width of rings—			
Compression	.0930″-.0935″	.0930″-.0935″	.0930″-.0935″
Oil	.1860″-.1865″	.1545″-.1550″	.1545″-.1550″
Engine unit number location	.....	.....	.....
All models—left rear engine support.			
CONNECTING RODS			
Center to center length	10½″	9¼″	9¼″
Clearance between connecting-rod bearing and crankpin	.0004″-.0000″	.0004″-.0000″	.0004″-.0000″
Diameter and length of connecting rod bearings	$2\frac{3}{8}$″ x $1\frac{3}{8}$″	2½″ x 1⅛″	2½″ x 1⅛″
Piston pin lubrication	.....	.....	.....
Force feed—connecting rods rifle-bored.			
Connecting rod material	No. 4140 Steel	No. 1340 Steel	No. 1340 Steel
Connecting rod weight, ounces	32.848	31.808	31.808
Wrist pin locked in rod, piston or floating	Locked piston	Locked piston	Locked piston
Connecting rod bearing material	Babbitt	Babbitt	Babbitt
Rods and pistons removed from above or below	Below	Below	Below

Engine Valves

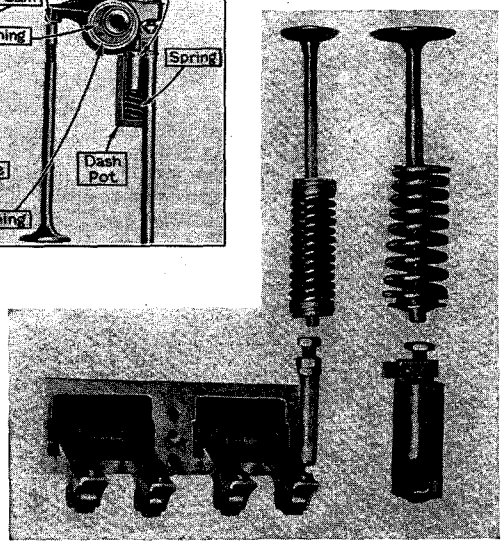




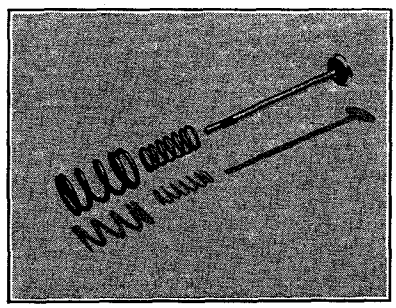
Valve Silencer Assembly Accessibly Located at Top of Engine



Above—The Overhead Valve Construction.



Large valves, strong springs of Cadillac (right) as compared to smaller valves of high priced car (left).



Valve and Double Valve Spring

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
Valves, Exhaust—			
Clear diameter (port opening)	1.634-1.640"	1.384-1.390"	1.384-1.390"
Length—overall	6 1/2"	6 3/4"	6 3/4"
Lift	23/64"	11/32"	11/32"
Material	No. 5645 Steel	No. 5645 Steel	No. 5645 Steel
Seat angle	45°	45°	45°
Seat width			
Stem diameter	3/8"	11/32"	11/32"
Intake valve spring pressure with valve closed	70 lbs.	69 1/2 lbs.	64 lbs.
Intake valve spring pressure with valve open	185 lbs.	167 lbs.	141 lbs.
Valves, Inlet—			
Clear diameter (port opening)	1.660-1.666"	1.506-1.515"	1.519-1.516"
Length—overall	6 11/32"	6 3/4"	6 3/4"
Lift	23/64"	11/32"	11/32"
Material	No. 3140 Steel	No. 3140 Steel	No. 3140 Steel
Seat angle	30°	45°	45°
Seat width			
Stem diameter	3/8"	11/32"	11/32"
Exhaust valve spring pressure with valve closed	70 lbs.	69 1/2 lbs.	64 lbs.
Exhaust valve spring pressure with valve open	185 lbs.	167 lbs.	141 lbs.

V-8, V-12 and V-16 Engines—*Continued*

Pistons—Cont'd

aluminum and will work in the cast iron cylinders with perfect results.

In the production of these pistons they are given a final treatment of alumilite. This is a special process that consists of the electrolytic treatment of the aluminum piston as an anode in the chemical bath, the chief constituent of which is sulphuric acid. With the passage of the current, the oxygen produced at the anode by electrolysis reacts with the aluminum forming a coating on the piston of aluminum oxide. Aluminum oxide is hard. It is the chief constituent of gems, such as the sapphire, which approaches the diamond in hardness.

Due to the way this aluminum oxide coating is deposited on the aluminum piston, it is hardest at the point next to the metal. In comparison with the hardness of other metals, Bierbaum micro character scratch hardness tests show the following comparison values:

Aluminum alloy	100-150
Razor steel	1550
Chromium (hardest form)	3100
Alumilite coating	
Intermediate surface	3000
Base	4000

It will be quite evident, therefore, that this coating provides the necessary hardness to the outside wearing face of the aluminum piston to eliminate scoring and scuffing, which have been proved by exhaustive tests under the most severe conditions.

There is no danger of the separation of the coating on the piston, which is uniform on all surfaces, such as the ring groove and the piston pin bore, because it is the result of a chemical change of the piston metal itself. In contrast to the building up process of ordinary plating, it is the growth of the aluminum oxide coating as it progresses inwardly through the aluminum during which the piston metal itself is subjected to a complete chemical change.

The alumilited pistons are much lighter in weight than the molybdenum cast iron pistons formerly used. The new V-8 piston weighs 15.008 as compared to 23.824 ounces in the old piston. This lighter weight increases the smoothness of engine operation and reduces excessive loads on bearings and wrist pins at the higher engine speeds now necessary.

The new Cadillac pistons do not use the invar strut. Instead they have a T slot in the skirt to allow for expansion and can therefore be closely fitted for quietness of operation.

Another special feature of these pistons is the way they are ground. In order to provide for expansion they are carefully ground elliptical six ten-thousandths (6/10,000) of an inch from a true circle so that when running in the engine expansion from heat will make them perfectly round.

With the combination of higher engine compression and lighter weight alumilited pistons, it allows for higher engine speeds with quicker dissipation of engine heat, increased oil and fuel economy and improved general performance.

Because of the greater heat dissipating qualities of the aluminum alloy, pistons run cooler, thus permitting the use of a higher compression ratio and greater spark advance which give increased power and economy.

V-8 Valves

The valve mechanism of the V-8 engine is extremely simple. The V-8 engine has 16 valves, each operated by a camslide carrying a hardened steel roller which rides upon the cam of the camshaft. The camslides operate in bushings assembled to the crankcase in groups of four. These bushings are very accurately machined and aligned to limits of not more than .0005 of an inch clearance.

Inlet valves have 30° angle seats and exhaust valves 45° angle seats. The valve lift is $^{23}/_{64}$". Valve guides are removable and the length of valves from top of seat to end of valve stem is 6½".

V-8, V-12 and V-16 Engines—*Continued*

V-8 Valves—Cont'd

Double valve springs prevent clatter even at highest speeds, and are retained on valve stem by a split tapered bushing instead of pin only (as on some competitive cars) which is liable to shear off.

The valve system is lubricated by the discharge of crankcase oil vapors through ports in the cylinder walls.

V-12 and V-16 Valves

In V-12 and V-16 engines overhead valves are used for greater compactness and power, also greater accessibility for service maintenance. The popular objection to overhead valve noise is overcome by the use of automatic valve silencers.

The valves are operated by a rocker arm driven from the camshaft by a push rod. The rocker arm is mounted on an eccentric bushing that has a small arm against which there is constant pressure from a spring loaded plunger operating in oil. This pressure against the eccentric automatically maintains zero valve clearance, thereby eliminating any noise.

Intake valves are made of tungsten steel and exhaust valves of silchrome steel. They are $1\frac{29}{64}$″ diameter, with 45° angle seats.

V-12 has 24 valves and V-16 has 32 valves. The valve lift is $\frac{11}{32}$″. Valve guides are removable and the length of valves from top of seat to end of valve stem is $6\frac{9}{64}$″.

Double valve springs are used to prevent clatter even at highest speeds and are retained on valve stem by a split tapered bushing instead of by pin only (as on some competitive cars) which is liable to shear off.

Valve spring pressure: V-12, with valve open, is 167 pounds; with valve closed, 70 pounds. V-16, with valve open, is 141 pounds; with valve closed, 64 pounds.

The whole valve system operates in a bath of constantly filtered oil, fed to it under pressure. It is simple, fool proof, quiet, and needs no attention.

Piston Rings

All pistons have three compression and one oil ring above piston pin.

Wrist Pins

V-8 are $\frac{7}{8}$″ diameter and $3\frac{1}{32}$″ length.

V-12 are $\frac{7}{8}$″ diameter and $2\frac{15}{16}$″ length.

V-16 are $\frac{7}{8}$″ diameter and $2\frac{13}{16}$″ length.

Bushings are rolled bronze $1\frac{1}{4}$″ long by .935″ outside diameter.

V-8 wrist pins are $\frac{7}{8}$″ diameter and $3\frac{1}{2}$″ long.

Bushings are rolled bronze $1\frac{5}{16}$″ long by .935″ outside diameter.

Connecting Rods

Connecting rods of V-8 are drop forged from chrome molybdenum steel, V-12 and V-16 of manganese steel, and designed for sustained performance at high speeds. V-8 are $10\frac{1}{2}$″ long. V-12 and V-16 are $9\frac{1}{4}$″ long, center to center, and both ends are diamond bored at the same time to assure accuracy of center distances and parallelism of bearings. Rods may be removed through the bottom of engine without taking off cylinder heads, thus lowering service cost.

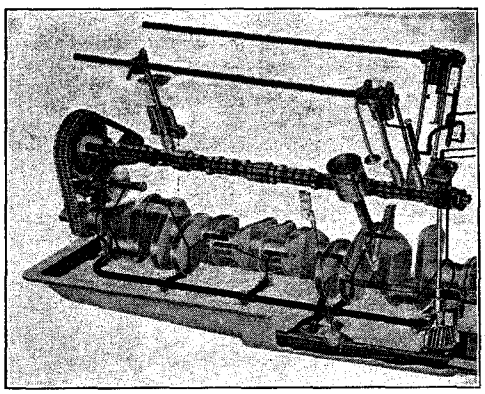
Lubrication to lower bearings is provided through metered holes in crankshaft and each rod has a rifle drilled passage to the upper bearing so that oil is forced under pressure to the piston pin which is locked in the piston.

Each set of rods is balanced to $\frac{1}{32}$ ounce for the complete assembly of rod, piston, piston rings, and piston pin, a most unusual and close precision limit.

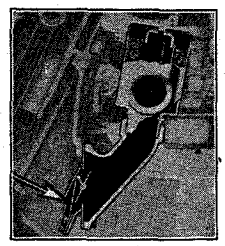
Connecting Rod Bearings

V-8 bearings are $2\frac{3}{8}$″ diameter and $1\frac{3}{8}$″ in length. (V-12 and V-16 bearings are $2\frac{1}{2}$″ diameter and $1\frac{1}{8}$″ in length.)

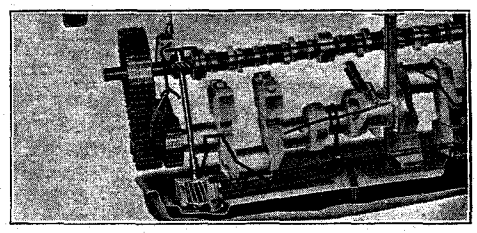
Lubrication



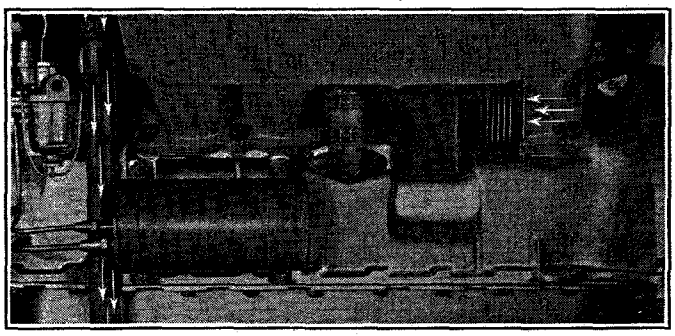
Full Pressure Lubrication System



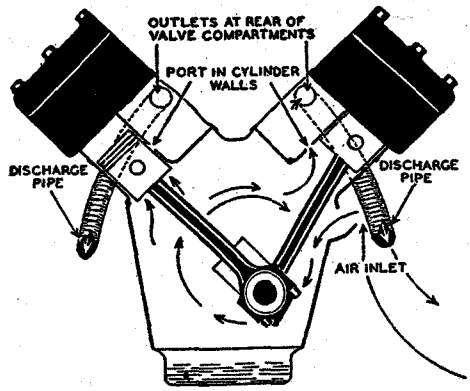
Crankcase Ventilation System — Thermostatic Controlled Air-inlet



Full Pressure Lubrication System (V-8)



Ventilation System Inlet and Outlet



Positive Crankcase Ventilating System

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
LUBRICATION			
Fan—			
355-D, 370-D, 452-D—gun lubricated with chassis grease.			
Rear axle—			
Capacity in pints or pounds	6	6	6
Lubricant recommended (S. A. E. viscosity)		A-160	A-160
Fill to level of overflow opening.			
Engine—			
Capacity	8 qts.	9 qts.	10 qts.
Lubricant recommended (S. A. E. viscosity)			
Summer	40-50	40-50	40-50
Winter	20	20	20
Transmission—			
Capacity in pints	4½	4½	4½
Fill to level of overflow opening.			
Lubricant recommended (S. A. E. viscosity)			
Summer	A-160	A-160	Cadillac AO-200
Winter	90	90	S. A. E. 90
Lubrication—			
OIL FILTER			
Make		Cuno	Cuno
PRESSURE REGULATOR			
Pressure, normal when oil is warm—			
10 M. P. H.	11 lbs.		
60 M. P. H.	30 lbs.	30 lbs.	30 lbs.

V-8, V-12 and V-16 Engines — *Continued*

Crankcase Ventilation

One of the most significant developments pioneered by Cadillac in 1925 was crankcase ventilation. In some cars only breather systems are used, but Cadillac uses a positive air ventilation system, which eliminates the dilution of the engine oil from unburned fuel vapors and moisture in the crankcase.

The system is simple, has no moving parts and requires no attention. In the V-8 engine air port is provided on the left side of the crankcase. The crankshaft with its compensators acts as an air pump drawing preheated air through this port, building up a pressure within the crankcase. Ports are provided in each cylinder wall which are uncovered on the upward stroke of the piston. During the down stroke of the piston any vapors passing the piston rings are held by the pressure in the crankcase and forced through the ports in the cylinder walls on the upward stroke, into the valve compartments, and conduits conduct these vapors from the valve compartment beneath the car where they are discharged.

In V-12 and V-16 engines the air inlet is thermostatically controlled to regulate the intake of air. The thermostat opens the inlet for cold-weather driving, and closes it for warm-weather driving when engine temperatures are higher and oil dilution is not present.

The air inlet is also fitted with an air cleaner to prevent dust from being drawn into the crankcase.

Crankcase ventilation as used by Cadillac is just another point of the outstanding engineering attention paid to those things which produce satisfactory operation of the car and protect the fine precision of the engine parts. It also reduces oil expense by making oil changes necessary only at 2,000 mile periods or one-half to one-quarter as frequently as is necessary in many other cars.

Engine Lubrication

Pressure lubrication is supplied to all vital engine parts. This complete and positive lubrication is one of the reasons for the durability and long life of Cadillac engines under the most strenuous use.

An oil pump in the bottom of the crankcase is driven by a gear from the rear end of the camshaft, which forces oil under pressure to all main crankshaft bearings through a main oil pipe. From the main bearings the oil passes to the connecting rod bearings through metered holes in the crankshaft throws and thence through rifle drilled passages in each connecting rod to the piston pins.

Pistons and cylinder walls are lubricated through oil released under pressure from between the crank cheek and connecting rod bearings. Camshaft bearings are lubricated through a drilled passage in the camshaft, fed by oil from the rear camshaft bearing.

The overhead valve gear mechanism in the V-12 and V-16 is lubricated by a special oil line that is fed direct from the oil filter to the main rocker arm shaft, where it is forced through metered holes to the valve gear to lubricate rocker arm valve stem and automatic silencer.

The timing chain is lubricated from overflow from the regulator valve, located in the timing case at the front of the engine.

To insure the constant filtering of oil, it passes through the oil filter (V12-V16) located at the rear of the engine, which removes all grit before it is forced to the valve gear. A fine mesh screen that completely covers the oil pan also filters oil that returns by gravity before it passes through the oil pump to be recirculated.

A float oil level gauge on the outside of the crankcase indicates the positive amount of oil in the reservoir, and a pressure gauge on the instrument panel indicates the oil pressure when engine is being operated.

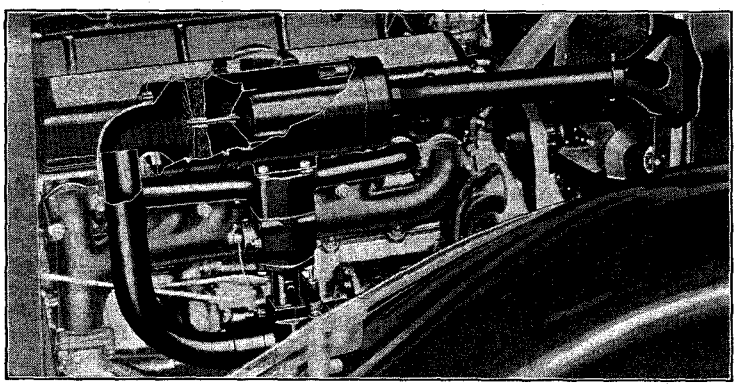
The crankcase is drained by removing an oil plug in the bottom of the case. The V-16 has an aluminum oil reservoir with cooling ribs on the outside to assist in quick dissipation of the heat and it holds 10 quarts.

The V-12 oil reservoir is pressed steel and has a capacity of 9 quarts.

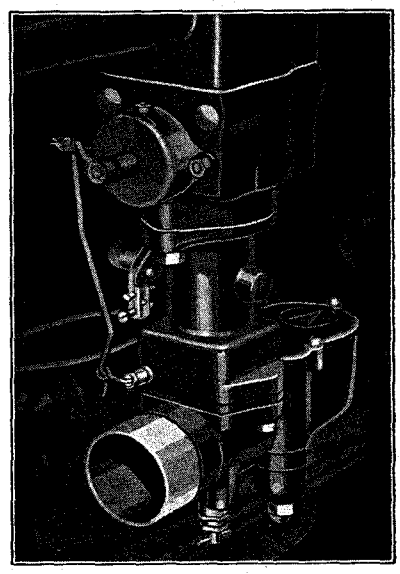
Regulator

The pressure throughout the circulating system is controlled by a piston valve pressure regulator mounted on the crankcase in front of the right cylinder block. Overflow from this valve lubricates the chain and chain mechanism.

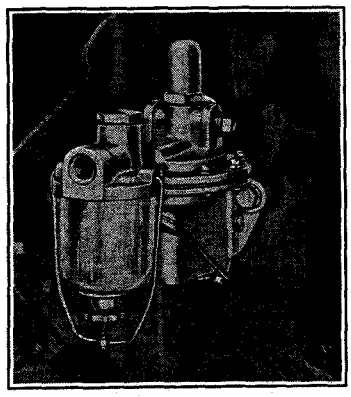
Fuel System



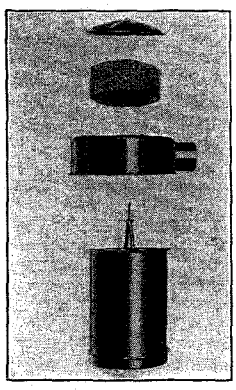
Cold Air Intake to Carburetor



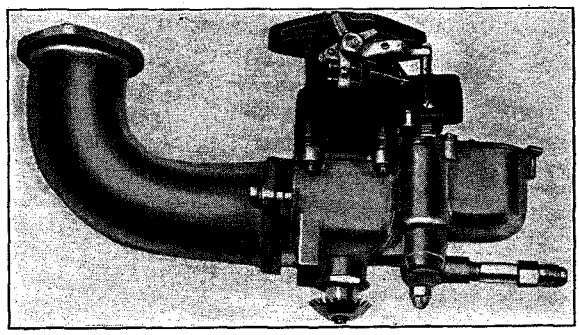
Semi-Automatic Choke



V-12 and V-16 Fuel Pump



V-8 Air Cleaner and Intake Silencer



Cadillac V-8 Carburetor

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
GASOLINE SYSTEM			
Air cleaner and intake silencer, make of	A.C.	A.C.	A.C.
Feed			
All models—A.C. fuel pump.			
Gasoline line location—			
All models—outside of left frame side bar.			
Gasoline gauge (electric) on instrument panel, make of	A.C.	A.C.	A.C.
Tank capacity (supply)	22 gal., Series 10&20 30 gal., Fleetwood	30 gal.	30 gal.
Carburetor—			
Type	Expanding vane up-draft	Expanding vane up-draft	Expanding vane up-draft
Float setting			
Size	2″	1½″	1½″
Carburetor air intake	Through radiator grille		
Heat adjustment	None	None	None
Thermostats—			
Throttle pump control operates			

V-8, V-12 and V-16 Engines—*Continued*

FUEL SYSTEM

Fuel Tank

The capacity of the V-12 and V-16 Fleetwood fuel tank is 30 U. S. gallons. V-8 Fisher 22 gallons (V-8 Fleetwood 30 gals.) It is located at the rear of the frame and the gas lines to the carburetor are air cooled by being placed away from the exhaust heat. The tank is held securely by steel straps and is protected from damage by the rear crossmember and covered by the body.

Fuel Pump

Fuel is pressure fed to the carburetor by a fuel pump operated by an eccentric from the distributor shaft. A fuel filter frees the gasoline of all sediment and water and deposits it in a glass sediment chamber where it may be easily seen and emptied when necessary.

Cold Air Intake

Power in a gasoline engine is derived from the air and gasoline mixture drawn into the combustion chamber through the carburetor.

A large engine delivers more power than a small one because it consumes more air. The fact that racing and aviation engines develop more power is largely due to the principle used of super-charging which pumps more air into the cylinders under pressure.

Warm air is expanded and weighs less per cubic foot than cold air, therefore, by using cold air taken from the front of the car rather than warm air which has been heated by the radiator and engine, the air is heavier and will deliver more power.

In the new 1934 cars the engines deliver more power because of the novel arrangement of the carburetor air intake. Instead of taking the warm air from under the hood in the usual manner, cool air is now taken from behind the radiator grille, through a passage between the radiator core and casing into the carburetor through the air intake cleaner and silencer.

In contrast with the warm air temperature under the hood of 150°-160° when outside temperature is 50°, the temperature of the cold air intake at the carburetor is about 60° or practically 100° cooler than the temperature under the hood.

This cooler air expands more and results in greatly improved power and engine performance.

Semi-Automatic Choke

To assist in producing a quicker warming up period of the engine without the continued use of the hand operated choke button, the semi-automatic choke has been added. It overcomes the difficulties of quick acceleration and practically discontinues the need of using the hand choke except at the time of starting the engine. It is a bi-metal (coil spring) thermostat operated by engine temperature to automatically apply the choke whenever the engine is cold.

Carburetors (V-12 and V-16)

Two carburetors in V-12 and V-16 made to Cadillac specifications by Detroit Lubricator, insure a positive and uniform fuel supply to all cylinders. They are located at the outside center of each cylinder block. A plunger pump automatically operated by the accelerator pedal pumps additional fuel through the jet, greatly improving acceleration for fast get-away. Carburetors are of the air vane single jet type with $1\frac{1}{2}''$ throat and a single adjustment to give the correct mixture of air and fuel for the complete range of engine speed and load.

Carburetor (V-8)

One carburetor (made to Cadillac specifications by Detroit Lubricator) of the hinged air valve single jet type with 2″ throat is used.

The carburetor is located in the center between the cylinder blocks and is connected to the six port intake manifolds and warmed from the heat of the exhaust manifold to assist in proper carburetion without power loss from overheating.

A plunger pump operated by the throttle shaft connected to the accelerator pedal pumps additional fuel through the jet, greatly improving acceleration for fast get-away.

Air Cleaner and Intake Silencer

Each carburetor is fitted with an air cleaner to insure clean air entering it and the intake silencer neutralizes the air roar, common to all carburetors. This combination unit has no moving parts and requires no adjustment.

Intake Manifolds

Intake manifolds have been designed to give the maximum engine efficiency. This contributes to greater economy as well as better performance. Cadillac engines are so well designed to give equal distribution to all cylinders there is no need for manually or thermostatically controlled heat chambers to help the warming up period when starting the engine.

Manifolds

The V-8 inlet manifold for both cylinder blocks is made of cast aluminum with six ports having a diameter of $1\frac{1}{2}''$.

The two V-12 and V-16 inlet manifolds are made of cast aluminum with three ports having a diameter of $1\frac{5}{16}''$.

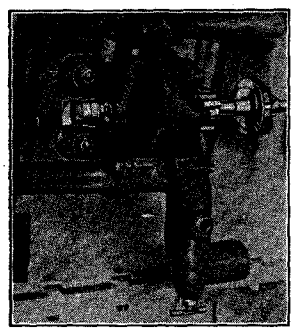
Exhaust Manifolds and Mufflers

Exhaust manifolds carry the burned gases to the rear of the engine, promoting the rapid elimination of heat from the engine.

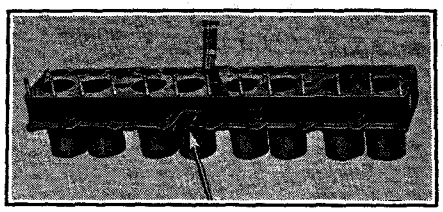
The two V-8 exhaust manifolds with four ports and the two V-12 and V-16 manifolds with six ports are made of cast iron with baked porcelain finish and have an expansion joint to prevent warpage.

Two mufflers are used on V-12 and V-16 (one muffler on V-8), one for each cylinder block. They are designed to neutralize noise from the exhaust and are attached to the frame by rubber insulated brackets to prevent transmitting any noise to the body.

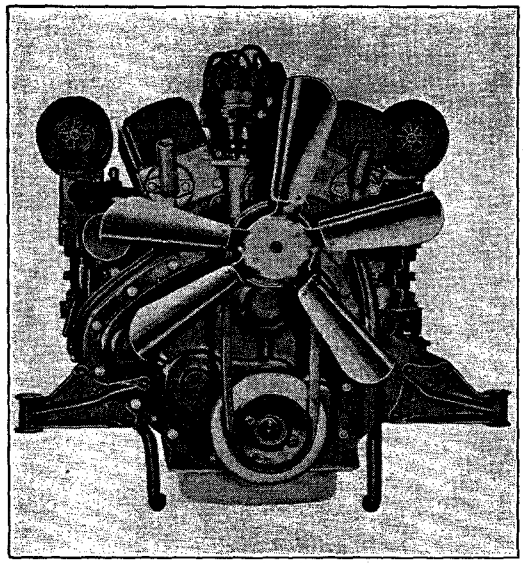
Cooling System



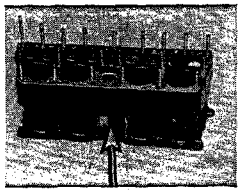
V-12 and V-16 Water Pump Easily Accessible; Mounted on Outside of Engine



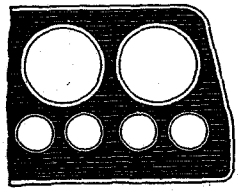
V-16—Water Inlet and Outlet at Center of Block. Even Circulation and Uniform Cooling



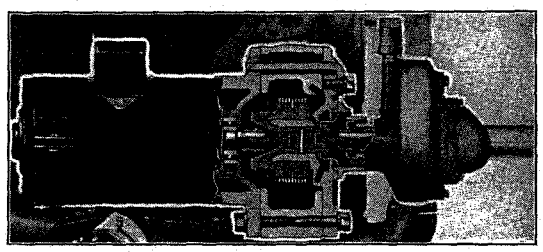
The Fan Blades are Unevenly Spaced to Increase Air Circulation



Cadillac V-8—Water Inlet and Outlet in Center of Short Block. Even Circulation and Uniform Cooling



Cadillac V-8—Larger Water Areas. Valves Completely Surrounded and Cooled



V-8 Positive Chain Driven Water Pump

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
COOLING SYSTEM			
Fan—			
Diameter			
Belt—			
Length (center to center)	7"	14"	14"
Width	7/8"	7/8"	7/8"
Blades—Number used	5	5	5
Ratio of fan R. P. M. to engine R. P. M.			
Radiator—			
Area of radiator core in square inches			
Capacity of cooling system	5 gal.	4.6 gal.	5.7 gal.
Thermostatic shutter control operating temperature			
Radiator shutter make and control	Own, thermostatic	Own, thermostatic	Own, thermostatic
Radiator core—Type and make	Cellular, Harrison	Cellular, Harrison	Cellular, Harrison
Water pump—			
Type	Centrifugal	Centrifugal	Centrifugal
Drive	Chain	Chain	Chain

V-8, V-12 and V-16 Engines—*Continued*

THE COOLING SYSTEM

Temperatures within a gasoline engine should be as nearly uniform as possible if every cylinder is to do its work most efficiently.

Cadillac's cooling system is one of the simplest and most effective. It helps to further increase the life of the wearing parts and to prevent rapid breakdown of the lubricating oil through heat.

The filler opening on all cars is located beneath the hood in the top of the radiator tank. This change contributes to the streamline appearance of the car and facilitates the checking of water and oil in one operation.

The capacity of the V-16 system is 5.7 (estimated) gallons; V-12, 4.6 gallons; V-8, 5 gallons. The cellular radiator core is mounted on the rigid front frame cross-member and cushioned on rubber, being secured to the dash by two rods in the form of a V.

Thermostatically operated shutters, built-in, control the air flow through the radiator core and maintain the most efficient engine temperature for starting and driving. The shutters open at about 155° and are full open at not more than 173°. A temperature indicator on the instrument panel registers the temperature of the cooling liquid.

Water Pump (V-12 and V-16)

The centrifugal impeller type water pump is of entirely new design. It has been built to give even longer life and less need for service attention. The pump is mounted at the rear of the generator and is positively driven by chain from the engine through the generator shaft. This location is much more accessible than water pumps located in cylinder blocks that are driven by belts.

The pump is protected from damage by freezing with a special shaft pin, that shears, preventing expensive damage to the pump itself.

Water is circulated through the cylinder blocks in large passages that completely surround cylinders and valve seats in the heads. The water enters the center of the cylinder blocks so that the cooling is more uniform than it would be with inlet and outlet at one end of the cylinders as in long straight 8's.

The water pump has two outlets; one goes directly to the center of the right block and the other is connected by a brass tube cast integral with the crankcase to provide for equal water distribution to both blocks for uniform cooling.

Water Pump (V-8)

The V-8 engine water pump is mounted on the right side of the engine and is positively driven by a silent chain from the crankshaft. The pump is coupled to the driven sprocket by a flexible coupling of laminated spring steel, permitting the pump shaft to align itself and protecting the packing from wear. The outside location of the pump is much more accessible and preferable than water pumps located on the front of cylinder blocks and driven by belts. A feature of each pump is that it provides a packing adjustment to automatically compensate for wear.

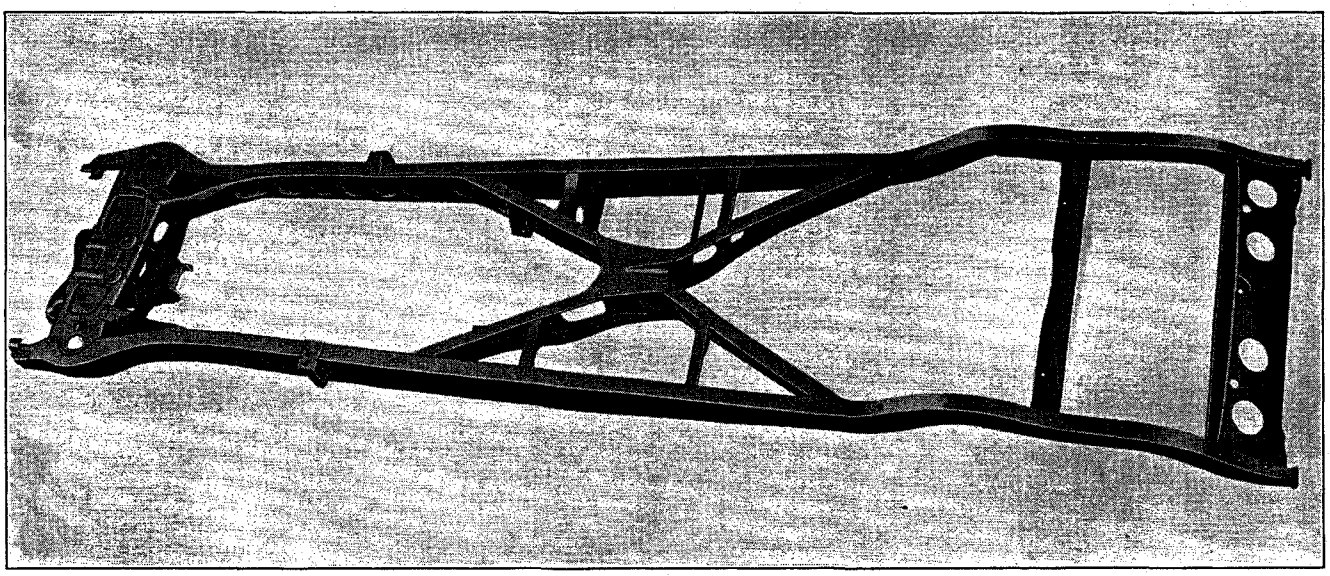
Fan

The fan operates on ball bearings and has 5 blades unevenly spaced to increase the amount of air disturbance and circulation in the engine compartment. It is operated by an endless V-type fan belt driven by a pulley from the crankshaft. Belt adjustment is made by raising or lowering the fan in its bracket, a simple operation. Fan belt is $\frac{7}{8}$″ in width and 14″ long, center to center. (V-8, 7″ long, center to center.)

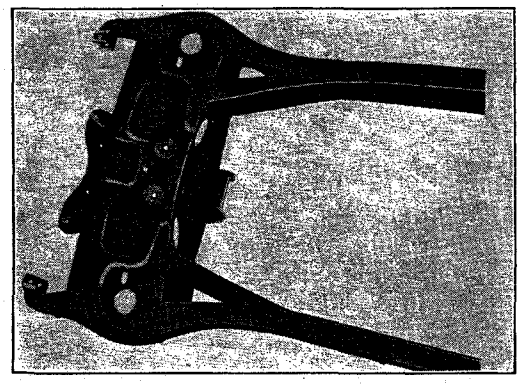
Radiator

The copper radiator is of the louver-center cellular core type with special type of fin construction having vents which increase air circulation through the core, and dissipate more heat from the water to the air surfaces. Radiator shells made of pressed steel and finished in plain color to match the hood are standard.

The Chassis—Frame



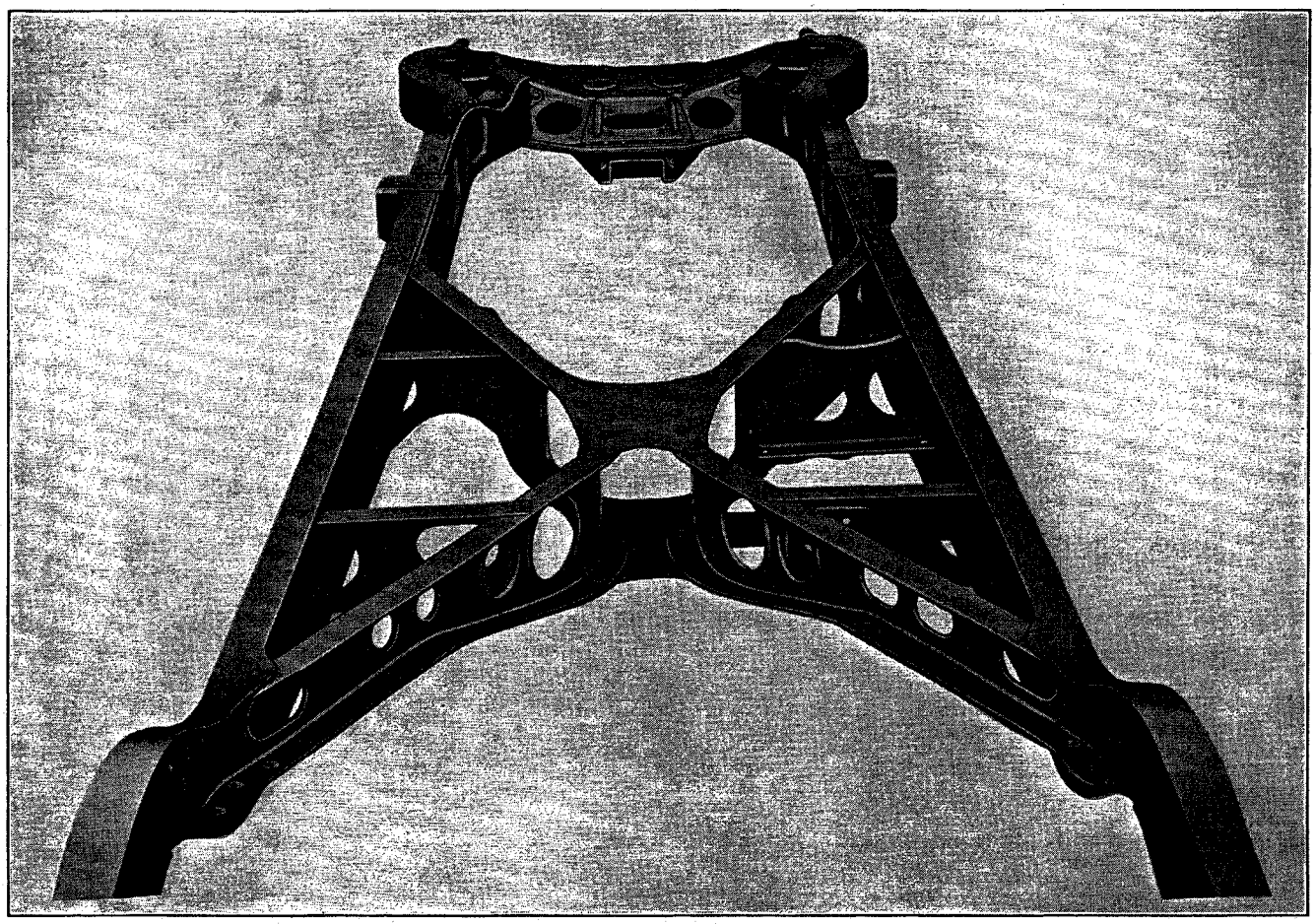
Great Strength and Rigidity are Important Features of the Frame



Right—Front End Construction. This Cross-member is Braced and Riveted for Unusual Strength

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
FRAME			
Number of cross members	3	3	3
Side bar—			
Depth	7-7¾-8⅞"	8⅞"	9"
Thickness	⅛"	⅛"	⅛"
Width—top and bottom	2¼-2¾-3"	3"	2 3/16"
Measurements taken at deepest part of frame.			
Width of frame at—			
Front			
Rear			
SPRINGS AND SHOCK ABSORBERS			
Springs—			
Type	Front, Helical Rear, Semi-elliptic	Front, Helical Rear, Semi-elliptic	Front, Helical Rear, Semi-elliptic
Length—rear	60" on Series 10 & 20 65" on Fleetwood	65"	66"
Width—rear	2¼"	2¼"	2¼"
Rear spring leaves lubricated	Graphite bronze inserts	Graphite bronze inserts	Graphite bronze inserts

The Chassis—Frame



The Massive Center X-Frame

Frame

The chassis frames of the V-8, V-12 and V-16 have been redesigned and incorporate many new and unusual features.

The rigidity of each frame has been increased many times over that of the previous models. This greater strength and rigidity eliminates frame flexing and twisting, relieving the body of weaving strains. It also increases the safety factor in the car and materially improves the riding comfort through the smothering of road vibrations and noise.

The new Cadillac frames each have a massive center X frame which is unlike the conventional X type construction used only as a re-enforcement cross-member. Cadillac's new X frame member in V-12 also 146″ V-8 and V-16 frames is really a separate frame in itself and the arms extending to the side bars of the outside frame and then to the front and rear end crossmembers of it within them. (In Cadillac V-8 the arms extend to the front crossmember and about half way to the rear due to the shorter wheelbase.) Both frames are welded and riveted together forming a solid box-type girder construction, the strongest known.

An important feature of Cadillac's X-type frame is the center junction box construction. The front and rear arms of the X are assembled back to back, which forms a section of double flange width. The arms are also in the same straight line instead of being staggered which construction adds materially to the rigidity of the assembly.

Heavy steel plates are welded top and bottom at the junction point, which ties the entire structure together into a single rigid unit. Additional cross-member arms connect the X type center frame to the side rails on each side of the center junction box.

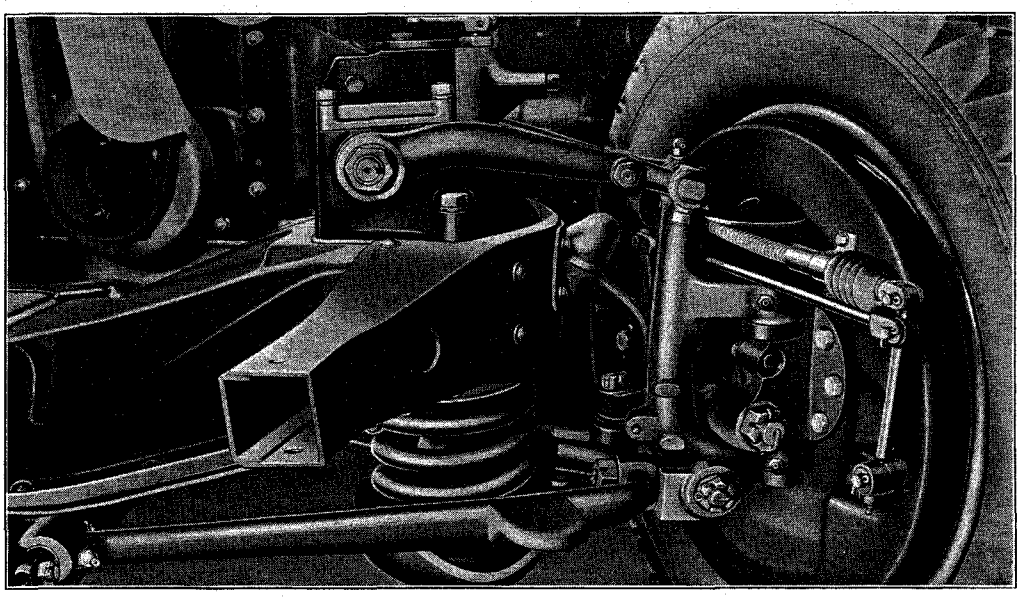
The 5 points of engine mounting in live rubber give additional frame rigidity and insure quietness to the body construction and other chassis units.

The front and rear bumper mountings are an integral part of the frame and two strong pressed steel brackets support the one-piece heavy steel running boards at each side.

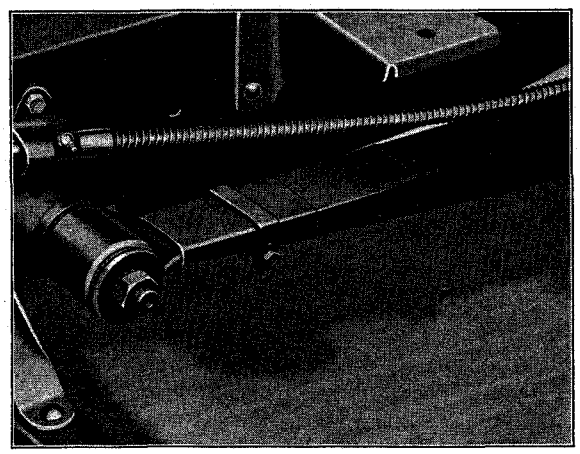
Wheelbase

The Cadillac V-8 is made on three wheelbases, 128, 136 and 146″. V-12 on 146″ and V-16 on 154″ wheelbase. The rear tread is 62″ and the front tread 59⅜″, which with the new narrow frame gives a shorter turning radius making the cars easy to handle in traffic or parking, also on sharp turns on the open road.

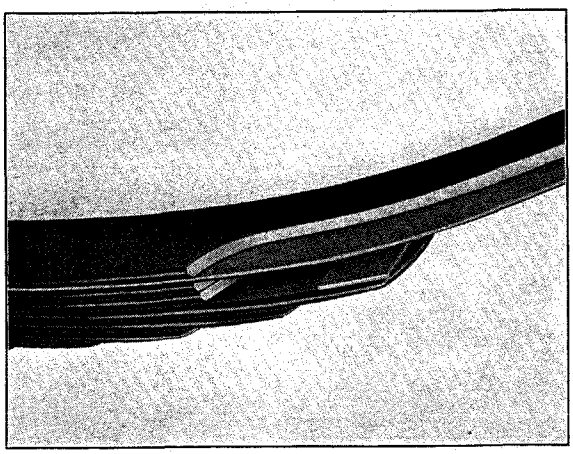
The Chassis—Springs



Frictionless Helical Coil Type Front Springs



Rubber Mounted Rear Springs



Graphite Bronze Metal Lubricating Discs

Springs

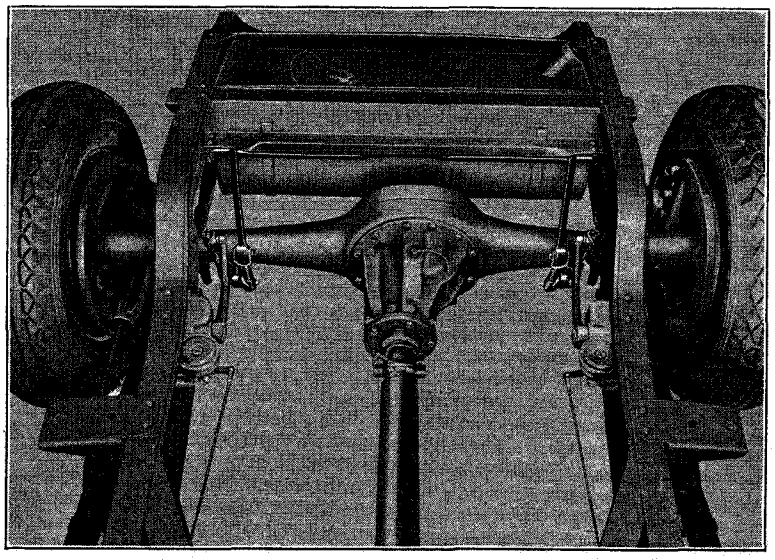
Front springs have been changed from the semi-elliptic to the individual frictionless helical coil type and each front wheel is individually sprung. The former I beam front axle is discontinued.

Rear Springs are continued as semi-elliptic but the method of mounting has been changed. Instead of being shackled front and rear the front end is permanently attached and cushioned to the frame on a sturdy steel spring bolt covered with rubber. The rear end of the spring is shackled by a threaded bolt and the shackle is connected to the frame by a rubber covered spring bolt. This new method of rubber mounting the rear springs at each end gives increased riding smoothness and quietness of operation and eliminates lubrication problems.

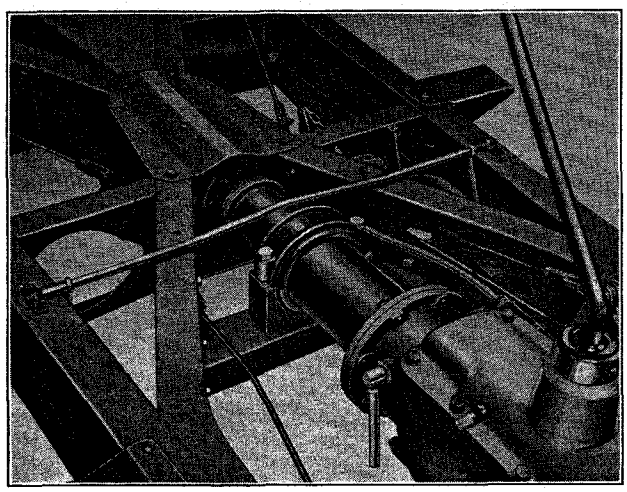
Spring Lubrication

Another feature of improvement in the rear springs is the method of rear spring lubrication. The springs are enclosed in metal covers to keep out water and dirt and between each spring leaf there are graphite bronze metal lubricating discs (2-inch sq. discs) that are permanently seated and require no attention. They eliminate spring squeaks and require no oil or grease lubrication throughout the life of the car.

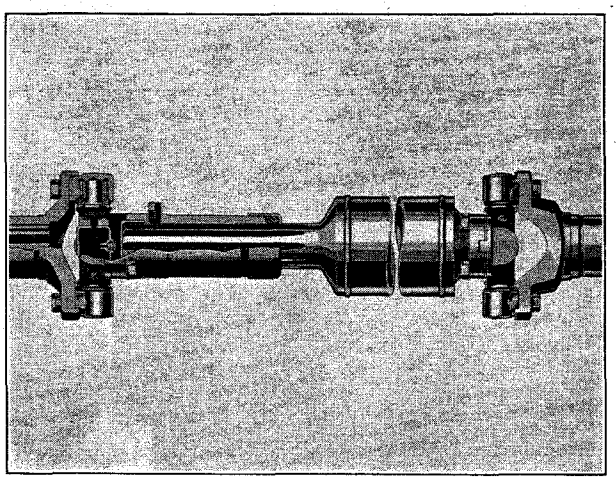
The Chassis—Hotchkiss Drive, Drive Shaft and Universal Joints



Rear Axle with Hotchkiss Drive



Rear Engine Support and Propeller Shaft



Propeller Shaft with Universal Joints

Hotchkiss Drive

The introduction of the new standard of riding comfort in Cadillac cars has introduced several important changes in chassis design.

With the moving forward of the engine, the lengthening of wheelbases and the incorporation of the new X type center frame, the Hotchkiss type of drive was found to be peculiarly well fitted to the needs of the new chassis.

With the Hotchkiss type drive the riding qualities of the car are greatly improved not only by a reduction of unsprung weight (weight not supported by the springs) but by the cushioning of the starting and stopping strains from the axle through the rear springs before it reaches the frame.

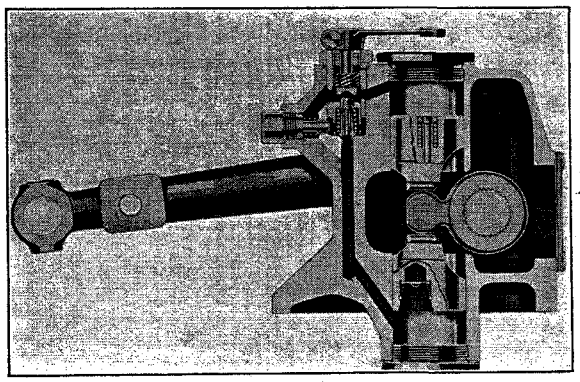
The Hotchkiss drive also makes the action of the rear axle smoother on rough roads because it allows the wheels to more freely follow road irregularities.

In the application of Hotchkiss drive to the new Cadillacs the length of the propeller shaft has been made much shorter.

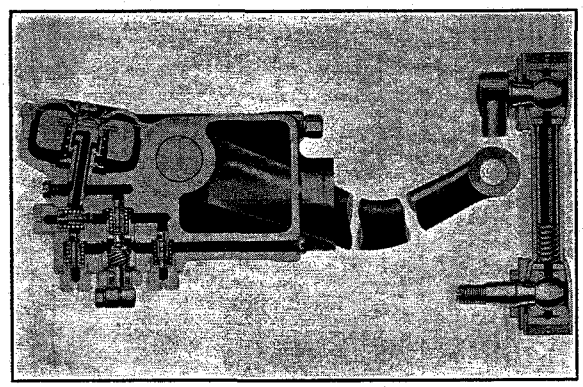
A forward propeller shaft from the transmission to the main drive shaft is carried on bearings in an extension tube from the transmission. The transmission and engine is supported as a unit on a strong center cross-member in rubber mounting and connects with the main propeller shaft.

The main propeller shaft has two universal joints (Mechanics Type) each of which has needle type roller bearings packed with lubricant when assembled, that need no further lubrication for at least a normal year's driving of 12,000 miles.

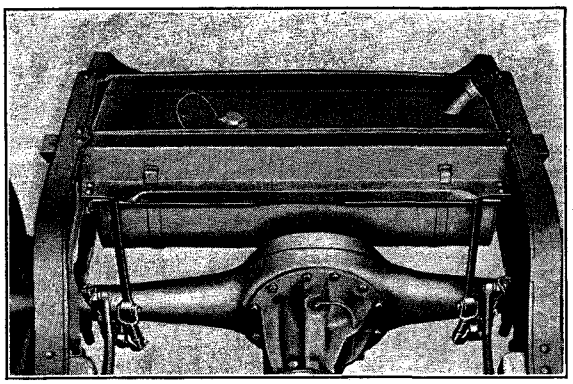
The Chassis—Shock Absorbers and Ride Stabilizer



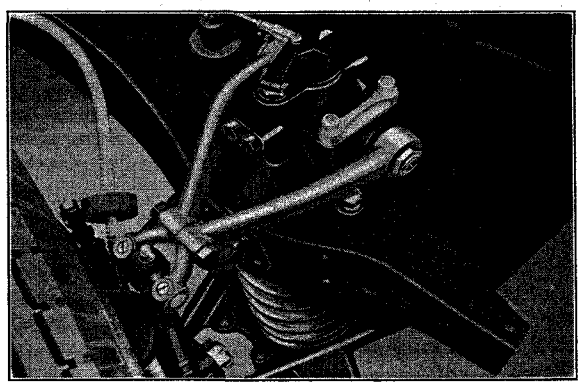
Front Shock Absorber



Rear Shock Absorber



Ride Stabilizer



Front Shock Absorber Mounting

Bumpers

The new bumpers are entirely new and of much more expensive construction and are streamlined in appearance to match the new beauty in exterior body styling.

They are double bar type and are attached to the frame with chrome plated tubular steel mountings inside of which are coil spring shock absorbers.

These new bumpers are much stronger and give greater protection to the car.

Shock Absorbers

In the 1934 Cadillac there is introduced a new combination of manual and automatic ride control of rear shock absorbers. The action of the one is entirely independent of the other so that wherever the manual adjustment may be set, the passengers are also protected by the new type inertia weight control of rear shock absorbers which snubs the rear spring movements on the long road waves that exist in even the best concrete roads.

The front shock absorbers are continued with manual control only. The inertia type automatic control is not used because its action would interfere with the smooth riding that has been developed with the new type of independent front spring suspension.

Supplementing spring action are the double action Delco Remy Duo-Draulic shock absorbers. They are special Cadillac designed and are part of Cadillac's system of Full Range Ride Regulation controlled by a handle near the steering column. The driver can control the riding qualities of the car at all times on every kind of road—smooth, rough, wavy, concrete or gravel. The handle is direct connected to the front and rear shock absorbers. Its movement changes the position of a threaded sleeve which compresses a valve spring that regulates the pressure on both the compression and rebound valves in the shock absorbers. This gives a much wider range of control of the shock absorbers when compared with other types of shock absorbers having only the fixed type of metering orifice control.

Ride Stabilizer

A new ride stabilizer has been added to eliminate body roll or side sway. It is a cross-rod torsion spring mounted at the front of the rear cross-member of the frame, that increases the stiffness of the suspension when the car rolls in rounding curves.

The Chassis—Chassis Lubrication and Bonderizing

Chassis Lubrication

Because 7 different lubricants are necessary in different parts of the car to properly protect its precision fitted parts, Cadillac uses the positive, easy and dependable manual chassis lubrication. In this way the right kind and amount of lubrication goes to each point under strong pressure, and it eliminates the guess-work incident to so-called automatic systems which may or may not always function properly.

There is no automatic system which lubricates every point necessary, nor has there yet been devised an automatic lubrication system which puts the correct kinds of lubricants, in the correct amount, at the correct spot.

Following are places which must be lubricated by hand on cars with the so-called automatic systems:

Generator
Horn
Distributor
Water Pump
Starter Motor
Rear Brake Operating Cam Bearings
Brake Rod Clevis Pins
Steering Knuckle Pins
Steering Gear
Spark and Throttle Control
Universal Joints
Transmission
Rear Axles
Body Parts, such as:
Hinges
Door Latches
Hood Pulls and Laces
Four Shock Absorbers
Fill Chassis Lubricator Tank
Test and add water to Battery
Drain and replace engine oil

Bonderizing of Sheet Metal Parts

All sheet metal parts including fenders, running boards and splashers are treated with a special solution known as bonderizing before they are put into the process of finish. This fills the grain of the metal surface and prevents rust in case the surface of the metal part is damaged.

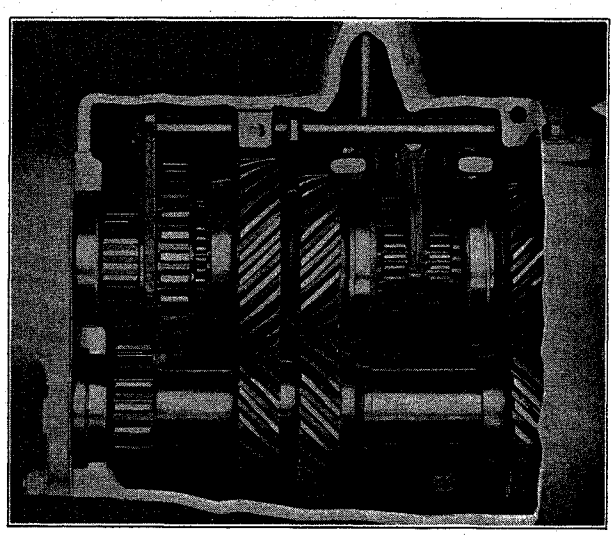
Running Boards and Splashers

Running boards are heavy steel with special vulcanized rubber with longitudinal grooves. They are slightly curved and have a deeper moulding to complete the flowing line from front to rear fenders. Splashers are insulated from the frame with special anti-squeak liners. Side splashers under drop sill body are invisible and tapered with the body.

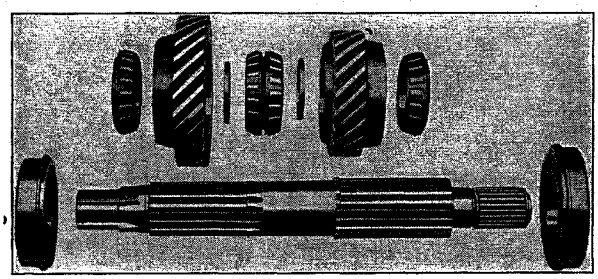
Cadillac Lubricants

1. Engine Oil	of the right grade insures proper lubrication and long life.
2. Gear Lubricant	for transmission and rear axle. Aids in quiet operation and freedom from wear.
3. Chassis Lubricant	for all grease gun connections. Will keep the chassis properly lubricated for 1000 miles.
4. Wheel Bearing Lubricant	for wheel bearings and clutch bearing. Withstands high temperatures and adheres to rotating parts.
5. Water Pump Lubricant	A special water repellant, heat-resistant lubricant. Reduces wear of pump shaft and packings.
6. Steering Gear Lubricant	A special lubricant that withstands pressure and provides easy steering.
7. Light Oil	for use in door hinges and body hardware.

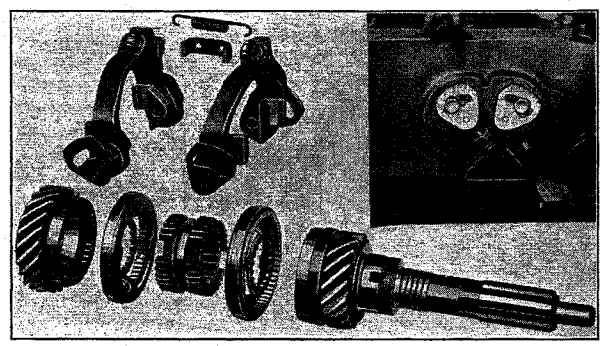
Transmission



Triple Silent Synchro-Mesh Transmission with Helical Cut Gears in ALL Forward Speeds



The Transmission Bearing Assembly



The Transmission Synchronizing Assembly

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
TRANSMISSION			
Gear ratios—			
Low speed	2.40 to 1	2.40 to 1	2.40 to 1
Second speed	1.47 to 1	1.47 to 1	1.47 to 1
High speed (direct drive)	1 to 1	1 to 1	1 to 1
Reverse speed	2.49 to 1	2.49 to 1	2.49 to 1
Transmission make	Own	Own	Own
Transmission location	Unit power plant	Unit power plant	Unit power plant
No. of forward speeds	3	3	3
Type of gears, first and second	Constant Mesh Helical	Constant Mesh Helical	Constant Mesh Helical
Type of gears, reverse	Sliding Spur	Sliding Spur	Sliding Spur
Synchronous meshing second and third gears	Yes	Yes	Yes

TRIPLE SILENT SYNCRO-MESH TRANSMISSION

Cadillac pioneered and was first to introduce in 1928 the Syncro-Mesh Transmission. In 1932 two new features were incorporated:

(1) Triple silent helical gears for silent operation in all forward speeds.

(2) An outside external adjustment of the syncronizing mechanism without disassembly of the transmission unit.

The gears are ground, lapped and polished to insure perfect contours of the gear face, thus insuring positive quietness in operation. This is an expensive and unusual operation not generally used by other manufacturers.

The gears are in constant mesh and have steep 45° angle teeth giving considerably more overlap than ordinary helical gears. Another difference is the use of a helical gear for the low speed gear as well as second and high, whereas other manufacturers use them for second and high only.

To maintain gear silence it is important to have bearings that are quiet and will hold the gears in alignment. Main and jack shafts are each carried on two unusually large ball bearings. Tapered roller bearings are used under the constant mesh transmission gears, where other manufacturers use bronze bushings.

Transmission Gear ratios on V-8, V-12, and V-16:

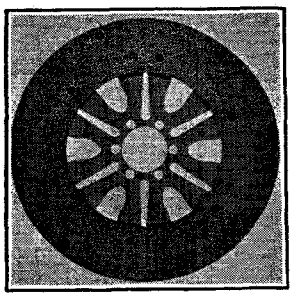
1st	*2nd*	*3rd*	*Reverse*
2.40 to 1	1.47 to 1	1 to 1	2.49 to 1

The transmission has a capacity of 4½ pints of oil.

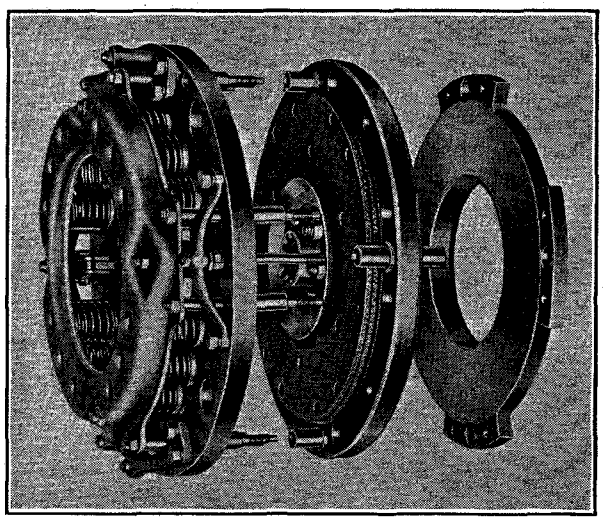
The Syncro-Mesh principle is simple and positive. A coupling fitted with friction cone connects the drive shaft with either the second or high speed gear by means of integral teeth. When shifting, the friction cone engages the cone of the second or high gear before the teeth on the gear and coupling meet, causing the rotating parts to turn at the same speed and engagement to be made without clashing or noise.

The Syncro-Mesh transmission permits quick, silent and effortless shifting at all times and provides extra safety on hills, ice and snow, by enabling the driver to quickly shift from high to second without fear of damage to the gears.

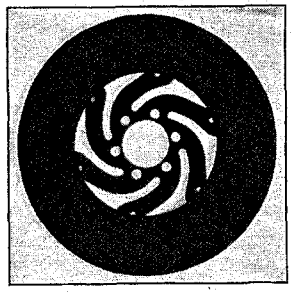
Clutch



The Large V-16 Clutch Plate



V-16 Double Disc Dry Plate Clutch



V-12 Clutch Plate

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
CLUTCH			
Make	Own	Own	Own
Type	Plate	Plate	Plate
Disc facings—			
Area—total in square inches	151. 1	206. 1	247
Diameter inside	6½″	5⅞″	6½″
Diameter outside	9½″	10″	11″
Number used	4	4	4
Thickness	.120-.130″	.120-.130″	.135-.145″
Driven discs, number of	2	2	2
Driving plates, number of	3	3	3
Pressure springs, number of	12	12	12
Clutch facing material	Woven	Woven asbestos compound	Woven asbestos compound
UNIVERSAL JOINT			
Front universal, type	Needle bearing	Needle bearing	Needle bearing
Rear universal, type	Needle bearing	Needle bearing	Needle bearing
Universal joints lubricated	Manually at 12,000 miles	Every 12,000 miles	Every 12,000 miles
Drive taken through	Rear springs	Rear springs	Rear springs

CLUTCH

THE clutch is a most important unit in an automobile. It performs severe duty because it must absorb the shock incident to connecting the rotating engine with the stationary vehicle. It must also require the minimum of effort for disengagement and cease spinning promptly when disengaged to enable proper gear shifting.

The clutch used on Cadillac cars is designed and made by Cadillac and meets these requirements, and in addition is so designed to give long life and freedom from annoyance.

It is of the dry plate type with 2 driven discs faced on each side with a compressed fabric of woven asbestos compound about $\frac{3}{64}$" thickness. With the engine flywheel it has 3 driving discs and 2 driven discs.

The V-16 Clutch is 11 inches outside diameter and 6½ inches inside diameter with a clutch facing area of 247 square inches.

The V-12 Clutch is 10 inches outside diameter and 5⅞ inches inside diameter with a clutch facing area of 206 square inches.

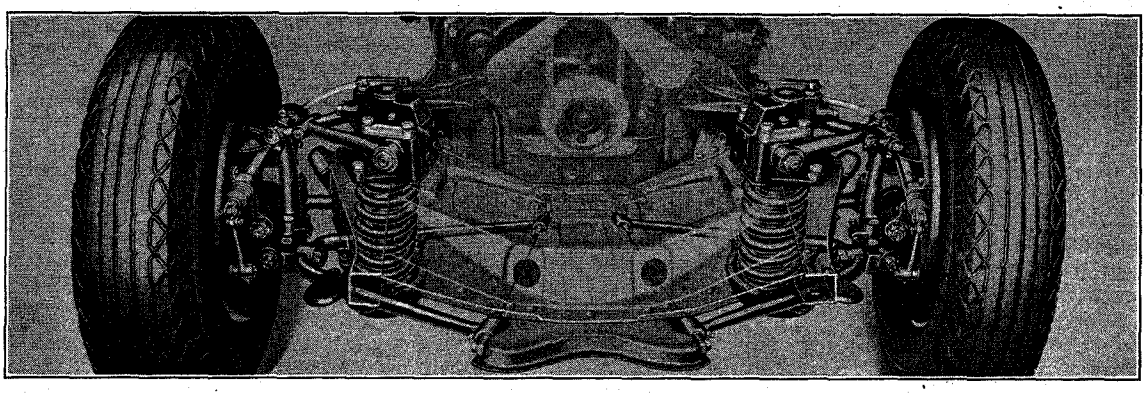
The V-8 Clutch is 9½ inches outside diameter and 6½ inches inside diameter with a clutch facing area of 151 square inches.

The perfect inherent balance of the engine would be quite useless if the other parts rotating with it were not as carefully balanced. Cadillac clutches are completely balanced statically and dynamically before they are assembled to the flywheel of the engine and give smooth performance and smooth engagement.

The clutch driving plates are chrome-nickel cast iron for long life, and prevent scoring or warpage due to extreme heat conditions. All springs, levers and other parts are attached to the flywheel, greatly reducing the amount of inertia and eliminating the tendency of spinning.

The clutch shaft is mounted on a ball-bearing in the engine crankshaft, and on a ball-bearing in the transmission case. The direct drive and constant mesh gear is forged integrally with it. The clutch throwout bearing moves on a sleeve mounted on the transmission case and is lubricated by a grease cup.

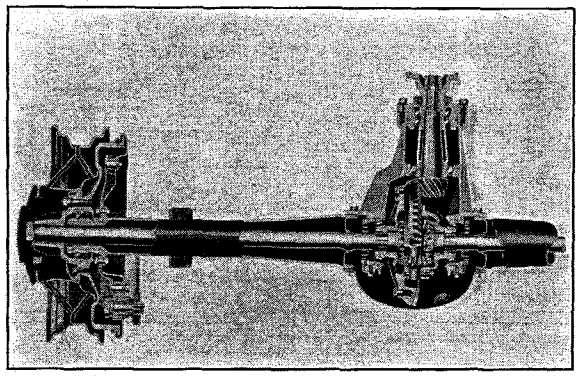
The Chassis—Front Suspension and Rear Axle



Independent Front Wheel and Spring Suspension



Matching Rear Axle Gears in a "Quiet Room" Test



¾ Floating Rear Axle

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
FRONT SUSPENSION			
Type	Independent	Independent	Independent
Tread	59⅜"	59⅜"	59⅜"
Camber of front wheel (angle with vertical)			
Caster angle			
Road clearance	10 3/16"	10½"	
Measure with new tires inflated to 35 lbs. and no load in car.			
REAR AXLE			
Make	Own	Own	Own
Type of axle	¾ Flt.	¾ Flt.	¾ Flt.
Tread	62"	62"	62"
Gear ratios—	Standard 4.60 to 1 on Series 10 & 20 Standard		
High	4.80 to 1 on Fleet.	4.60: 1 Opt.	4.31: 1 Opt.
Low		4.80: 1 Stand.	4.64: 1 Stand.
Road clearance (minimum) under rear axle	7⅝"	8¾"	8 3/16"
To be measured with tires inflated to 35 lbs. and no load in car.			
Unit number location			
All models—Rear surface of housing at lower R. H. side.			
Type of final gearing	Spiral bevel	Spiral bevel	Spiral bevel
Drive and torque taken through	Rear springs	Rear springs	Rear springs

The Chassis—Front Suspension and Rear Axle

Front Axle

With the new independent front wheel and spring suspension the front axle has been entirely eliminated.

Rear Axle and Differential

Cadillac axles are built with a large factor of safety and protection against overload. They are designed with sufficient strength, without excessive weight, and are absolutely quiet in operation.

The axle is the ¾-floating type, with the rear wheel bearings mounted outside of the axle housing to take the weight of the car off of the axle shafts. This leaves the shafts free to transmit the power to the wheels and eliminates bending strains due to weight of car, a feature common to semi-floating axles. Spiral bevel gears are matched in sets and are carefully tested with precision instruments to eliminate back lash and insure quietness.

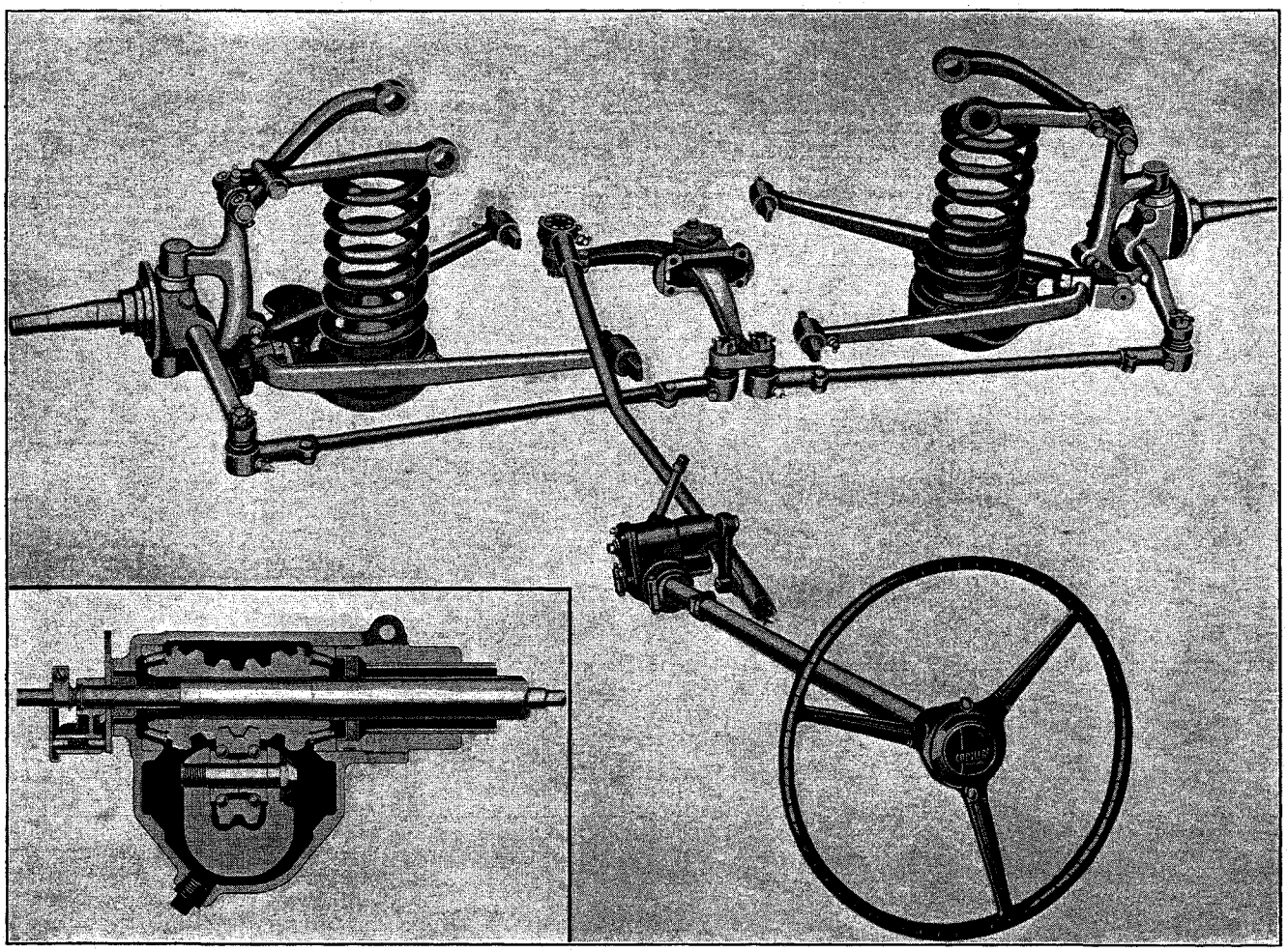
The differential gears are mounted on tapered roller bearings. Pinion shaft on ball bearings. Provision is made for pinion adjustment by the use of shims.

Rear axle shafts are carried in a strong pressed steel housing.

Rear axle ratios are—

V-16 Standard 4.64 to 1 Optional 4.31 to 1
V-12 Standard 4.80 to 1 Optional 4.60 to 1
V-8 146″ Standard 4.80 to 1
Optional 4.60 and 4.36 to 1
V-8 Standard 4.60 to 1 (128″ and 136″)
Optional 4.36 to 1

The Chassis—Steering System



Worm and Double Roller Steering Gear

Layout of Steering Connections

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
STEERING GEAR			
Steering Gear Type	Worm and Double Roller	Worm and Double Roller	Worm and Double Roller
Ratio (steering gear only)	Series 10 and 20, 22 to 1 Series 30, 24 to 1	24 to 1	24 to 1
Steering wheel diameter	18½″	18½″	18½″
Number of turns of steering wheel for full left and right swing of wheels	3⅞	4	4
Car turning radius (right)	21′-22′ 3″	22′ 3″	23′ 6″
Car turning radius (left)	21′-22′ 3″	22′ 3″	23′ 6″

The Chassis—Steering System

Improved Steering

Steering control in the modern motor car must be designed to turn the car at low speeds easily and quickly in confined spaces such as parking and dense traffic, and at high speeds it must have micrometer accuracy for safe handling.

The new type of sturdy worm and double roller steering gear gives an improvement of 50% higher efficiency with greater ease of car control.

The motion of the conventional axle connected to the frame by flexible spring is indeterminate because the axle rolls forward under braking load causing a tendency to "wander" or pull from side to side, and when striking a bump the conventional front axle never moves in quite the correct curve to give exactly correct steering geometry thus causing steering wheel whip.

In the new Cadillac such objectionable action is avoided and the geometrical relationship of the various parts of the steering system is now accurately controlled. In the design of the new front spring suspension each front wheel is directly connected to the frame by rigid members that accurately control the motion under all circumstances.

The upper forked arm is shorter than the lower by just the right amount to maintain a constant tread regardless of spring deflection, thus avoiding sidewise scrubbing of the tire upon the road surface if upper and lower arms were of equal length.

The two steering cross rods are of the same length and parallel to the lower forked arms which avoids errors in steering geometry.

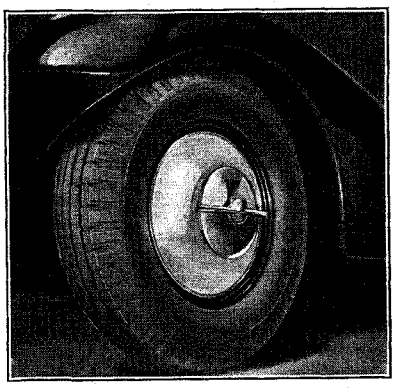
The ratio of the steering gear has been changed on the V-8 from 18.6 to 22 to 1 on Series 10 and 20 cars. 24 to 1 on Series 30. V-12 and V-16 have been changed from 18.6 to 24 to 1.

The turning radius has also been materially reduced due to the narrower frame, making it possible to turn the car in a much smaller circle and park with greater ease in a shorter space.

This improvement in car control will be greatly appreciated by every driver and especially women drivers because it makes the handling of the heavier and longer wheelbase cars as easy as the much smaller and lighter weight cars.

The tie-rod has self-adjusting ball and socket joints at each end to eliminate need for frequent adjustment. Special attention has been given to the road clearance, a feature of safety often overlooked by some companies. Cadillac V-8 have $8\frac{1}{8}$ inches, V-12 $8\frac{5}{8}$ inches, and V-16 $7\frac{7}{16}$ inches compared to only $7\frac{3}{8}$ inches on a competitive car.

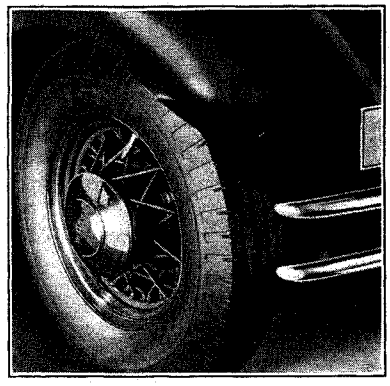
The Chassis—Wheels and Tires



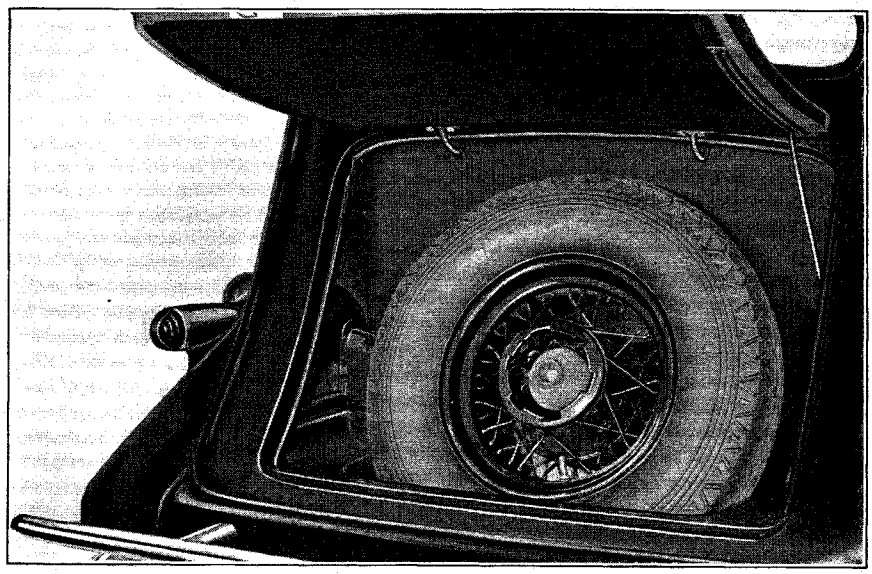
Wheel Disc Plates Optional Equipment at Extra Cost on V-8, V-12. Standard Equipment on V-16.



Drop Center Rim Construction



Sturdy Wire Wheels



Fifth Wheel in Rear Deck Compartment

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
WHEELS, RIMS AND TIRES			
Rims			
Type	Drop center	Drop center	Drop center
Diameter	17″	17″	17″
Width	4.19″	4.19″	4.19″
Tires			
Number of plies	6	6	6
Balancing mark location			
Mark on tire should be placed in line with valve stem.			
Pressure in pounds—			
Normal			
Front	35	35	35
Rear	35	35	35
Size	7.00 x 17″	7.50 x 17″	7.50 x 17″

The Chassis—Wheels and Tires

Wheels

All wheels run on ball bearings. Five sturdy demountable type wire wheels are standard equipment at no extra charge.

Cadillac wire wheels have 40 spokes and are 17 inches in diameter with 7½-inch diameter hub caps that conceal the wheel attaching bolts.

Demountable wood wheels are not available. Chromium plated discs that fit over the wire wheels, giving disc wheel appearance and beauty are standard on V-16 and available at slight extra cost on V-8 and V-12. Six wire wheel equipment is optional at extra cost.

Spare Wheel and Carrier

On all V-8 cars with Fisher bodies standard equipment, the fifth wire wheel is carried at the rear.

On V-8, V-12 and V-16 cars with Fleetwood bodies, the fifth wheel is in the rear deck compartment where it is concealed and helps to improve the beauty and flowing lines of the body.

An anti-theft lock is located in the hub of spare wheel carrier.

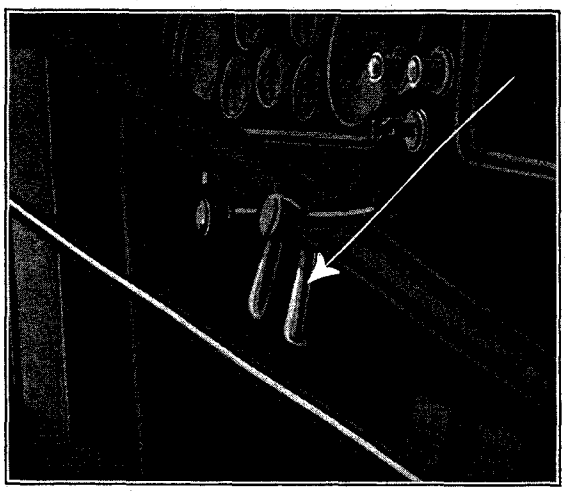
On cars with six wheel equipment, the extra wheels are carried in the front fenderwells with locks in the hubs.

Tires

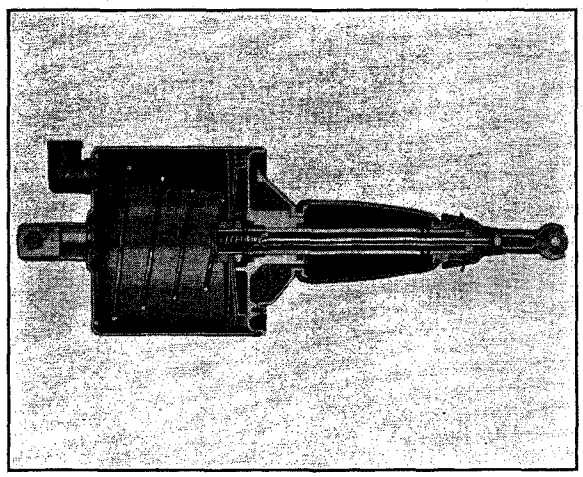
Tires used by Cadillac are the safest and best balanced combination of fabric and rubber obtainable. Cadillac pioneered their development with the introduction of V-16 to meet the demands of increased speed and quick stops. All tires and wheels are carefully balanced before being released for production.

All tires are six ply. V-16 has 17 x 7.50 tires, V-12 has 17 x 7.50 tires and V-8 have 17 x 7.00 tires. All are mounted on drop center rims which eliminate squeaks and require no locking rings.

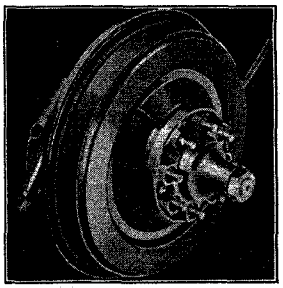
The Chassis—Braking System



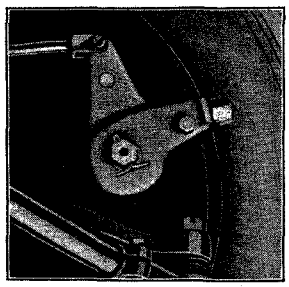
The Hand Brake Lever is Located at the Left Directly Under the Instrument Panel



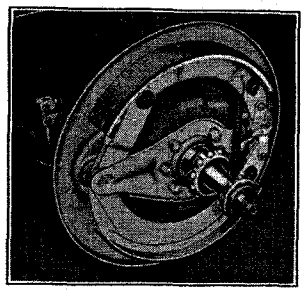
Vacuum Brake Assister



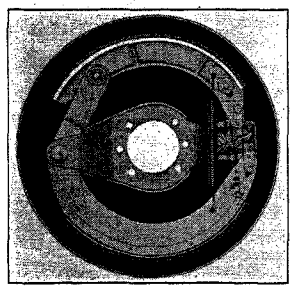
Chrome Nickel Brake Drums



One Point External Adjustment on Each Drum



The Front Brake



The Rear Brake

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
BRAKES			
Make	Own Mechanical with Vacuum Assister	Own Mechanical with Vacuum Assister	Own Mechanical with Vacuum Assister
Type	237.7	237.7	237.7
Braking area (foot brakes)—total in square inches	60% front 40% rear	60% front 40% rear	60% front 40% rear
Braking power division			
Drums—			
Nominal inside diameter	15″	15″	15″
Thickness (approximately)			
Front and rear brake drum material	Chrome nickel	Chrome nickel	Chrome nickel
Lining—			
Length per wheel	29 21/32″	29 21/32″	29 21/32″
Thickness	.245-.260 for. .183-.198 rev.	.245-.260 for. .183-.198 rev.	.245-.260 for. .183-.198 rev.
Width	2″	2″	2″
Material	Woven	Woven	Woven

The Chassis—Braking System

BRAKES

Cadillac's mechanical braking system is expensively constructed and is one of the safest and simplest braking systems built. There are several exclusive features that make it superior to other types of mechanical brakes.

The forward acting brake shoe is made of aluminum to avoid loss of braking effort from the heating of the drums. The braking area is always 100% effective, due to the articulated link and self-centering cam construction, a feature exclusive to Cadillac when compared to competitive cars. This design is superior to other braking systems having the ordinary brake shoe set up, with fixed anchorage that produces toe or heel contact of the shoes and causes uneven wear of the brake lining. Semi-molded brake lining gives longer life and insures smooth, quiet brake action.

Brake drums are made of Chrome Nickel. This material is more expensive to manufacture than ordinary steel and is a development pioneered by Cadillac, at a cost of several thousands of dollars in research and special manufacturing equipment.

The advantage of Chrome Nickel for steel drums is that it does not score and it prevents deflection and eccentricity, and is much longer lived in use.

In the design of these drums, Cadillac builds extra strength at those points where the greatest stresses and strains occur, i. e., at the hubs and at the outside circumference of the drum.

It is the best and most expensive manufacturing practice. The drums completely enclose the brakes protecting them from dirt and water.

Coil springs encircle the drums to dissipate heat more rapidly and dampen noise.

Twelve roller bearings, another Cadillac feature, are used in the mountings of the brake shafts making them easier to operate and eliminating loss of pedal effort through friction common with plain or spherical type bushings.

Brake adjustment is quick, easy and positive by the turn of a nut on the outside of each brake dust shield. This insures proper adjustment at any time and eliminates the complicated operation in systems that require adjustment of the entire linkage.

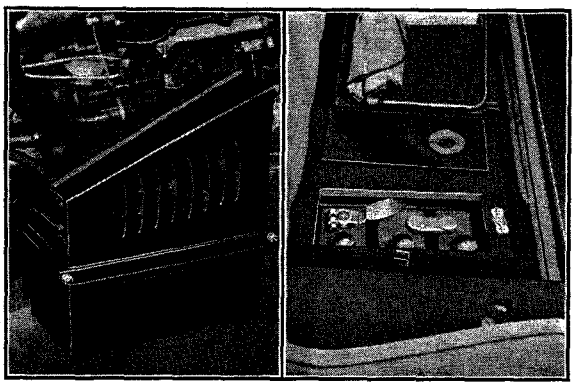
A vacuum power brake assister insures easier brake effort and quicker stopping at higher driving speeds. This assister, designed to work with the Cadillac braking system, utilizes vacuum created by the engine as an additional energy to give quick stopping with the least amount of pedal effort by the driver.

The proportion of braking effort of the vacuum assister is automatically controlled in exact proportion to the effort exerted on the brake pedal by the driver.

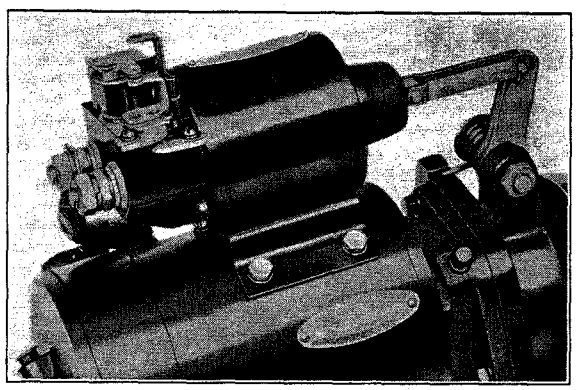
By means of hooking up the service brake shaft with the hand brake lever the service brakes are also used as parking brakes. The hand brake lever is now an inverted pull type handle located below the instrument panel to the left of the steering column where it is more convenient to reach and easier to operate.

Cadillac's braking system is simple, efficient, safe and long lived, and assures complete confidence in the safe control of the car at all times.

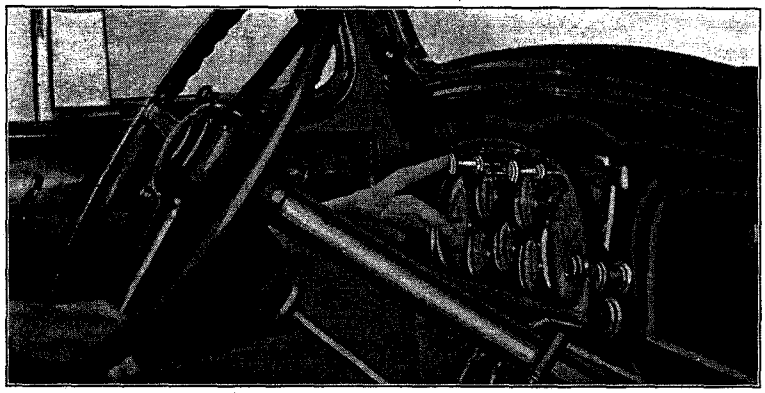
Electrical System



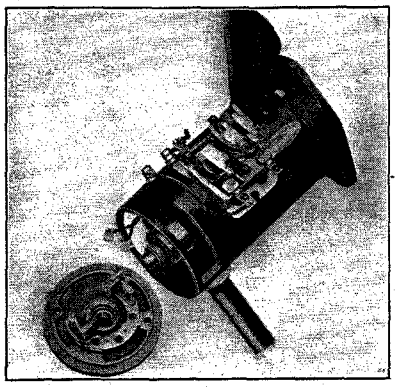
(Left) V-12-V-16 Battery—R. H. Front Fender
(Right) V-8 Battery—R. H. Front Seat



Solenoid Starter



Starter Button is Located on Instrument Panel



Air-cooled Current-controlled Generator

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
ELECTRICAL SYSTEM			
Battery			
Delco type number	17 BW	21 DW	25 AW
Capacity, rated in ampere hours	130	160	190
Plates, number of	17	21	25
Terminal grounded	Positive	Positive	Positive
Voltage—rated	6	6	6
Generator			
Delco-Remy type number	933-B	933-C	933-C
Car speed for maximum normal charging (approx.)	20 m.p.h.	16 m.p.h.	16 m.p.h.
Charging rate on car (in amperes)—Cold	15-20.5	15-20.5	15-20.5
Current regulation			
All models—Current Regulator Relay with Thermostat.			
Ratio of generator R. P. M. to engine R. P. M.	1.35 to 1	1.40 to 1	1.40 to 1
Thermostat (lighting circuit) operating temperature	375-385 F.	375-385 F.	375-385 F.
Voltage—rated	6	6	6
Horn			
Delco-Remy (Klaxon)—Number used	2	2	2
Ignition			
COIL			
Delco-Remy type number	539-D	553-E	553-E

Electrical System

ELECTRICAL SYSTEM

CADILLAC PIONEERED ELECTRIC STARTING AND LIGHTING IN 1912 AND HAS IMPROVED IT CONSTANTLY EVER SINCE. CADILLAC EQUIPMENT IS LARGER IN CAPACITY AND MORE LIBERAL THAN THAT OFFERED BY COMPETITIVE CARS.

BATTERY

The current source is a Delco battery carried in an accessible compartment. The V-16 is equipped with the largest battery furnished on any car. It is a heavy duty 190 amp. hour capacity battery with 25 plates. The V-12 is 160 amp. hour capacity with 21 plates. V-8 car batteries are 130 amp. hour capacity, with 17 plates.

The positive battery terminal is grounded to the frame. The V-12 and V-16 battery is located under the right front fenders. Also V-8 146″ WB. The V-8 battery is under the right hand side of the front seat.

GENERATOR

Batteries are charged by a current controlled generator, positively driven by a silent chain from the crankshaft. Chain drive is more positive than belt-drive used by some competitive cars. The generator is air-cooled, another Cadillac feature not used by some competitive cars, which lengthens the life of the generator and permits a higher charging rate to the battery.

The charging rate of the generator is automatically controlled to keep the input to the battery in relation to the discharge when lights are being operated.

STARTING MOTOR

The Solenoid Starting Motor is of the six pole type on V-16 and V-12, four pole type on V-8's and drives the flywheel through double reduction gears to give easier starting in cold weather and longer battery life. Ratio of starter to flywheel is approximately 21 to 1 on V-16 and V-12 engines, and 26 to 1 on V-8 engines. Normal engine cranking speed is 90-100 R.P.M.

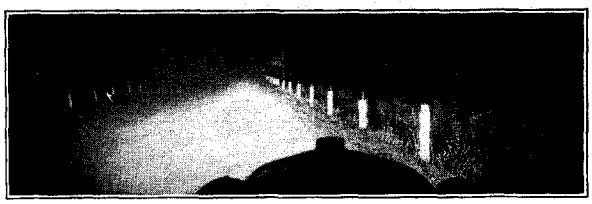
The starter button is located on the instrument panel and connects with a solenoid switch attached to the starter that gives a positive engagement of the starter pinion with the flywheel before the starter operates and relieves the starter gears of all shock loads, giving longer life and quieter operation.

CIRCUIT BREAKER

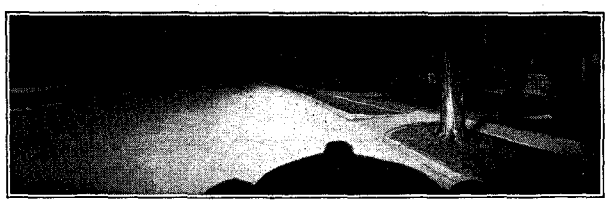
The entire electrical system is the single-wire type, the circuit being completed through the frame. The system is protected against short circuits by a thermostatic circuit breaker.

This breaker is operated by the heat generated by any current overload; after breaking the circuit it closes as soon as the system cools to a normal temperature.

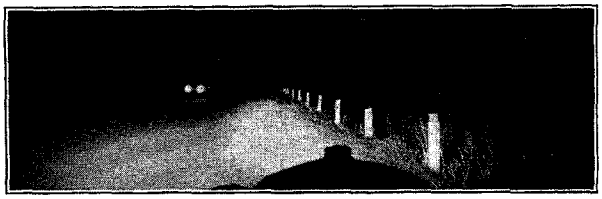
Electrical System



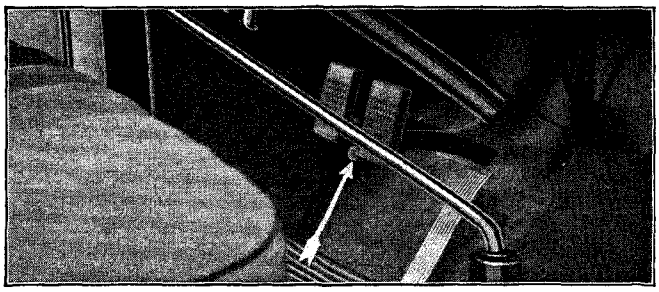
Powerful Light Ahead for Country Driving



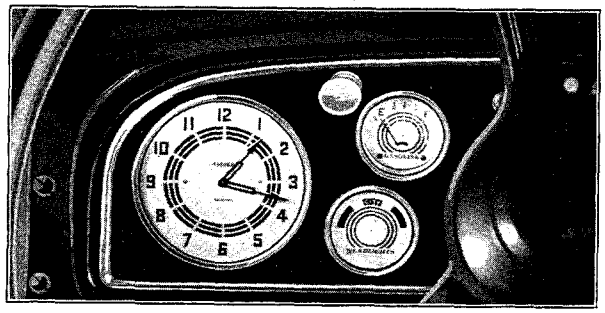
Bright Light for City Driving



Extra Light on Right Roadside for Passing



Foot Dimmer Switch



Headlamp Beam Indicator Dial

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
DISTRIBUTOR			
Delco-Remy type number	661-V	667-C	4118
Angle between contact arms			
Contact point gap	.0125-.0175″	.018-.024″	.014-.018″
Spark advance (degrees on flywheel)—			
Automatic	22°	38°	32°
SPARK PLUGS			
A. C. type number	G-7	G-7	G-7
Gap	.027-.027″	.025-.027″	.025-.027″
Thread	Metric, 18 mm.	Metric, 18 mm.	Metric, 18 mm.
IGNITION SWITCH			
Delco-Remy type number	539-D	431-E	431-F
STARTING MOTOR			
Delco-Remy type number	728-P	580	580
Type of Drive—	Solenoid Gear	Solenoid Gear	Solenoid Gear
Automatic starting device	Push button	Push button	Push button
Brushes—number used			
Engine cranking speed	90-100 r.p.m.		
Gear ratio between armature pinion and flywheel	26 to 1	21 to 1	21 to 1
Number of teeth in flywheel gear	113	113	113
Number of poles	4	6	6
Flywheel teeth integral or steel ring	Steel ring	Steel ring	Steel ring

Electrical System

HEADLIGHTING
(Cadillac V-8, V-12 and V-16)

Multi-Beam headlighting system with the use of 2 filament lamps and new lenses provides improved and safer headlighting. Three combinations of light beams are possible, one in traffic and two in country driving. It gives perfect lighting without glare in the country passing position and projects a substantial volume of light to a greater distance ahead. When passing other cars it cuts through the glare of approaching headlights and gives increased lighting on the right side of the road where it is more needed. There are two 32 candlepower filaments in each lamp. The three kinds of light beams are provided—city driving, country driving and country passing.

A control switch on the steering wheel provides selection of beams, and a foot dimmer switch on the toe board at the left side of the clutch pedal controls the change from the country passing beam to the country driving beam.

A visible headlamp beam indicator dial on the instrument panel shows the driver instantly which of the three light beams is being used and overcomes the uncertainty and objectionable necessity of operating the foot dimmer switch to tell whether city or country driving or the country passing beam is being used. The combinations of light beams distribute maximum illumination for the driver, and minimum glare to the oncoming driver with no sacrifice in road illumination.

The lighting system includes two parking lights, two main headlights, double tail lights with special red lenses in combination with the stop light, two instrument panel lights, one special map-reading lamp for driver and dome light operated either by manual switch or automatically with the opening and closing of car door. Quarter lights are furnished in all seven passenger sedan bodies and in all Fleetwood closed bodies.

Head, tail and parking lamps are controlled by a lever on the steering wheel. Stop lamps

SUBJECT AND REMARKS	CADILLAC		
	V-8	V-12	V-16
LIGHTING SYSTEM			
Bulb Data			
Voltage—all bulbs	6-8	6-8	6-8
Back-up and stop lamp—			
Candle power	15	15	15
Contact	Single	Single	Single
Mazda No.	85	85	85
Dome and Rear quarter lamp (closed cars)—			
Candle power	6	6	6
Contact	Single	Single	Single
Mazda No.	81	81	81
Parking, Instrument, Map Reading and Tail lamp—			
Candle power	3	3	3
Contact	Single	Single	Single
Mazda No.	63	63	63
Headlamp—			
Candle power	32-32	32-32	32-32
Contact	Double	Double	Double
Mazda No.	2330L	2330L	2330L
Are double or triple filament bulbs used	Double	Double	Double
Are tail and dash lights in series	No	No	No
Headlight reflector type	Parabolic	Parabolic	Parabolic

Electrical System

are automatically operated when the brake pedal is depressed through a switch on the brake operating mechanism.

HORNS

Two high frequency (vibrator) trumpet type horns are mounted under the hood in the engine compartment. They are each of exceptional tone and tuned to a different pitch to give a strong, but pleasing, warning signal.

IGNITION SYSTEM

Power in an automobile is obtained by means of exploding a mixture of fuel and air. The spark is produced by a Delco-Remy ignition system of the high tension type.

The ignition system consists of an ignition timer which interrupts the low tension current, producing a high voltage in the secondary circuit of the induction coil.

A distributor is provided to distribute the high-tension current produced by the coil to the proper cylinder.

The coil is of the ironclad type and is completely enclosed, making it waterproof. The condenser is mounted inside the distributor and protects the contact points against burning and assists the coil in building up a high secondary voltage. The timer and distributor are mounted in one unit and driven from the camshaft by a spiral gear. Distributor cover is of special waterproof design to protect the terminals from moisture.

The high-tension wiring is enclosed in a special conduit housing leading to the heavy duty AC metric, 18 mm. spark plugs.

The timer is equipped with an 8-lobed cam, operating two sets of contact points on V-16, 6-lobe cam operating two sets of contact points on V-12. These break alternately, sharing the work which would otherwise be done by one. The V-8 has an 8-lobe cam operating one set of contact points. Automatic spark advance is controlled by a governor.

FIRING ORDER

V-8: 1, 2, 7, 8, 4, 5, 6, 3

V-12: 1, 4, 9, 8, 5, 2, 11, 10, 3, 6, 7, 12

V-16: 1, 8, 9, 14, 3, 6, 11, 2, 15, 10, 7, 4, 13, 12, 5, 16

Cylinders are numbered from the front of the engine:

V-8: Right 1, 3, 5, 7, Left 2, 4, 6, 8

V-12: Right 2, 4, 6, 8, 10, 12, Left 1, 3, 5, 7, 9, 11

V-16: Right 2, 4, 6, 8, 10, 12, 14, 16, Left 1, 3, 5, 7, 9, 11, 13, 15

General Questions *and* Answers

Why did we abandon the torque-tube drive in favor of Hotchkiss?

With the new more rigid frame and the improved ride, the torque-tube became a conveyor of road vibrations to the body. The type of Hotchkiss drive we are using has never been used before and reduces the transmission of these vibrations to the body.

Why Centrifuse drums on La Salle and chrome nickel cast iron drums on Cadillac?

Because of Cadillac's greater weight, chrome nickel cast iron drums are required to give the same effectiveness as the Centrifuse drums on La Salle.

Why Hydraulic brakes on La Salle and not on Cadillac?

The weight of the La Salle, which is substantially less than that of Cadillac, makes possible the use of hydraulic brakes of the newest type, which give maximum braking efficiency with minimum physical effort. With larger, longer and heavier Cadillac cars, we use mechanical brakes with vacuum brake assister to accomplish the same result.

Why do we build a straight-8 La Salle, after 19 years of pioneering in the V-type field?

General Motors does not restrict itself to any one type of engine design. In planning the new La Salle, Cadillac desired to broaden its market and knew that in the new La Salle price field the preponderant demand is for a straight-eight motor.

How can we equip La Salle with Fleetwood bodies, at a lower price than the Cadillac V-8 with Fisher body?

The La Salle is in every respect a smaller car than the Cadillac V-8 and naturally costs less to produce. In addition, we offer only four body styles on the La Salle as compared with thirteen on the Cadillac V-8, thus simplifying La Salle body production and hence reducing costs.

LA SALLE QUESTIONS

Is the rumor true that La Salle is an assembled automobile, with either a Buick or an Oldsmobile-8 chassis?

This is not true. The new La Salle was designed and developed by Cadillac engineers and measures up to Cadillac standards in every respect. The La Salle engine, transmission and rear axle, which are the most important units in any chassis, are all built in the Cadillac factory to Cadillac standards and you are at liberty to invite prospects to visit the Cadillac factory at any time to see the La Salle built.

Why do you have such a short wheelbase on the La Salle?

Wheelbase is no longer important except to provide sufficient room for passenger carrying purposes. The old need for length of wheelbase to better the ride is gone, due to the new ride design developed by Cadillac. The overall length of the new La Salle is less than two inches shorter than the previous model.

Why only 4 body styles?

We know that these particular body styles will meet the majority of the public's demand.

Can you furnish a trunk rack on La Salle?

Yes.

Can you furnish wire wheels instead of disc on La Salle?

No. La Salle is designed solely with the disc wheels you see.

General Questions *and* Answers—*Continued*

Why isn't there more headroom in the rear compartment of La Salle?

The new airstream styling of La Salle is the result of a harmonious balance of proportions in body height and length.

With the new improved ride and the elimination of the pitching and bouncing of rear seat passengers it was unnecessary to allow the same amount of headroom formerly required. You will find the new La Salle comfortable to ride in on all kinds of roads.

Why is the new La Salle now competitive with the Buick in price?

The La Salle is a quality built car with new and unusual style appeal. It was not designed to compete only with Buick but to appeal to the large number of owners of Upper Medium Price Group cars such as Nash, Chrysler, Studebaker and other makes, who want a car of advanced and unusual style appeal plus the added prestige of a car built by Cadillac and at a price less than Cadillac cars sell for.

What about streamline design. La Salle follows one idea and other cars follow an entirely different one. Which is correct?

The La Salle interpretation of streamline design is beautiful. It is neither extreme nor radical but follows the idea of shaping all body and fender contours to eliminate protruding parts and permit the free passage of air currents. Buyers of a car of La Salle price want beauty and distinctive individuality in addition to streamline design and the immediate popularity, response and acceptance of La Salle's beauty and styling is proof of its endorsement by the public.

Why do you use a different body styling on La Salle than you do on Cadillac?

The sales appeal of La Salle and Cadillac will be to entirely different groups of buyers, Cadillac styling is more conservative to meet the demands of a more conservative buyer. La Salle is a car of unusual style appeal and will be bought by a more youthful buyer who wants unusual style and smartness and something that is distinctively different than the more conventional and conservative styling used on Cadillac.

What about luggage space for touring?

There is space in the rear deck compartment above the tire. If additional luggage space is needed a trunk rack is available for use as is usual on sedan models.

What about cost of repairing fenders?

Due to the increased efficiency in fender metal repair during recent years complete fender replacement is seldom necessary except in case of unusual damage caused by a wreck. The new La Salle fenders can be repaired and bumped out in case of ordinary damage without any greater expense than old-fashioned fenders.

INDEPENDENT FRONT SUSPENSION QUESTIONS

Competitive salesmen say the new independent front wheel suspension causes excessive spring breakage and tire wear.

This information is untrue. The fatigue life of the new coil front spring when compared with the old type leaf spring is *twice* as great, and experimental test records with new independent front wheel suspension covering over a million miles show that there was not one single case of breakage with the new coil type front springs.

As to tire mileage there is no increase in tire wear on the cars with the new front suspension when compared with conventional cars.

General Questions *and* Answers—*Continued*

Both of these rumors are examples of the efforts that will be made by competitive salesmen of cars without independent front suspension to disparage the new riding comfort offered in Cadillac while the cars they are selling are still offered with conventional axles and springs pending the completion of experimental work now necessary by their organizations.

What effect will dirt and gravel have on front spring action when it gets inside the coil springs?

None at all. Due to the constant activity of the coil spring it prevents any accumulation of dirt or gravel on the spring having any effect on the flexing action of it.

What about road clearance due to softer front springs when both wheels strike a bump simultaneously?

The lowest point of clearance at the bottom of the lower forked arm is no lower than the old style front axle. There is actually greater road clearance now than before.

What about the strength of these forked arms when compared with the strong heavy front axle formerly used? Won't they wear *more* causing noise and be expensive for adjustment?

In the new front suspension each wheel is attached directly to the frame by means of a pair of forked arms. They are forgings and are even stronger than the former front axle. The forked arms are joined to the frame by means of threaded bolts that are permanently seated in threaded bushings. This construction wears indefinitely, is always silent and will not require adjustment.

If independent front wheel suspension gives improved riding comfort, why don't you use it on the rear wheels also?

Cadillac's new improved riding comfort is the result of a complete redesign of the chassis with a redistribution of mass and the use of front springs that are as soft as the rear to eliminate the fight between front and rear spring oscillation of conventional car design. It can be readily understood, therefore, that independent front suspension does not in itself produce improved riding comfort nor is it the cause of Cadillac's new ride. Independent front wheel suspension is used by Cadillac to give accurate direction and correct steering with the use of the soft front springs which would be impossible and unsafe with conventional front axle and front springs of the same softness. Independent rear wheel suspension is designed for an entirely different purpose and would only be used to reduce unsprung weight. There is no relationship between the problems.

What is the difference between the front suspension used by Cadillac and that used by Buick?

Cadillac developed the front suspension it uses to suit the weight and size of its cars. On the front suspension Cadillac uses the manual control of shock absorber adjustment and at the rear a combination of inertia and manual control.

Buick has no manual control of either front or rear shock absorber adjustment and uses inertia type shock absorbers at the front only. Buick's system of front suspension was worked out to suit the size and weight of their car and while similar in principle to Cadillac, is different in its application to the chassis as a whole unit.

Where do you put a jack under the front end when a tire change is necessary?

There is a specially designed shelf or bracket on the lower forked arm on each side which supports the car when the use of a jack is necessary.

Questions and Answers

AXLES

Q—What about dual rear axle gear ratio? Why don't you use it?

A—A dual rear axle ratio sounds good theoretically, but in practice it offers complications which do not seem to justify it. Cadillac used a two speed axle in 1914; from experience we know it is unnecessary. It also adds to the unsprung weight which in turn reduces the riding qualities. A dual rear axle ratio may be used to obtain good performance in a car which otherwise might be lacking in this factor.

Q—Packard uses semi-floating axle, Lincoln full-floating. Pierce semi-floating and Cadillac ¾ floating. Why does Cadillac feel it has the best design?

A—Cadillac feels a ¾ floating axle is the best design because it removes the stress, caused by the weight of the car, from the axle shafts and because the outer ends of the axle shafts are not splined, but securely locked to the hub. The semi-floating axle shafts carry both the driving and load stresses on the rotating shafts. This has never been considered the best practice because of the resulting high stresses in the shafts limiting their life. Practically every car priced under $1,000 uses a semi-floating axle.

The full floating axle shafts have both ends splined which, in time, produces an undesirable rattling or clicking sound in the rear wheels.

Q—Does this car have a hypoid or worm drive rear axle?

A—No, we use a spiral bevel gear axle. Worm gear and hypoid rear axles are used by some manufacturers in the effort to get a lower car. Both are less efficient than spiral bevel gear axles, particularly the worm drive type which has so much friction that it runs hot which sometimes causes trouble. Hypoid gears require a special lubricant and if neglected there is friction and wear which may score the gear teeth and become noisy in a short time. Spiral bevel gears as manufactured by Cadillac are more efficient, are quiet and stay quiet.

Q—What gear ratios are used?

A—There are two gear ratios available on each model. For Cadillac V-8, 4.36 to 1 and 4.6 to 1; for V-12 4.6 to 1 and 4.8 to 1; and for V-16 4.31 to 1 and 4.64 to 1.

BODY

Q—Is this car equipped with a heater?

A—No, but a heater can be easily installed if ordered.

Q—Why don't these cars have side cowl ventilators?

A—The large ventilator in the top of the cowl takes the place of side ventilators and is much more effective inasmuch as it admits a greater amount of cooler air than ventilators in the sides of the cowl.

Q—How is the body insulated from the heat of the engine?

A—The dash in all bodies is insulated by a 1¼-inch thickness of felt between the dash and the dash cover. The cowl is insulated with a ⅜-inch felt pad. The floor is insulated by floor and toeboards made of ⅞-inch thick insulating board on top of which is placed a felt pad under the carpet.

Q—Is it possible for the driver to lock himself out?

A—No. The inside door lock device automatically releases as soon as the lock bolt is forced in by closing the door. The only way the car can be completely locked from the outside is by setting the inside door trip locks of the rear doors and the left front door and then locking the right front door from the outside with a key.

Q—What is the type of seat cushion springs?

A—Marshall springs are used throughout with double springs at the edges of the cushions. Cushion pads are of soft, thick material.

Q—Why is the Security Plate glass sealed with a black compound?

A—Some manufacturers use a black sealing compound and others a silver seal. Both are equally effective.

Q—Why is the upholstery in the Fleetwood plain instead of pleated like the Cadillac Fisher models?

A—To reserve the plain trim as a distinctive feature for the Cadillac line. Plain trim can be secured on Fisher cars at extra charge.

Q—Can the V-12 and V-16 quality upholstery be secured in the Cadillac V-8 Fisher Bodies?

A—Yes, at extra charge.

Q—Why are there no pockets in the rear doors?

A—To improve the appearance of the doors and make the entire car neater; pockets are provided at the side of the arm rest. The large compartment in the instrument board also provides additional storage space.

Q—Are ventilator windows as safe from the standpoint of possible theft from the outside, as the old conventional type?

A—It is impossible to pry open the ventilator windows when closed from the outside because of the construction of the ventilator window mechanism. The only possible way to get into the cars when the windows are properly closed is by breaking the glass as in the old conventional type window.

Q—The chrome ventilator frame will interfere with vision, will it not?

A—Vertical obstructions do not interfere with vision unless their width exceeds the width between a person's eyes. The chrome frames are but a fraction of an inch wide, and were especially designed not to hamper vision. After a few rides you are not conscious of the ventilator frames, and the greater comfort of the new ventilation becomes a source of ever-increasing satisfaction.

Q—Are the ventilator sections of the windows weatherproof?

A—Exhaustive tests, covering every conceivable weather condition, show that the ventilator windows are weatherproof. Furthermore, unlike conventional windows, they can be opened sufficiently during a rain or snow storm to provide ventilation and keep windows and windshield from clouding or steaming.

Q—What is a Fleetwood Body?

A—It is a body which is built by Fleetwood Body Corporation, one of the oldest and most renowned custom body builders.

Q—Some companies claim your Cadillac Fisher Bodies are made in the same factories that bodies for Chevrolet, Pontiac, and other units of General Motors are produced in.

A—Fisher Body Corporation has a capacity of nearly two million bodies yearly. They have many plants throughout the country to provide for the most economical production based on location and point of material supply.

Cadillacs, Fisher and Fleetwood Custom Bodies are produced in the Fisher Fleetwood unit of the Fisher Body Corporation devoted exclusively to Cadillac requirements construction. Methods, materials and inspection are used that are based on Cadillac standards of quality and finish.

Q—The Lincoln salesman tells me they use only custom bodies and that their prices are, therefore, only comparable with your Fleetwood custom body line.

A—Lincoln uses a standard line of Lincoln bodies as is illustrated in their literature. They also use custom bodies produced by some custom body builders to provide for the individual requirements of their customers who do not want the standard line of bodies. Cadillac list prices both with standard Fisher and Fleetwood Custom bodies, are considerably lower than Lincoln, owing to our much larger volume of business.

Q—The Lincoln salesman claims they use only aluminum for body panels and that steel panel bodies are much cheaper.

A—It is not a question of the cost of materials that determines what kind of bodies will be used. It is less expensive for Lincoln with its small production to use aluminum for certain body parts that can be shaped by hand instead of steel that would necessitate the making of costly steel dies for each body style, thereby raising the price per car higher than it is now. Steel is preferable to aluminum because it is stronger, resists denting better, and can be repaired less expensively. Steel panels when shaped by steel dies under tons of pressure, are also more uniform and take a better and more lustrous finish than hand shaped panels of softer aluminum.

Q—The Pierce man says they use laminated joints instead of mortise joints in their bodies and that they are 2½ times the strength of ordinary mortise and tenon joints. Why don't you use them?

A—The laminated joint is what is commonly known as the dovetail type joint. It is used in Fisher Bodies as well as mortise joints. The particular body load or stress determine the type of joint to be used at each point and there is nothing unusual about Pierce Bodies having laminated joints as it is no exception to the general rule.

Q—Why do you use the slatted roof instead of the wire mesh top? Doesn't it make more body noise? This is what Packard and Pierce claim.

A—The slatted roof construction is much stronger, does not make more body noise, and is less likely to sag between the bows than a wire mesh top. It is also more expensive to build.

Q—The Pierce man told me their bodies were the most expensively finished, having 55 different operations. How does this compare with yours?

A—When Cadillac bodies are finished they are not put on a basis of so many coats which could vary in thickness depending on the man who does the work. Each type of body is allotted a definite quantity of Duco that must be applied under supervision with careful inspection until it is entirely used up. In this way you are assured of getting the same standard of quality in every Cadillac car.

Q—How do you overcome the slow movement of windshield wipers when driving under full throttle?

A—A vacuum pump which is engine operated, provides more than sufficient additional vacuum to operate the windshield wipers regardless of engine speed.

Q—Some cars use a lock on the steering wheel. Why do you use it on the ignition coil.

A—From the standpoint of safety, we believe it preferable to use a locking device: (1) which, if accidentally applied while the car is being driven, cannot possibly interfere with the steering mechanism. (2) An ignition lock also permits a car stored in a garage to be moved from one place to another without unlocking. If this is attempted on a car with the steering gear locked, damage is likely to result. (3) An ignition lock is given equal rating by the Underwriters with a steering gear lock. (4) An ignition lock operated from the dash is much easier to see at night than a steering wheel lock; (5) and it is much simpler in operation as it becomes operative by merely pushing in the key-lock plunger on the dash when stopping the motor.

BRAKES

Q—Do your brakes have any internal features of interest?

A—Yes, the cam by which the shoes are applied. This cam is self-centering which permits equalization of wear as it occurs over the entire lining surface. Also the articulated link that makes the braking area of the shoes always 100 per cent effective when applied, and eliminates toe or heel action common to other types.

Q—How do the hand brakes work?

A—The hand brake lever operates the rear brake shoes. After the foot brakes are fully applied, additional leverage may be obtained by use of the hand lever.

Q—What is the total area of the brake lining?

A—284.6 square inches on all three cars.

Q—What kind of brakes do you have on the Cadillac cars?

A—Four-wheel internal-mechanical brakes with two shoes on each wheel with vacuum booster automatically controlled.

Q—What is a self-energizing brake?

A—It is a brake in which the motion of the car is used to assist in applying the brakes. The Cadillac brakes are self-energizing.

Q—How are the brakes adjusted?

A—The brakes are adjusted by a single nut on the outside of each brake dush shield. Adjustment is simple and all four brakes can be adjusted in a short time.

Q—Why do you use roller bearings in your brake connections?

A—Roller bearings are used on the brake connections to reduce increased pedal effort friction. In the average braking system, over 50 per cent of the braking effort is usually lost between the pedal and the wheels because of friction in the brake linkage.

Q—Do Cadillac front brakes release on a turn?

A—No, this decreases ability to stop on a turn by giving the operator little better action than that of the rear wheel brakes. By throwing most of the braking to the rear wheels these are more apt to slide resulting in pivotal skid—generally regarded as the most dangerous form.

Q—Why do you use one aluminum and one steel brake shoe instead of two steel shoes? Steel shoes would have the same effect, wouldn't they?

A—No. The lower shoe does less of the braking than the upper shoe and as it does not become as hot the aluminum alloy shoe is unnecessary. The shoes never get as hot as the drums because the heat is generated on the surface of the drum and the shoes are insulated from this surface by the lining. The expansion is not the same, therefore, and on cars equipped with only steel shoes it is necessary to compensate for this difference by pushing the pedal farther down when the drums are hot. Aluminum, on the other hand, has a greater co-efficient of expansion than steel, and this makes up for the difference in temperature between the shoes and the drums, so that the shoes expand practically the same as the drums.

Q—What is the difference between your brake and the Bendix type?

A—The only point of similarity between Cadillac brakes and Bendix brakes is that both are internal brakes, both have rigid shoes, and both operate by cams. Otherwise, the Cadillac brakes are entirely different in design from Bendix or any other brakes, and carry refinements in detail to a point heretofore unknown in brake construction. The principal distinctive features of our brakes are as follows: (1) Aluminum and steel brake shoes are used in order to equalize the expansion resulting from heat, so that the same brake action is obtained at the end of a long grade as at the beginning. (2) The cam acts on the brake shoes through segments of rollers instead of flat plates, thus giving rolling contact instead of sliding contact. The loss of effort at this point with the usual construction is considerable, due to the friction accompanying the great pressure exerted by the cam. (3) The bearing in which the cam is carried floats on a spring-loaded bracket which permits the cam to center itself between the two shoes. This insures that both shoes automatically take their proportional share of the force exerted by the cam. (4) The levers by which the cams are applied are an exclusive patented design comprising a take-up with micrometer adjustment. The external adjustment of the nut on these four levers comprises the only adjustment ever necessary to take up wear. This adjustment, furthermore, does not affect the angle of the levers as is the case with brakes which are adjusted by shortening the pull rods and cables.

Q—Why do you use chrome nickel cast iron brake drums instead of steel?

A—Steel brake drums require very little machining. They are softer metal and due to intense heat in high speed use they wear and score quickly. The chrome nickel cast iron Cadillac brake drums are machined all over, highly polished and carefully balanced. They resist heat, do not score, and reduce brake adjustment expense.

Q—Why do you use roller bearings in your brake set up? No competitive car has them. Don't they give trouble in adjustment and wear?

A—We use roller bearings at twelve points in the brake linkage in order to reduce the loss of pedal effort due to friction. No competitive car has them because no competitive manufacturer has gone to the same pains and expense as Cadillac to give the purchaser the easiest possible brakes. Roller bearings require no adjustment and wear longer than bronze or so-called "oil-less" bushings.

Q—How does the booster brake work?

A—A chamber is connected to the intake manifolds so that when the brake pedal is depressed, the vacuum operates a diaphragm connected to the brake pedal. The valve in the booster brake is designed so that the amount of pressure developed is proportioned to the effort exerted by the driver. This prevents the brake from being too sensitive and eliminates undesirable grabbing as in some other cars with booster brakes, also the necessity for manual control of the pressure which gives variable results.

Q—In the event of failure of the vacuum would these brakes be operative?

A—Yes, the foot brakes may still be applied the same as though the booster was not on the car.

Q—Why is your brake the most expensive to build, as you claim?

A—For several reasons: (1) Aluminum shoes cost more than steel shoes. (2) Chrome nickel drums are more expensive than steel and are ground to within .007 inch of a true circle—which is closer to absolute accuracy than was ever thought necessary before. (3) The cam centralizing mechanism involves several additional parts. (4) The patented cam lever costs more than the ordinary type of lever. (5) The twelve roller bearings in the break linkage cost more than the bushings ordinarily used. (6) The vacuum booster is another item of cost.

Q—What is the difference between the "mechanical power" brakes in Pierce and Cadillac vacuum assister brakes?

A—The Cadillac system comprises a pedal connected directly to the four brakes. A cylinder, actuated by inlet

manifold vacuum, is also connected to the foot pedal and arranged so that for every pound of pressure applied to the pedal by the driver the vacuum assister adds another pound.

In the "mechanical power" system, the pedal instead of being connected to the brakes, is connected to a friction servo motor mounted at the rear of the transmission. The operator's effort applies a clutch on this motor after which the motor, through mechanical linkage, applies the brakes.

Cadillac has chosen the vacuum assister for the following reasons:

(1) Direct connection of the pedal to the brakes in the Cadillac system will not leave the operator without foot brakes should the power unit fail.

(2) Maneuvering in restricted spaces is facilitated since there is no lag in brake application. With the "mechanical power system" about six inches of wheel travel is required after depressing the pedal before the brakes are applied.

(3) Cadillac brakes do not "hang on". If the driver wishes to slightly decrease deceleration he merely reduces his foot pressure slightly, instead of being forced to almost release the pedal, then apply at reduced pressure.

(4) Because of its simplicity Cadillac engineers believe the vacuum assister more reliable than a friction motor.

Q—The Pierce-Arrow salesman tells me that they get more uniform action because they have abandoned the wrapping type of brake.

A—That statement was a little misleading. All internal shoe brakes have a wrapping action to a greater or lesser degree. A more exact term for extremely sensitive brakes is "uncontrolled energized" brakes. The Cadillac brake is not of the uncontrolled energized type. It has more wrapping action than has a new Pierce-Arrow brake, but as the Pierce-Arrow type wears, its wrapping action becomes greater than that of the Cadillac brake which remains uniform.

CHASSIS

Q—Why is the front tread 59⅜ inches and rear tread 62 inches?

A—The rear axle tread is wider to provide more body room for passengers. The front axle tread is narrower to give a shorter turning radius.

CLUTCH

Q—What is the size of the clutch facing?

A—9½ inches outside diameter, 6½ inches inside diameter on V-8 Cadillac, on V-12; 10 inches outside and 5⅞ inches inside diameter, 11 inches outside diameter, 6½ inches inside diameter on V-16.

Q—Packard, Nash, Auburn and others have automatic lubrication on their cars. It oils 38 points on the chassis and they claim it saves a lot of maintenance expense. Why don't you use it?

A—The automatic chassis lubrication system used to have selling appeal when first introduced, we admit. But its claimed practical advantages are offset by some disadvantages. On cars equipped with so-called automatic systems, there are still a number of points that must be manually lubricated and inspection schedule calls for regular attention every 500 miles in winter and every 1000 miles at other times. In addition to the chassis lubricating system, the cost of the manual lubrication part of this inspection service is approximately $60.00 every 10,000 miles. Complete schedule lubrication by contract on Cadillac and La Salle Cars (at 1000 mile intervals) costs even less and you are sure of having the right lubricant at the right place at the right time.

Q—Why don't you use the multiple disc clutch?

A—A multiple disc clutch does not release positively, and any tendency for the discs to drag makes it difficult to shift gears quietly. In order to use the Syncro-Mesh principle, it is necessary to have a clutch, the discs of which separate positively.

Q—Is this clutch easy to service by an ordinary mechanic in case of trouble while touring?

A—The only adjustment to the clutch is in connection with the clutch pedal. This can be made by any mechanic.

Q—How often should you lubricate the clutch?

A—The clutch thrust bearing should be lubricated every 2,000 miles. This can be done by simply raising the hood to reach the grease cup under the floor boards.

Q—Has your clutch four contacting surfaces? I understand the Packard eight has a single disc clutch. Which is better?

A—The clutch on Cadillac cars is a two-plate clutch with four facings and four driving surfaces. This clutch is of a special design in which the driven discs separate positively from the driving plates thus overcoming one of the disadvantages of other disc clutches.

COOLING

Q—How can you cool these large V-12 and V-16 engines with such small water capacities?

A—The ability of a cooling system to cool an engine is not a question of amount of water but of the rate at which the heat is transferred from the cylinders to the water and from the water to the air. The larger cellular type radiator core permits more water to pass through it during a given interval of time and the greater cooling surface permits more heat to be transferred to the air.

Q—Does the V-12 and V-16 water pump contain a thermostat?

A—No, the engine temperature is controlled by a thermostat operating the radiator shutters.

Q—How does the water circulate in passing from the pump to the cylinders on V-12 and V-16?

A—A brass tube is cast in the crankcase to permit water to pass from the pump at the right of the engine to the left cylinder block—water enters both blocks at the center giving even distribution of cooled water to all cylinders.

Q—Of what material is the radiator core made?

A—Copper, which is a better conductor of heat and resists corrosion better than any other commercial metal.

Q—Will this engine over-heat at continuous high speed?

A—At continuous high speeds the increased circulation of air through the radiator due to the motion of the car gives ample cooling for the most extreme conditions.

Q—Why does Cadillac recommend the use of soluble oil in the cooling system?

A—Soluble oil prevents rust.

Q—Why is cellular type better than tubular design?

A—The cellular type of radiator has greater cooling efficiency because for a given volume of water, it presents a greater amount of radiator cooling surface to the air.

Q—What feature do you have in your radiator construction?

A—The radiator core has been constructed with small louvers or vents in the cooling fins. These vents provide greater air circulation within the core, and allow more air to reach the sections filled with heated water. This change in construction results in greatly increased cooling efficiency.

Q—Why don't you put the V-8 water pump in the cylinder block like Packard? They drive it with the fan belt and don't have to use a chain in front end. Won't the chain cost more for replacement?

A—We prefer to place the water pump at the side of the engine for five reasons: (1) Because a chain drive is much more positive than a belt drive. Stopping the water pump due to slippage or breakage of the fan belt is much more serious from the standpoint of overheating. (2) As to replacement, the chain will outlast several fan belts because a water pump at the side of the engine is more accessible than a pump in the cylinder block. To remove the Packard water pump, the radiator must first be removed, whereas on the Cadillac engine it is only necessary to remove two cap screws and disconnect two hose connections. (3) A large water pump with its large capacity is impossible when mounted in cylinder block. (4) Any corrosion after long mileage would be much more costly to remedy with the pump in the block than in the outside water pump unit. (5) When adjusting some fan belt-driven water pumps it is necessary to loosen the five nuts which hold the pump on the cylinder block, thereby causing water leakage and possible gasket damage. In Cadillac, this service expense is never necessary.

ELECTRICAL

Q—How is the distributor shaft lubricated?

A—Alemite fitting below, oil up above.

Q—Why don't you use dual ignition?

A—Our experiments show that there is no advantage to be gained by the use of dual ignition.

Q—Where is the generator mounted and how is it driven?

A—The generator is mounted on the crankcase at the right side of the engine and is connected by a positive drive consisting of a silent chain from the crankshaft.

Q—What do you do to provide ample current for your various electrical accessories so as to avoid the necessity for recharging the battery?

A—We use exceptionally large batteries—the V-16 battery is the largest battery used on any passenger car. The ventilated current controlled generator reduces heat and permits higher charging rates.

Q—What is the difference between current controlled generator and the generator on other cars?

A—The generators on Cadillac charge at a higher rate in proportion to lighting load and puts more current into than is taken out of the battery when lights are on.

Q—How many lobes has the timer cam?

A—Eight on V-16 and six on V-12.

Q—Where are the ignition coils located?

A—There is a coil for each cylinder block mounted in the top tank of the radiator for the V-12 and V-16. This is an ideal location and gives a very neat appearance to the power plant.

Q—Why do you use two ignition coils on V-12 and V-16?

A—Because of the greater number of cylinders two ignition coils are provided to allow more time for saturation of the coils and thus give a hotter spark.

MULTI-BEAM HEADLIGHTING SYSTEM

Q—What is the Cadillac Multi-Beam lighting system?

A—The Multi-beam headlighting system consists of three separate and distinct light beams.

Q—How are these beams accomplished?

A—By specially developed lenses and a new "fixed focus" bulb using 2-32 candlepower filaments.

Q—This lighting arrangement will permit much safer driving speeds at night, will it not?

A—Yes, the Multi-Beam Lighting System is used by Cadillac to increase the safety of night driving by giving greater illumination to warning signs and markers beyond the present range, and throwing additional light to the right edge of the road for complete vision of road conditions, and reducing glare to oncoming drivers.

Q—Do you have any arrangement to prevent car from being left in total darkness in case a short circuit burns out fuse, like Packard?

A—Such a device as is used on the Packard is unnecessary with the thermostatic circuit breakers used on Cadillac cars. In case of a short circuit in the lighting system, the circuit breaker interrupts the current so that the circuit is not overloaded. As soon as the cause for the short circuit is removed, normal conditions are restored. Another disadvantage of fuses is if you should be out of them it might cause unnecessary delay and inconvenience.

Q—Your starter seems to operate different from those on other cars. Why?

A—The outstanding feature of the Cadillac starter is that the starter pinion is meshed by positive, mechanical linkage and does not depend upon the overrunning of the pinion with relation to the armature as is the case with the Bendix drive.

IGNITION, BATTERY AND GENERATOR

Q—Why is Delco claimed to be better than others?

A—Delco pioneered battery ignition and has, therefore, had more experience than any other manufacturer making this sort of equipment.

Q—What company makes the Northeast Distributor used by Packard?

A—The Delco Appliance Corporation, controlled by General Motors Corporation.

Q—Why do you have the timer gear on the camshaft a separate part from the camshaft itself?

A—So that in the event it is necessary to replace the spiral gear on the camshaft it will not be necessary to replace the entire shaft.

Q—In case of accident or trouble to this gear, does the entire engine have to be dismantled?

A—It would not be necessary to dismantle the entire engine, but it would be necessary to remove the camshaft.

Q—I notice Packard battery is 160 ampere-hour capacity.

A—The ampere-hour capacity of a battery is not the only requirement to be met. A battery must be able to furnish a quick rush of current of sufficient amperage to operate the starter under the most severe conditions. A battery may have a greater ampere-hour capacity and yet be deficient in the amount of current available for operating the starter.

Q—Is there anything unusual in the features of design or construction of your air cooled current controlled generator?

A—The generator is driven positively by a chain so that there is no possibility for belt slippage. It is air-cooled to permit higher charging rates and by reducing operating temperatures the life of the unit is increased. The armature shaft revolves on ball bearings. The adjustment of the charging rate is easily made and accessible simply by removing the cover band. The charging rate is automatically controlled to keep the current input to the battery in relation to the discharge when the lights are being used.

Q—Pierce-Arrow uses Startix for starting the engine. Why don't you use it?

A—Cadillac has always considered safety as an important factor in motor car transportation. Cadillac feels that the Startix can be unsafe from the standpoint of starting the car while it is in gear; particularly with children. Some cars with Startix do not provide the manual type starter button, and if the Startix does not start the engine it is necessary to have service attention.

ENGINE

Q—What is brake horsepower?

A—Brake horsepower is actual horsepower as measured by a brake or dynamometer.

Q—How about breaking connecting rods at such high speeds?

A—The connecting rods are forged from chrome-molybdenum steel and are designed to withstand all strains imposed at maximum speeds.

Q—Are these high compression engines? What is the compression ratio?

A—Yes. 6.25 to 1 on V-8, 6.0 to 1 on V-12 and V-16.

Q—What do you mean by compression ratio?

A—The compression ratio is the volume of the cylinder and the combustion chamber divided by the volume of the combustion chamber.

Q—Why has the compression ratio been increased on all cars?

A—The increased compression ratio provides better performance, quicker pick-up and acceleration and greater gasoline economy. It also provides higher top speed.

Q—Of what material is the V-8 crankcase made?

A—A special copper silicon aluminum alloy which costs more than substitute metals, but is stronger and lighter and better fits the high standard set by Cadillac. It costs more to manufacture than in cars having cast iron cylinder blocks and crankcase made in one piece.

Q—Why do you use shimless bearings?

A—Because shims permit the escape of oil and make it more difficult to maintain the proper oil film.

Q—How do you hold your bearings in place?

A—The main bearings are held in place by dowel pins between the bearing and the bearing cap.

Q—Where is the heat temperature reading taken on your engine?

A—This reading is taken at the top of the radiator.

Q—What is meant by torsional vibration?

A—Torsional vibration of a crankshaft is the rapid alternate twisting, first in one direction and then in the other, set up by forces applied to it. Torsional vibration is reduced in the Cadillac V-12 and V-16 by the design of crankshaft and absorbed by the use of a special amplex balancer.

Q—How long has Cadillac built V-type engines compared with other makers who have recently introduced V-type engines?

A—Cadillac has been building V-type engines exclusively for 19 years since it introduced the world's first V-type 8 cylinder engine in 1914. It has produced over 500,000 cars with V-type engines and therefore it has V-type engine experience and ability that cannot be equaled by any other company.

Competitive car makers do not share this long experience. Pierce-Arrow never built V-type engines in its regular production prior to 1932. Packard built a V-12 from 1915 to 1919 exclusively and then introduced a single six. The Packard V-12 was dropped entirely in 1923 and replaced with a straight 8. Packard literature in 1928 stated "this was something of a pioneering decision, for Packard was the first prominent maker to break away from the complications of multi-cylinders." The foregoing comment is interesting in view of Packard's return to V-type engines in 1932 to meet Cadillac's competition with Cadillac V-12 and V-16 introduced in 1930.

Q—How does Cadillac V-16 and V-12 compare in engine size with other makes?

A—Information taken from trade papers shows the following comparisons:

	W. B.	*No. of Cylinders and Engine Type*	*Engine Size Bore and Stroke*	*Cubic Inches Piston Disp.*	*Claimed H. P. Development*
Auburn V-12	133	12 Overhead	3 1/16"x4 1/4"	391	160
Lincoln V-12	145	12 L-head	3 1/16"x4 1/2"	414	150
Marmon V-16	145	16 Overhead	3 1/16"x4"	490	200
Franklin V-12		12 Overhead	3 1/4"x4"	398	150
Packard V-12	142-147	12 L-head	3 7/16"x4"	445	160
Pierce V-12 (1240A)	138-144	12 L-head	3 1/2"x4"	462	175
Pierce V-12 (1248A)	147	12 L-head	3 1/2"x4"	462	175
Cadillac V-16	154	16 Overhead	3"x4"	452	185
Cadillac V-12	146	12 Overhead	3 1/8"x4"	368	150

Q—How long did Cadillac experiment in the development of the V-12 and V-16?

A—Cadillac spent four years in the experimental development of V-12 and V-16 engines prior to their introduction in January, 1930.

The V-16 was finished first although both cars shared the same engineering skill in design, development and experimental work. The V-12 was started in production about 9 months later. Both cars were thoroughly tested and proven at General Motors Proving Grounds with hundreds of thousands of miles of observation before they were produced and offered to the buying public.

Supplementing this, both cars have been in production and in actual use by thousands of users so that it can be truthfully said these cars are proven to a much greater degree than new types of V-12 engines announced two or three years after Cadillac's announcement.

Q—Can a V-16 cylinder engine be installed in a Cadillac V-12 car?

A—No, this cannot be done, because of size and position of mounting.

Q—Could one set of 6 or 8 cylinders be used independently for driving in the V-12 or V-16?

A—Although the engine would probably operate without pronounced vibration, such an arrangement would result in decided lack of power and give very poor acceleration.

Q—What other American companies build both V-12 and V-16 engines?

A—Cadillac is the only company building both a V-12 and V-16 engine.

Q—What other companies build V-12 engines?

A—Lincoln, Pierce, Packard, Auburn and Franklin have all recently announced new V-12 engines since Cadillac set the pace in 1930.

Q—Explain your method of balancing the V-8 crankshaft.

A—By placing the crank pins at an angle of 90 degrees from each other, the inertia forces of the pistons and connecting rods on opposite sides of the engine are made to combine in such a way that they largely neutralize each other. The remaining unbalanced forces are completely neutralized by the counterweights or compensators on the crankshaft. There is no other V-type engine in which counterweights on the crankshaft can be used to so largely neutralize the inertia forces set up by the reciprocating parts.

Q—How much shorter is your crankshaft than a Packard Standard eight?

A—The Cadillac V-8 crankshaft is 9¼ inches shorter than the crankshaft of the Packard Standard eight.

Q—Isn't it as good practice to balance shaft by dynamic and static runway balance and take out material by drilling at places where shaft is unbalanced?

A—Balancing of a shaft by the removal of small amounts of material by drilling is the accepted practice for balancing a shaft and is used in balancing the Cadillac crankshaft. This operation does not take the place of the counterweights.

Q—What is the length of the V-12 and V-16 crankshafts?

A—From outer ends of main bearings the V-12—30$\frac{25}{32}$ inches; V-16—39$\frac{9}{32}$ inches.

Q—Why don't you use a seven-bearing crankshaft in your V-12 like Lincoln and Pierce-Arrow?

A—Our engine design permits the use of fewer and larger main bearings rather than a larger number of smaller bearings which do not retain oil film as well and which are also unnecessary in an inherently balanced engine. Fewer bearings make possible a shorter engine, allowing a shorter and more rigid crankshaft with less torsional vibration. Fewer bearings are easier to align and cheaper to replace.

Q—Why do you use a balancer on the V-12 and V-16 crankshaft?

A—Balancers are necessary to counteract torsional vibration on crankshafts of more than four throws. A balancer is not necessary on the Cadillac V-8 because the crankshaft has only four throws and is extremely short.

Q—You claim short crankshaft in the V-8 as an advantage. What about the long crankshaft in the V-16?

A—Yes, in the V-16 we do use a longer and heavier shaft. It weighs 130 pounds, because the V-16 engine is larger and heavier. The length of the V-16 crankshaft is practically the same length as the crankshaft of the present high-priced straight eights, but the disadvantage of length is overcome in the V-16 engine by the light impulses which are only half as severe as they would be in a straight eight of the same piston displacement.

Q—Does your V-8 engine have more vibration with only three bearings? Why do you use five bearings in the V-16?

A—The short crankshaft of the V-8 is inherently balanced and requires fewer bearings. In the V-8 type engines the forces from opposite pistons and connecting rods completely neutralize each other and the disturbing stress on the crankshaft are so much less that it requires fewer bearings to hold it. In the V-8 type engine the main bearings are required to control only the forces produced by gas pressure and to provide proper support to the weight of the shaft with adequate bearing area for lubrication.

In the V-16 engine the same principles apply, but due to its much greater size and power we have to use a much heavier shaft and consequently increase the bearing area supporting it. Five bearings are sufficient to prevent crankshaft deflection in the V-16 engine, because of the overlapping and lighter power impulses and the heavy rigid crankshaft used. It is easier to align and lubricate a smaller number of large bearings than a larger number of narrow bearings. The V-16 crankshaft is also counterweighted to even further reduce the bearing loads.

Q—Why do you use only four main bearings on the V-12 as compared with five on the V-16?

A—The V-12 is a shorter engine with fewer cylinders and therefore requires fewer bearings. In proportion to its size it has just as much bearing area as the V-16.

Q—Both Pierce and Lincoln V-12's have seven bearing crankshafts. Why do you use only four on Cadillac V-12?

A—With proper engine design, size and proportioning of crankshaft and counterweights, etc., fewer bearings are permissible. This allows a shorter engine and more body room with a shorter and more rigid crankshaft freer from torsional vibration. Fewer bearings are easier to align, cheaper to replace and wider bearings may be used. Wider bearings retain a better oil film giving longer life. From a

service angle, our bearing arrangement permits the connecting rods and pistons to be taken out through the crankcase, reducing service costs appreciably. This cannot be done on a seven or nine bearing shaft of reasonable length.

Q—I notice the Pierce and Lincoln V-12 engines are L-head design while Cadillac is overhead valve. Why does Cadillac use overhead valves?

A—Overhead valve engine would not be quiet or acceptable in high grade cars without a valve silencer. Cadillac V-12 and V-16 engines were designed with overhead valves which have hydraulic valve silencers, a patented development of General Motors Research Laboratories.

Q—I understand that cylinder walls in a V-type engine wear excessively on the lower side because the whole weight of the pistons is constantly rubbing that side.

A—This is the old stock argument of competition and a most ridiculous one. Actual service records on more than 500,000 of our engines prove it to be untrue. The force in pounds of an explosion in the cylinder is 200 times the weight of a piston. Therefore, the weight of the piston itself is, in relation, about the same as that of a postage stamp to a letter. The normal average mileage a Cadillac or LaSalle can be driven before reboring the cylinders is desirable is 40,000 miles. It is readily apparent, then, that cylinder wear due to piston weight, amounts to nothing at all. Another proof that wear on the lower side of the cylinders (because of piston weight) is virtually nonexistent is found in the radial aircraft engine in which cylinders are located like spokes of a wheel. Cylinder wear on all cylinders is equal, the vertical cylinders wearing just as much as those at an angle.

Q—Why don't you use a rocker arm assembly on the V-8 like some straight eights, while on the V-16 you do use rocker arms?

A—Due to the difference in design of the V-8 and V-16 engines the valve arrangement is entirely different. In the V-8 we use an L-head engine and the camshaft is designed with cam slides that are large enough to give sufficient bearing surface to more than compensate for the side thrust. The advantage claimed by competition for the rocker arm construction is that the side thrust of the cam is taken by the rocker arm shaft instead of being transmitted to the valve stem. In the V-8 we do not have this problem. This eliminates sixteen rocker arms with their shafts, bearings and other parts as used by some competitors in the L-head engines. In the V-16 engine we use the overhead valve arrangement for greater compactness and accessibility in service due to greater size of the engine. With overhead valves, rocker arms are necessarily a part of the design, but Cadillac engineers have introduced an entirely new idea in rocker arm construction that is patented by General Motors Research Laboratories. This patented feature is a valve silencer which assures quiet valve action by automatically maintaining the correct valve adjustment and thus removing the usual objection to noisy overhead valves. The adjustment is automatically made and all valve clearance is eliminated by means of an eccentric bushing controlled by a plunger working in oil.

Q—They tell me it is much more expensive to service this motor because you have to take off too many things before you can get to it.

A—Upon raising the hood of a V-type engine in comparison with the side view which is the most familiar view of the vertical engine, the V-type engine, therefore looks unfamiliar. It is this unfamiliar appearance which sometimes gives the impression of complexity. Actually, the V-type engine is fundamentally more simple and its parts are much more accessible. Proof of this lies in a comparison of actual service operations.

Timing ignition—On the Packard engine, the starting motor must be removed in order to see the marks on the flywheel. On the Cadillac engine, there is a special inspection hole for the flywheel marks in housing covering the flywheel—accessible without removing parts.

Removing Carbon—On the Packard engine, the distributor must be removed in order to remove the cylinder head. On the Cadillac engine, the cylinder heads may be removed without disturbing anything else.

Removal of pistons—On the Packard engine, it is necessary to remove the cylinder head as well as the oil pan in order to remove the pistons and connecting rods. On the Cadillac engine the pistons and connecting rods can all be removed from below (after first removing the oil pan) due to the wider space between throws on crankshaft.

Q—What about the Lincoln 60-degree V-type motor? I suppose that is the same idea as Cadillac. No? What's the difference? They talk about non-rhythmic firing. What's that?

A—The Cadillac V-type 8-cylinder engine has an angle of 90 degrees between cylinder blocks. A 60-degree V-type engine has an angle of 60 degrees between the cylinder blocks. This difference affects balance.

Balance—From the standpoint of balance, a 60-degree V-type engine may be thought of as two four-cylinder engines placed side by side. A four-cylinder engine has vibration because it is not "inherently" balanced. If two fours are placed side by side, this unbalance is only part neutralized. Our engine is not simply two four-cylinder engines and its crankshaft is not like that of the 60-degree V-type. Instead, it has a crankshaft with "throws" at right angles to each other, and with compensators or counterweights so placed that all inertia forces are completely neutralized. This principle cannot be applied to a 60-degree V-type eight.

Q—Why have you no manual spark advance?

A—Manual spark advance has been discontinued in all models because the automatic advance in distributor takes care of variation in engine speeds.

Q—How can the spark be retarded if the engine is to be cranked by hand?

A—The automatic governor in the distributor is in full retard position. The spark can be still further retarded by hand by moving the distributor housing.

Q—I understand that Pierce-Arrow is using an automatic hydraulic valve lifter that they claim eliminates tappet noise.

A—Yes, although the type differs from that introduced by Cadillac in 1930. The type employed by Pierce-Arrow was one of the early developments in the research at the General Motors Laboratories which eventually led to the Cadillac hydraulic adjuster.

Q—What is the difference between the Cadillac and Pierce-Arrow hydraulic lash adjusters?

A—In the Cadillac design the valves are lifted by positive mechanical action (pushrods and rocker arms) in which

all clearance is removed by a hydraulic mechanism. The arrangement used by Pierce Arrow actually lifts the valves by a mechanism using oil under pressure—much as a barber's chair is lifted. While the research made by Cadillac several years ago showed that the type now used by Pierce Arrow was less expensive to build, it was not used because of a number of objections.

Q—What were the objections?

A—(1) Since the hydraulic valve lifter parts are a part of the lifter assembly they add weight to the moving valve gear. Increased weight causes valve clatter at high speeds. If valve springs are made stiffer to avoid this, increased cam and roller wear results.

(2) The ball check valve moves up and down with the valve lifter. As the cam starts to lift the cam follower, the ball check should close. Increased oil pressure in the lower chamber tends to effect this, but is counteracted at high speeds by the inertia of the ball itself which is pressed downward as are the passengers in an upwardly accelerating elevator. If the spring holding the ball against its seat is made stiff enough to overcome this objection the oil pressure is insufficient to lift it from its seat to replace oil lost from the lower chamber through leakage. Valve clearance increases and the gear becomes noisy.

(3) Hydraulic lash adjusting plungers of the Cadillac type act upon the valve gear through an eccentric bushing which gives considerable leverage enabling small hydraulic plungers to effectually support the valve spring load. The springs that lift these plungers need not be very stiff and also have a wide range in which they will give satisfactory operation. With direct operation as in Pierce-Arrow, the parts must be larger. The supporting spring is heavily loaded and, if made stiff enough to take up clearance rapidly, is very apt to cause the valve to "ride."

(4) Because of the higher loading as explained above, hydraulic pressures are higher resulting in lost motion in the mechanism. This decreases valve lift.

Q—Is there any possibility of oil mist from the V-12 and V-16 overhead valves getting on the spark plugs?

A—No. The spark plugs are so located that they are remote from any oil spray or mist.

Q—I notice the Pierce Engine and crankcase is cast in one piece. Why do you have it separate? Doesn't it weaken the engine structure as their salesman claimed?

A—No. Cadillac's aluminum alloy heat treated crankcase is lighter and stronger and it costs more than the other type to manufacture. Cadillac's is of better design and construction.

Q—What is meant by "diamond-bored?"

A—"Diamond boring" is a method in which a diamond is used for the cutting edge of the boring tool.

Q—Why don't you have overhead valves on the Cadillac V-8?

A—Because a 90-degree angle between the cylinder blocks permits the use of the L-head arrangement to best advantage.

Q—Why is the camshaft hollow?

A—To act as an oil duct and distribute oil to the camshaft bearings, also to reduce weight.

Q—How is the crankcase oil strained?

A—The entire surface of the oil pan is covered by fine wire mesh screen. All oil, after passing through the circulating system, has to pass through this screen before being recirculated by the oil pump.

Q—Where is the outlet for the crankcase ventilating system?

A—The outlets for the crankcase ventilating system are on the left front and right rear of the valve compartment on V-8 engine, and on the front ends of the cylinder heads on V-12 and V-16 engines.

Q—Why doesn't Cadillac use an oil cooler?

A—With our engine design we have not found an oil cooler necessary.

Q—Compared with Lincoln and Packard, are your chains wider? What is the width of each?

A—The Cadillac V-8 camshaft chain is 1¾ inches wide compared with the Packard chain which is 1½ inches wide. The Lincoln chain is also 1½ inches wide. The Cadillac generator and water pump chain is 1¼ inches wide.

Q—How do you take up generator and water pump chain stretch or wear?

A—By the easy adjustment of the position of the water pump and generator mounting on the V-8. Take up is automatic on the V-12 and V-16.

Q—Why is timing chain better than gears for driving generator and camshaft?

A—Chains are quieter than gears.

Q—Why do you use only one timing chain on V-12 and V-16?

A—Because with this type of design there is less torsional reaction on the chain, and one chain with automatic adjustment is sufficient and most advantageous.

Q—How is the front end chain adjusted on V-12 and V-16?

A—An idler sprocket and automatic take-up has been provided.

Q—What is the purpose of crankcase ventilation?

A—The purpose of the crankcase ventilating system is to prevent condensation of moisture in the crankcase and dilution of the oil with unburned gasoline leaking past the piston rings. This is done by ventilating the crankcase with a current of air which sweeps out the vapor before the moisture and unburned gasoline have a chance to condense and be deposited.

Q—Do you use floating power on the new Cadillac?

A—Cadillac engines are inherently balanced so that no unbalanced forces arising from the motion of the pistons and the connecting rods are transferred to the frame. Cadillac has used rubber engine mountings since 1928, but only to completely insulate the power plant from the frame, and these mountings have not been used to cover up an unbalanced engine.

Q—To what clearance must valves be adjusted on V-12 and V-16?

A—After the valves have been originally set in assembly no further adjustment is necessary as the automatic valve silencer enables the valves to be operated at zero clearance at all times.

Q—How many bearings has the camshaft?

A—Four on V-12 and five on V-16.

Q—What is the capacity of the lubricating system on the V-12 and V-16?

A—10 quarts on V-16, 9 quarts on V-12.

Q—How is oil cooled on V-16?

A—The oil is cooled by ribbed passages cast in the aluminum oil pan which serve to dissipate heat quickly.

Q—What type of valve construction is used on the V-12 and V-16?

A—Overhead valves, equipped with automatic valve silencers on V-12 and V-16.

Q—How are the valves operated on V-12 and V-16?

A—The valves are operated by a single camshaft located at the base of the "V". This shaft operates the valves through push rods and rocker arms. Special precautions have been taken to silence the valve action by the use of automatic valve silencers.

Q—In the V-8 the angle between cylinders is 90 degrees and in the V-16 45 degrees. On this basis why is the V-12 45 degrees instead of 60 degrees?

A—The V-12 is made at an angle of 45 degrees instead of 60 degrees because with overhead valve gear it is then possible to place the carburetors and manifolds outside the Vee where more room and cooler temperature are available.

Q—I notice that the Lincoln V-12 engine is 65 degrees. Pierce V-12 is 80 degrees, Packard V-12 67 degrees, Auburn V-12 is 45 degrees, Franklin V-12 is 60 degrees, while the Cadillac V-12 is 45 degrees. Which is right for the best performance and what drawbacks are there in the other type?

A—In a Vee type 12 if side valves are used the angle is usually made more than 60 degrees to allow enough room for the valves and manifolds. Even if the angle is as much as 80 degrees to allow more room, accessibility is still poor and manifolds are in a hot location. If overhead valves are used as in Cadillac V-12 and V-16 the angle of the Vee may be decreased and manifolds may be placed outside the Vee without losing accessibility, and giving more room in a cooler location for manifolds.

FUEL SYSTEM

Q—What type is the carburetor?

A—In the V-12 and V-16 it is the expanding air vane and fuel orifice type with accelerating pump. There is an automatic opening of throttle with the use of the starting adjustment. The V-8 carburetor is of the hinged air valve, single nozzle type.

Q—What size are the carburetors?

A—They are 1½ inches in size on the V-12 and V-16, and 2 inches on the V-8.

Q—On the V-12 and V-16 how do you get equal distribution of gas with two carburetors?

A—The carburetor adjustments are equalized by a simple device which is used in Cadillac-LaSalle service stations. Both manifolds are identical, assuring equal distribution of gases to all cylinders.

Q—What operates the fuel pump?

A—This pump is driven from an eccentric below the gear on the distributor shaft.

Q—What type of gasoline gauge is used and how is it operated?

A—It is an electric gauge mounted on the instrument panel. It is operated by current from the storage battery and is drawing current only when the ignition is on.

Q—What advantage is there is putting heat around carburetor?

A—Heat applied to the intake header is necessary in order to vaporize the fuel, especially during the warming-up period.

Q—Can any mechanic adjust carburetor?

A—Yes, the adjustment is very simple.

Q—What should be proper adjustment for average running?

A—The proper adjustment is that which gives the maximum speed of the engine when the throttle is closed and the engine idling.

Q—How does the plunger pump in the carburetor work? Will it get out of order?

A—The throttle pump on the carburetor is simply a plunger working in an air cylinder to temporarily increase the pressure in the carburetor bowl when the accelerator pedal is pushed down suddenly. There is no possibility of its getting out of order. Any leakage by plunger does not prevent normal operation of the car, it simply lessens the acceleration.

Q—Why do you use two carburetors on V-12 and V-16 and only one on V-8 engines?

A—Because two carburetors give better distribution with a 12 or 16-cylinder engine. With only one carburetor the manifolding would be too complicated to be practical.

Q—What are the advantages of a fuel pump?

A—It requires no priming; idling performance is improved and fuel is furnished in direct proportion to carburetor requirements.

Q—Being attached to the engine, it appears that engine heat might interfere with its operation. Is this so?

A—Its location has been selected as the coolest position in the engine to take advantage of the fan down draft at that point. Fuel lines from the fuel tank are also air cooled by their location on the frame and insulated in the engine compartment to prevent gas lock from heat.

Q—Lincoln and Pierce use down-draft carburetors. Why doesn't Cadillac?

A—Development of down-draft carburetor for V-type engines has not yet reached the stage where all driving conditions (including idling and starting a hot engine) are met satisfactorily.

Q—Why do you use two separate carburetors on V-12 and V-16?

A—Two carburetors are used on the Cadillac V-12's and V-16's and are located outside the narrow Vee. This places the carburetors in a cooler location and permits the use of free flow manifolds which are not restricted by sharp bends as is the case when manifolds are placed in a Vee of less than 90 degrees.

SHOCK ABSORBERS

Q—In what way is your Ride Regulator different from other ride control devices?

A—Cadillac Ride Regulation differs from other types primarily in the method of restricting the flow of oil in the shock absorber. Our method is to vary the spring pressure on the relief valve whereas other manufacturers restrict the flow of oil by varying the size of the oil passages.

Q—In what way do you claim that Cadillac Ride Regulation is better than other Ride Controls?

A—(1) Cadillac's Ride Control always provides shock absorber action. Even in the first or easy acting position, there is sufficient shock absorber action to avoid excessive floating and prevent road shocks from being transferred to body and passengers. (2) Cadillac's Ride Control gives better balance in all positions of ride regulator than can be obtained by any other method.

Q—Will varying weather conditions affect your Ride Regulation?

A—No. The exclusive Cadillac method of controlling the shock absorber action renders it independent of the effects of temperature changes in the oil supplied.

Q—Why do you use automatic control of shock absorbers on rear springs?

A—A new combination manual and automatic ride control of rear shock absorbers is used in connection with the new spring suspension to give maximum riding comfort. The action of one is entirely independent of the other, so that wherever the manual adjustment may be set passengers are also protected by the new type of inertia weight control of rear shock absorbers, which snubs the rear spring movements to the road waves that exist in even the best country roads.

Q—Why don't you have the automatic inertia type shock absorbers on the front?

A—The inertia type automatic control is not used because its action would interfere with the smooth riding which has been developed with the new type of independent front spring suspension.

SPRING SHACKLES

Q—How does the rubber type of shackle automatically eliminate end play and wear.

A—Because the rubber bushing is divided in two parts and is compressed under pressure when tightening up the spring bolt.

Q—Why does the threaded type of shackle prevent "frozen" and squeaking shackle bolts?

A—Because the threaded construction permits a constantly freer fit between the bolt and bushing and provides better lubrication for a longer time.

Q—Why will this type of threaded shackle wear longer than the ordinary type?

A—(1) Because the load is distributed over more bearing surface; (2) because the threads hold more lubricant and distribute it more thoroughly; and (3) because the bushing and bolt are both of hardened steel.

Q—Why don't you use ball bearing shackles? I notice Pierce is using them.

A—Our company is not unfamiliar with the results obtained with ball bearing shackles. The problem is entirely different from the usual bearing equipments in that the bearing loads are not uniform like an axle or similar surface. Our experiments so far have shown the necessity of getting a certain kind of steel ball and race that will take the uneven stresses imposed on it, stand up under hard service, and give the same satisfactory results of our present type of spring shackle. So far, there have not been any advantages in easier riding shown to offset the many disadvantages of the possible troubles in service.

FULL RANGE RIDE REGULATOR

Q—What is meant by "Ride Regulation?"

A—"Ride Regulation" is the method of providing the driver and passengers maximum comfort and roadability by controlling the resistance offered by the shock absorbers to meet varying conditions of road, load and speed.

Q—What do you mean by "Full Range" Ride Regulation?

A—Regulation of the shock absorbers to meet all kinds of road conditions from city boulevards to high speed driving on rolling gravel roads, with comfort and safety under all conditions for all passengers.

Q—How is the Ride Regulator Controlled?

A—By a convenient lever on the instrument panel.

Q—You claim greater range of Ride Control than other cars. How is this accomplished?

A—The 1934 Cadillacs have greater range of ride control than other cars. This is because the Cadillac shock absorbers have an entirely different method of control. Where others control only the size of the orifice between the two oil chambers, Cadillac controls the relief valve pressure—a method that inherently permits far greater range of adjustment. Stiffer spring control is possible for fast driving over rough roads without sacrifice of the desirable soft action on smooth roads.

Q—Is a special oil necessary in Cadillac shock absorbers?

A—No. Only the usual shock absorber oil is necessary which is supplied by Cadillac Service Stations.

TRANSMISSION

Q—What type of transmission is used on Cadillac?

A—The Triple-Silent Syncro-Mesh 3-speed transmission, which was developed by Cadillac. The Syncro-Mesh is a principle enabling gears to be shifted silently at all speeds and at all times. It also permits shifts to be made from high to second speed without clashing. This gives greater ease of control, more safety in descending long grades and better traffic ability.

Q—Is this transmission complicated or likely to get out of order?

A—No. Cadillac has used this transmission since 1928 and it is operated daily in the hands of thousands of satisfied users. The synchronizing mechanism operates in oil at all times and is only in operation during the short period that gears are being shifted.

Q—I notice some competitive V-12's use a Free Wheeling Unit mounted behind the transmission. How do they function?

A—They are of the cam and roller type of over-running clutch.

The Free Wheeling Unit is made up of two main sections —an outer casing and an inner core—each independent of the other. Between this outer casing and inner core are rollers which run in tapered grooves or raceways.

The outer casing is driven by the engine; the inner core drives the propeller shaft, which transmits power to the rear wheels. When the engine is "pulling," the steel rollers are forced into the narrowed ends of their respective raceways, exerting a positive driving force on the inner core, which transmits the power to the wheels.

When the throttle is closed, the engine immediately slows down, and with it the car keeps the inner core spinning, carrying the rollers to the wide ends of their tapered raceways. This releases the grip which provides the drive. The rear wheels are freed from the engine and the car continues forward.

Free Wheeling begins the instant car speed exceeds the speed of the engine. As soon as engine speed equals the speed of the car, the outer casing again wedges the rollers into the narrow ends of the raceways and instantly the motor is pulling the car.

NOTE: It is this wedging action that causes wear on the working parts, as is clearly explained in the following excerpt taken from instructions on the service and repair of Free Wheeling transmissions.

"In instances where the rollers have noticeably worn the cam surfaces of the core, the core should be discarded and a new one installed. Other parts should be replaced with new ones when breakage or wear are seen."

Q—Why do they provide for locking in and locking out?

A—When it is locked in the locking device provides easier shifting. Conventional drive, with greater safety and less wear on brakes, may be had by locking out the unit.

Q—Why has Cadillac discarded Free Wheeling as standard equipment?

A—When Free Wheeling gained prominence through the advertising of a number of manufacturers, it had "sales appeal" to many people who asked for it, and Cadillac supplied it in all 1932 models.

Cadillac has withdrawn Free Wheeling from standard production because careful investigation has shown that thousands of people whose cars were equipped with Free Wheeling, stopped using it—some because of the excessive wear on brakes and tires, and others because the novelty of Free Wheeling has worn off. It is available, however, in combination with the Vacuum Clutch, as optional equipment at extra cost.

Q—Many manufacturers speak of the "Silent Second" transmission. Does the Triple Silent Syncro-Mesh transmission differ from these so-called Silent Second Transmissions?

A—Yes. Silent operation on all forward speeds in Cadillac is secured with helical cut gears. These gears have been ground to a limit of .0002 of an inch. This requires difficult and expensive manufacturing methods which have been pioneered by Cadillac. These gears which are always in mesh are helical gears with steep 45 degree teeth providing more overlap and greater quietness than ordinary helical gears.

Q—How does the Syncro-Mesh transmission work?

A—In the Syncro-Mesh all forward gears are always in mesh with the jackshaft, and rotate about the main shaft on bearings. A coupling locks these gears to the shaft. Cone clutches are used with this coupling in such a way that they bring the rotating gears to be engaged to a common speed before engagement is attempted, thereby preventing gear clashing.

Q—What other features besides helical gears and synchronizing mechanism are found in your Syncro-Mesh Transmission?

A—Quiet operation can only be secured by keeping the shafts and gears in accurate alignment. This has been accomplished on Cadillac by mounting the main and jack shafts on four unusually large ball bearings. In addition to this feature, the constant mesh gears which other manufacturers mount on bronze bushings are carried on tapered roller bearings. This transmission has more liberal bearing support than any other transmission produced today.

Q—They tell me this transmission is one of those trick things that get out of order frequently. Just what can wear about it? How does this transmission synchronize, as you put it? Can it be changed at all speeds and can you go into first as well as second?

A—In the construction of the Syncro-Mesh Transmission, there are practically only four new parts:

(1) The second speed gear which, instead of sliding on the shaft, remains always in mesh with the gear on the jackshaft.

(2) A bronze cone mounted on the gear.

(3) A steel drum tapered to fit the bronze cone, so that the two parts act as the members of a friction clutch.

(4) A plunger acting as a dashpot to apply the friction clutch through oil pressure.

The operation of the device can be explained briefly as follows: If you wished to mesh two gears which are revolving at different speeds and which would therefore clash, you would put your finger on the one revolving faster and slow it down to the speed of the other. You could then mesh the two gears silently and without interference. This is exactly what happens in the Syncro-Mesh transmission.

The drum engaging with the bronze cone on the gear is the "finger" which slows the gear down to the speed of the coupling with which it is to be meshed. The dashpot is the means whereby the necessary pressure is automatically supplied to the "finger."

There are no parts to get out of order and no parts subject to wear that are not already found in the conventional transmission. The synchronizing drums and cones run in oil and are engaged for so short a time that the wear is negligible.

The operator may shift from low into second, from second into high, and from high back into second at any reasonable speed. The synchronizing device is not applied to shifts from neutral to low and reverse or from inter-

mediate to low. These shifts are practically always made with the car standing still and synchronizing would then be unnecessary.

WHEELS

Q—What are the advantages of Drop Center Rim Wheel Design?

A—This type wheel is better balanced, has stronger rim section and is much safer because of the improved tire seat. It also eliminates the possibility of squeaks from former type locking rings.

Q—Lincoln, I notice, uses a steel spoke wheel. They claim it is stronger than a wire wheel.

A—A steel spoke wheel as used on Lincoln is virtually a one-piece wheel after it is welded, and in case of damage either by collision or skidding, the entire wheel must be replaced. This costs considerably more than replacing a few spokes in the type of strong wire wheels we use.

OPERATING COSTS

Q—How do your operating costs compare with others like Packard?

A—Here is a concrete example of comparative operating costs as established by a large transportation company:

	Cadillac Sedan		*Packard Custom 8 Sedan*	
Miles operated.....	11,972		11,887	
Gallons of gas used.	1,052		1,229	
Miles per gallon....	11.4		9.7	
Quarts of oil used..	56		103	
Miles per quart.....	219		114½	
	Total Cost	*Cost Per Mile*	*Total Cost*	*Cost Per Mile*
Gas and oil.....$	263.42	.022	$319.47	.027
Direct Maintenance (except tires)....	68.72	.006	224.35	.027
Total DIRECT OPERATING COST.....	332.14	.028	543.82	.054

Q—The Lincoln man claims they have a regular replacement policy on parts that is lower than any other company after 50,000 miles of car usage.

A—Cadillac parts prices are uniformly low. A recent comparison with other competitors showed Cadillac prices lower than competitors. Cadillac cars are built for long life and we do not think there is any competitive make of car that will provide the low operating per mile cost that Cadillac gives. The best proof of this is the many large companies now using Cadillacs for public transportation, having changed from other makes.

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The New La Salle



1934

Features of Construction

MODEL 350
SERIES 50

CADILLAC MOTOR CAR COMPANY • DETROIT
Division of General Motors

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THE PENALTY *of* LEADERSHIP

IN every field of human endeavor, he that is first must perpetually live in the white light of publicity. Whether the leadership be vested in a man or in a manufactured product, emulation and envy are ever at work. In art, in literature, in music, in industry, the reward and the punishment are always the same. The reward is widespread recognition; the punishment, fierce denial and detraction. When a man's work becomes a standard for the whole world, it also becomes a target for the shafts of the envious few. If his work be merely mediocre, he will be left severely alone—if he achieve a masterpiece, it will set a million tongues a-wagging. Jealousy does not protrude its forked tongue at the artist who produces a commonplace painting. Whatsoever you write, or paint, or play, or sing, or build, no one will strive to surpass or to slander you, unless your work be stamped with the seal of genius. Long, long after a great work or a good work has been done, those who are disappointed or envious continue to cry out that it cannot be done. Spiteful little voices in the domain of art were raised against our own Whistler as a mountebank, long after the big world had acclaimed him its greatest artistic genius. Multitudes flocked to Bayreuth to worship at the musical shrine of Wagner, while the little group of those whom he had dethroned and displaced argued angrily that he was no musician at all. The little world continued to protest that Fulton could never build a steamboat, while the big world flocked to the river banks to see his boat steam by. The leader is assailed because he is a leader, and the effort to equal him is merely added proof of that leadership. Failing to equal or to excel, the follower seeks to depreciate and to destroy—but only confirms once more the superiority of that which he strives to supplant. There is nothing new in this. It is as old as the world and as old as the human passions—envy, fear, greed, ambition, and the desire to surpass. And it all avails nothing. If the leader truly leads, he remains—the leader. Master-poet, master-painter, master-workman, each in his turn is assailed, and each holds his laurels through the ages. That which is good or great makes itself known, no matter how loud the clamor of denial. That which deserves to live—lives.

This text appeared as an advertisement in The Saturday Evening Post, January 2nd, in the year 1915
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Cadillac presents

THE SENSATIONAL NEW LASALLE

The World's Newest Car

AND THE YOUTHFUL ARISTOCRAT OF MOTORDOM

A Statement by L. P. FISHER, *President*
CADILLAC MOTOR CAR COMPANY

EVERY MEMBER of the Cadillac Selling Organization will be interested in a brief review of the reasons and thinking back of the introduction of La Salle in our selling program for 1934. The new La Salle represents over two years of extensive study and planning. For the design, appearance and performance features, we went to the consumer. We found thousands of medium high priced car owners who wanted a motor car distinctive and advanced in design, thrilling and dashing in performance; yet comparatively economical as to first cost and upkeep.

We learned, however, that to meet these requirements is not enough, for these people also wanted a car whose name reputation would give them a plus value in prestige. Today, no matter what price is paid, people want something more than transportation when they select a car.

In the highest price groups this desire finds expression in individuality of design, and to satisfy that requirement the V-12 and the V-16 Cadillac-Fleetwoods are built. But a program of individual design, because of the cost involved, lifts such a possibility above the financial reach of the higher medium class group.

To those of us who have studied this problem it became increasingly apparent that a marvelous opportunity was knocking at the door of Cadillac. La Salle was originally introduced in 1927 to meet the requirements I have just described, but since that date the whole economic scheme of things has changed. The 1933 La Salle was beyond the reach of the market it was originally planned for—thus its natural place in the automotive world was destroyed. This fact was apparent as early as 1931, and immediately we began to plan the new La Salle to fit the requirements I have already outlined. In no respect have we changed the original purpose of La Salle's creation—we have simply redesigned it for the new conditions and demands of the world in which we are now living.

If a car is to be outstanding and appeal to any particular group of buyers in its particular price group it must make a stronger appeal than its competitors. To accomplish this we have built the new La Salle and I want to assure you that all of us who have had a hand in its development sincerely feel it represents a tremendous stride forward.

The new La Salle with its Fleetwood Bodies is a car that embodies all the mechanical and appearance qualities its exacting market demands. It bears an established name already honored and looked up to by all who know motor cars. It carries the full sponsorship of Cadillac endorsement with the full force of its prestige, and of Fleetwood for every line of its body styling.

I am confident it will meet with an enthusiastic endorsement not only in our own organization but also have a quick and ready response from the buying public.

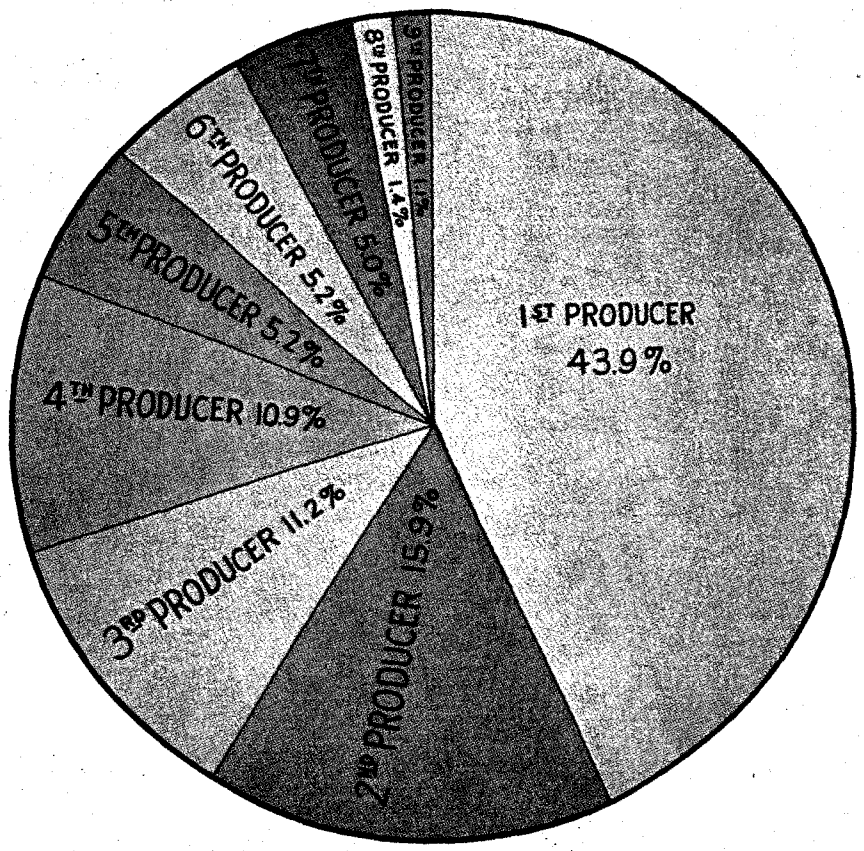
L. P. FISHER, President
Cadillac Motor Car Company

December 27, 1933

The NEW 1934 LA SALLE MARKET

4 YEAR SALES IN THIS MARKET 438,296 CARS

1930	225,268 Cars
1931	125,386 Cars
1932	59,356 Cars
1933 (Jan. through Sept.)	28,106 Cars



The current Upper Medium Price Group owner market is being competed for by the following makes of cars. Those cars marked discontinued were formerly sold in this market and many of their owners will now be logical prospects for the new La Salle.

Make	Model	Price
Auburn	12-165	$1595-1745
Buick	34-60	1300-1575
Buick	34-90	1745-2055
Chrysler	Airflow Imp.	1495
Franklin	Olympic	1435-1550
Graham	Custom 8	1245-1730
Hupp	427	$1245-1345
Nash	Ambassador 8	1575-2055
Packard	Light 8 (Discontinued)	1795
Reo	Royale N-2	1500
	Royale N-1	1700

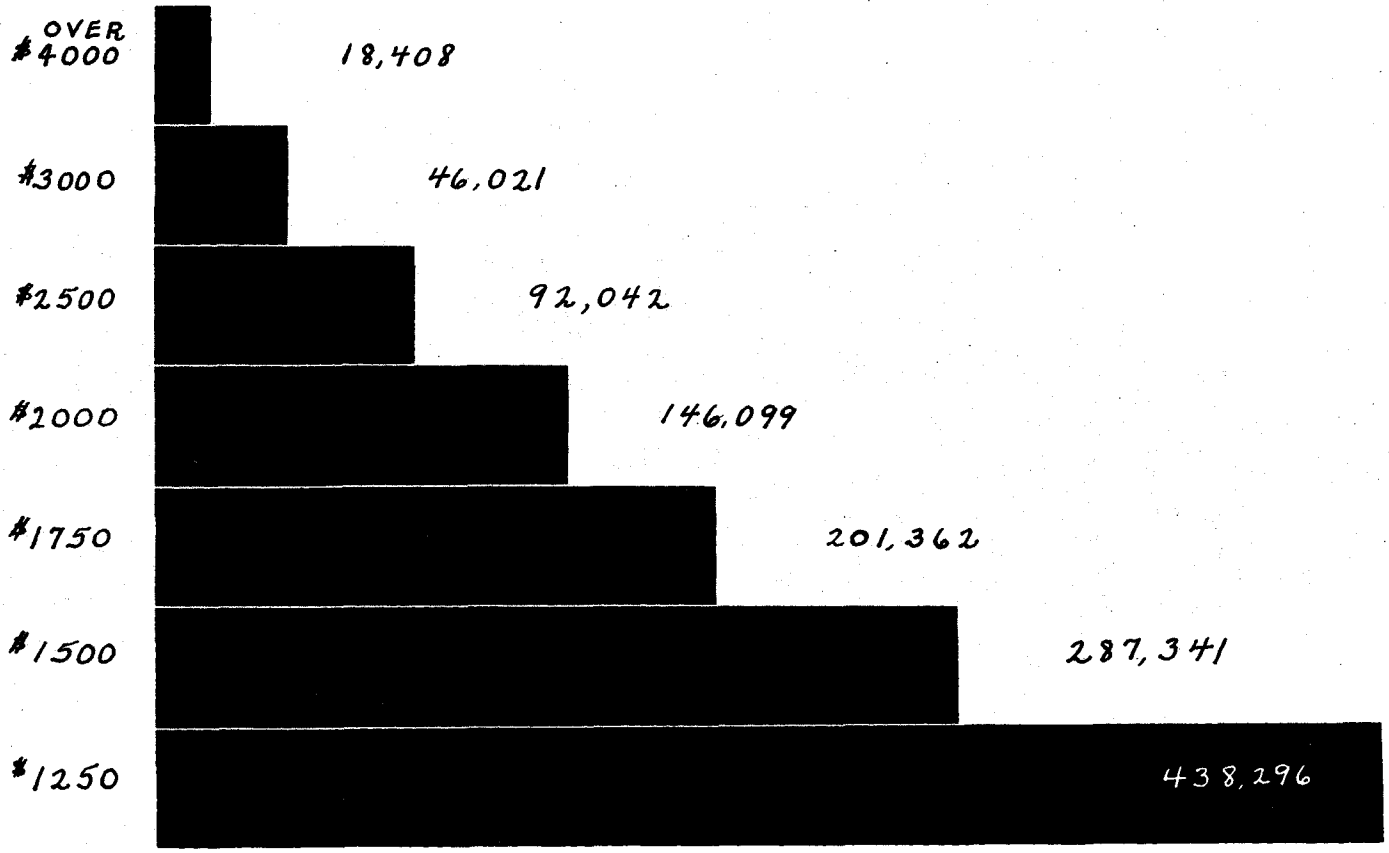
Studebaker (former Big President 8 and Commander 8 owners)

The car owners in this upper medium price group market have always wanted to buy a car of the quality, size and price of the new La Salle, but heretofore no car has ever been supplied to this market *with the additional selling feature of prestige.*

The new 1934 La Salle with its Fleetwood Body will penetrate this market quickly and successfully because it offers for the first time sensational new body styling, flashing performance, unusual and luxurious comfort and in addition it has the distinctive value of *PRESTIGE* because it is built by Cadillac and is furnished only with a Fleetwood body.

No other car in the upper medium price group offers value to match with the sensational new La Salle.

THE RELATION OF PRICE TO SIZE OF POTENTIAL MARKET VOLUME



The New 1934 La Salle Greatly Increases Potential Markets and Sales Opportunities for Cadillac Distributors, Dealers and Salesmen

The new 1934 La Salle opens up a big vast new market for every Cadillac Distributor, Dealer and Salesman.

The above chart shows the relationship of the size of potential markets for cars in the various price brackets and you will notice from the figures which represent the number of cars registered during the past four years, that the market for cars selling below $2,000 increases much more rapidly in relative proportion to volume than do the various price markets above $2,000.

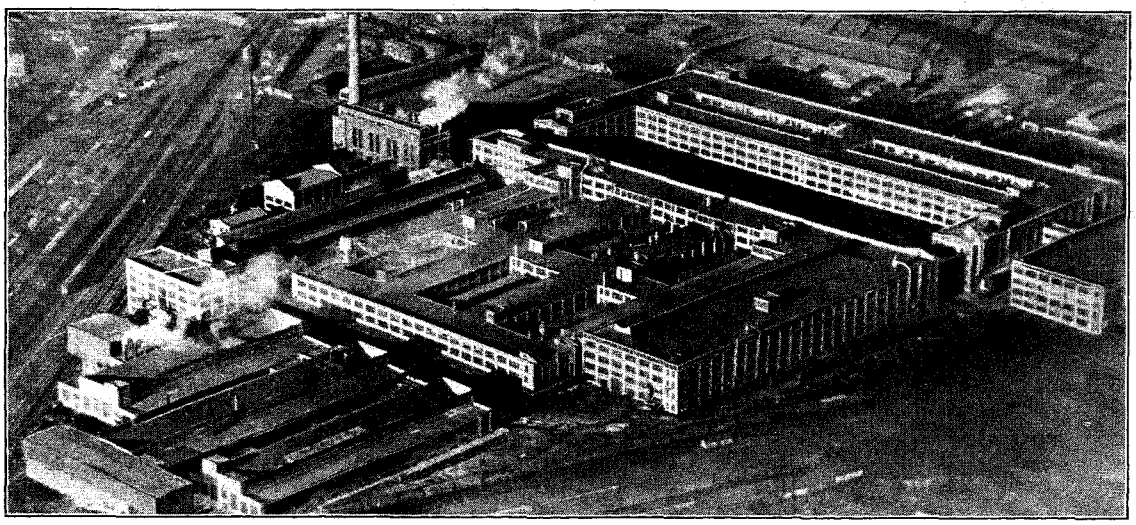
It is obvious, therefore, that capable and aggressive salesmen who have the opportunity of selling the new 1934 La Salle in this larger potential market will have an increased opportunity also for greater sales earnings.

It will be remembered how the introduction of the new La Salle in 1927 captured the public imagination because of its sensational new styling and appearance. The same thing will again be repeated with the introduction of the 1934 La Salle.

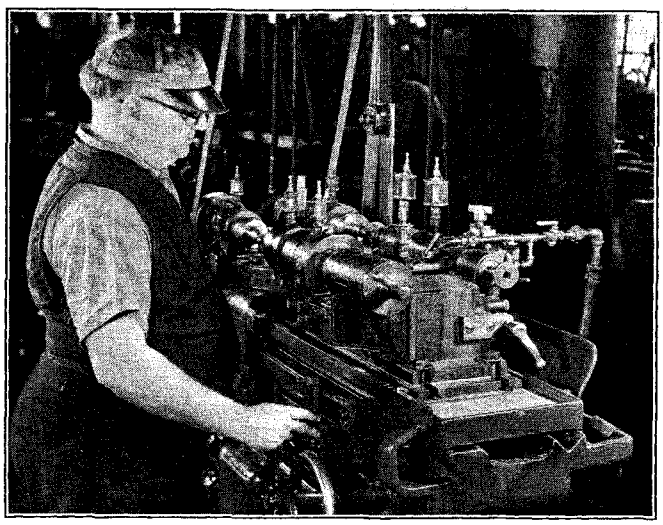
It is an entirely new car with new sales appeal and the strength of its penetration into the larger market of owners of upper medium price group cars (over 430,000) will depend entirely on the complete understanding of its greater value and the aggressiveness with which it is presented to this market.

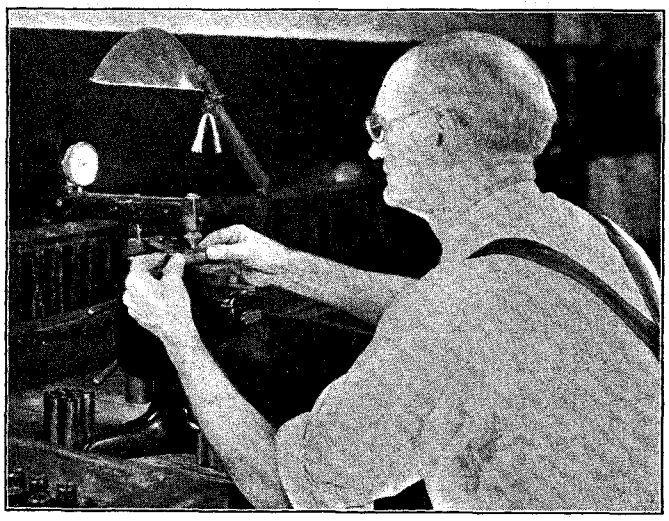
PRESTIGE

Built by Cadillac

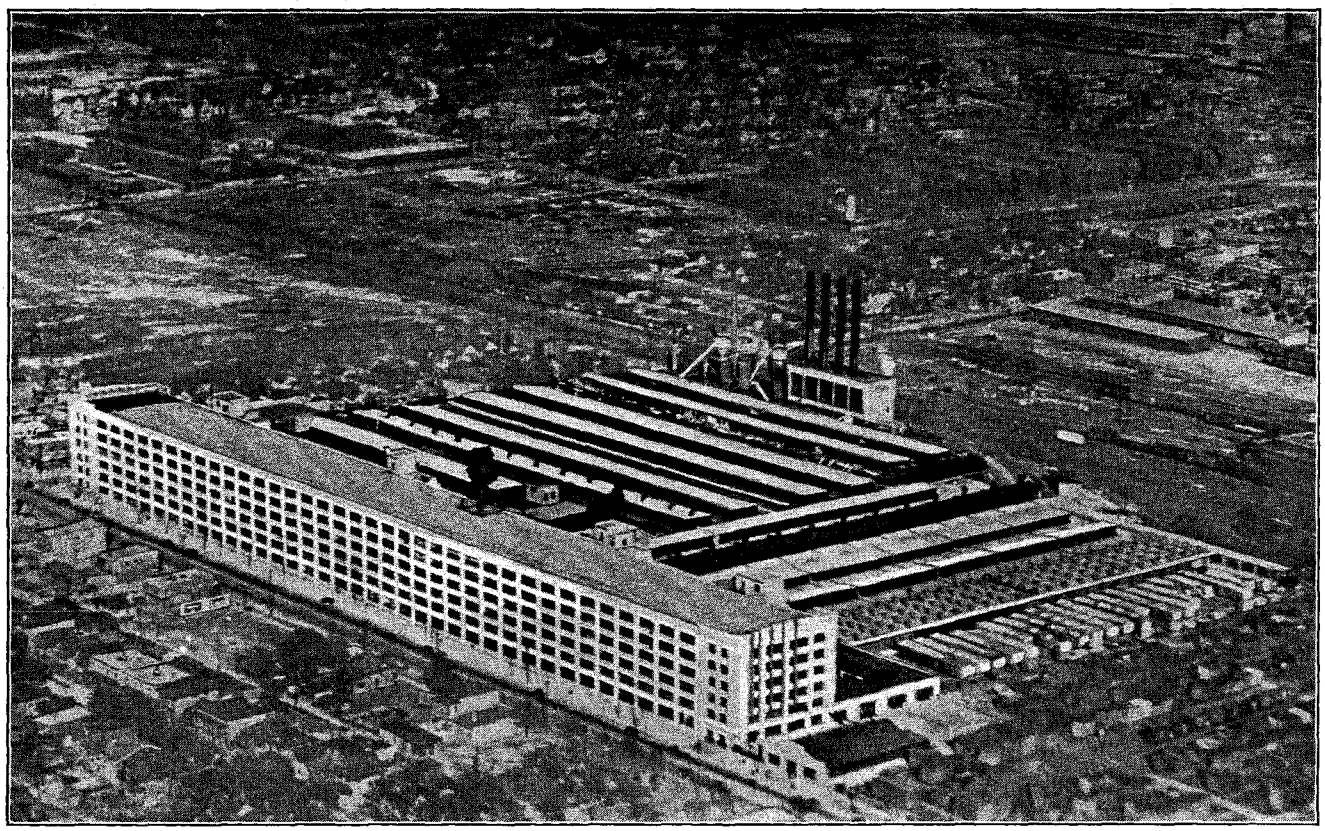


WHERE CRAFTSMANSHIP IS A CREED AND ACCURACY A LAW





LASALLE IS BUILT TO CADILLAC'S PRECISION STANDARDS OF ACCURACY AND WORKMANSHIP



The Fisher-Fleetwood Plant at Detroit is the largest custom body manufactory in the world. It is here that all Fleetwood bodies are made for Cadillac and La Salle.

BODIES BY FLEETWOOD

The Fisher Body Corporation is the largest body building company in the automobile business. It controls lumber, hardware and many other sources of supply and can buy the best materials at lowest prices.

Its engineers and designers are the ablest in the industry; and its plants have greater facilities than any other body building company.

Fleetwood Bodies on La Salle are made exclusively in the Fisher-Fleetwood Body plant, and are built to Cadillac's high quality standards. Fleetwood body engineering on La Salle parallels its fine precision-built chassis.

The unequalled riding comfort and lasting satisfaction of La Salle result directly from the good design, careful workmanship, quality materials and many important, exclusive features of special construction in its Fleetwood bodies.

NEW 1934 LaSALLE FEATURES

1. AN ENTIRELY NEW STANDARD OF IMPROVED RIDING COMFORT

(a) Scientific redistribution of car weight by locating car units to give better riding balance.

(b) Independently sprung front wheels and elimination of front axle and reduction of unsprung weight.

(c) Changing of front and rear spring rates to nearly equal frequencies, to eliminate neck cracking and forward pitching motion to rear seat passengers.

(d) Reduction of body-roll through use of ride stabilizer.

(e) Minimized road vibration through use of softer springs, frictionless coil front springs, threaded rear spring shackles and Hotchkiss Drive.

2. GREATER EASE OF CONTROL

(a) *Improved Steering*

New type worm and roller steering gear mounted on anti-friction bearings reduces physical effort to control car.

Increased steering ratio makes it easier to steer at any speed.

Reduction of turning radius making it possible to turn car in much smaller space and park with no more effort than smaller and shorter wheelbase cars.

Reduction of steering wheel whip through use of double tie-rods giving perfect steering geometry.

(b) *Improved Lighting System—"Multi-Beam"*

Adoption of three beam "Multi-Beam" lighting system legal in all states. Foot control of dimmer switch for country driving and passing beams. Visible dial indicator on instrument panel to show kind of light beam being used.

(c) *Easier Starting*

Push button type starter button located on instrument panel.

Automatic choke to provide easy starting in coldest weather.

Current controlled generator automatically regulates charging rate to battery in proportion to lighting load and keeps the battery at proper strength for necessary starting energy.

(d) *Improved Ride Control*

Double acting automatic shock absorbers.

Ride stabilizer.

3. NEW IMPROVED PERFORMANCE

(a) Increased compression that gives greater power efficiency from same amount of fuel mixture.

(b) New type long wearing light weight anodyzed alloy pistons.

(c) Dual downdraft carburetion.

4. GREATER ECONOMY

(a) Better gasoline economy due to lighter car weight, smaller engine, higher compression.

(b) Reduced oil consumption. New pistons, new rings, smaller cylinders.

5. NEW BEAUTY AND STYLING (Exterior)

(1) *Bodies*

(a) Completely new designed Fleetwood bodies with more steeply sloping windshields and beaver-tail rear decks that completely cover the chassis.

(b) Spare-wheel compartment in rear decks of bodies.

(2) *Radiator Grille*

Newly designed slender radiator grille that slopes steeply to the rear.

(3) *Hoods*

New long hoods that extend nearly to windshields, with racing car type louvers.

(4) *Front Fenders*

New air-foil type fenders with streamlined fronts that are brought low to cover chassis. The new design has a higher hood still and moulds into the radiator replacing the splash shields. Fenders are creased along their centerlines.

(5) *Bumpers*

New streamlined bumpers with concealed coil springs and especially shaped to deflect gravel and flying stones.

(6) *Headlamps*

New tear-drop shaped lamps filleted to radiator.

(7) *Running Boards*

New style long running boards with heavy rubber mats effectively trimmed and requiring no visible dust shield.

(8) *Rear Fenders*

New air-foil shaped rear fenders to blend with streamlined tail lamps.

6. INTERIOR COMFORT

Newly shaped cushions and seat backs.
New style trimming.
New appearance instrument panel.
New improved package compartment door mechanism.
New easy operating front seat adjustment.
Front doors easier operating and hinged at center pillar.
Rear doors hinged at their rears.
New design door bolts.
New type inside door locks.
New special design striker plates—easier adjustment.
New type inside visors.
Improved Fisher No-Draft Ventilators—Neater appearing rubber seals for ventilators. C. V. drip shields on front door ventilators.
Improved screen type cowl ventilators opening towards rear to give more air.

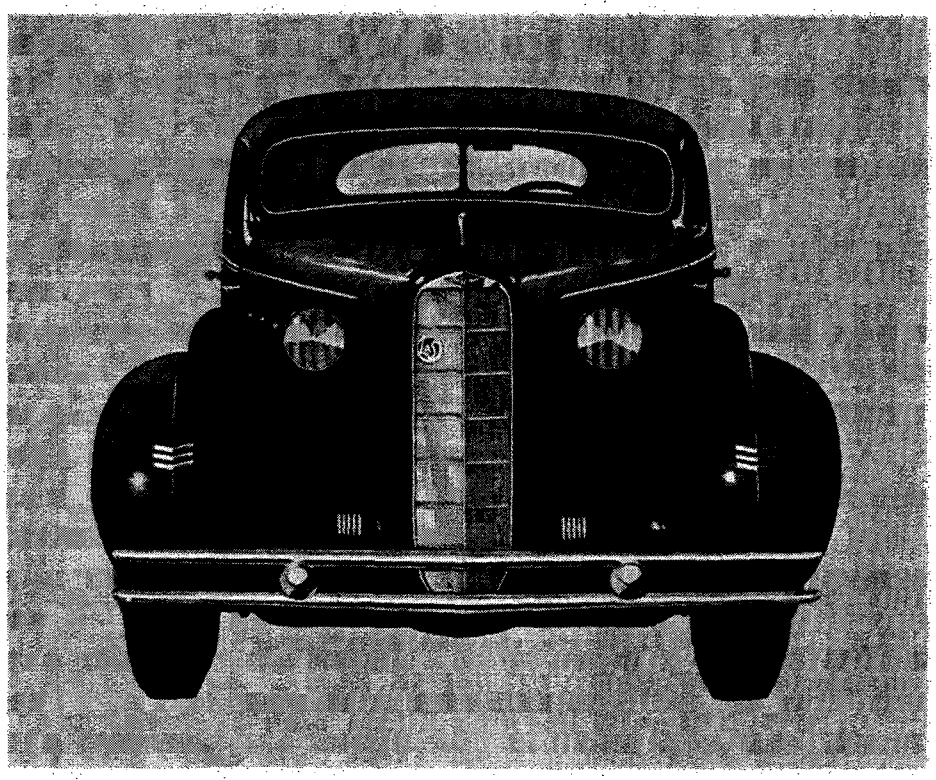
7. NEW MECHANICAL FEATURES

(a) *La Salle Chassis*

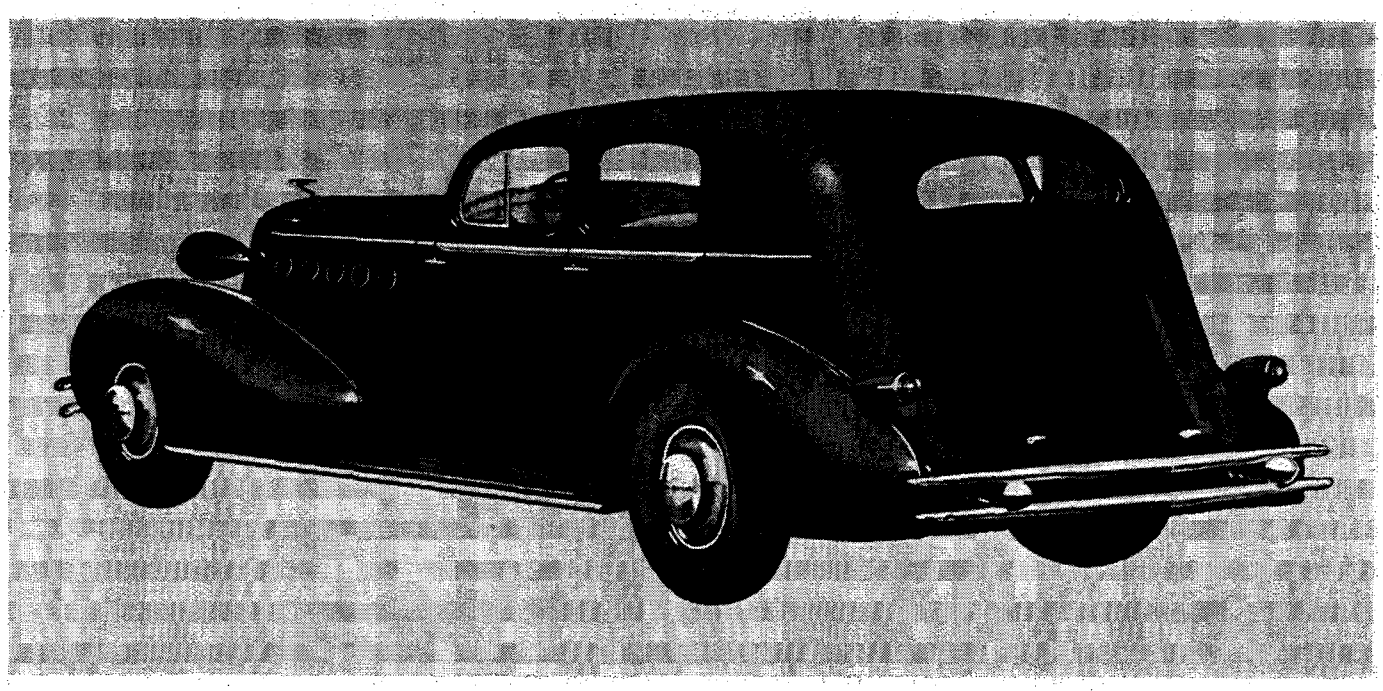
(1) Frame
(2) Hotchkiss Drive
(3) Bumpers
(4) Shock Absorbers
(5) Roll Stabilizer
(6) Steering
(7) Hydraulic Brakes
(8) 3-Beam Multi Beam Headlights
(9) Current Controlled Generator
(10) Locked Type Ignition Coil

(b) *Engine Improvements*

(1) Automatic Choke
(2) Higher Compression
(3) Anodyzed Alloy Pistons

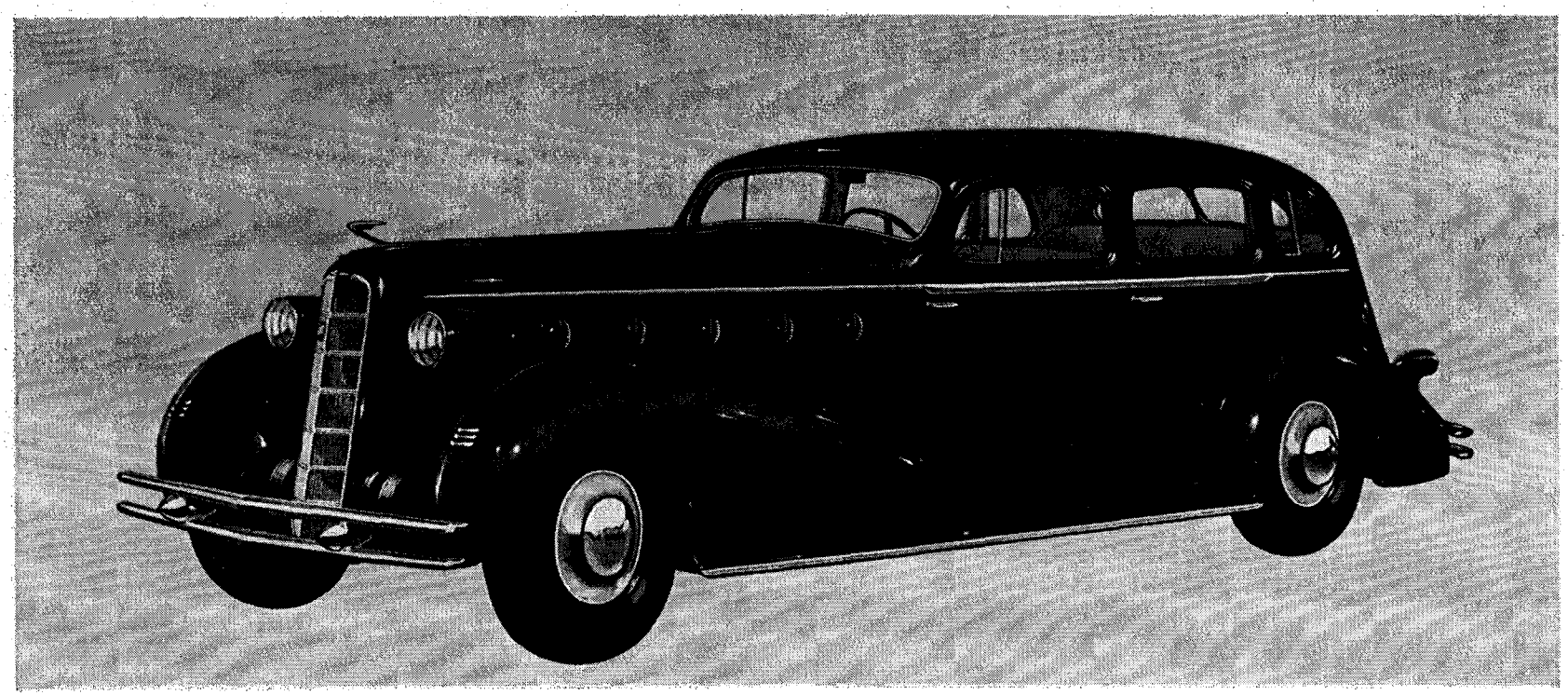


FRONT VIEW—The new narrow radiator grille—the streamlining of the headlamps and supports—the filleting of fender and radiator casing—all contribute to the beauty of the new 1934 La Salle. These details have a practical side too—as their scientific aero-dynamic design assists free passage of air currents.



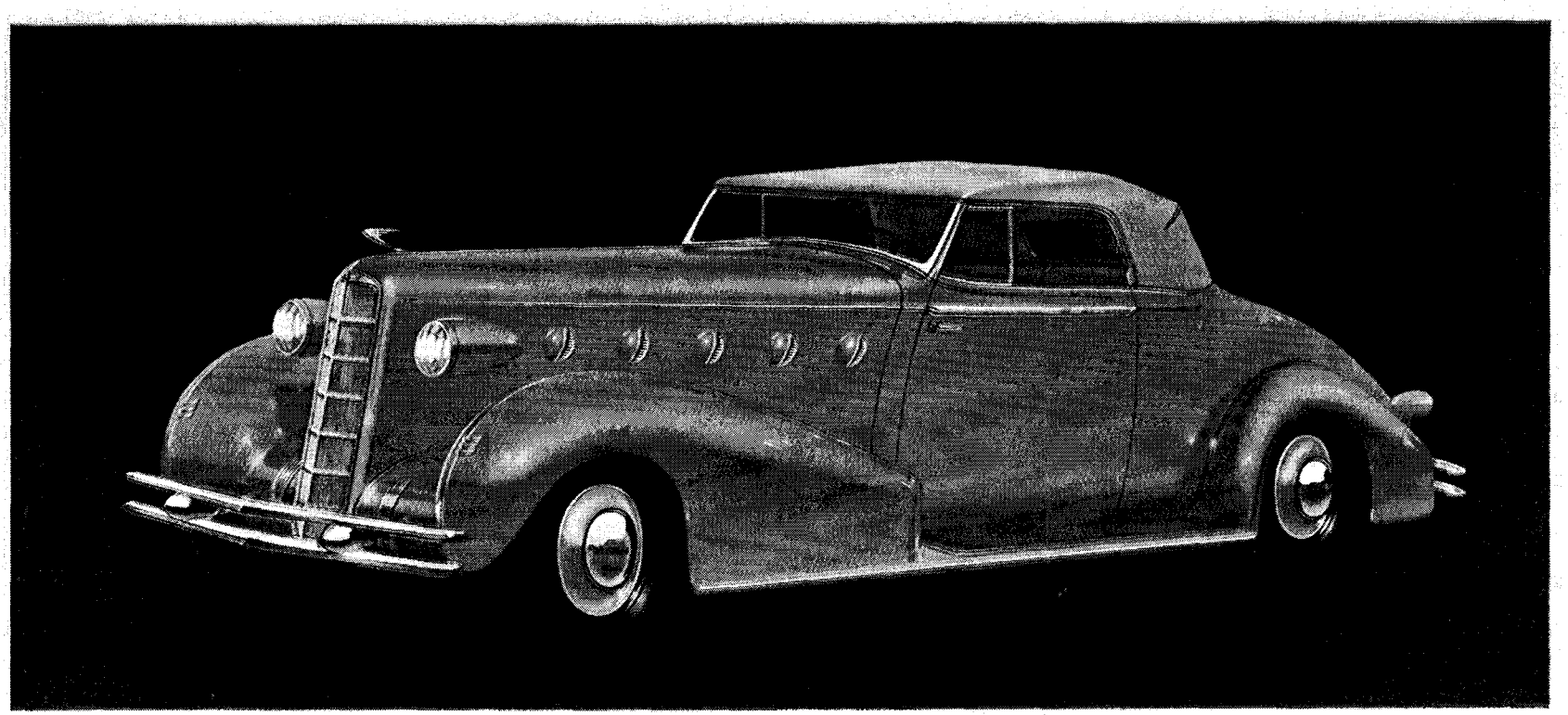
REAR VIEW—Another important feature of the new 1934 La Salle body styling is the elimination of protruding parts at the rear by the concealment of the spare wheel and tire in order to complete the air streamlining from the front to the rear of the car.

They are carried with the rear of the body in a special compartment, above which is space for luggage.



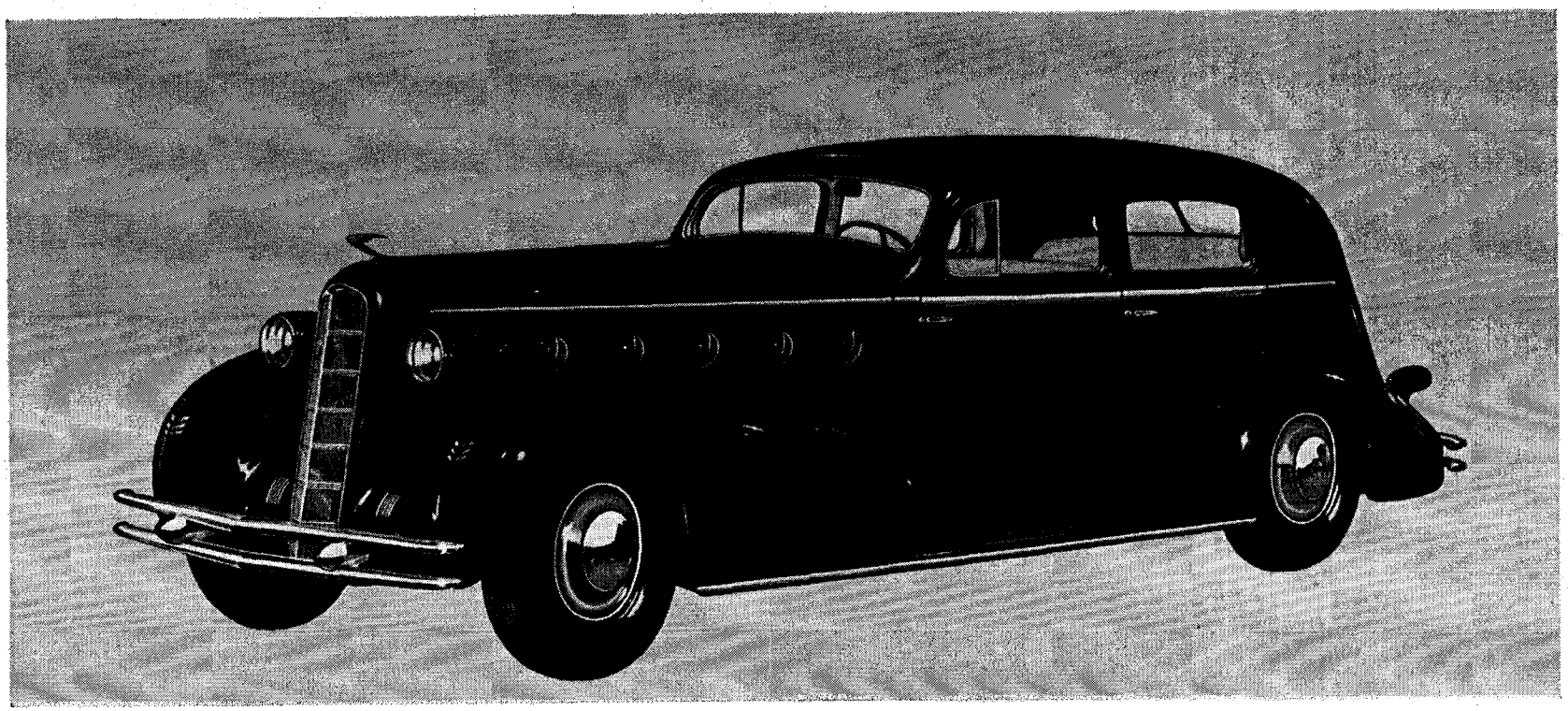
LA SALLE 5-PASSENGER SEDAN

LA SALLE—the *newest car in the world*, graced with its exclusive Fleetwood bodies—strikes a youthful new note in modern motor car styling. Favored as a family car, the aristocratic 5-passenger Sedan presents generous room—with typical Fleetwood luxury and captivating eye-appeal. Here Fleetwood body designers give artistic expression to aero-dynamic trends; Fleetwood specialists build as finely as they do for Cadillac. La Salle, like Cadillac, carries its occupants in the unprecedented ease and comfort newly created by Knee-Action Wheels. The improved Fisher No Draft Ventilation is incorporated to provide fresh air as the individual passenger desires, but without chilling blasts. Impeccable Fleetwood style is heightened by the concealed storing of the spare wheel and tire in a special recess built into the rear of the body, and by the buyer's custom-car choice of finish in one of nine beautiful color schemes. The selection of color is without limit, as with Cadillac, in case deferred delivery is agreeable.



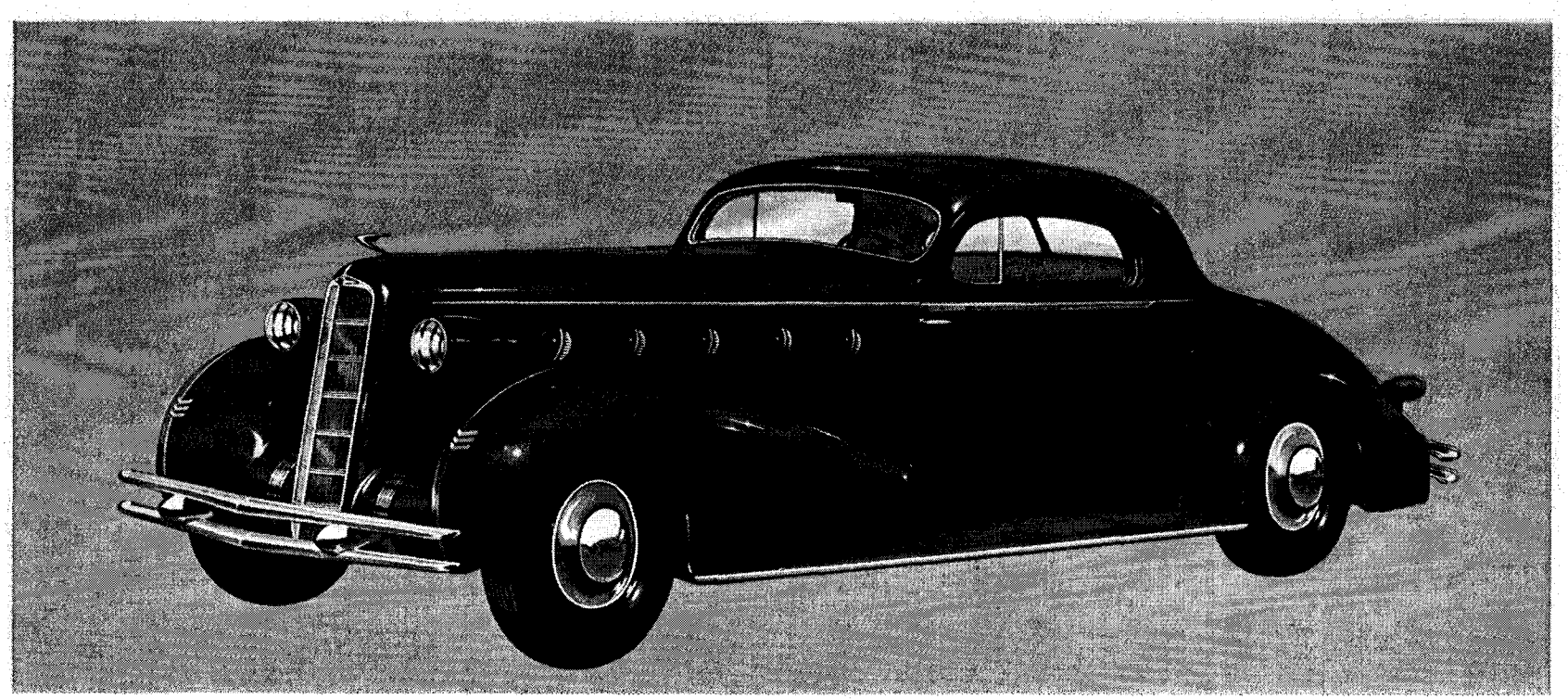
LA SALLE 2-PASSENGER CONVERTIBLE COUPE

BRILLIANT in its Fleetwood conception and execution, of the newest aero-dynamic styling, the La Salle Convertible Coupe is destined for high popularity with smart people. In one dashing body, designed and fabricated by America's leading custom-car builder, it presents the practical charm of both closed and open types. On balmy days, it is a delight to fare forth in a swift, low roadster. Upon occasion, an additional two ride with sumptuous comfort in the spacious extra seat. As a coupe, the Convertible is tightly insulated against the rigors of weather by Fleetwood skill in fine design and precision body-building. Knee-Action Wheels—newly developed by Cadillac engineers—contribute to the finest riding ease. Spare wheel and tire are carried concealed in a specially designed compartment in the rear of the body. The striking beauty of this *newest car in the world* is enhanced by liberal customer options—at no added cost—in both upholstery and exterior finish. For the first, there is a choice of four smart colorings in leather. Finish is selected from a range of nine beautiful color schemes—with unlimited choice if later delivery can be arranged.



LA SALLE 5-PASSENGER CLUB SEDAN

EYES will turn in admiration as the La Salle Club Sedan, with its exclusive Fleetwood body, sweeps smartly down the street. For here is the *newest car in the world*, done in luxurious five-passenger type by the premier custom-car builder of America—with youthful, aristocratic design, handsome fitments, and sound Fleetwood construction. The highest degree of riding ease and steadiness is provided by Knee-Action Wheels, perfected by Cadillac. For exterior finish, the buyer has the option of nine beautiful colors; with the privilege of unlimited selection when he specifies deferred delivery. The aero-dynamic design is preserved by the disposal of spare wheel and tire into a completely hidden space within the rear of the body. In designing and building this La Salle, Cadillac shares in full its own superlative quality with the *newest car in the world.* Improved Fisher No Draft Ventilation meets the desire of each passenger for fresh air, but chills none with direct drafts.



LA SALLE 2-PASSENGER COUPE

LA SALLE'S 2-passenger Fleetwood-body Coupe presents compelling charm for doctors and other professional men, business men, and women whose chief use of a car is individual rather than family. In its utterly new aero-dynamic smartness, this coupe type of the *newest car in the world* is beautifully balanced and proportioned. A personal touch is afforded by the custom-car option of nine carefully harmonized color schemes for finish; with an unlimited choice, at no extra charge, when deferred delivery is satisfactory to the buyer. Fleetwood—America's leading custom-car creator—builds the body as though for Cadillac, with gorgeous fitments and the improved Fisher No Draft Ventilation. Knee-Action Wheels—Cadillac's latest great advancement—impart riding ease hitherto unknown. The driver's seat adjusts as desired, the extra seat is truly comfortable for two additional passengers. Spare wheel and tire are concealed in a special recess at the rear, thus preserving the aristocratic lines of the flowing Fleetwood design.



Preceding this January announcement and followed by weekly announcements during January and February, Cadillac through its national radio program has quickened nation-wide buying interest of the public in the new La Salle.

It is conservatively estimated that over 15 million people have heard these Cadillac radio programs each week which has built a widespread waiting interest in the new La Salle until it was ready for display to the public.

LaSALLE
LOCAL DELIVERED PRICES

CASH OR GMAC TERMS

THESE PRICES ARE FOR CARS WITH STANDARD EQUIPMENT INCLUDING THE FOLLOWING EXTRA EQUIPMENT:

Time prices also include APD (Accidental Physical Damage) insurance including fire, theft, and collision insurance ($..... deductible) and additional coverage, for 1 year on 12 months' terms, and for 2 years on 16 and 18 months' terms.

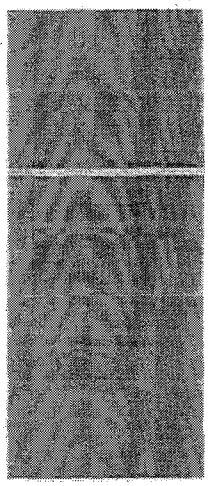
Model 350 (Series 50) Body by Fleetwood	Fleetwood Body Style	List Price (f. o. b. Detroit)	Local Delivered Price	GMAC TIME PRICE Balance Monthly for Period of			
				1/3 Down	12 Mo.	16 Mo.	18 Mo.
5 Pass. Sedan	6330-S	$1595.00					
5 Pass. Club Sedan	6333-S	1595.00					
2 Pass. Coupe	6376	1495.00					
2 Pass. Conv. Coupe	6335	1595.00					
5 Pass. Conv. Sedan	6380						

Comparison of
LOCAL DELIVERED PRICES

LaSALLE AND UPPER MEDIUM PRICE GROUP CARS

(USE 5 PASS. SEDAN PRICE) For Comparison	LA SALLE	BUICK 34-60	BUICK 34-90	GRAHAM Custom 8	NASH Ambassador 8	CHRYSLER Imperial	FRANKLIN Olympia 6	REO N 2	REO N 1
List Price F. O. B. Factory (5 Wheels)									
Extra Equipment									
Freight and Handling									
Total Cash Delivered Price									
Local Delivered Time Price									
Finance Charge									

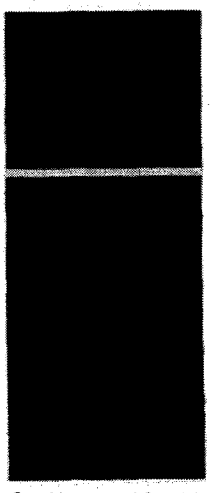
LA SALLE STANDARD COLORS



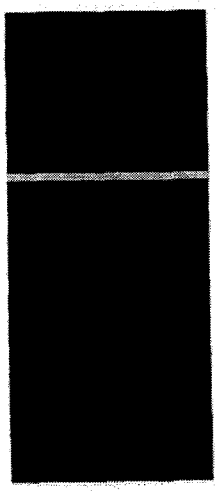
Combination No. 39
Body and Fenders—Diana Cream
Wheels—Diana Cream

The LaSalle for 1934 is offered in nine appropriate colors. All are particularly adaptable to the design of the new LaSalle. Cars brought through scheduled production will be in the nine standard colors, others being available on order without extra charge, but subject to some delay.

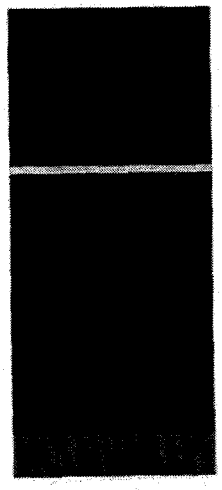
Please note that the design of the new LaSalle lends itself only to one color painting, as there is no logical breaking point for two-tone color application.



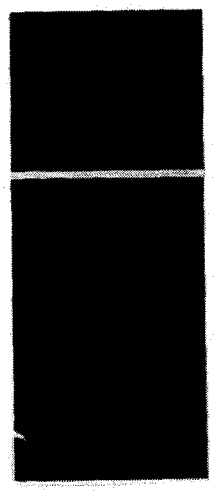
Combination No. 38
Body and Fendes—Lamar Tan
Wheels—Sealing Wax Red



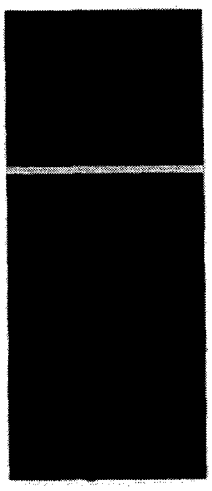
Combination No. 34
Body and Fenders—Ardsley Green
Wheels—Ski Green



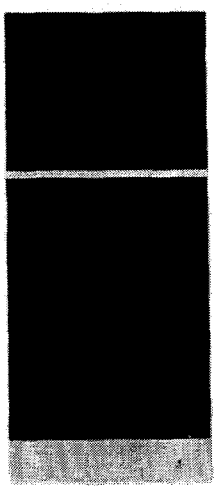
Combination No. 35
Body and Fenders—Brazilian Brown
Wheels—Malay Brown Light



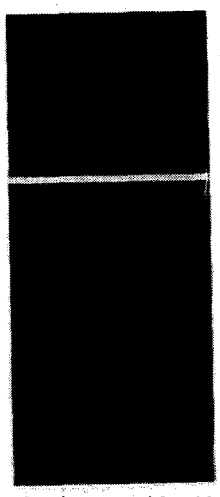
Combination No. 36
Body and Fenders—Cranbrook Gray
Wheels—Ski Green



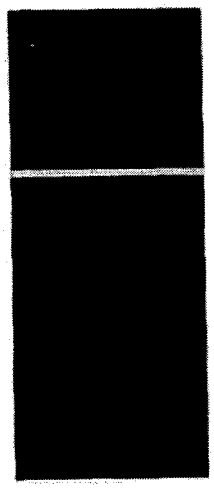
Combination No. 31
Body and Fenders—Black
Wheels—Black
Wheel Options—Red or Green



Combination No. 37
Body and Fenders—Sheridan Blue
Wheels—Italian Cream



Combination No. 33
Body and Fenders—Richmond Maroon
Wheels—Vincennes Red



Combination No. 32
Body and Fenders—Admiral Blue
Wheels—Freedom Blue

The above colors are identical with those that will be used on the cars. **Bottom color strip represents wheel combination.**

OPTIONAL AND EXTRA EQUIPMENT

WHEELS

LA SALLE—Standard Equipment—5 steel wheels with disc covers. Extra wheel carried in compartment at rear.

Optional Equipment—(at additional cost) 6 steel wheels with disc covers. 2 extra wheels and tires carried in fenderwells.

Wood or wire wheels not available.

COLOR

LA SALLE—9 Standard color options.
Or any single durable color may be had without extra cost, subject to the usual delay for special color and such orders are not subject to cancellation after order has been started in production.

Opalescent Finish—Available at extra charge and not subject to cancellation after order has been started in production.

Fenders—Standard practice is to finish in same color as body panels. Black may be specified without extra charge but subject to delay.

UPHOLSTERY MATERIALS

LA SALLE—For closed bodies—2 Heather mixture cloths.

For convertible coupe—4 leathers.

Special upholstery material can be specified at extra charge, subject to delay in procuring the required material.

WHEEL FINISH

LA SALLE—Each standard color combination has a standard wheel color. Any other single durable color (except opalescent) may be specified without extra charge, but such orders are not subject to cancellation after order has been started in production.

Chromium finish disc covers available at extra charge and are not subject to cancellation after order has been started in production.

MISCELLANEOUS

MONOGRAMS—$\frac{3}{8}$" three-letter block style monogram in any color except silver or gold leaf—$10.00 list and net.

TIRES—U. S. Royal.

GEAR RATIO—4.78.

CORRECTION SHEET

Please refer to page 20 and under the heading "UPHOLSTERY MATERIALS" change the wording as follows:

Now printed:	For closed bodies - 2 heather mixture cloths.
CHANGE TO:	A choice of 4 upholstery cloths. 2 whipcords and 2 new materials known as Highland Twist. Each kind of cloth is available in a gray and taupe brown that matches well with any of the standard body color options.

THE 1934 LA SALLE SELLING APPEALS

Cadillac presents the new La Salle as the World's newest car and "The Youthful Aristocrat of Motordom."

PRESTIGE, BEAUTY, STYLE AND INDIVIDUALITY

La Salle is a new conception of a quality car built to fine car precision standards by Cadillac, the world's leading fine car producer. It is equipped with Fleetwood Bodies to satisfy the demand for striking individuality of beauty in appearance and body styling and a degree of smartness and swank heretofore never available in cars priced to sell under $2000.00. It is the "Youthful Aristocrat of Motordom" and shares both the prestige of Fleetwood and reputation of established association with Cadillac, that has always been known as the "*Standard of the World.*"

LUXURIOUS RIDING COMFORT

The New La Salle is a quality car throughout, designed both in chassis and body to provide the same luxurious riding comfort heretofore associated with the finest cars at much higher prices. In the chassis a new standard of riding comfort is made possible by new distribution of mass weight, and a new individual front wheel spring suspension. In the Fleetwood Bodies new scientific principles of design in seat contours and cushion spring construction have been applied to provide luxurious riding comfort, heretofore thought impossible in a car of the new La Salle's price.

FLASHING PERFORMANCE

The New La Salle is a car of flashing performance built for greater top speed, smoothness, and quieter operation that will make it just as individual in performance as it is in appearance when compared with other cars hundreds of dollars higher in price.

SAFETY

The New La Salle is a strong, sturdy and well built car for safety. The strong massive frame, strong steel wheels, quick and positive acting hydraulic brakes and a large easy operating steering gear provide that necessary assurance of absolute safety and positive control at all times. The strong body construction with its clear vision driving position and safety glass windows make it a safer car to drive and ride in.

EASE OF OPERATION

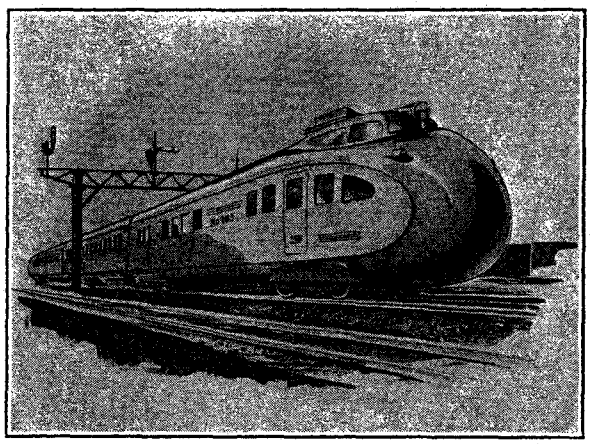
The New La Salle is a delightful car to drive. Its ease of operation, with quick starting, effortless steering and quick braking, make it an ideal car for use in congested city traffic and a revelation on the open highway where its higher speeds are always instantly under the complete control of the driver with the minimum of physical effort and maximum assurance of positive control.

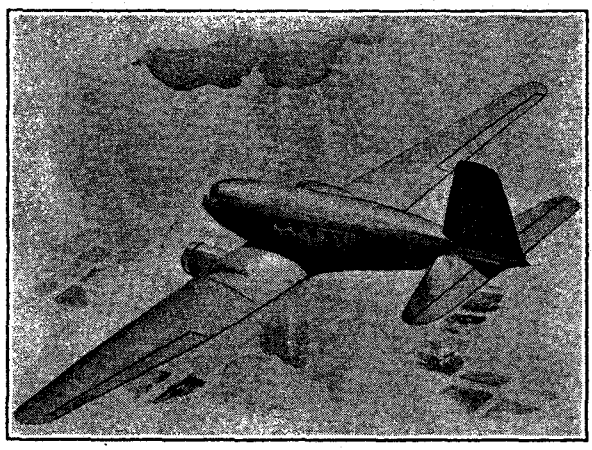
Regardless of what other cars in the upper medium price class offer, the New La Salle establishes a higher standard of value than has ever been made available heretofore in a car of its size and price.

LONG LIFE AND ECONOMY

The New La Salle is built for long life and economy in service. Its parts are made and fitted to Cadillac's established high standards of precision workmanship that assure long life. The engine, transmission, clutch and axle are sturdy in design and well balanced to give that continuity of satisfaction and trouble-free service, that is always characteristic of a well-made product.

New BEAUTY *and* STYLING





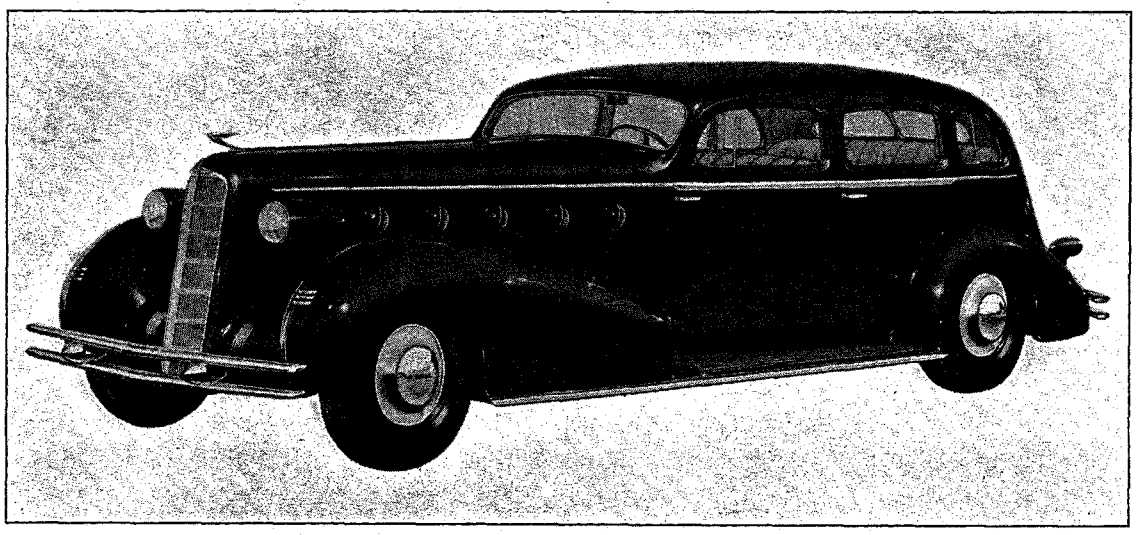
THE NEW 1934 LA SALLE sets a new standard of advanced and modern body styling beauty in the interpretation of aerodynamics and streamlining.

The graceful flowing lines of the new bodies and fenders, that start with the narrow radiator and finish at the sloping sweep-tail back of the body, represent a perfect blending of harmonious and well-balanced design.

In these new La Salle bodies every line and curve is fashioned to lessen wind resistance and air noise and increase the smooth passage of air currents. This new principle in automobile body design approximates the new fashioning and symmetry in other forms of fast transportation like the latest Douglas transport planes and the new air-streamed trans-Continental trains that are built for greater speed, greater safety, greater operating economy and finer riding comfort.

La Salle body styling is advanced, modern and beautiful, but there has been no attempt to make it gaudy, extreme or freakish.

The new 1934 La Salle bodies again create a new mode of beauty and styling for fine cars that puts them years in advance of competitive cars still offered with old-fashioned body styling which cannot be considered as advanced or as modern.



BEAUTY AND STYLING

Appearance

Side

Fleetwood Body
Low overall height (4 inches lower)
Individual striking beauty in design
Scientific balance and harmonious proportions
Aerodynamic air-flowing lines
Streamline bullet type headlamps
Long unbroken hood line (nearly reaching windshield)
New type hood louvers with round screened openings
25° sloping windshield without exterior visor
New low sweeping air foil type fenders (Duco finished) completely cover frame and running gear
Narrow windshield pillar posts
Low coach sill body covers dust shield
New type chrome body striping (increases appearance length)
Five demountable steel wheels with disc covers standard
New chrome hub cap discs
New heavy steel running boards covered with deep channel safety non-skid rubber mats
Built-in Fisher No-Draft ventilation
Clear plate safety-glass in all windows and both front and rear ventilators and windshield.

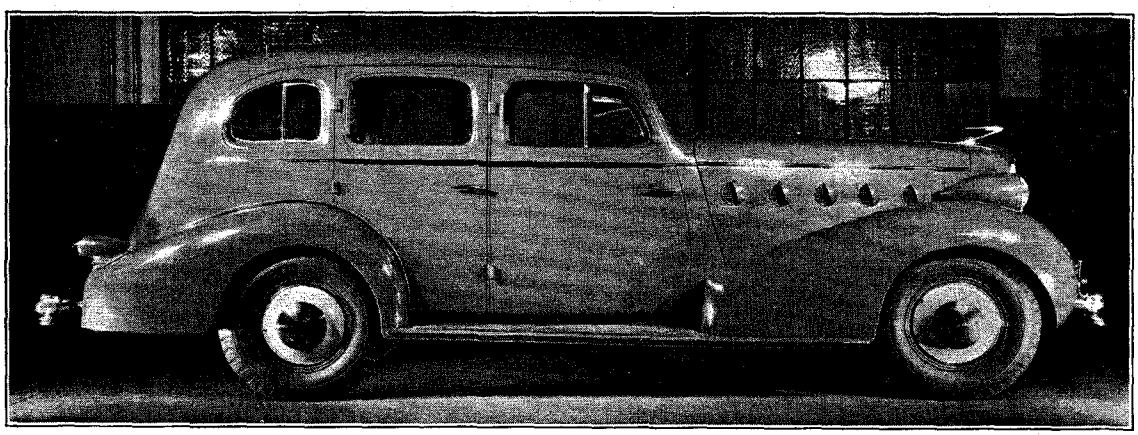
Front

New slender type chrome finished built-in radiator grid
Clean uncluttered front end
Horns concealed under hood
New crest mounting
New strong airplane type double bar windsplit bumpers with concealed coil springs and shaped to deflect gravel at rear
High front fender hood sill
Fenders meet below radiator, eliminating splash shield
Radiator filler cap concealed under hood
Radiator casing colored to match hood
Restricted use of chromium
Permanent type screened cowl ventilator (increased ventilation)

Rear

Air streamed design rear body panel
Extra wide vision rear window with division strut
Twin rear lamps with combination safety lens
Air foil rear fenders mould into body
New style full width double bar bumper
Bonderized sheet metal parts and fenders (prevent rust)
Exterior visible metal parts Duco finished
Concealed fuel tank
Concealed extra wheel and tire
Luggage space in rear deck

BEAUTY *and* STYLING—*Continued*

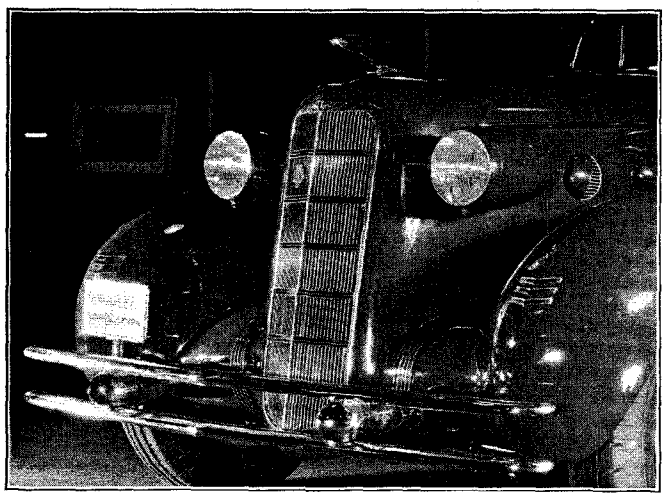


In the new trend to streamline body styling there will be distinctly different interpretations offered by various manufacturers.

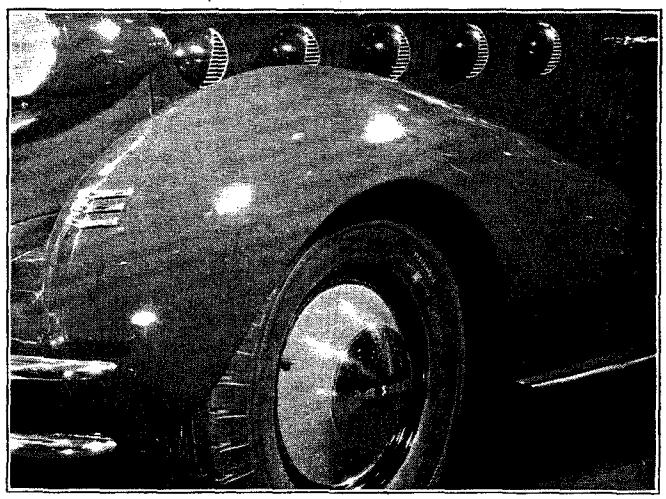
When appraising appearance it is important to the purchaser to distinguish between art, style, fad, freak fashion, individuality, craze and novelty. The average motorist has very definite convictions between the sound and the freakish and leans toward the simplicity of design which reflects sound judgment and conservative good taste.

Cadillac and Fleetwood engineers have produced in La Salle not merely a new car but an entirely new order of car in which smartness is combined with ability to effect true streamline design in which nothing is over-emphasized and nothing over-stressed.

When presenting the new La Salle to prospects you should point out to them the importance of appearance as it is directly related to economy from the standpoint of protecting the future trade-in value.



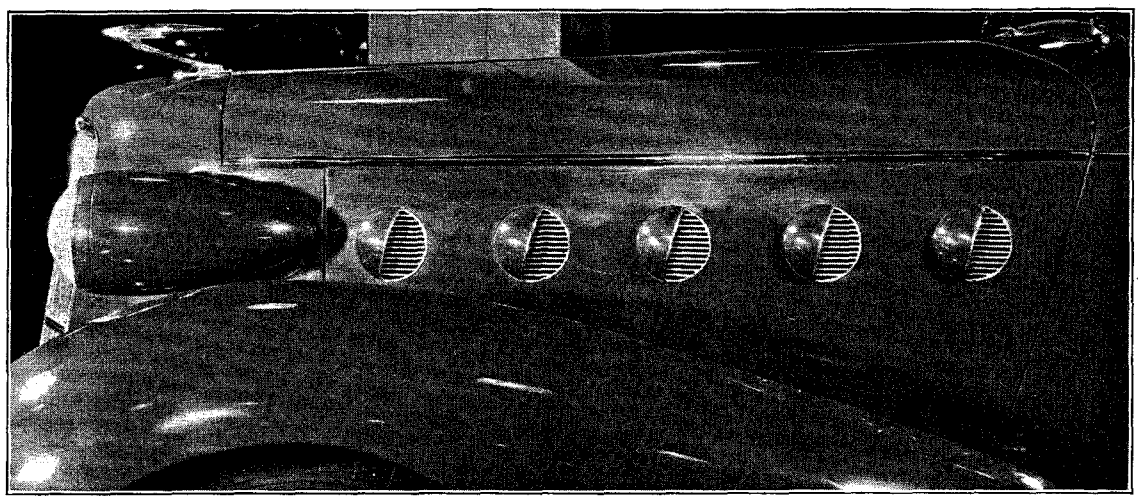
The new narrow sloping radiator grille is rakish and distinctive. The heavy double bar bumpers are airplane styled and are mounted on tubular brackets with heavy coil springs to cushion shocks. The radiator filler cap is concealed under the hood and prevents possible damage to car finish in winter by anti-freeze.



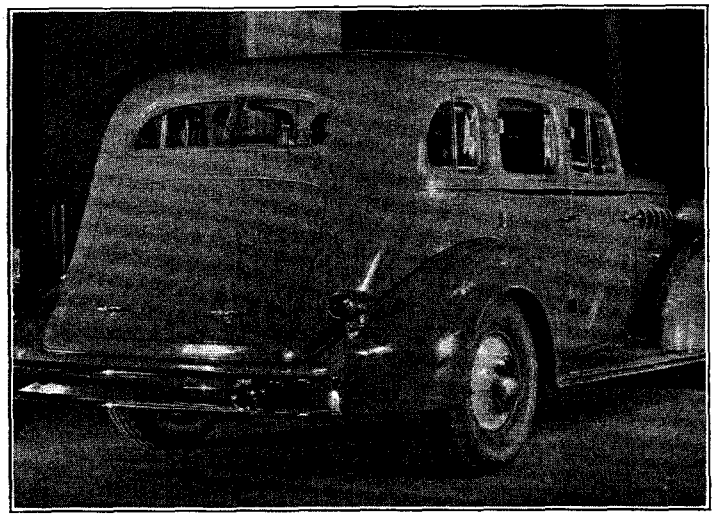
FENDERS

The new style sweeping airplane type fenders with streamlined nose and tail completely conceal the chassis. The fenders are massive and mould into the radiator grille and are designed to reduce wind disturbance.

BEAUTY *and* STYLING—*Continued*



HOOD. The long hood extends nearly to the windshield. The distinctive appearance of the hood ports and the tear drop headlamps add to the impression of fleetness and speed.



REAR VIEW

The rear body styling was designed to complete the streamline appearance. The rear body panel has been designed to remove all exterior obstructions and prevent air pockets.

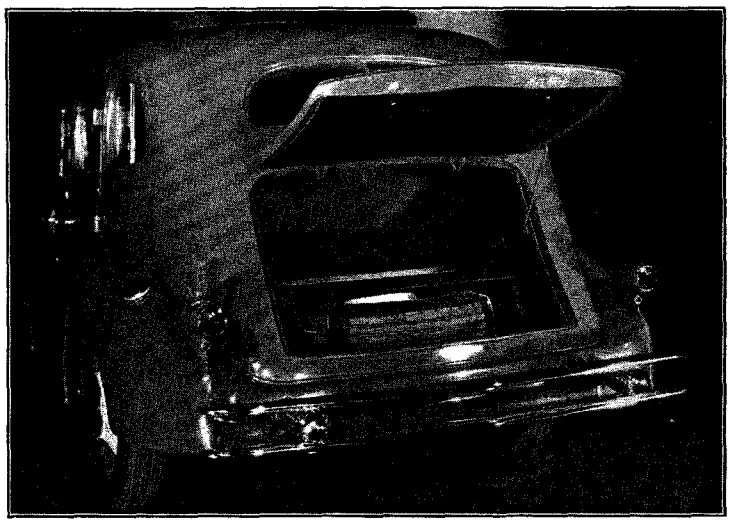
The gracefully rounded-to-the-top side panels (tumble home) is new. The wide rear window with dividing strut and the air foil fenders are all part of the harmonious styling. The entire rear view is clean cut and tailored, concealing the gas tank and chassis.

REAR BODY COMPARTMENT

An important item is the concealment of the extra tire. With standard five wheel equipment the extra tire is carried in the rear body compartment, with space above it for luggage.

Because of its design, the La Salle looks much better with five wheel equipment but for buyers who want extra tire equipment and additional luggage space six wheel equipment is optionally available at extra cost with wheels carried outside in each front fender.

A trunk rack with folding support arms is also available at small cost for those buyers who want trunk equipment.



COMFORT

There are two kinds of riding comfort—

(a) *Mechanical construction comfort* that is built into the design of the car in the Frame, Springs, Steering, Brakes, Shock Absorbers and Ride Stabilizers.

(b) *Physical comfort* that is provided by plenty of room to get in and out of the car, by proper seat cushion and back design and construction, by adequate driving vision and ventilation, by quietness through soundproofing and by the ease of controllability in operation.

(a) MECHANICAL CONSTRUCTION COMFORT

Car Springs

The gliding ride with new type soft helical coil front springs. No front axle. Knee action front wheels, independently sprung, ride over bumps without jarring passengers.

Long rear springs with metal covers.

Frame

New X-type center frame construction with greater rigidity.

Steering

Geometrically correct steering with no wabble, shimmy or road tramp, due to independent front wheel suspension.

Brakes

Dependable, easy operating, Duo-Servo hydraulic brakes with safety parking brake. Reaction from brake application on front wheels is now taken by rigid forked arms connected positively to the frame. On the conventional axle, brake application rolls the resiliently suspended axle forward with resultant loss of caster angle. This makes the car wander—an objectionable feature that has been entirely eliminated.

Shock Absorbers

Double-acting shock absorbers.

Ride Stabilizers

Torsion cross rod opposes action through resistance to twist when one spring is deflected more than the other.

Quietness

Body panels soundproofed.
Body mounted to frame on live rubber pads.
Floor boards insulated and of sound-proofed material.
Dash between engine and front compartment thickly insulated.
Thick heavy dust and draft-proof carpets.

Operating Controls

Visible instrument dials in front of driver.
Large control dials (pointer type for quick and easy reading).
All controls within easy reach with minimum body movement.
Ignition switch, coincidental type (locks ignition and coil simultaneously).
Starter button on instrument panel.
Headlight beam indicator dial on instrument panel.
Clear vision steering wheel. (4-spoke flexible type optional at extra price.)
Brake and clutch pedals rubber covered.
Easy operating front seat adjustment.

COMFORT—*Continued*

(b) PHYSICAL COMFORT

Doors

Physical comfort is provided by wide, easy-operating doors, easy to get in and out.

Soft cushion arm rests on each front door.

Snug fitting doors prevent drafts.

Adjustable striker plates eliminate rattles. Easily reached door controls.

Inside safety door locks.

Seating Comfort

Comfortable seating, elbow and shoulder room for rear seat passengers.

Unusually high seat back cushions for shoulder support.

Deep, thick, soft seat cushions that retain their shape.

Seat backs and contours designed for resistance and softness where needed most.

Cushion contours and angles uniformly maintained to definite standards in manufacturing.

Marshall Cushion Springs of different types and sizes used with variable rates of spring action to give maximum seating comfort without the disagreeable bottoming of too-soft cushion springs.

Wide lounge chair type side arm rests with sponge rubber cushions.

Spring cushion hassocks.

Shift lever forward in front compartment toe-board.

Upholstery and Fittings

Optional choice of two exclusive patterned quality upholstery materials.

High quality interior fittings.

Dome light operated manually and automatically by door action.

Rear window blind concealed.

Robe rails and door hardware with round corners.

Lighter in back of front seat and ash tray recessed in door panels.

Vision

Large windows of clear plate security glass.

Narrow windshield front pillar posts.

Clear driving vision.

Stationary windshield reduces depth of header bar and eliminates drafts.

Windshield wipers do normal work regardless of engine load.

Two inside sun visors to prevent glare day or night.

Ventilation

Individually Controlled No-Draft Ventilation in front door and rear quarter windows.

Reverse type opening cowl ventilator (screened) for maximum ventilation in front compartment.

SAFETY

There are two kinds of safety that are of interest to the buyer.

(a) *The safety of car operation of control*
In this group he will be interested in the safety of Visibility—Headlamp Lighting—Braking Effectiveness—Ease of Driving Control—Adequate Ventilation—Driving Comfort to prevent fatigue.

(b) *The safety of car construction*
In this group he will be interested in the safety of the built-in strength of the car construction. Frame, springs, wheels and tires, bumpers, running boards, bodies, brakes and steering.

(a) SAFETY OF CAR OPERATION AND CONTROL

Visibility

Wide windshield glass and narrow pillar posts.

Extra large rear view window.

Sun visors adjustable to prevent front and side glare.

Windshield wipers that operate effectively regardless of engine load.

Headlamp Lighting

Multi-beam headlights for maximum open road lighting or when passing cars.

Visible headlamp beam indicator dial on instrument panel.

Foot dimmer light control switch.

Current controlled generator regulates current input to battery in proportion to lighting load.

Braking Effectiveness

Hydraulic brakes lessen physical effort. Centrifuse brake drums prevent scoring and warping, and out-of-roundness under severe usage. Large diameter steel brake shoes designed not to lose effectiveness when used continuously.

Ease of Driving Control

Clear vision instrument panel.

Pointer type dials for easy reading.

Narrow rim clear vision steering wheel.

Hourglass worm and roller steering gear.

Wide tread and narrow frame for short turning radius and easy parking.

Double acting shock absorbers.

Ride stabilizer automatically controls body roll or side sway.

Easy front seat adjustment for necessary legroom and seating comfort.

SAFETY—*Continued*

(b) CAR CONSTRUCTION SAFETY

Frame

Strong—sturdy—*non-flexing frame.*

More rigid than other cars of similar weight.

X-type center frame with arms to front and rear welded to side members, makes strongest known box-girder type construction. 6 point engine mounting and extra wide front end *cross-member* make front end rigid.

Chassis construction close to ground with low center of gravity.

Springs

Helical coil type front springs with independent front wheel suspension.

Strong semi-elliptic rear springs with threaded type hardened steel spring bolts.

Wheels and Tires

Sturdy reinforced steel wheels.

Low pressure wide section tires best balanced combination of fabric and rubber.

Bumpers

Strong double bar full width front and rear bumpers with coil spring shock absorbers.

Running Boards

Strong, heavy steel running boards give side protection.

Deep channel rubber mats for safety prevention against slippage.

Bodies

Welded steel panels and strong hardwood and steel frame construction. Double strength.

Security clear plate safety glass in all windows, ventilators and windshield.

Heavy bow and slat roof construction.

Welded steel unit construction of cowl and front pillar posts.

Ventilation

Fisher No-Draft Ventilation prevents air pollution and fatigue in stormy weather.

Screened cowl ventilator keeps out insects.

Permanent position windshield eliminates drafts and does not require hand control.

Brakes

Dependable Duo Servo Hydraulic Brakes fully equalized and require minimum of physical effort.

Centrifuse brake drums.

Steering

Double steering tie-rods protected by location between frame.

Transmission

Syncro-mesh transmission permits silent, non-clashing gear changing. Provides safety on hills, on ice or in traffic. Always possible to change gears instantly when desired and retain complete control of the car. Quiet operation in all gears.

EASE *of* OPERATION

Easy Engine Starting	Starter button on instrument panel. Automatic choke. Current controlled generator. Positive engagement of starting motor gear.
Easy Shifting	Syncro-mesh transmission permits silent, non-clashing gear shifting. Provides safety on hills, on ice or in traffic. It is always possible to change gears between 2nd and high instantly when desired.
Easy Steering	Hour-glass worm and roller steering gear, mounted on roller, ball and needle bearings. Wide tread and narrow frame makes exceptionally short turning radius for parking and turning car around.
Visible Controls	Instrument panel with large pointer type dials grouped at left in front of driver. Easy to read. Well lighted for night driving. Headlamp beam indicator on instrument panel. Foot type control switch for dimming lights.
Ride Regulation	Double acting shock absorbers—automatically regulated to suit driving conditions.
Braking	Hydraulic brakes, reduce brake pedal effort to minimum. Passage of liquid through pipes is practically frictionless.
Engine Operation	Engine water temperature thermostatically controlled.
Car Ventilation	Individually controlled no-draft ventilation. Window ventilators easily adjusted to any position to suit weather conditions. Reverse opening type screened cowl ventilator.
Protection from Glare	Inside adjustable visors. Windshield tilted at 25° angle to prevent glare through rear window. (Multi-beam lighting gives greater night driving vision and protection.)

LONG LIFE *and* ECONOMICAL MAINTENANCE

ENGINEERING DESIGN AND RESEARCH

Constant research analysis and fatigue testing of all kinds of material by Cadillac's Metallurgical Department before being approved for design and use by Cadillac Engineers.

Cadillac Engineering Division maintains its leadership through a policy of constant progress by continuous work on advance designs and developments.

General Motors Research Laboratories effort is devoted to new developments and the solution of basic research problems for future use of the engineers of General Motors units. Its entire engineering and research activities are part of General Motors and, therefore, available to La Salle.

General Motors Proving Grounds the world's largest outdoor scientific testing laboratory in the automotive industry. Cadillac engineers supplement their own testing with the experience and data of the Proving Grounds' engineers who conduct independent tests on all makes of vehicles. This policy of Cadillac engineering keeps La Salle in advance of competition and assures satisfaction in new principles, designs and improvements before they are put into production.

CADILLAC CRAFTSMANSHIP AND PRECISION MANUFACTURING

The Cadillac factory is a model of modern manufacturing efficiency. La Salle production methods are scientifically controlled and safeguarded by Cadillac's finest precision standards of manufacturing and most rigid inspection systems for rejection of any parts not up to these standards.

PRODUCT FEATURES FOR ECONOMICAL MAINTENANCE

Every unit designed with large factor of extra strength.

Careful balancing of units to minimize friction and reduce wear.

Full pressure lubrication to all moving parts in engine—bearings, piston pins, timing chains, etc.

Positive crankcase ventilation prevents dilution of engine lubricating oil. Reduces oil change to every 2,000 mile period which is only half as frequently as some cars.

Air cleaner and fuel filter purifies air and fuel used in engine, prevents wear and prolongs life of precision fitted parts.

Engine water temperature thermostatically controlled.

Current controlled generator air cooled to prolong life of generator. Charging rate to battery automatically controlled in proportion to lighting load.

Anodized pistons for long wear and light weight on bearings and reciprocating parts.

Automatic choke eliminates need for hand operated choke button when starting.

Ball and tapered roller bearings in major units such as transmission, clutch, wheels and universal joints.

Threaded spring shackles eliminate friction and wear.

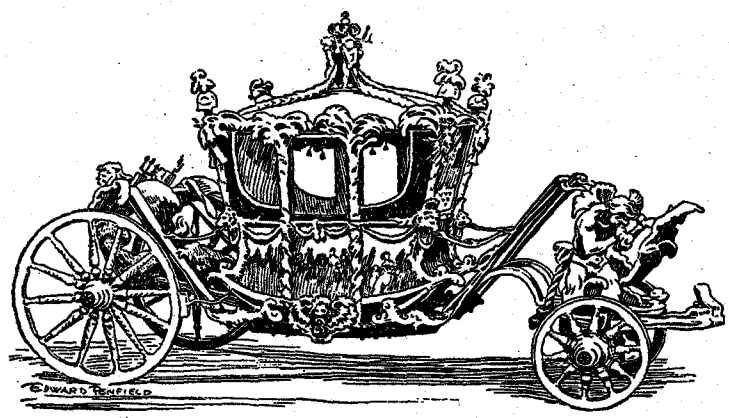
Centrifuse brake drums reduce scoring and uneven wear common to less expensive construction.

Cadillac Service Policy provides La Salle purchasers with maximum service protection at lowest possible cost for maintenance and protects owner's investment further than competitive policies.

Cadillac Now Offers an Entirely New Standard of Riding Comfort in La Salle

Cadillac introduces in the new 1934 Cadillac and La Salle cars, a wholly new interpretation of luxurious riding comfort and ease that marks the greatest single improvement in automobiles during the past 20 years.

The springing of automobiles since their introduction has remained essentially the same as the springing of the 18th century four-horse coach. Both types of vehicles had front and rear axles with stiff front springs and soft rear springs under passengers.



At slow and moderate speeds this type of construction was tolerable but with the constant stepping up of speed in automobiles during the past decade it has entirely changed the ride problem. The neglect of city streets has increased the problem of the boulevard ride and the rapid improvement of state highways with longer distances of travel at higher speeds, and increasing emphasis on safety, have each contributed to the demand for improved riding comfort in automobiles.

During the past three years Cadillac engineers have studied and concentrated on the development of improved riding comfort, to eliminate the disagreeable effects of the neck cracking and pitching motion of rear seat passengers, and find some solution that would give the same riding comfort in the rear seat as that enjoyed by the front seat passengers.

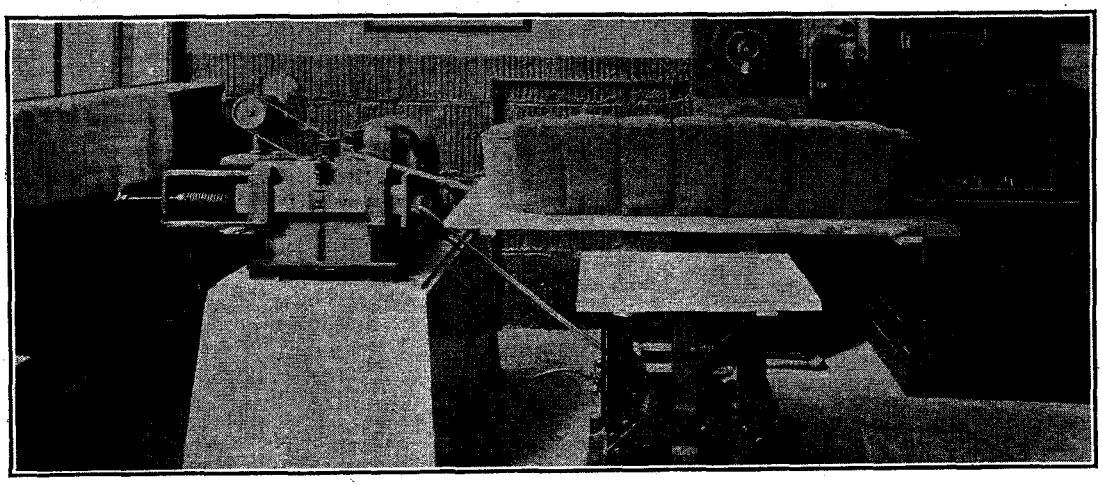
This experimental work *initiated and followed through by Cadillac Engineers* involved the adoption of revolutionary new principles in accomplishing the desired objective, and the introduction of this new improved riding comfort on the 1934 La Salle cars, again typifies the leadership of Cadillac engineering that has been responsible in past years for the many other notable improvements Cadillac has contributed to the development of the automobile industry.

CADILLAC NOW OFFERS AN ENTIRELY NEW STANDARD OF RIDING COMFORT IN LA SALLE—*Continued*

Cadillac's Development *of the* Ride Problem

All previous developments in the approach to the problem of riding comfort were discarded and a new start made to determine the fundamentals of riding motions.

A bouncing chair was first designed in which many people were subjected to every conceivable kind of a bouncing ride to definitely determine and measure riding discomfort. These tests determined many interesting facts and revealed that the size of the bump was less important than its direction and the rapidity of its recurrence. Every kind of ride was analyzed to determine just how far, how fast and in what direction a passenger could be moved and still remain entirely comfortable.



Riding qualities in an automobile depend primarily on two factors:

(1) The flexibility of the front and rear springs.

(2) The mass weight distribution in the car.

The springs of the conventional car are of different stiffness, the front springs being between two and three times as stiff as the rear springs. The front springs have had to be stiff in order to hold the front axle in place for steering stability.

Since the front springs are stiffer than the rear springs the "frequency" or speed of the oscillations set up at either end of the car are different. Particularly in the rear seat of the car this difference is felt as an inharmonious or "discordant" movement.

Everyone has known ever since automobiles have been made that they have had the habit of riding hard in the back seat.

It was learned that it was neither the action of the front nor the rear springs alone, ***but the fight set up by the combination of the two movements*** which had subjected rear seat passengers to the uncomfortable "rabbit punching" and "neck snapping" with which we are all familiar.

Experimental study was made of the ride curves obtained in a conventional car when the front spring "pitching" and rear spring "bouncing" movements were brought within 10% of the same frequency.

A car was specially equipped with weights in which it was possible to reproduce almost any possible riding condition.

CADILLAC NOW OFFERS AN ENTIRELY NEW STANDARD OF RIDING COMFORT IN LA SALLE—*Continued*

Cadillac's Development *of the* Ride Problem—*Continued*

Experiments were made in which the mass weight of the car was redistributed and the front springs softened until their deflection was slightly greater than that of the rear springs. As a result the ride curves were completely smoothed out giving a much closer approach to what the engineers term "simple harmonic motion."

In addition special springing was used with softer front springs so that front and rear spring motions were equal. This was done to investigate the conditions of harmonic motion in which spring deflections front and rear are equal.

The best results were obtained *with the front spring suspension being made softer than the rear* which caused the front end to lie flat on the road at all speeds on all sorts of surfaces.

Although an entirely new standard of riding comfort had been attained with the redistribution of weight and the softening of the front springs, the engineers were still a long way from the complete solution of the problem. The ride had been tremendously improved, but the controllability of the car had been impaired. This was due to the fact that the ride was obtained at the expense of considerable activity in the front springs. And conventional front suspension had never been designed for such active use.

Cadillac was then faced with the problem of incorporating the newly discovered ride in a car without sacrificing the car's controllability.

In other words, under the old-style construction the front springs had to do two jobs —they not only had to serve as springs but they had to keep the front end of the running gear in proper alignment.

These two jobs didn't mix very well because if you made the front springs stiff enough from a structural standpoint they'd be too stiff for riding comfort. On the other hand, if you made them soft enough to match up with the rear springs they'd be entirely too soft to give the proper stability on the road and the car would be very unsafe, especially when turning corners.

So we see that the old-fashioned system of springing the front end was a compromise at best.

The big problem was to divorce these two jobs from one another and deal with them separately.

It wasn't a matter of sticking in a coil spring and a couple of levers. It must be remembered that automobiles have been pretty satisfactory in the past—and all of the chassis engineering was definitely tied in with the tradition of a flat, stiff front spring construction.

To change one thing would necessitate changing other things and to be basically sound, the new style front springs could not be tacked on just as an accessory or a "gadget." And since Cadillac wanted to gain the full advantages of the new construction without sacrificing anything else it had to measure the effects of these changes—not only within themselves—but in their relation to one another. This necessitated what amounted to a new and different approach to the overall problems of chassis design—which incidentally typifies the difference between Cadillac's sound, scientific approach to a problem and the "hit or miss" method.

CADILLAC NOW OFFERS AN ENTIRELY NEW STANDARD OF RIDING COMFORT IN LA SALLE—*Continued*

The Independent Front Wheel Suspension

Cadillac has answered this problem in La Salle with an entirely new design of chassis with INDEPENDENT FRONT WHEEL SUSPENSION.

Independent Front Wheel Suspension, as used by La Salle, is not merely a new type of spring design, it is the means of attaining a fundamental principle of such far-reaching effect that it has necessitated the redesigning of the entire car!

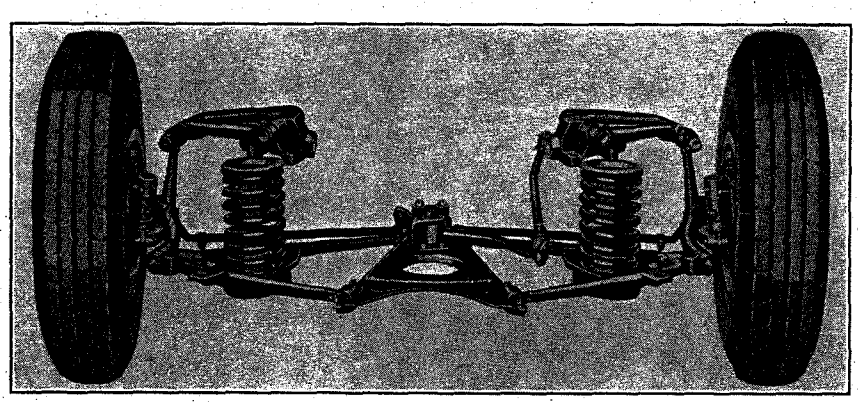
SAFETY

Independent Front Wheel Suspension also adds materially to *Safety.* The danger of accident from blow-outs is minimized.

STEERING

The steering of the new La Salle cars has also been greatly improved.

Formerly, owing to the fact that the motions of the front axle were indeterminate, it was absolutely impossible to design a truly accurate steering mechanism. Now, with the abolition of the front axle it has finally permitted the design of a new type of steering mechanism which accurately controls the geometrical relationships of the various parts.



Independent front wheel suspension demands a better substitute for the conventional front axle and front springs.

The front wheels are now attached directly to the frame by means of sturdy forked arms and their movement is controlled by special helical springs. With the wheels fastened directly to the frame, the springs no longer have to hold the axle in place and absorb driving and braking twists.

In the new chassis the springs have absolutely nothing to do except to spring the car. Consequently, they can be made as soft as desired. In addition, since each wheel is mounted independently of the other, either wheel can now ride over a bump without transferring the bump to the other wheel. This, obviously, improves the car's roadability, especially over poor roads.

A sturdy worm and double roller steering gear mounted on the left hand frame sidemember is connected to a steering link, which in turn operates a bell crank that is supported upon the massive frame front cross-member. To this bell crank are attached the two steering rods, each of which controls one of the front wheels. This is an entirely new type of steering mechanism and one which the owner will find a revelation in steering precision and ease when he accepts a demonstration.

CADILLAC NOW OFFERS AN ENTIRELY NEW STANDARD OF RIDING COMFORT IN LA SALLE—*Continued*

The Independent Front Wheel Suspension

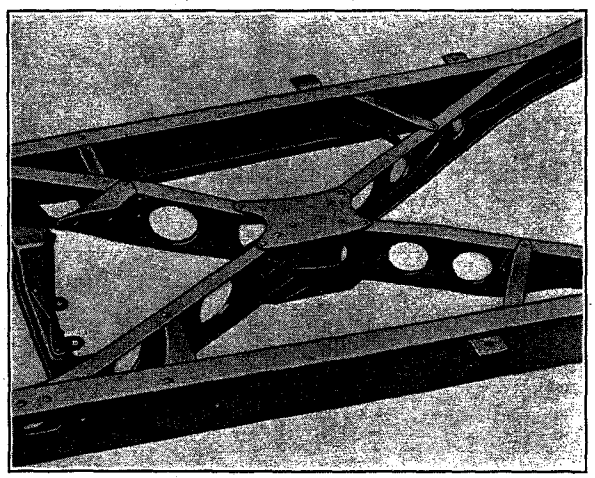
{Continued}

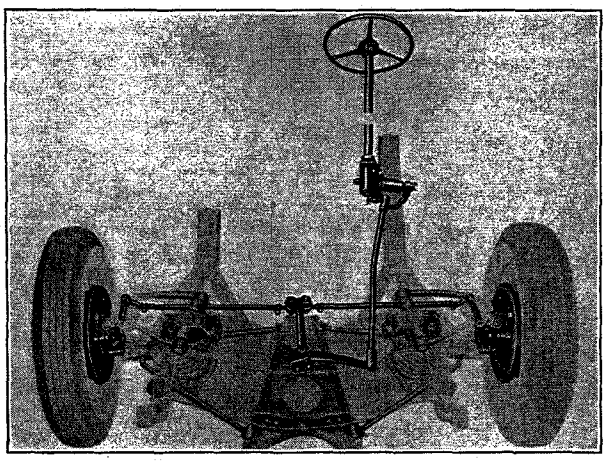
With the new narrower front frame it allows a greater space for the turning of the front wheels, and this results in a much shorter turning radius. You can now turn a La Salle around in a much smaller circle and also park with a great deal less physical effort in a shorter space than other cars of the same size.

X-TYPE FRAME

La Salle's new Front Wheel Suspension also lends itself to the design of an extremely rigid X-type frame, a frame in which every weak link has been avoided.

The X-member is not merely a reinforcing member. The forward members extend from the junction at the center to the frame side bars —then forward within the side bars (forming a rigid, box-like section), to the front cross-member, to which they are attached.



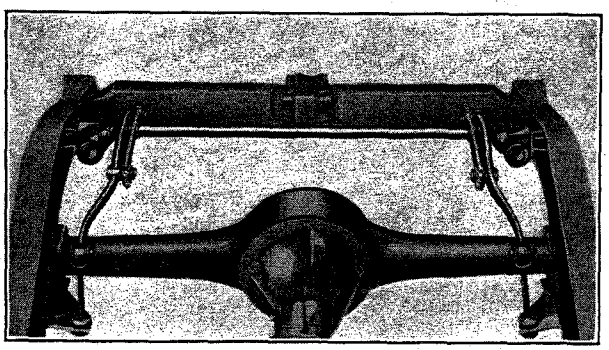


RIDE STABILIZER

In addition—just behind the rear axle and extending across the frame—is a ride stabilizer.

Whenever the car has a tendency to roll it is opposed by the torsional resistance of the stabilizer cross shaft, which increases stability and adds a feeling of greater security, especially when making turns.

With the new frame design Cadillac engineers found that they could get the best results from the Gliding Ride by using Hotchkiss drive with a short sturdy tubular shaft with two universal joints.



CADILLAC NOW OFFERS AN ENTIRELY NEW STANDARD OF RIDING COMFORT IN LA SALLE—*Continued*

The Advantages of Independent Front Wheel Suspension

There are many important advantages derived from La Salle's Independent Front Wheel Suspension:

1. An entirely new standard of riding comfort.

From now on, La Salle's back-seat passengers will enjoy the comfort of a front seat ride and the front seat passengers will also have an unbelievably improved degree of riding comfort.

In addition the 1934 La Salle cars are equipped with double acting hydraulic shock absorbers front and rear.

2. Better Roadability.

The independently suspended front wheels, and the stabilizer cross shaft all play important parts in contributing to better roadability of the car.

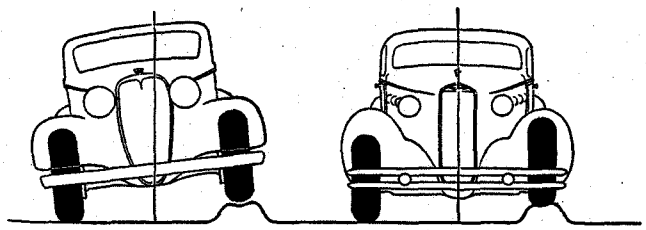
3. Improved Steering.

In spite of the greatly softened front spring suspension the accuracy of steering in the car, particularly at high speed, is much greater than can possibly be obtained with a conventional front axle.

4. Increased Safety.

The independently suspended front wheels have decreased the dangers resulting from tire blow-outs at high speed.

Out of all this Cadillac research work on improved riding comfort, an entirely new principle of chassis design has been adopted, and in the enjoyment of the delightful ease of these new cars there will be noticed three distinct improvements in the quality of riding motion.

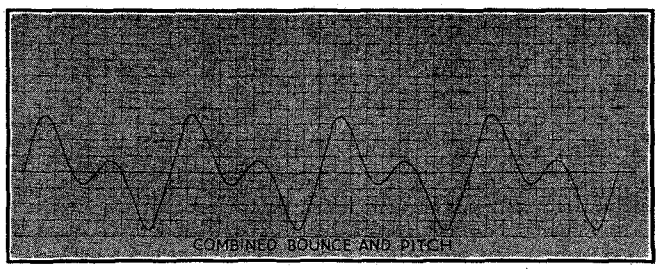


1. Passengers will note in striking a severe bump they will be lifted much more gently.

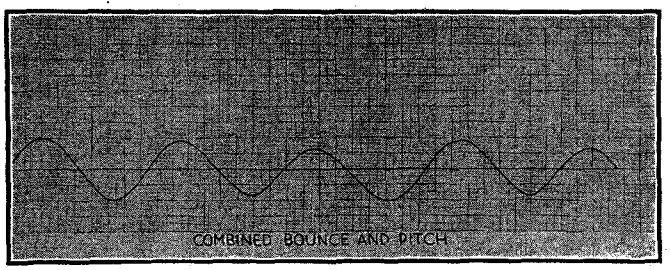


2. The motion will be vertical instead of the forward pitching and neck cracking motion previously experienced in conventional type cars.

OLD WAY



NEW WAY



3. The movement will be slight at the beginning and quickly smoothed out and at no time result in the usual rear seat "Interference Kicks" which have always been present.

La Salle's *New* Standard *of* Riding Comfort

Must be Demonstrated to be Realized

LUXURIOUS ease and riding comfort are probably the strongest and most forceful buying appeals to any car purchaser and especially with purchasers of fine cars. La Salle now offers a new standard of riding comfort that cannot be remotely approached by any competitive car and one that changes all previously accepted standards and sets La Salle apart as an entirely different kind of car.



This new La Salle selling feature is one of great strategic importance to every Cadillac Distributor, Dealer and Salesman.

It is a revolutionary new improvement and one that will quickly appeal to both men and women alike and should be capitalized to the fullest possible benefit by lots of demonstrating *while your competitors are not in a position to offer anything to favorably compare with it.*

Demonstrations Will Be Easy To Obtain

Thousands of prospective new car buyers and many others who may not now be in the market for a new car, will willingly accept your offer to demonstrate this new feature.

It Will Help Reduce Selling Resistance

This new *voluntary interest* on the part of the buying public not only reduces selling effort for the La Salle salesman, but increases the selling resistance for competitive salesmen. It is a long time since anything has been done to so radically improve the demonstrating features in automobiles and it should, therefore, be aggressively followed up while it is such an important selling feature of La Salle in its price class.

Demonstration Will Make Prospects Dissatisfied With Present Car

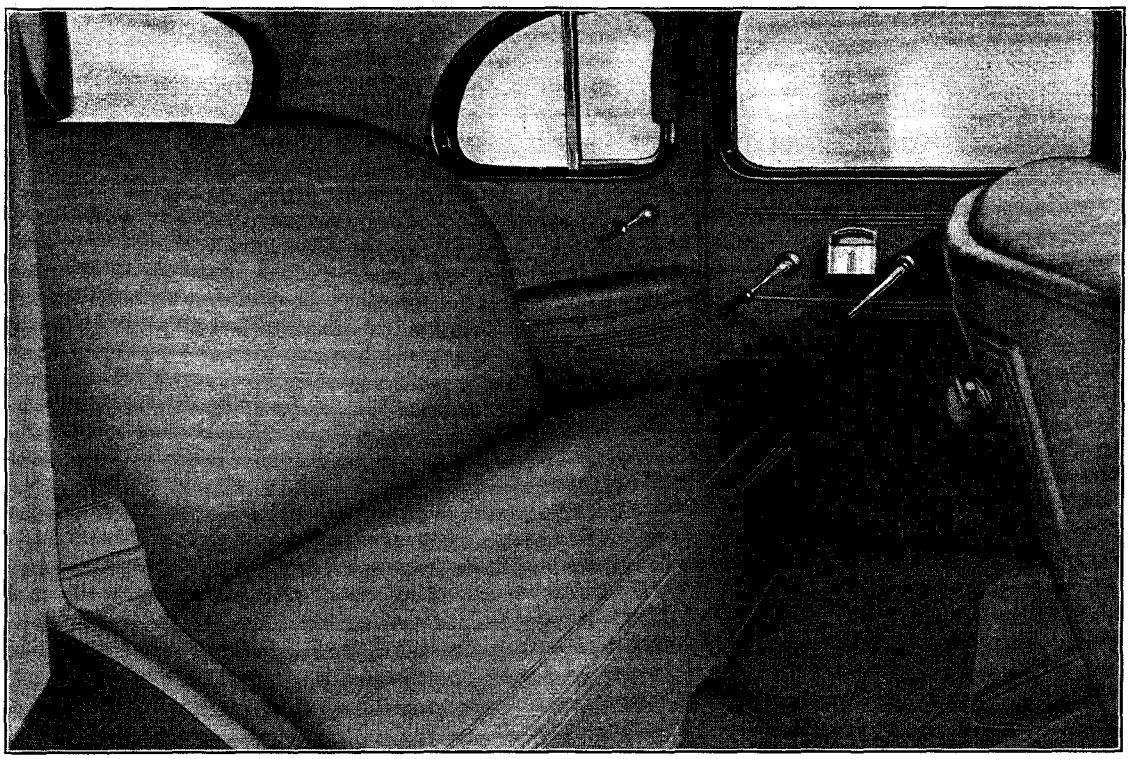
The unusual selling advantage of this new standard of riding comfort in La Salle is obvious. Demonstration will quickly prove to any car owner the great desirability of having this new riding comfort and help to increase his dissatisfaction with the old car.

Competitive Cars Cannot Be Considered As Modern

Description and explanation of this new feature are essential, of course. But a strong campaign of demonstrations is the only way to quickly prove to prospects *that other 1934 competitive cars which do not have what La Salle offers cannot be considered as advanced or as modern motor cars.*

MAKE THE MOST OF YOUR OPPORTUNITY AND DEMONSTRATE

LUXURIOUS RIDING COMFORT

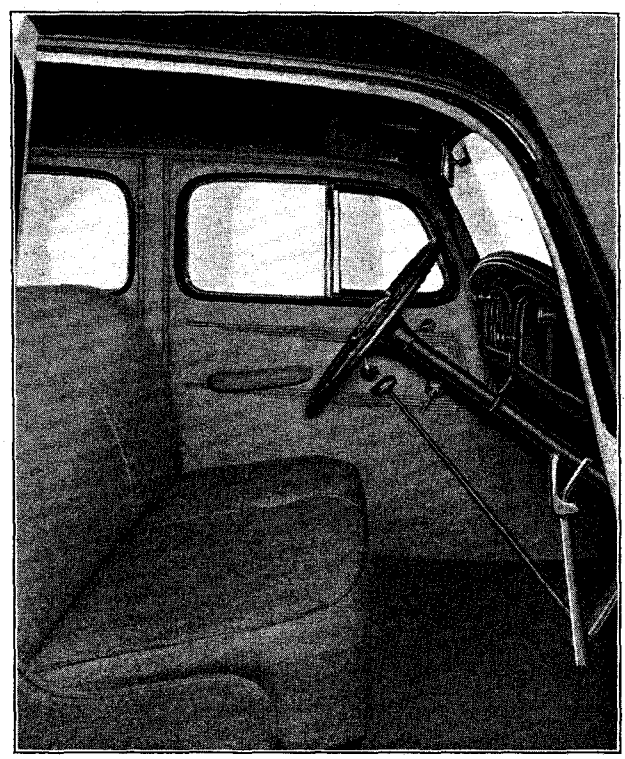


REAR COMPARTMENT

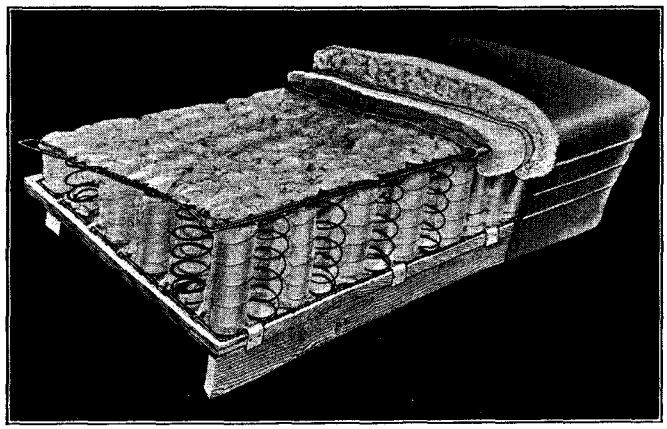
1. The combined skill of Fisher and Fleetwood Body Designers is evidenced in the new richly appointed interiors. Exclusive patterned and costly fabrics cover the soft form fitting cushions fitted with scientifically arranged Marshall coil springs. Every detail has been studied to provide the utmost in riding ease and comfort.
   Soft side arm rests covered with sponge rubber, assist straps, a dome light controlled manually or automatically by door action, two carpet covered hassocks, concealed blind on rear window, cord type robe rail, ash receivers in each door and pass type lighter in back of front seat are among the many details that have been provided.

FRONT COMPARTMENT

2. Unusual comfort and complete relaxation are provided in the driver's seat. Soft cushions, adequate driving vision, generous insulation to protect against heat, noise, and drafts, and effortless control of steering, gear shifting and braking are only a few of the many features of unusual comfort in these new Fleetwood Body interiors.
   Two inside visors for front or side protection, a fixed type windshield to prevent drafts, a reverse opening cowl ventilator, and individual control Fisher No-Draft Ventilation in both front (and rear) compartments are comfort features that are appreciated by driver and passengers.

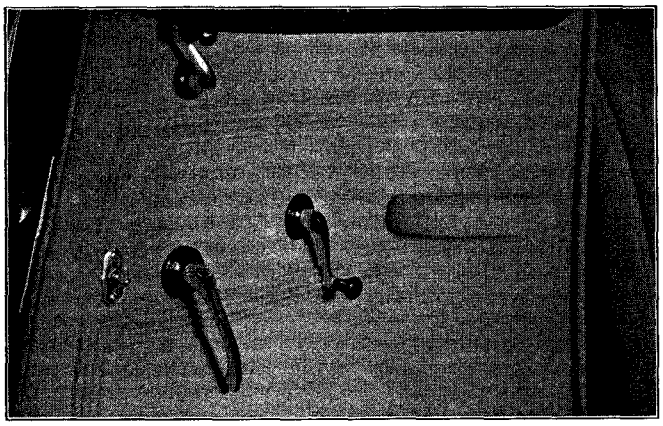


SEAT CUSHIONS



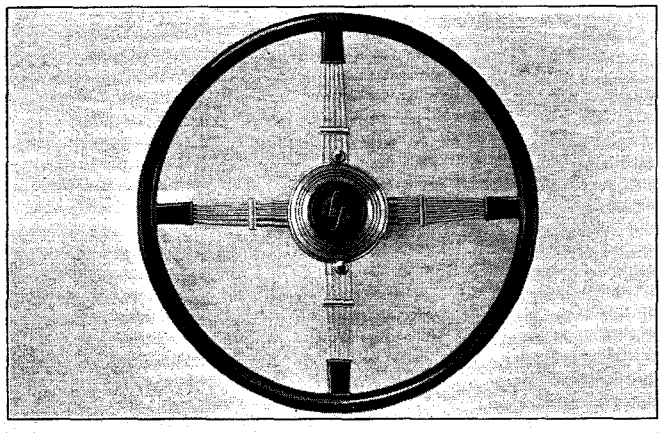
All seats and seat back cushions in the Fleetwood Bodies are scientifically designed for maximum riding comfort. Soft resilient Marshall coil springs of varying sizes and spring rates are used to provide the necessary resistance without being too soft. They also properly distribute the passenger weight to prevent bottoming and assist in maintaining the proper cushion contours.

FRONT DOOR ARM RESTS



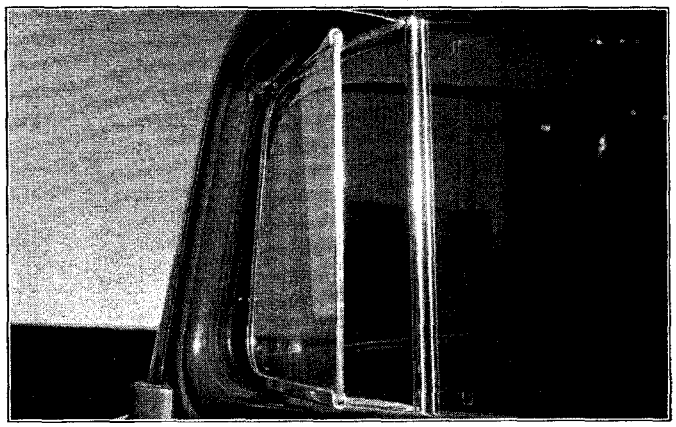
A new feature of additional comfort for the driver and front seat passenger is the arm rest on each front door.

FLEXIBLE STEERING WHEEL



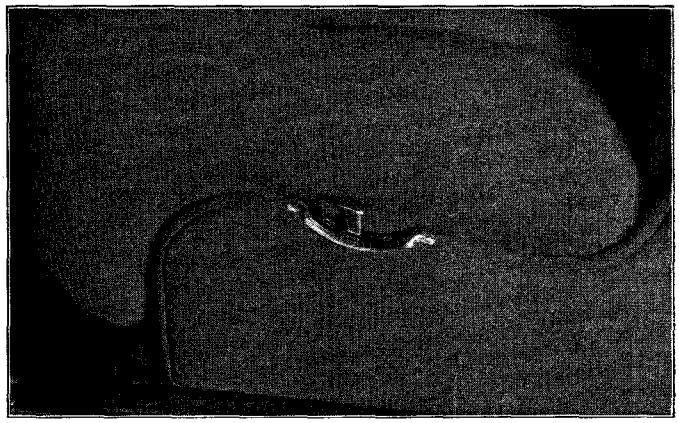
The new flexible type steering wheel is offered as optional equipment at small extra cost. It is unusually attractive in appearance and being flexible it contributes to greater driving comfort for the driver.

FISHER NO-DRAFT VENTILATION



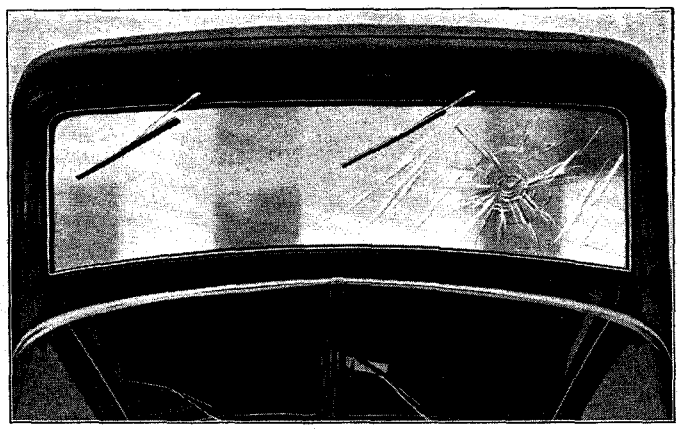
The Fisher No-Draft Ventilation system in both the front and rear compartments gives comfortable ventilation without drafts in winter driving and can be adjusted to take advantage of the cool breezes in warm weather driving. The new drip shield located over the front ventilators also permits ventilation in rainy weather.

EASY SEAT ADJUSTMENT



Proper seat adjustment to prevent fatigue on long drives and give the driver a comfortable seating position is provided by the easy operated push button on the left side of the front seat frame.

SAFETY GLASS



Security plate safety glass is standard equipment in windshield, ventipanes and all windows. This quality feature is unusual as standard equipment in cars in the La Salle price range and is an important item of safety to every car owner.

LUXURIOUS RIDING COMFORT

UPHOLSTERY MATERIALS

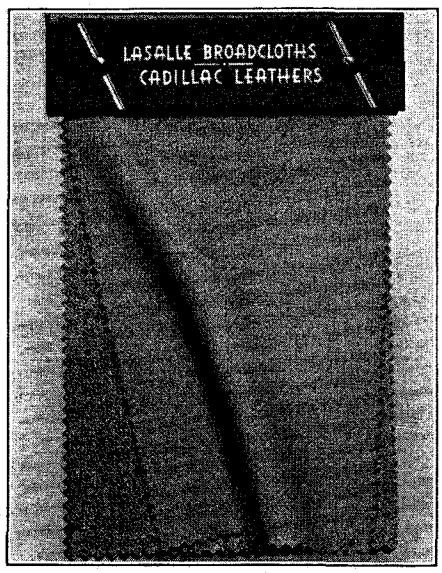
The upholstery fabric in the new La Salle reflects the quality and distinction of the car itself.

Four optional cloths are offered in a choice of gray and taupe brown shades in closed bodies. Two of the cloths are whipcords and the other two materials are a new cloth woven especially for the new La Salle called Highland Twist.

In the development of this new fabric many months were spent in its perfection to create something entirely new, distinctive and unusual that would combine fine appearance with utility and be capable of years of hard service.

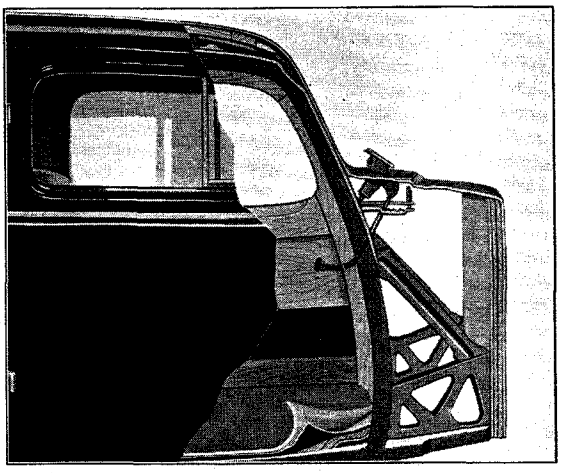
Nothing but the finest virgin wool was obtained and on arrival at the sorter's table only those portions that contained the fibres of the requisite length, strength and fineness were selected. In the dyeing process the chemicals used were also subjected to the most complete analysis.

The yarn was spun thirteen turns to the inch. Ordinarily a single yarn would be used but in the manufacture of this new Highland Twist cloth two single yarns of different colors were twisted together twelve turns to the inch, insuring still greater tensile strength in both the warp and filling. By using the two-toned yarn both ways in the loom a sparkling and unusual design was created that harmonizes well with the choice of exterior colors provided.



In the finishing process of the cloth the latest type of finishing machinery is used to give the fabric a smooth softness of texture that cannot possibly rough up and that is sufficiently pliable to enable the Fleetwood body trimmers to produce a smartly tailored interior, brilliant in coloring yet impervious to soil.

This new Highland Twist cloth is manufactured exclusively by weavers who have proven through years of experience their qualifications to manufacture the finest custom body fabrics.



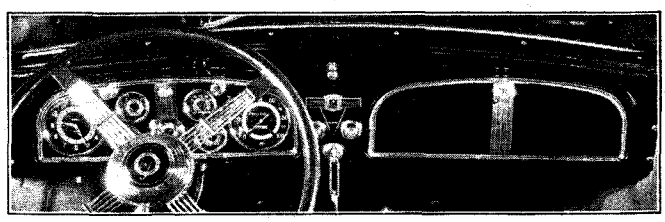
STURDY BODY CONSTRUCTION

The Fleetwood body on La Salle is sturdily built. It has a hardwood frame covered with steel panels welded together. The front cowl is strongly reinforced with steel brackets attached to the chassis frame. The roof is also a strong unit of slat and bow construction, securely fastened together to provide unusual strength.

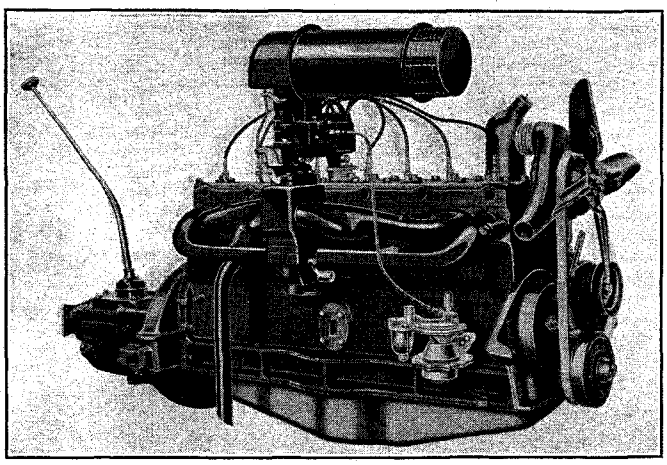
All body joints are braced to provide greater strength and are securely joined together with pressed steel brackets to eliminate wood-to-wood contact. This construction offers great safety, strength, resiliency and quietness.

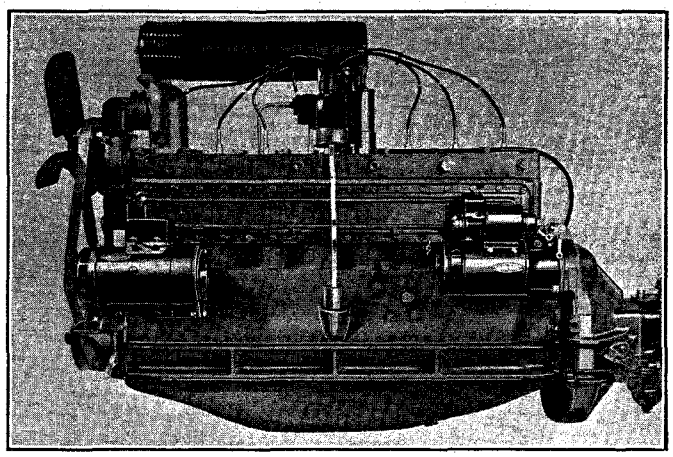
INSTRUMENT PANEL

The direct vision instrument panel with large, easy-to-read pointer type dials is a real safety feature in driving at high speeds. At the right is a large package compartment fitted with lock and key for protection of packages and personal things when parking in garages or parking lots.



LA SALLE STRAIGHT 8 ENGINE FEATURES

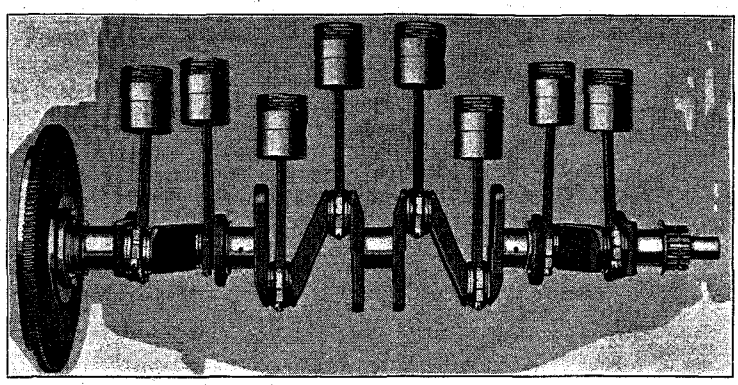


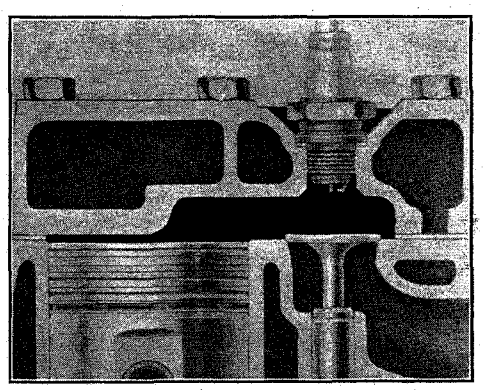


The new LaSalle straight 8 engine is built by Cadillac to its established high standards of precision and accuracy and has the built-in stamina to give satisfactory performance and long life under the hardest conditions of service.

It develops 95 horsepower at 3700 R.P.M. and is L-head in design, with 3″ bore, 4¼″ stroke. The full pressure lubricating system supplies all main, connecting rods and camshaft bearings and piston pins. The timing chain is lubricated by spray and valve mechanism by spray and splash from crankcase. The crankcase ventilation system prevents engine oil dilution caused by unburned fuel vapors.

The new LaSalle is a very delightful car to drive. The engine is powerful and built for over 80 miles per hour top speed driving. It is smooth, quiet and has a new quickness of acceleration in traffic that will make it just as pleasing in performance as it is in appearance.





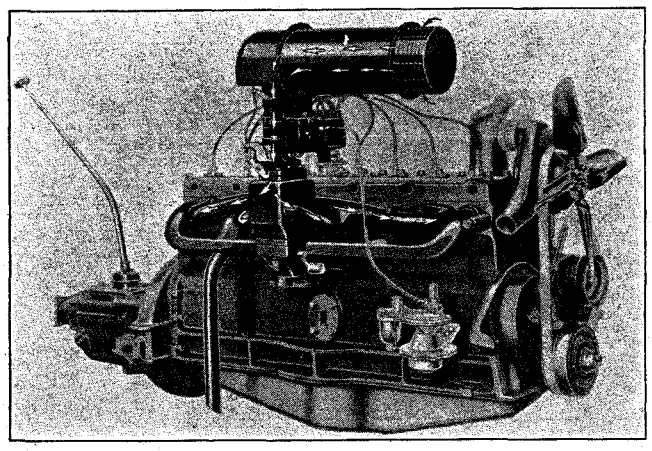
CRANKSHAFT

The LaSalle engine crankshaft is counterweighted with eight counter-weights and the harmonic vibration dampener to give maximum smoothness. All operations of Cadillac's rigid inspection system control the balance of each connecting rod and piston and the crankshaft is balanced statically and dynamically. Five main bearings provide generous support to the crankshaft and are spaced to permit removal of pistons from below thus reducing service cost.

INCREASED COMPRESSION

The compression ratio is 6.5 to 1 which gives the maximum power efficiency from the fuel mixture. The cylinder head is cast iron with a special designed combustion chamber to permit high compression.

LA SALLE ENGINE FEATURES



DUAL DOWNDRAFT CARBURETOR

Dual downdraft carburetion with automatic choke thermostatically controlled completely eliminates hand choking or priming of carburetor by use of accelerator when starting.

The carburetor is the dual or double barrel type with one barrel for each group of four engine cylinders. Each barrel has a separate main metering jet and adjustable idle needle valve. One float chamber and a single air intake furnish fuel and air to both barrels of the carburetor.

Air cleaner and intake silencer are provided. The fuel pump that furnishes fuel to the engine and the vacuum pump for operating the windshield wiper are of the diaphragm type and combined into a single unit and operated from the camshaft.

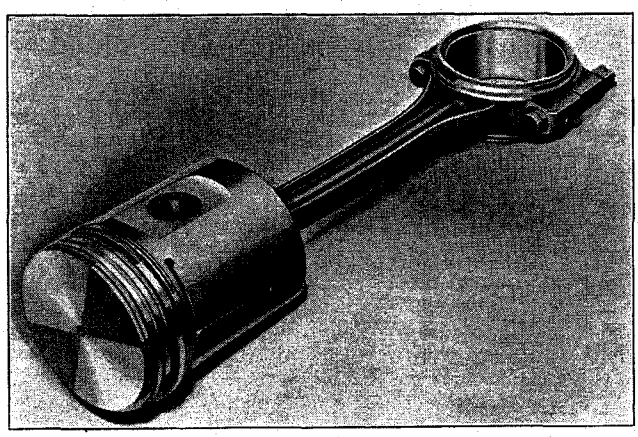
Uniform fuel vaporization and automatic heat control give steady and smooth engine performnace throughout its entire range of speeds.

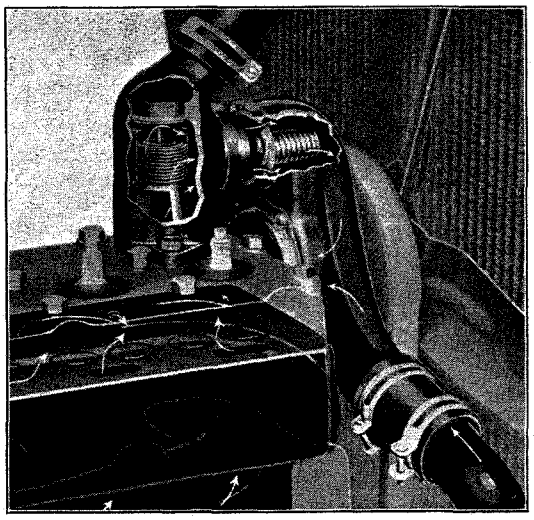
ANODIZED PISTONS

The new T-slot pistons in the 1934 LaSalle are made of a tough long-wearing aluminum alloy metal. In the production of these pistons they are anodized to provide the necessary hardness to the outside wearing face to eliminate scuffing and scoring. They are light in weight (12 oz.) which increases the smoothness of engine operation and reduces excessive loads on bearings and wrist pins at higher engine speeds.

CONNECTING RODS

Connecting rods are drop forged and matched to Cadillac precision limits of balance in sets for smoothness of operation. Each rod is gun drilled to allow for pressure lubrication to piston pins. This is an expensive feature of construction unusual in a car of this price. Piston pins are 7/8" diameter and are locked in the piston and carefully fitted into upper end of the connecting rod which is diamond bored.





COOLING

The LaSalle engine cylinders and valves are completely surrounded by water circulated by a belt-driven pump located in the front of the cylinder block on the same shaft as the fan.

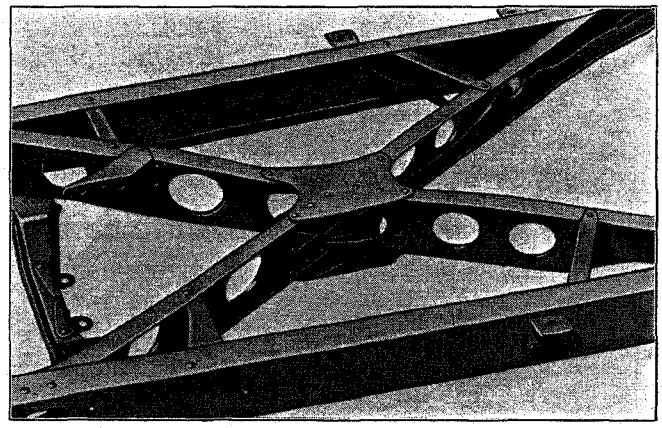
The water distributing manifold on the left side of the engine has holes for distributing the cool water from the pump to the opposite side as well as to the front and rear of the cylinder block to insure good circulation and provide balanced temperature.

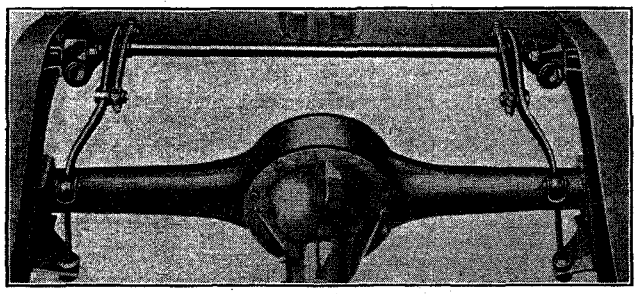
The thermostatic valve located in the cylinder head is controlled by the water temperature of the engine. When cool the valve closes and shuts off the water from flowing through the radiator until the engine reaches proper operating temperature. A spring loaded by-pass valve opens under the increased pressure of the system and maintains uniform temperature in the cylinder head and block.

CHASSIS FEATURES

X TYPE FRAME

The La Salle chassis has a low frame that reduces the overall height of the car. The lower center of gravity and wide tread gives the entire car unusual stability and roadability. An X frame member in the center extends forward within the frame side bars (forming a strong and rigid box member construction) to the front cross member, to which it is joined. This type of construction prevents twisting or distortion, stabilizes the front end and makes an unusually strong and rigid foundation for the body. The frame is $6\frac{1}{32}$" deep, $\frac{3}{64}$" thick and has a flange width of $2\frac{1}{2}$".



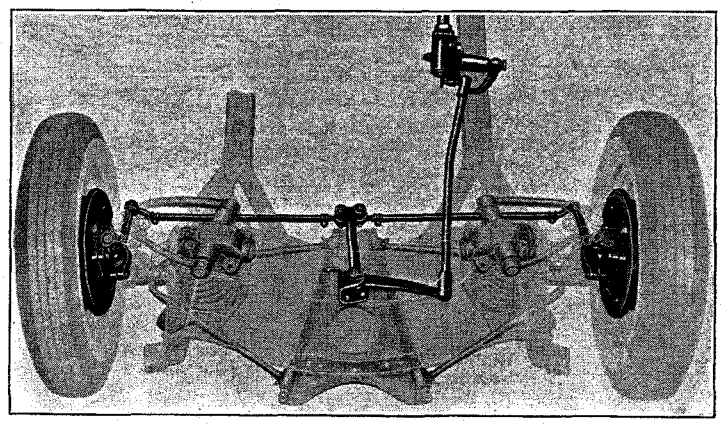


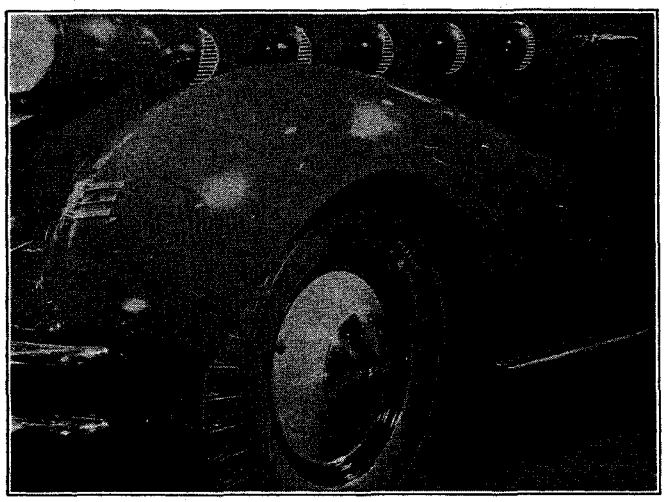
RIDE STABILIZER

The ride stabilizer shaft is located just behind the rear axle, on the frame, and is a safety feature of importance because it prevents body roll and sidesway and makes the car ride more smoothly, and adds a feeling of greater security, especially when making turns.

STEERING

The new steering system is a sturdy worm and double roller type gear. The steering link operates a bell crank supported on the massive front cross member, and to it are attached the two steering rods, each of which controls one of the front wheels, and it gives effortless steering and reduces physical effort of control to the minimum. With the new narrow front frame it allows a greater space for turning the front wheels. A La Salle can be turned around in a much smaller circle and also parked with a great deal less physical effort in a shorter space than many other cars of the same size. The steering ratio is 18.75 to 1.





WHEEL DISCS

La Salle wheels are of the disc type covered with steel discs as standard equipment at no extra charge. These new wheel discs provide for unusual and individual color combination treatment to contrast with the new La Salle body styling in solid color finish.

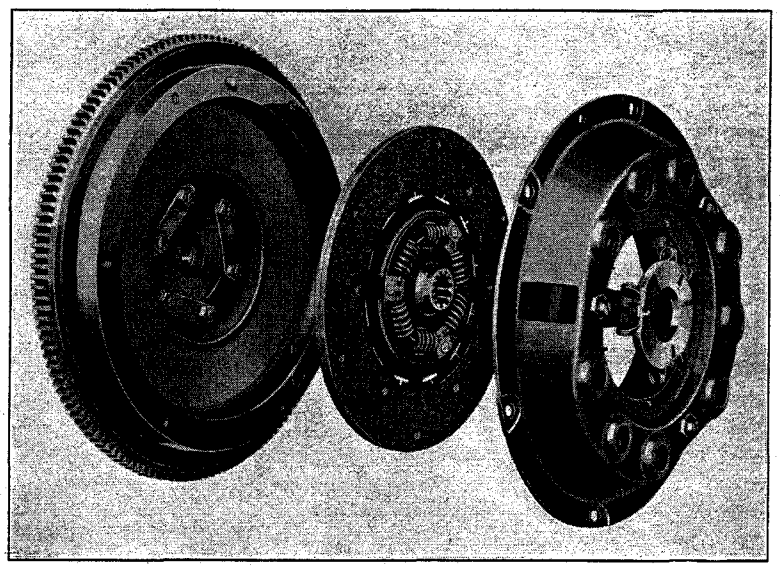
LOW PRESSURE TIRES

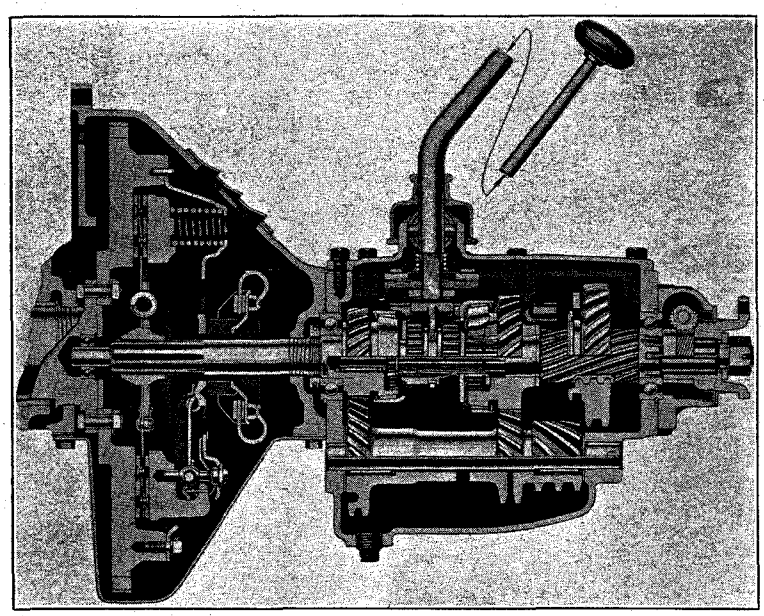
Low pressure, 4-ply tires, 7.00 x 16, carrying 25 lbs. of air pressure, are fitted to 16" diameter disc steel wheels. This new, large section tire cushions road shocks and contributes to the general comfort and roadability. It is designed for quietness with a new special tread that gives the same efficient anti-skid properties as higher pressure tires with conventional tread.

CHASSIS FEATURES—*Continued*

CLUTCH

The La Salle clutch is the single plate dry disc type. The clutch plate discs have a long wearing fabric that resists heat and gives smooth operation. The clutch is released through a graphite release bearing which is mounted on the clutch release yoke. Removal of foot pressure from the clutch pedal causes the clutch springs to force the pressure plate forward against the driven disc which gives gradual and smooth application of the engine power through the transmission to the rear wheels. The clutch is $9\frac{7}{8}$" outside diameter and $6\frac{1}{8}$" inside diameter with a clutch facing area of 94.25 square inches.





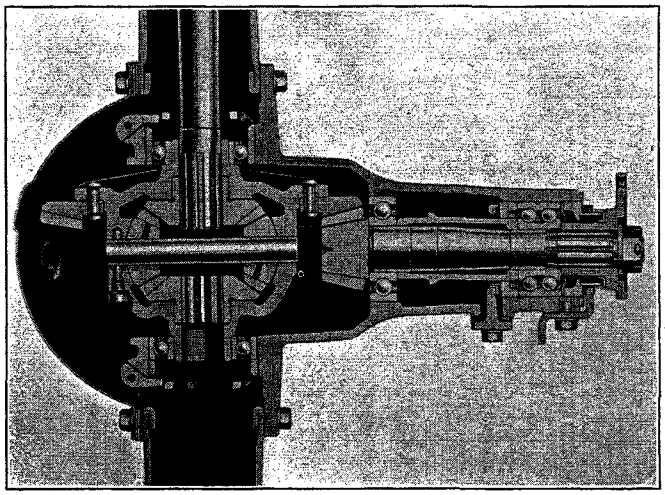
TRANSMISSION

The new La Salle Syncro-Mesh transmission is Cadillac built to the same precision standards as the Cadillac transmission. The spline shaft and all gears are helical cut including the reverse gear which gives quiet operation in all speeds. Syncronization between the second and high speed gears is possible either up or down at any reasonable speed and permits the use of the engine as additional braking power when needed, thus providing extra safety on hills, ice and snow by enabling the driver to shift quickly and positively from high to second without damage to the gears. The syncronizing of the gears is accomplished by inertia type synchronizers which make it physically impossible to complete shift until speeds are synchronous.

Transmission gear ratios—Second, 1.70 to 1. Low, 2.68 to 1. Reverse, 2.90 to 1. These ratios give quick response from the engine to the rear wheels and enable the driver to get the car under way in traffic with greater speed and acceleration in each gear before shifting to a higher gear.

To assist in maintaining gear silence it is important to have bearings that are quiet and will hold the gears in alignment. The main transmission shaft is carried on ball bearings and the jack shaft on roller bearings, an unusual feature in cars in this price class. The low and reverse shifter gears are on helical splines on mainshaft.

CHASSIS FEATURES

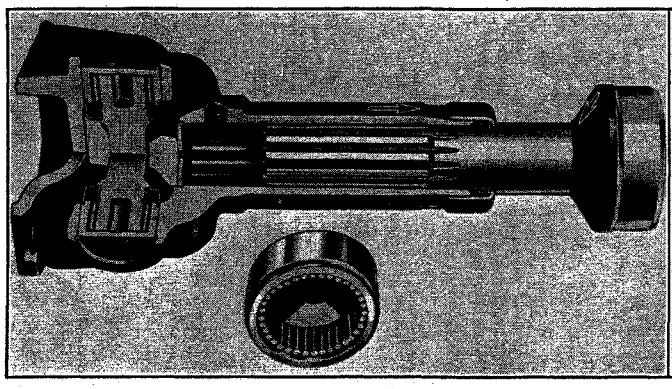


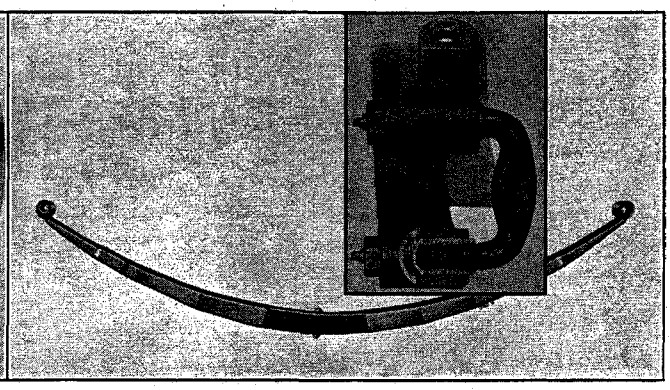
REAR AXLE

The La Salle rear axle is a strong, sturdily built unit of the semi-floating type with spiral bevel gears. All axle and pinion gears are matched to fine precision limits to eliminate back lash and insure quietness. Differential gears are mounted on ball bearings and pinion shaft on ball and roller bearings. Adjustment of pinion shaft is provided by a threaded nut. Standard rear axle gear ratio is 4.78 to 1 and was selected for best all around general performance.

A special feature is the mounting of the rear springs to the rear axle housing. To insulate the axle against any road vibrations or noise from the tires, rubber pads are used between the springs and spring seats on the axle housing.

SPRINGS AND UNIVERSAL JOINTS



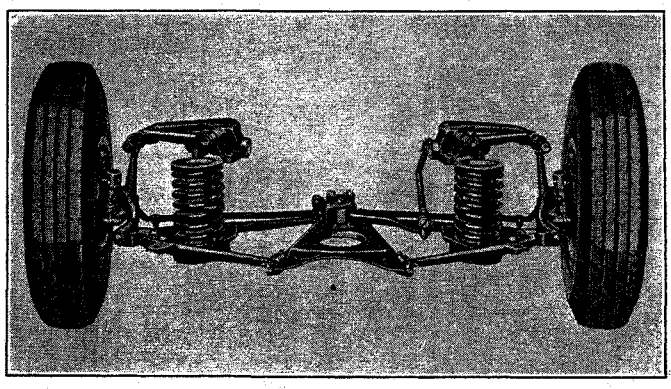


Front springs are the helical coil frictionless type requiring no lubrication. Rear springs are semi-elliptic 54¼" long with a composition rubber and asbestos strip between Nos. 1 and 2 leaves, and graphite bronze metal lubricating discs between leaves 2 and 3 and leaves 3 and 4. This method of spring lubrication eliminates spring squeaks and requires no oil or grease lubrication during the life of the car.

The U-type spring shackles at the rear of the rear spring and the spring bolt at the front end are of the threaded type. Being permanently seated they eliminate wear and side slap noise and with a greater surface for lubrication they last indefinitely.

With Hotchkiss drive the driving torque is taken through the rear springs. The tubular drive shaft has two Spicer universal joints mounted on needle roller bearings that are packed with lubricant when assembled and need no further lubrication for at least a normal year's driving of 12,000 miles.

Shock absorbers are of the conventional double-acting hydraulic type with no manual control.



CHASSIS FEATURES—*Continued*

Electric System

BATTERY

A 17-plate Delco battery with 130 ampere-hour capacity is located under the right side of the front seat where it is convenient for inspection and service.

GENERATOR

Power to the battery is furnished by a Delco Remy air-cooled and current controlled generator. The generator is driven by the fan belt and is hinge mounted to the engine to provide for fan belt adjustment. Fan blades in the generator driving pulley force air through the generator to reduce heat. The current output of the generator is automatically controlled by a relay used in conjunction with a special winding, which provides a higher charging rate to the battery to compensate for additional current when lights are used, and maintains battery current for quick starting.

STARTING MOTOR

Starting motor is put into operation by a push button on the instrument panel which connects with a solenoid switch on the starter that gives positive engagement of the starter pinion with the flywheel before the starter operates, and relieves the starter gears of all shock loads, giving longer life and quieter operation.

DISTRIBUTOR

The La Salle distributor is the double arm type with a 4-lobe cam and has full automatic spark advance.

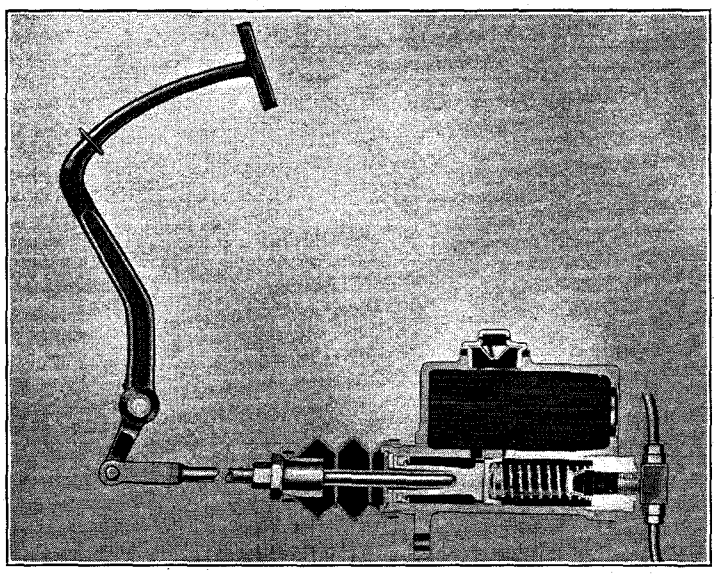
LIGHTS

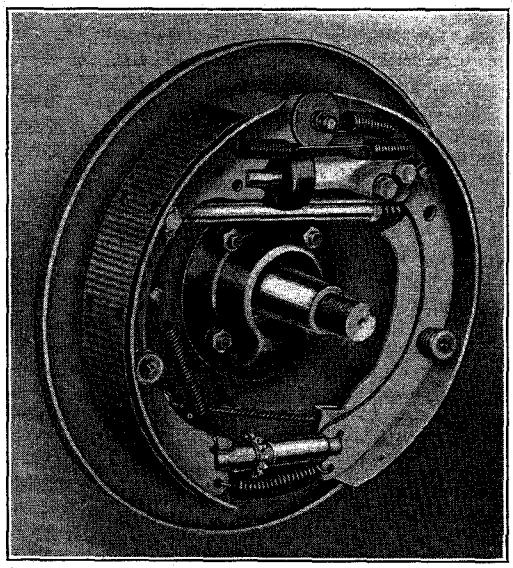
Multibeam headlighting system with double filament lamps provide improved and safer headlights. When passing other cars it cuts through the glare of approaching headlights and gives increased lighting on the right side of the road where it is most needed. By use of the criss-cross passing beam it keeps the left lamp beam directed to the right side of the road and lowers the right lamp beam directed to the left side of the road in order to prevent glare to approaching drivers. A control switch on the steering wheel provides selection of three driving beams, one for traffic and two in country driving, and the parking lights. A foot dimmer switch on the toe board at the left side of the clutch pedal controls the change from the country passing beam to the driving beam.

A visible headlamp beam indicator dial on the instrument panel shows the driver which of the three headlamp beams is being used.

Parking lights are mounted in the headlamps. Double tail lights with reflector lens also contain the stop warning lamps operated by brake pedal action.

CHASSIS FEATURES—*Continued*





DUO-SERVO SUPER-HYDRAULIC BRAKES

Bendix Duo-Servo Super-Hydraulic Brakes operate in centrifuse brake drums and give safe, dependable and easy operation.

In this system there are four important units.

(a) A master hydraulic cylinder mounted on the frame at the left under the floorboards and operated by the foot brake pedal.

(b) Supply tank cast integral with the master cylinder which maintains a constant volume of fluid in the system at all times, regardless of expansion or contraction due to temperature changes.

(c) Individual wheel cylinders and pistons attached to the brake shoes in each of the four wheel drums that are operated from hydraulic pressure coming from the master cylinder.

(d) Tubing and flexible hose connecting the master cylinder to the wheel cylinders.

The driver's foot pressure on the brake pedal builds up the fluid pressure in the master cylinder which displaces the fluid from the master cylinder through the tubing and flexible hose connections into the four wheel cylinders, which in turn operate the brake shoes against the drums.

In the wheel cylinders each unit is composed of a cylinder casting, a piston and return spring. The casting is anchored to one shoe while the piston is connected to the other shoe by means of a link. As the fluid from the master cylinder enters the wheel cylinder it causes the piston to move in the opposite direction away from the casting, thus forcing the brake shoes into contact with the drum.

When the pressure on the foot pedal is released the return springs become active and return the wheel cylinder pistons to their normal position, thus forcing the brake fluid back through the tubing into the master cylinder.

An important advantage in this type of hydraulic brakes is the self-equalizing principle which means that pressure cannot be built up in the system until all brake shoes are in contact with the brake drum which makes the pressure equal on all four wheels.

Another important advantage in this type of hydraulic brakes is the Duo-Servo action or self-energizing feature of the brakes themselves. As the brake shoes are expanded against the brake drums the moving wheels tend to wrap the brake shoes tighter against the drums and utilize the motion of the car for additional stopping energy.

HAND BRAKES

In addition to the Hydraulic Brakes the new La Salle is equipped with a separate mechanical hand brake system which operates entirely independent of the Hydraulic System and can be used for parking or emergency purposes.

The hand brake lever is connected by a pull rod to a cross shaft mounted on the X-member of the frame and operates the rear wheel brake shoes mechanically through a cable which is connected to a lever and strut rod within the brake unit. This combination mechanical and hydraulic braking system provides effortless and equalized braking pressure and is dependable under all conditions.

The brake drum diameter is 12". Rear and front wheel brake lining length is 25⅞" on each wheel. Combined total braking area front and rear, 207 square inches. Braking power is 44% on rear wheels and 56% on front wheels due to the larger bore of the wheel cylinders on the front, $1\frac{1}{16}$"—rear, $\frac{15}{16}$".

Three Phases *of* Constructive Selling

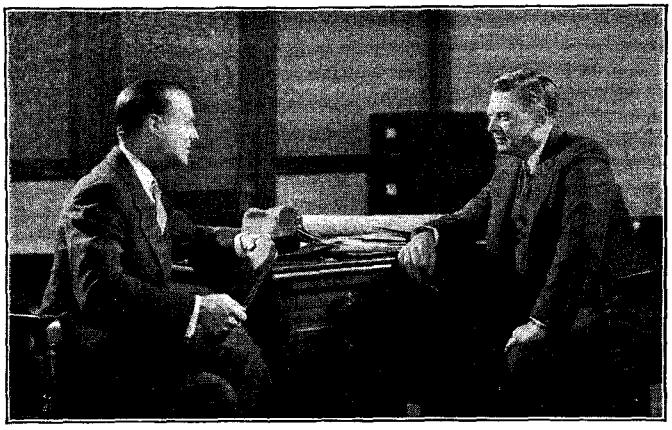


Study Each Prospect Card Carefully

ANALYZE EACH PROSPECT CAREFULLY BEFORE YOU CALL ON HIM

Determine whether he is a La Salle, V-8, V-12 or V-16 buyer and then arrange your selling presentation to fit the advantages of that car to his requirements.

People want and graduate to the better things in life. Always try and sell them something finer and better first. Remember it is easier to sell them *down* and you always have the lower priced cars to use as reserve selling strategy.



Show and Sell the Product Features in the Sales Kit

WHEN YOU TALK TO THE PROSPECT, TRY AND FIND OUT HIS PARTICULAR BUYING MOTIVES

What does he want most in a motor car: Style, prestige, comfort, performance or safety?

Concentrate your selling appeals on his strongest buying motives and sell him the features in a Cadillac or La Salle that will satisfy those needs better than any other car.

With used car prices controlled it is your job to do a better selling of Product Value. Carry your Sales Kit and be ready to show and prove why your car offers better value than any other car.



Giving the Prospect Demonstration

SELLING TALK, PICTURES AND ADVERTISING ALONE WILL NOT SELL THE MANY NEW 1934 EXCLUSIVE SELLING FEATURES. THEY MUST BE DEMONSTRATED.

It is *what the car does* for a prospect better than any other car in satisfying his buying urges that will make him want one of these 1934 Cadillac or La Salle cars enough to exchange his money for the satisfaction it will give him. You have the advantage of being able to demonstrate new exclusive features on Cadillac and La Salle that competitive salesmen cannot offer. You should make the most of your selling opportunity by making as many demonstrations as you possibly can to both La Salle and competitive car owners. Remember, you have the advantage over the competitive salesmen. Demonstrate and prove it to the prospect.

The La Salle Selling Appeals

The selling of La Salle automobiles is a business that brings you in constant contact with people having keen and intelligent business judgment.

As a La Salle salesman you enjoy definite advantages shared by salesmen of no other company. You sell the finest products of the largest and leading organization in the automobile industry.

Prospects and salesmen are different, and seldom are two sales made in exactly the same way. People buy for different reasons and the sales appeals to be used must be varied to fit each individual prospect.

For this reason no attempt is made by Cadillac to give a set form or "canned" sales talk on La Salle. It is important, however, that every salesman must know his product thoroughly, before he can do a constructive job of selling. Enthusiasm and personality are both essential, of course, but it is seldom that the selling effort can be effective unless it is backed up by knowledge and facts about the product you are selling. *No salesman ever lost a sale by "knowing too much" about his product. It all depends on how he uses it.*

The following pages divide the features of a La Salle car into various groups of selling appeals that fit an average buyer of a fine car. They are summarized as a list of features for your understanding and reference and are also put into a conversational form of selling outline that may be helpful to you in suggesting ways to interpret these features in your own words when you present them to a prospect.

You will notice the construction of these selling outlines is arranged entirely on the basis of what the features of a La Salle car will do *for the Buyer.*

You are selling the buyer a service when you sell him a La Salle and you must make your sales presentation, appeal to him on the basis of *what the car will do for him* to give him greater comfort, greater safety, and make him happier with it than any other car he may consider. Another way of putting it, is to say that when you are selling La Salle you are trying to do the buyer a service that must appeal to him enough to exchange the money he now has, for the benefits the La Salle car will give him.

A careful study of these La Salle sales appeals and an effort to constantly improve your methods of presenting them to your prospects, will, if they are backed up by common sense, tact, and the ability to fit your selling talk to the buyer's needs, determine the difference between good selling and "all other kinds."

What Owners of Upper Medium Price Cars Want

Compiled from a study of thousands of Questionnaires by General Motors Consumers Research

Dependability	76.6%	Ease of Control	37.7%
Operating Economy	69.7	Smoothness	31.1
Safety	50.7	First Cost	22.3
Comfort	49.5	Pick Up	19.5
Appearance	47.3	Speed	10.7

THE SELLING APPEAL OF PRESTIGE

La Salle, as you know, is a car of high standing. The prestige which it has won during the last seven years in its own right, and by reason of its Cadillac sponsorship, will be greatly increased by the four new models for 1934.

You recall how confidently the public accepted and approved La Salle upon its initial presentation. The popularity into which it sprang almost immediately has solidified into high and increasing regard on the part of the public which appreciates and buys fine cars.

The fact that Cadillac designs and builds LaSalle with all the scrupulous care that governs the manufacture of Cadillac cars themselves was—and is—La Salle's passport to good opinion. But the new La Salle, with its youthful design, its flashing performance and its appeal to a wider market, will win myriads of new friends on its own account.

From now on, it will be "on its own" in a broader sense than at any time in its history. It could not be designed by any but Cadillac engineers, of course, and it will be manufactured by the same exacting, close-precision methods of Cadillac itself.

When La Salle first appeared, you remember that it recorded a radical departure from the then generally accepted tendency in motor car design. Each year since, it has been a leader in design refinement and advancement.

For 1934 La Salle registers a departure from accepted lines as stunning as its original conception. It presents to your eye today a highly artistic and at the same time a highly practical expression of the aerodynamic effects which are just beginning to come into use.

La Salle appearance is aristocratic and distinctive, as becomes the newest car in the world. In effective streamlining, attention to detail is of extreme importance. The necessity is for careful smoothing of exposed surfaces. In the La Salle, such things as headlamps, fenders, rear lamps, and so on, are shaped so as to create little air disturbance.

La Salle now has the additional prestige of Fleetwood, America's leading custom-car builder, with bodies which place it in the custom-car classification when compared with other makes of production cars in the upper medium price groups. They have the same high qualities, the same high standards of design and workmanship which distinguish Cadillac.

Fleetwood designers, in producing the exclusive bodies for the new La Salle, have adhered strictly to all the streamline necessities, and at the same time have created body outlines which are highly pleasing in their artistry.

There is prestige in the name La Salle. There is prestige in the car and in its ownership. With its exclusive design, and Fleetwood body equipment—with its full sponsorship of Cadillac precision manufacture—with its dazzling performance—the new La Salle is destined to earn even more widespread prestige than heretofore.

THE SELLING APPEAL OF NEW BEAUTY AND STYLE

There is everything about the new LaSalle to excite your admiration and approval. A new style is created. Beauty is evident in every line and curve. Both of them find masterly expression in LaSalle's exclusive Fleetwood body.

There is no other car like the new LaSalle, in the long low lines of its aero-dynamic design. Here is grace, fleetness—the suggestion of speed, stamina and strength. Finely proportioned beauty, in perfect balance, meets your eye, whether you observe the LaSalle from the side, the front or the rear.

You see no spare wheel or tire on the new LaSalle. Heretofore this very necessary equipment has been mounted on a carrier at the rear or carried in front fender wells. In either place, spare wheels and tires were out of harmony with general design, and it was not possible to reconcile the two.

Fleetwood designers solve the problem by providing a special recess, within the rear of the body, for the spare wheel and tire. Here they are concealed, and also protected from dust and dirt, water and sunlight, with a protection more complete than any metal cover can provide. Here the aero-dynamic design can have untrammeled sweep from front to rear.

Regarding the LaSalle from either side, you see a long, low design of strikingly individual beauty. You see that the long, unbroken hood line reaches to the windshield. It is emphasized by the absence of a radiator filler cap. Headlamps, too, are streamlined.

In the contour of the front fenders there is an entirely new beauty note. They are known as the air-foil type. See how they hug the wheels, yet round over them to provide space for spring action. The new chromium belt-line of the body tends to emphasize the body's length.

You get a particularly pleasing view from the front. The radiator is unique in its extreme narrowness, with the long hood tapering sharply from windshield to radiator. The radiator grille is built in and finished in chromium, with slender horizontal crossbars at wide intervals. At their front, the fenders follow the wheel contours to the lower bar of the new-design front bumper.

The front of the body slopes sharply back from the cowl line to the roof; and when you go to the rear of the car, you see the same slope carried down from the roof to the end of the shield which conceals the fuel tank. True aero-dynamic design—fleet, sleek, and new among motor cars.

New-style, double-bar front bumpers, air-foil in type, have their powerful coil springs completely concealed. Twin horns are mounted under the hood in contrast to today's general custom of being placed out in front under the lamps. The radiator cap, too, is under the hood and in its place above the hood is a beautiful fixture symbolic of speed and flight. Rear bumpers harmonize in design with those at the front, of course.

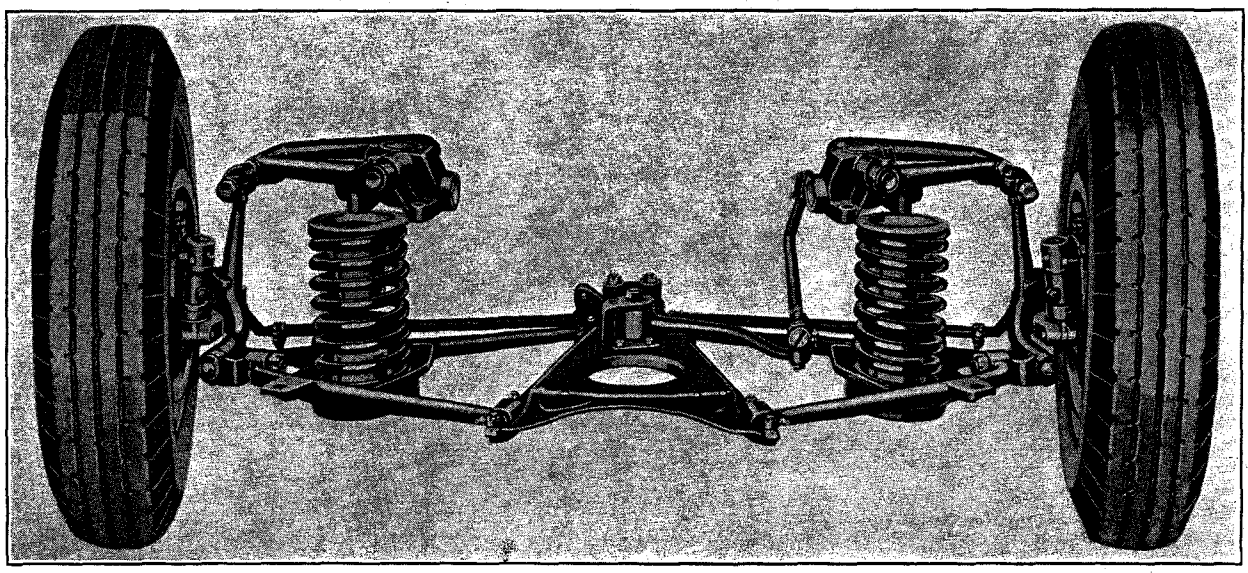
In effective streamlining, such as you see in the new LaSalle, attention to detail is of special importance. The latest high speed airplanes are distinguished by the absence of exposed stays and braces; junctions between two surfaces, in engineering terms, are skillfully filleted. You observe similar treatment in this car. All exposed surfaces are smooth. Details such as headlamps, fenders, rear lamps, are all carefully designed to create little air disturbance or resistance.

So you see that there is very practical reason for the new styling so stunningly expressed in the new LaSalle. That reason is dazzling performance, as you shall see when you drive it yourself.

The Sales Appeal *of* Comfort

Cadillac has always provided La Salle owners in the past with very fine riding comfort, but in the new 1934 cars Cadillac introduces an entirely new standard of luxurious riding comfort and ease that marks the greatest single improvement in automobiles during the past 20 years.

When you ride in the new La Salle, and drive it, you will marvel at the great improvements which have been made in riding comfort compared with previous models. In these cars you get a wholly new interpretation of riding comfort through what is known as a gliding ride. Roughness in the road, trolley and railroad crossings seem to smooth out as you pass over them. No such riding comfort as you now get in La Salle has ever before been built into a motor car. It is the result of three years of development initiated and followed through by Cadillac engineers.



When Cadillac decided to start research development of riding comfort they discarded all previous developments and began with an entirely new viewpoint of finding out what caused physical discomfort to people. Hundreds of people were subjected to a bouncing chair test while the engineers noted physiological reactions. The engineers went far beyond mere determination of the boundary line between comfort and discomfort. They analyzed causes of riding fatigue. They discovered that certain types of motion, not uncomfortable in themselves, upon repetition become far more tiring than others.

From the result of these tests, Cadillac engineers defined the fundamentals of riding comfort. They knew just how far, just how fast, and in what direction you can be moved and still remain entirely comfortable.

Starting with the passenger they then studied the car design as to its distribution of mass weight and spring action. Finally it was determined that an entirely new kind of spring suspension and distribution of mass weight in the car was necessary. Consequently in the new La Salle you get riding comfort that is the result of an entirely new principle and something which is not available on any competitive car. In enjoying the delightful and exclusive ease of these new cars, you will notice four distinct improvements. You will notice

1. They are lifted much more gently.
2. That the motion is vertical instead of the usual neck-cracking and forward pitching movement.
3. That the disturbance, slight at the beginning, is quickly damped without the usual "interference kick" which has always been the bane of rear seat passengers.

In addition to these three improvements in riding comfort you will notice a great improvement in the ease of steering and control of the car as you drive smoothly over holes, ruts and rough roads.

Naturally you are curious to know how Cadillac has achieved such unprecedented results.

First: The mass weight distribution in the car has been entirely changed.

The Sales Appeal *of* Comfort — *Continued*

Second: The stiff front axle and the stiff semi-elliptic front springs are no longer employed. In their place we now use frictionless helical coil springs that are softer than the rear springs. With the new independent suspension of the front wheels, they are attached directly to the chassis frame by means of parallel and hinge-jointed upper and lower forked arms. This type of front wheel suspension permits an improved positive and accurate steering mechanism and the reduction of unsprung weight helps to keep the wheels in contact with the road at all times.

Cadillac engineers concentrate on the development of improvements with always the comfort of its users in mind. In the new 1934 cars they have now gone farther than ever in riding comfort and the same is true of the interior dimensions and arrangements which contribute to both physical and mental comfort.

As you enter and leave the car, you can hardly help commenting upon the generous width of the doors, and the ease with which they open and close. If you examine the doors closely you will see that they fit snugly and are so trimmed as to keep out drafts. The striker plates are adjustable; all door controls are arranged within easy reach; and the safety inside locks of the doors furnish protection against intrusion and also prevent your being ever inadvertently locked out of your car.

There is plenty of room comfort in the La Salle rear seat. Seating space and elbow and shoulder room are ample. As you sit in the rear seat you can feel that the back cushions are unusually high to support your shoulders. Though deep and soft, the seat cushions retain their shape because they are scientifically built to definite contours that have been found to be the most pleasing to hundreds of owners. The Marshall cushion springs are of different types and sizes, with varying rates of yield, so that there is softness and resistance where each is most comfortable. La Salle cushions are not too soft but are carefully designed to be sufficiently resilient to prevent the disagreeable bottoming which you may have previously experienced with some seat cushions.

The arm rests for the rear seat are of the wide lounge-chair type and have sponge rubber cushions to support your arm like your easy chair in your home.

In upholstery, you have a choice of four exclusive patterned cloths, including the new Highland Twist material created especially for the new La Salle.

Door action automatically operates the dome lights. The rear window blind is concealed. Conveniently placed you will notice the lighter and ash trays. Spring-type hassocks are provided for those in the rear seat.

You can see easily out of all windows. The openings are large and the plate glass is clear. All the windows and the windshield are of Security plate glass, which gives you protection and safety. The front pillars are narrow, and the rear window glass is also extra wide, which adds to the range of your rear view driving vision. The windshield cleaners maintain effective vision when in use, regardless of the speed of the engine; and two adjustable inside visors prevent glare by day and by night.

Fisher no-draft ventilation is provided in the windows of the front doors and in the rear quarter windows. With this unique system, you have fresh air as you like it and so do the others in the car, for it can be individually controlled. Its use prevents the fogging, steaming or frosting of the windows and keeps the air inside the car fresh and free of fumes and odor if you or any of your passengers wish to smoke.

Maximum ventilation of the front compartment is obtained by a reverse-opening cowl ventilator, which is screened against the entrance of insects in summer, and can be used for ventilation in wet weather.

Soundproofing is one of the important features of La Salle bodies which you will appreciate most. The dash between the engine and the front compartment is thickly insulated; and the body panels are sound-deadened; and the thick, heavy carpets are proof against dust and drafts. These things make the interiors as quiet and enjoyable for conversation as your club or home.

When you take the driver's seat, you see how conveniently everything is arranged. The instrument dials are directly in front of you, large in size with pointers for quick, easy reading, through the clear-vision, three-spoke steering wheel. All the controls are reached with minimum movement of your body. The starter button is on the instrument panel. The brake and clutch pedals are rubber covered for sure footing, and the front seat can be easily adjusted to your individual requirement.

The instrument panel includes a headlight beam indicator, which is illuminated and tells you which of the three headlight beams is in use at the moment.

Comfort for driver and all passengers is built into these new La Salles. Though the La Salle is low as you look at it from the outside, you find sufficient headroom when you enter and sit down. Regardless of whatever body type you may choose you will find La Salle is a masterpiece in comfort engineering.

The Selling Appeal *of* Safety

(a) SAFETY OF OPERATION AND CONTROL

With the changing traffic conditions and faster driving speeds on the highways, you will be vitally interested in what Cadillac offers to give you in greater safety when driving. In a motor car there are two entirely different group of things that contribute to safety.

(a) One group is concerned with the safety features of car operation and control—
(b) The other with the safety and built-in strength of the car's construction.

In the first group you are particularly concerned with visibility, the easy of driving control, the positive sure and quick braking, the headlamp efficiency, adequate ventilation and in general everything that concerns effortless driving comfort with the idea of preventing fatigue.

When you drive the new LaSalle you will be instantly impressed with the safety and the feeling of great security. It is a combination of many things each in itself important, but when you consider them collectively you will agree they contribute to greater safety. Sitting at the wheel, you will notice the very wide range of clear visibility both front and rear.

The wide windshield and narrow front pillars prevent blind spots and give maximum driving vision. The rear window has also been made extra wide to give an adequate rear view of traffic. The windshield cleaners are designed to always give clear vision when used, regardless of whether the engine is idling, accelerating at the start, or pulling up a stiff grade, because a special vacuum pump furnishes extra vacuum for the operation. The cleaner blades are the inverted type and snow or water does not run back over the cleaned area.

You will also appreciate the care that has been taken to prevent glare when driving. The two adjustable sun visors prevent glare from either the front or the sides; and the windshield is sloped at the necessary angle to eliminate the light reflections and glare from the headlamps of following cars. You can read the pointed type dial instruments at a glance because they are compactly grouped directly in front of you and are clearly visible through the narrow rim steering wheel. You will find the steering almost unbelievably easy, whether on the straightaway or maneuvering into a cramped parking space because the steering gear is mounted on roller and ball bearings. Even after a long day's drive you will notice the absence of fatigue.

The combination of a very wide wheel tread and narrow frame affords an unusually short turning radius that facilitates the ease of parking and handling the car in small spaces or heavy traffic. You can quickly and easily adjust the front seat to your own requirements for legroom or a change in seating comfort when desired. A ride stabilizer on the frame at the rear automatically controls body roll and prevents sidesway on curves at high speed and at all other times.

When the need arises for quick stopping you will find LaSalle brakes stop the car easily, smoothly and effectively. The physical effort of braking is reduced to almost nothing by the efficient hydraulic brakes. The centrifuse brake drums are much longer wearing than ordinary steel. Even when used continuously, they do not warp or lose their effectiveness, a most important feature of safety.

LaSalle's multi-beam headlighting gives you more than the usual amount of light on the road. It provides three beams—city, country driving and country passing. You select city and country beams

by means of the switch on the steering wheel. The country passing and driving beams are controlled by the foot switch at the left of the clutch pedal. On the instrument board the visible headlamp beam indicator dial shows quickly what type of beam you may be using and when the headlamps are in use it eliminates uncertainty when approaching oncoming cars. You can always be sure that the battery is being properly charged when headlamps are in use because the charging rate of the electric generator is automatically regulated and increased to compensate for the volume of the current used for lighting.

(b) SAFETY OF CAR CONSTRUCTION

In the manufacture of LaSalle cars the careful metallurgical research, fine engineering and precision manufacturing used assures you of the structural safety of the car which you can accept as a matter of course. Nevertheless, you will be interested in some of the details at least as to the strength of the frame, springs, wheels and tires, brakes, steering and so on.

The frame is unusually strong. It has an X-type frame within the main frame, the arms of which extend to the front and are welded to the side members, which makes the frame a solid, sturdy and rigid unit of construction capable of standing unusual strains.

With the new independent suspension of the front wheels the front springs are only required to support the weight of the frame and body.

All former braking and twisting strains are now taken by the forged arms that connect the wheels directly to the frame.

The wheels, tires, running boards and bumpers are all unusually strong and were designed for maximum safety. The bodies are strongly constructed of steel with the panels welded in a unit type construction. The cowl, windshield pillar posts and front body brackets are also welded together into a single unit that gives unusual strength and safety.

The syncro-mesh transmission permits you to shift positively without clashing, and when driving on hills, on ice or in snow it provides additional safety in giving you complete and instant control of the gears at all times under all conditions.

The cause of numberless accidents on the highways is driver fatigue. One of the many important things that contributes most to fatigue is the lack of good ventilation and constant circulation of air within the body. LaSalle cars are equipped with the Fisher No-Draft ventilation system that always assures a constant supply of fresh air and plenty of ventilation without drafts. Ventilator windows are provided in both front *and rear* compartments and may be individually controlled by the driver or the rear seat passengers without any discomfort. It is without question the greatest advancement ever introduced in closed cars for the health, comfort and safety of passengers and driver.

So you see when we talk of safety in a LaSalle car we really have many important features of safety that are of vital importance for you to consider. Safety is priceless to you and your family and in no other car will you find as many features that protect your safety as well as in LaSalle.

The Selling Appeal of Long Life and Economy

When you invest in a motor car you are entitled to a satisfactory return on that investment in the terms of long life and economical maintenance which in Cadillac is pre-determined by the thoroughness of its engineering design and research and the excellence of its manufacture.

Cadillac goes to every possible length to safeguard your investment by insuring long life and economical maintenance long before you take delivery of your car. For example—

Cadillac's Metallurgical Department devotes its entire time to research analysis and fatigue testing of all kinds of materials before they are even approved for design and use by the Engineering Department. If you were to visit the Cadillac plant in Detroit, you would see in constant use all the devices which science has perfected for finding out about the life and wear of materials. This is done to find out what will take place in the cars before they are even manufactured. Such information is assurance to you that Cadillac knows that the materials it selects will prove satisfactory to the purchasers in the terms of long life.

The Cadillac Engineering Division is known and respected as a leader in the motor car industry. It is the work of the Engineering Division to think in terms of the future and to constantly strive for progress, in advanced designs and mechanical developments. Such a purpose increases the efficiency of the product, and its satisfaction to the buyer.

General Motors Research Laboratories devote their efforts to basic research problems for future use by the engineers of Cadillac and other General Motors units. The facilities of the laboratories for engineering research and experimentation are all-embracing. Since the Laboratories are owned and operated in their entirety by General Motors, the benefits of their conclusions and findings are always available to Cadillac for the continuous improvement and advancement of its product.

General Motors Proving Grounds are the largest and most complete outdoor testing laboratory in the motor car industry. Cadillac engineers do their own exhaustive testing and supplement their findings with the information and experience gained by the Proving Grounds engineers. Their methods of test are impartial and every car whether built by a General Motors unit or by some other manufacturer, must show what it is made of and what it can do. Through such extensive testing and research work Cadillac engineers are not only assured that new principles and their application will be successful and satisfactory to you, but they are in position to continuously keep in advance of competition, and pass the benefits of this knowledge on to you and all other LaSalle owners.

Cadillac craftsmanship and precision manufacturing are famed throughout the world. Every year hundreds of visitors from all parts of this country and from all over the world go to the Cadillac plant in Detroit. The plant is known as a model of modern manufacturing accuracy and efficiency where production methods are scientifically controlled and safeguarded by the finest precision inspection standards.

Long life and economical maintenance, as interpreted by Cadillac engineering and manufacturing, requires a large factor of extra strength in every unit of its construction. This is seldom expressed in weight or size, but is determined by metallurgical and engineering science that knows how to provide strength with fine alloys and analysis rather than resorting to weight and bulk.

In the construction of the engine the reciprocating and operating parts are balanced to the smallest fractions of an ounce, to minimize friction and reduce wear. Full pressure lubrication is provided to all

moving parts such as main and connecting rod bearings, piston pins, timing chains, camshaft bearings. Positive crankcase ventilation prevents dilution of the engine lubricating oil, thereby reducing wear and lengthening the life of the lubricant. It also increases the periods for complete draining of the crankcase and replenishing with new oil, to every 2000 miles—which is only half as frequently as with many cars—an economy feature which will appeal to you.

The oil, air and fuel which are used in the LaSalle engine are strained, filtered and cleaned. The oil is screened as it is recirculated by the pump to the various engine parts. The air cleaner removes the dust from the air drawn into the carburetor and prevents microscopic abrasive material from reaching the surfaces of precision fitted parts, thereby prolonging their life and efficiency. The fuel filter removes any particles of dirt and water from the gasoline which, if permitted to remain, often cause engine stoppage.

Cadillac has carried on research on aluminum alloy pistons for years and has overcome the disadvantages of earlier designs. We use pistons of aluminum alloy which is anodized and has excellent wearing qualities due to its hard, tough and long wearing wall surface. They are ground slightly elliptical in shape, with such precision that when they expand with heat in operation, they become perfectly round. With these pistons you are assured of long wear—and the special design of the rings gives you the further satisfaction of lower oil consumption.

An internal combustion engine cannot develop its greatest efficiency in power unless its temperature is at the approximately correct point. The La Salle water circulation is thermostatically regulated so that the engine reaches that point quickly, thus reducing the "warming up" period, especially in cold weather. The thermostat maintains the correct temperature and its operation is wholly automatic. All of this means greater fuel economy to you.

If you have ever experienced the inconvenience of a run-down battery, you will be interested to know that the new LaSalle provides for keeping the battery charged with more current than is used when the lights are on. In other cars the charging rate to the battery drops as current is used for the headlights. In the LaSalle generator the amount of current to the battery is automatically increased to partly compensate for the outgo. The generator is air-cooled to prolong its life.

Continued use of the hand operated carburetor choke, in starting the engine and in cold weather driving, is prevented by La Salle's new automatic choke. In midwinter it automatically provides summer flexibility and efficiency to the engine.

Ball and tapered roller bearings are used in the major units, such as transmission, clutch, rear axle and wheels to minimize friction and prolong life of the moving parts.

LaSalle's centrifuse brake drums are proof against the scoring and the uneven wear which are common to less costly material and construction. LaSalle brake drums completely enclose the brake mechanism at each wheel, protecting it from water and dirt.

Threaded spring shackles eliminate friction, noise and wear at the points where the rear springs are attached to the frame. The rear springs have metal covers and require no lubrication because, between number 2 and 3 and 3 and 4 spring leaves, graphite bronze discs are used to give adequate lubrication.

LaSalle service policy. With all of this care in the design and manufacture of LaSalle cars you can be assured of getting the best return on your investment in terms of quality and long life. In addition to this, however, Cadillac goes one step further and backs up the car after it is put into service by the owner with the finest service policy of any company in the automobile business. LaSalle service men are well trained and constantly given help and education on the best methods of service maintenance so that LaSalle owners will derive the utmost in economical upkeep and carefree service from their cars.

CADILLAC-LA SALLE SERVICE POLICY

Service rendered according to Cadillac standards by Authorized Cadillac-La Salle Service Stations provides for car salesmen an additional and effective sales story, and also contributes definite sales assistance by fostering good will and by maintaining customer interest in Cadillac during the interval between successive new car purchases.

The sales story in regard to Cadillac-La Salle service includes the nation-wide features of the Cadillac service policy as presented on the next page and the advantages to the owner of well-organized Authorized Service Stations, which are as follows:

Authorized Cadillac-La Salle Service Stations have a more sincere interest in the operation of the La Salle owner's car than anyone else could have. Their personnel are specialists, having had more experience on Cadillac and La Salle cars than anyone could have who works on all makes of cars. Furthermore, their personnel secures the benefit of continuous factory training, through the medium of up-to-date, expert information on La Salle adjustments and service methods, supplied exclusively to them by the Cadillac factory in regular publications and special bulletins.

The most valuable contribution of Authorized Cadillac-La Salle Service to the salesmen, however, is in retaining the car owner's good will and interest in La Salle. Authorized Service helps to accomplish this by keeping the car in satisfactory operating condition at a minimum of cost and inconvenience, and by providing a means of maintaining regular contact with each car purchaser.

Salesmen can utilize the aids provided by Authorized Service to best advantage by doing the following things:

Adopt the proper attitude toward service in every contact with prospects and owners. This means pointing out to each purchaser that his car is a piece of fine machinery and, as such, will require a certain amount of regular service. Then sell each prospect on La Salle service as well as on the La Salle car.

Know the selling points of your own local service station. Know the advantages which it possesses by virtue of its being an Authorized Service Station; know its facilities, its personnel and its high grade of work; and make sure that your prospects know these things also.

Use service as a reason for making additional sales calls. You can call upon and interview an owner on service at times when a strictly sales message might not supply a plausible entry. You can use service as a "door opener" to interview those owners who declare that they are not in the market.

Re-emphasize the superiority of Authorized Service in all of these calls, and exert your efforts to make regular service customers of those owners who are not. By so doing, you will increase the likelihood of their being satisfied with their cars and enthusiastic about La Salle, which means that your sales efforts with these owners will be more successful.

Sales of new cars to former Cadillac and La Salle owners and to their friends, constitute by far the greater part of our new car sales. Each one of these sales is made primarily because of the good will which these customers hold toward both the La Salle car and the local Cadillac organization. This good will is fostered in several different ways; of which one of the most effective is good service.

The Obligations of the Owner Service Policy

1. Delivery:

The Dealer will see that the car is properly prepared before delivery to the owner, in accordance with Standard Factory Instructions.

2. Parts and Labor:

For ninety days after delivery, provided the car has not been driven to exceed 4,000 miles, any parts (including all original equipment except tires) which have proved defective in either material or workmanship will be replaced or repaired by any Cadillac-La Salle dealer in the United States and Canada without any charge to the owner for the material or labor.

3. Adjustments:

For the first ninety days after delivery, provided the car has not been driven to exceed 4,000 miles and is in the hands of the original purchaser, the owner will receive three inspections and adjustments; the first between 500 and 1,000 miles, second between 1,000 and 2,000 miles, and the third between 2,000 and 4,000 miles. These to be given without charge to the owner provided the work is not made necessary by misuse, negligence or accidents.

4. Inspections:

Throughout the life of the car the owner is entitled to have his car tested and inspected without charge every 30 days or 1,000 miles by any authorized Cadillac-La Salle Service Station, provided such inspection or testing requires no dismantling of parts.

5. Service Identification Card:

At the time of delivery the owner will be provided with a service identification card which will introduce him to any authorized Cadillac-La Salle Service Station and entitle him to receive service in accordance with this policy. This card should be kept at all times in the holder provided for it on the car.

6. Tourist Privileges:

When touring, the owner is entitled, upon presentation of his identification card, to all of the benefits of this policy at any Authorized Cadillac-La Salle Service Station in the United States and Canada.

7. Change of Residence:

In case the owner changes his residence from one location to another before the warranty period has expired, the Authorized Cadillac-La Salle Service Station serving the locality into which the owner moves will, upon presentation of the Identification Card, render any no-charge service to which the owner may be entitled as outlined in paragraphs two and three.

8. Regular Maintenance Parts and Service Charges:

For the benefit of the owner, the Cadillac Motor Car Company has provided established parts and labor prices on regular maintenance work. Genuine Cadillac-La Salle parts are sold only through Authorized Cadillac-La Salle Service Stations, and can be secured at the published list price anywhere in the United States and Canada, and there are no additional charges for freight, express, handling, or additions of a similar nature.

G. M. A. C.

Advantages to Cadillac-La Salle Salesmen

1. A WIDELY KNOWN PAYMENT PLAN.
   More people know about the G. M. A. C. Plan than any other method of buying on time, because over seven million people have used it to buy cars. Thousands of bankers who regularly invest in G. M. A. C. short term investment certificates, recognize the importance of the deferred payment plan to the industry.

2. LOW FINANCING COST TO THE PURCHASER.
   G. M. A. C.'s low rates which include valuable insurance, enable you to take full advantage of the opportunity offered by time sales.

3. PROTECTS OWNER GOOD WILL.
   Because G. M. A. C. is a unit of General Motors you can be assured that its policies and practices are such as to protect and develop the owner good will which is one of yours and Cadillac's greatest assets.

4. PROVIDES STRONG RETAIL SELLING POINTS.
   G. M. A. C. has published a booklet entitled, "Selling Points for Use with Three Out of Five Prospects." It is filled with valuable retail selling points you should use daily. Be sure to get a copy and study it carefully.

5. FLEXIBILITY.
   No sale of a new or used car should ever be lost on account of terms as long as the purchaser's credit is good! Know the many ways in which G. M. A. C. terms can be fitted to the purchaser, and call your local G. M. A. C. Branch to figure irregular transactions before you let any prospect decide he cannot buy on account of regular time payment terms.

Advantages to Cadillac-La Salle Purchasers

1. LOW TIME PRICES.
   Frequently there is a difference of from $10.00 to as much as $100.00 or more between the total cost of a Cadillac or La Salle financed through G. M. A. C. and a competitive car of the same list price financed by other companies.

2. TERMS TO FIT THE NEEDS OF THE PURCHASER.
   Be sure you know the four ways G. M. A. C. terms can be fitted to your purchasers.
   (a) Standard Monthly Payments.
   (b) Special Cadillac low cost Single Payment G. M. A. C. Plan.
   (c) The So-Called "Farmer Plan."
   (d) Irregular Payments which your G. M. A. C. Branch will gladly figure for you.

3. INSURANCE PROTECTION.
   Cadillac-La Salle purchasers appreciate, more than any other class of owners, the extra protection and many unusual features of the insurance included in the G. M. A. C. Plan provided through G. E. I. C., (General Exchange Insurance Corporation) a unit of General Motors.

4. FRIENDLY, HELPFUL SERVICE.
   Cadillac-La Salle purchasers appreciate the type of finance company relationship which they know they can expect, when dealing with a unit of General Motors.

5. CONSIDERATION OF PURCHASER ON COLLECTIONS.
   The close co-operation between the dealer and G. M. A. C. on collections, assures due consideration of the purchaser's interest in collection procedure and protects his investment.

WHAT TO DO TO GET THE FULL BENEFIT FROM THE G. M. A. C. PLAN

1. Be prepared to quote regular terms promptly—at least on volume selling models without figuring them in detail.
2. When the prospect asks for the price always include a quotation of terms by saying "This car sells for $....., $.....down and $.....per month."
3. Know how to figure G. M. A. C. time payments. Get your dealer, sales manager, or G. M. A. C. representative to show you.
4. Always be sure to ask your G. M. A. C. branch to figure deals for you which require irregular terms.
5. Know and tell your prospects the many retail selling points in the G. M. A. C. Plan.

Answers to G. M. A. C. Questions Which Salesmen Ask Every Day

1. What is the most liberal contract G. M. A. C. will purchase?

This question cannot be answered by stating any specific terms because G. M. A. C. prefers that the plan be fitted to the individual purchaser. There is a great deal of difference between the credit standing of purchasers. In most every community there are a few well known individuals who enjoy an extremely good reputation and whose credit is so well recognized that there would be practically no question in accepting any contract which they might request. There are others to whom your dealer might hestitate to extend even the customary terms of ⅓ or more down and 12 months in which to pay.

The best policy for the salesman is always to advise the prospect to pay as much down and make his monthly payments as large as possible and then to submit the proposition to his dealer.

2. Why are terms usually more liberal on new cars than on used?

The answer to this question is found in the experience on repossessions. Approximately 80% of all cars repossessed are used cars. Also, when a loss occurs in the sale of a repossessed car, it is usually on a repossessed used car instead of a repossessed new car.

It is obvious from the above that greater caution should be observed in granting terms on used cars.

3. Why does G. M. A. C. have more than one payment chart?

G. M. A. C. uses two charts, because there are two kinds of items which make up the total time price differential. There are those which are more or less the same, country wide, and others which vary considerably territorially. The latter are called territorial differentials and include insurance premiums. If only one chart were used, these territorial differentials would have to be averaged and as a result, some purchasers would pay considerably less than they should and others would pay considerably more. It is G. M. A. C.'s constant endeavor to see that the differentials in its payment charts are always as low as possible so that your time prices can be made as low as possible.

4. Why did G. M. A. C. make A. P. D. (Accidental Physical Damage) Insurance a part of the standard G. M. A. C. Plan?

Fire and theft insurance was made a part of the G. M. A. C. Plan a number of years ago. In 1930 A. P. D. was added. During the first eight months of 1932, loss records show that on a like number of cars, collision losses were greater by 15% in number and by 65% in dollars per car than were the combined losses from fire and theft. It is obvious, therefore, that there is even greater need for collision insurance than there is for fire and theft, and that is the reason it was included in the plan.

In addition, it was found, in planning this extra insurance feature, that protection against a number of other forms of accidental physical damage could be included at a cost generally less than the usual cost of collision alone to the purchaser, thereby giving him protection against practically any accidental physical damage which can happen to his car. The value of this additional protection is indicated by the fact that, in one year, 50,000 automobiles were seriously damaged by hail, windstorm, flood, tornado, earthquake and other hazards, exclusive of fire, theft and collision, which are covered by A. P. D. insurance.

5. If a prospect can go to his bank and borrow the money, should he be urged to buy his car on time?

No. If the purchaser can borrow money at the bank, it is cheaper for him to do so and pay cash for his car as long as he is not using his bank credit to the extent that none is available for other purposes at a later date.

In some instances, it might be advisable to point out to such a prospect the features of your time payment plan including insurance. If he wishes to relieve his credit at the bank, he may welcome the opportunity to buy his car on a sound plan.

When a prospect says he will borrow money at the bank, ask him to sign the order and make a small deposit. This will assure you he is sincere and is not merely making a postponement excuse.

6. What can I do to assure my time sale contract being accepted after I have obtained the order?

A very easy thing but an important one for you to do is to fill out the purchaser's statement completely and as accurately as you can. In other words, obtain all the facts. This will help your dealer and G. M. A. C., to promptly and thoroughly analyze the purchaser's responsibility. Otherwise, a decision may have to be postponed until additional information is obtained. Larger down payments and larger monthly payments always go a long way toward assuring that the deal will go through. Many salesmen make it a practice on trade-in deals to obtain some cash in the down payment whenever possible to do so. This is particularly advisable where the value of the used car traded barely equals the required down payment.

Here is another thing which many salesmen do that assures the acceptance of time sales which otherwise might not go through. When they see that there is some question as to the purchaser's credit standing, they obtain additional security

by having another individual join the purchaser in signing the purchase contract. In some instances they will merely say to the prospect, "Now it is customary to have someone sign this contract with you." Or, "It will help me put this deal through and get a prompt delivery of your new car if we have another individual sign with you."

7. How does G. M. A. C. handle a purchaser's contract?

The purchaser's time payment contract is of course made with the dealer. Then G. M. A. C. buys the contract from the dealer. Before accepting the purchaser's contract from the dealer, G. M. A. C. verifies from the purchaser's statement and contract that the papers are made out properly and that the purchaser's credit standing is good. When the contract is accepted, a check for the proceeds is mailed to the dealer. G. M. A. C. then holds the purchaser's contract and proceeds to collect it according to its terms. Promptly after the purchaser's contract is accepted G. M. A. C. mails the purchaser a folder explaining its relationship. Enclosed with the folder is a purchaser's Coupon Book.

When the purchaser makes his monthly payments, he fills out a coupon and either mails it with his payment or takes it to the branch personally. This makes it unnecessary for G. M. A. C. to mail monthly statements to purchasers.

He also receives an insurance policy which either is enclosed with the coupon book or mailed direct by the General Exchange Insurance Corporation.

When the purchaser has completed his payments, the contract is marked paid-in-full and mailed to the dealer. The dealer then returns the contract to the purchaser either by mail, through personal delivery by the salesman, or writes the purchaser to call at the salesroom to obtain it. G. M. A. C. recommends the last method because it gives the dealer and salesman the best opportunity to sell the owner a new car, get the names of prospects from him, or sell him service.

8. What happens when a purchaser fails to make his payments to G. M. A. C.?

Approximately 5 days after a monthly payment is due, the delinquent purchaser receives a courteous reminder. This is followed a few days later by a second, and later by a third, each of which though showing every courtesy to the purchaser, becomes stronger in its urge for him to either send in his payment or get in touch with the G. M. A. C. branch office.

If the purchaser does not pay then, G. M. A. C. advises the dealer and writes the owner a personal letter, again endeavoring to secure the payment or obtain from him a statement of the reasons for his delay. If results are not obtained by mail, the purchaser is called on by a representative.

Sometimes it is found that by rearranging the purchaser's payments, G. M. A. C. can enable him to complete his contract, while otherwise, the instalments would be too large for him. This, however, is only done when the purchaser has a sufficient investment in the car to warrant this action and there is good reason to believe that he will be able to complete his payments on the revised basis.

There is real value in the considerate treatment which purchasers receive when their contracts are purchased by G. M. A. C. In 1932, 113,000 people, who said they could not complete their payments, actually finished paying for their cars that year because their dealers and G. M. A. C. went to the trouble of finding a way for them to continue their payments.

9. Why does G. M. A. C. consider it so important to avoid repossessions whenever possible to do so?

There are three principal reasons. One is, that when a repossession can be avoided it eliminates the expense of time, effort and money in reselling the car to somone else.

The second is one which warrants a great deal more attention on the part of salesmen and dealers. When an owner loses his car through repossession, it usually calls for some explanation to his friends and acquaintances. Many such owners, instead of telling their friends and acquaintances their car was repossessed, will say that they disposed of it or turned it back to the dealer because it proved so unsatisfactory. This tears down good-will for the dealer and salesman and good-will for the car itself.

The third reason is that the owner whose car has been repossessed sooner or later buys another one, but he feels it necessary to go to a competitive dealer because his credit has been injured with the dealer who sold him the car which was repossessed.

By avoiding repossessions whenever possible, G. M. A. C. is able to keep a large number of owners in the General Motors Family who otherwise would be lost as repeat buyers.

10. Why is it that many repossessions occur before the purchaser makes a monthly payment?

G. M. A. C.'s experience indicates that more than 1 out of 5 used car repossessions are made because the purchaser fails to pay the first instalment; also 3 out of 4 used car repossessions show 4 monthly payments or less.

There are 5 outstanding causes:

1. Inadequate Down Payments.
2. Overpriced Cars.
3. Dissatisfaction due to—
   Mechanical condition of the car, or
   Misrepresentation in the sale.
4. Accidents.
5. Inability to make monthly payments.

Here are 5 ways to correct them:

1. Secure adequate Down Payments.
2. Avoid the inflation of trade-ins. Get some cash on each deal if possible.
3. Avoid overselling.
4. Use the G. M. A. C. Plan including A. P. D. (Accidental Physical Damage) Insurance.
5. Check the prospect's ability to pay the first instalment.

Salesmen should cooperate with their dealers in correcting the causes of repossessions.

General Questions *and* Answers

Why did we abandon the torque-tube drive in favor of Hotchkiss?

With the new more rigid frame and the improved ride, the torque-tube became a conveyor of road vibrations to the body. The type of Hotchkiss drive we are using has never been used before and completely eliminates the transmission of these vibrations to the body.

Why Centrifuse drums on La Salle and chrome nickel cast iron drums on Cadillac?

Because of Cadillac's greater weight chrome nickel cast iron drums are required to give the same effectiveness as the Centrifuse drums on the La Salle.

Why Hydraulic brakes on La Salle and not on Cadillac?

The weight of the La Salle, which is substantially less than that of Cadillac, makes possible the use of hydraulic brakes of the newest type, which give maximum braking efficiency with minimum physical effort. With larger, longer and heavier Cadillac cars, we use mechanical brakes with vacuum brake assister to accomplish the same result.

Why do we build a straight-8 La Salle, after 19 years of pioneering in the V-type field?

General Motors does not restrict itself to any one type of engine design. In planning the new La Salle, Cadillac desired to broaden its market and knew that in the new La Salle price field the preponderant demand is for a straight-eight motor.

How can we equip La Salle with Fleetwood bodies, at a lower price than the Cadillac V-8 with Fisher body?

The La Salle is in every respect a smaller car than the Cadillac V-8 and naturally costs less to produce. In addition, we offer only four body styles on the La Salle as compared with thirteen Fisher Bodies on the Cadillac V-8, thus simplifying La Salle body production and hence reducing costs.

LA SALLE QUESTIONS

Is the rumor true that La Salle is an assembled automobile, with either a Buick or an Oldsmobile-8 chassis?

This is not true. The new La Salle was designed and developed by Cadillac engineers and measures up to Cadillac standards in every respect. The La Salle engine, transmission and rear axle, which are the most important units in any chassis are all built in the Cadillac factory to Cadillac standards and you are at liberty to invite prospects to visit the Cadillac factory at any time to see the La Salle built.

Why do you have such a short wheelbase on the La Salle?

Wheelbase is no longer important except to provide sufficient room for passenger carrying purposes. The old need for length of wheelbase to better the ride is gone, due to the new ride design developed by Cadillac. The overall length of the new La Salle is less than two inches shorter than the previous model.

Why only 4 body styles?

We know that these particular body styles will meet the majority of the public's demand.

General Questions *and* Answers—*Continued*

LA SALLE QUESTIONS—Continued

Can you furnish a trunk rack on La Salle?

Yes.

Can you furnish wire wheels instead of disc on La Salle?

No. La Salle is designed solely with the disc wheels you see.

Why isn't there more headroom in the rear compartment of La Salle?

The new airstream styling of La Salle is the result of a harmonious balance of proportions in body height and length.

With the new improved ride and the elimination of the pitching and bouncing of rear seat passengers it was unnecessary to allow the same amount of headroom formerly required. You will find the new La Salle comfortable to ride in on all kinds of roads.

Why is the new La Salle now competitive with the Buick in price?

The La Salle is a quality built car with new and unusual style appeal. It was not designed to compete only with Buick but to appeal to the large number of owners of Upper Medium Price Group cars such as Nash, Chrysler, Studebaker and other makes, who want a car of advanced and unusual style appeal plus the added prestige of a car built by Cadillac and at a price less than Cadillac cars sell for.

What about streamline design. La Salle follows one idea and other cars follow an entirely different one. Which is correct?

The La Salle interpretation of streamline design is beautiful. It is neither extreme nor radical but follows the idea of shaping all body and fender contours to eliminate all protruding parts and permit the free passage of air currents. Buyers of a car of La Salle price want beauty and distinctive individuality in addition to streamline design and the immediate popularity, response and acceptance of La Salle's beauty and styling is proof of its endorsement by the public.

Why do you use a different body styling on La Salle than you do on Cadillac?

The sales appeal of La Salle and Cadillac will be to entirely different groups of buyers, Cadillac styling is more conservative to meet the demands of a more conservative buyer. La Salle is a car of unusual style appeal and will be bought by a more youthful buyer who wants unusual style and smartness and something that is distinctively different than the more conventional and conservative styling used on Cadillac.

What about luggage space for touring?

There is space in the rear deck compartment above the tire. If additional luggage space is needed a trunk rack is available for use as is usual on sedan and coupe models.

What about cost of repairing fenders?

Due to the increased efficiency in fender metal repair during recent years complete fender replacement is seldom necessary except in case of unusual damage caused by a wreck. The new La Salle fenders can be repaired and bumped out in case of ordinary damage without any greater expense than old-fashioned fenders.

General Questions *and* Answers—*Continued*

LA SALLE QUESTIONS—Continued

Why does the La Salle tire have a different type of tread from that used on the Cadillac tire?

The La Salle tire is built for lower pressure (25 lbs.) than the Cadillac tire (35 lbs.). Lower tire pressure is desirable with a lighter car whereas it is not practical or necessary with a heavier car. The new tread on the La Salle tire is necessary to avoid tire noise to which low pressure tires heretofore have been subject.

Does the new tread used on the La Salle tire have as good anti-skid properties as the conventional tread?

With a large section low pressure tire more of the tire is in contact with the road and on such a tire the new tread is equal to anti-skid property to a high pressure tire with conventional tread.

Will this type of tire give as good mileage as the conventional tire?

Tests show the wear factors to be practically the same.

Why is the La Salle tire only a four-ply tire whereas the Cadillac tire is a six-ply tire?

Although it is a lighter car, the La Salle tire has the same size cross section as the Cadillac, namely—7". Better results are secured with a large section four-ply tire than with a small section six-ply tire such as most manufacturers have specified for a car of this weight.

INDEPENDENT FRONT SUSPENSION QUESTIONS

Competitive salesmen say the new independent front wheel suspension causes excessive spring breakage and tire wear.

This information is untrue. The fatigue life of the new coil front spring when compared with the old type leaf spring is *twice* as great, and experimental test records with new independent front wheel suspension covering over a million miles show that there was not one single case of breakage with the new coil type front springs.

As to tire mileage there is no increase in tire wear on the cars with the new front suspension when compared with conventional cars. Both of these rumors are examples of the efforts that will be made by competitive salesmen of cars without independent front suspension to disparage the new riding comfort offered in Cadillac while the cars they are selling are still offered with conventional axles and springs pending the completion of experimental work now necessary by their organizations.

What effect will dirt and gravel have on front spring action when it gets inside the coil springs?

None at all. Due to the constant activity of the coil spring it prevents any accumulation of dirt or gravel on the spring having any effect on the flexing action of it.

What about the strength of these forked arms when compared with the strong heavy front axle formerly used? Won't they wear *more* causing noise and be expensive for adjustment?

In the new front suspension each wheel is attached directly to the frame by means of a pair of forked arms. They are forgings and are even stronger than the former front axle. The forked arms are joined to the frame by means of threaded bolts that are permanently seated in threaded bushings. This construction wears indefinitely, is always silent and will not require adjustment.

General Questions *and* Answers—*Continued*

INDEPENDENT FRONT SUSPENSION QUESTIONS—Continued

If independent front wheel suspension gives improved riding comfort, why don't you use it on the rear wheels also?

Cadillac's new improved riding comfort is the result of a complete redesign of the chassis with a redistribution of mass and the use of front springs that are as soft as the rear to eliminate the fight between front and rear spring oscillation of conventional car design. It can be readily understood, therefore, that independent front suspension does not in itself produce improved riding comfort nor is it the cause of Cadillac's new ride. Independent front wheel suspension is used by Cadillac to give accurate direction and correct steering with the use of the soft front springs which would be impossible and unsafe with conventional front axle and front springs of the same softness. Independent rear wheel suspension is designed for an entirely different purpose and would only be used to reduce unsprung weight. There is no relationship between the problems.

What is the difference between the front suspension used by Cadillac and that used by Buick?

Cadillac developed the front suspension it uses to suit the weight and size of its cars. On the front suspension Cadillac uses the manual control of shock absorber adjustment and at the rear a combination of inertia and manual control.

Buick has no manual control of either front or rear shock absorber adjustment and uses inertia type shock absorbers at the front only. Buick's system of front suspension was worked out to suit the size and weight of their car and while similar in principle to Cadillac, is different in its application to the chassis as a whole unit.

Where do you put a jack under the front or rear end when a tire change is necessary?

There is a specially designed shelf or bracket on the lower forked arm on each side at the front which supports the car when the use of a jack is necessary. At the rear each rear spring also has a jack pad for use in lifting the car.

The New 1934 LaSalle Shares Cadillac's Engineering, Metallurgy, Precision Manufacturing and Inspection Methods

In the Cadillac factory there is a familiar motto: "CRAFTSMANSHIP A CREED—ACCURACY A LAW."

Throughout the entire Cadillac organization, this motto has for years been jealously safeguarded by constantly maintained effort, to produce the finest cars possible. The adherence to such a high ideal has contributed strongly to making Cadillac "*Standard of the World.*"

As the automobile industry has grown and progressed, continuous improvements that have been made in manufacturing efficiency have measurably increased the fine standards of workmanship of every craftsman, making it possible to turn out more work with even finer precision and greater uniformity.

Cadillac, always a leader in building quality cars, maintains that leadership with specially designed tools and with production methods that are the envy of the whole industry.

Every LaSalle salesman should know and "tell the world" the many fine points of Cadillac's precision manufacturing in the new La Salle.

The following pages give some idea of the many things done by Cadillac in its sincere effort to maintain the well-earned reputation of its products as "*Standard of the World.*"

Cadillac goes to greater lengths in every phase of its manufacturing activity than any other car producer, to make a car as perfect as one can be built.

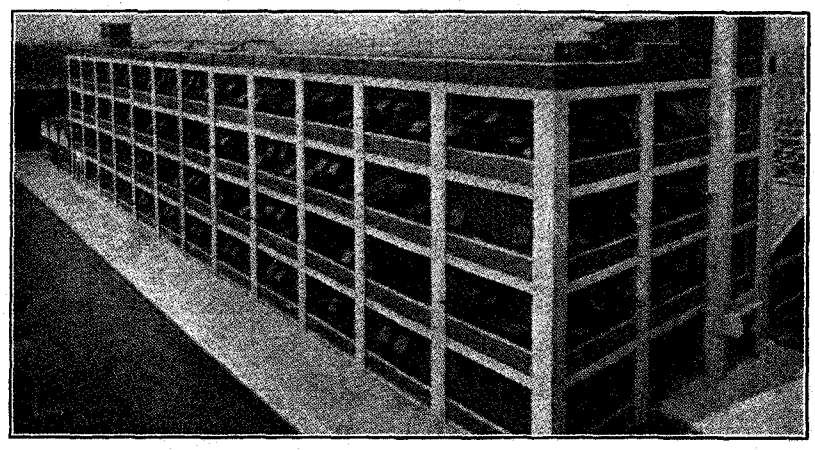
Cadillac Engineering

Cadillac engineering has pioneered more important developments than any other automobile organization. These developments have benefited not only Cadillac, but the entire industry.

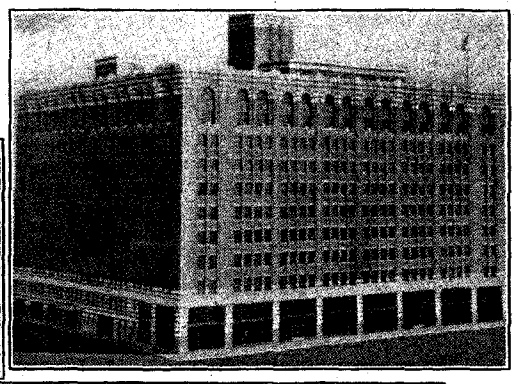
Among the many "firsts" that can be claimed by Cadillac, the following are a few major ones that have advanced the Cadillac car to new heights of public appreciation and established Cadillac as the undisputed leader of the fine-car field.

List of Cadillac Firsts

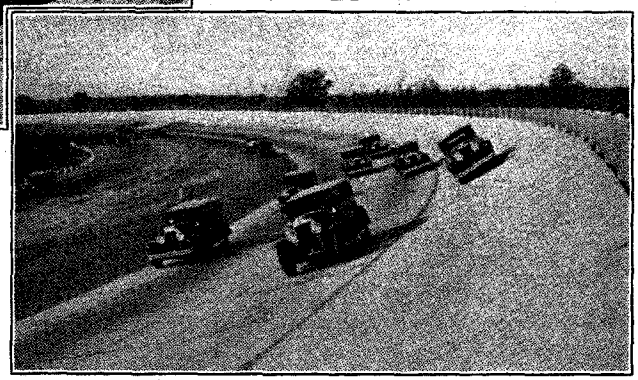
First to standardize parts and make them interchangeable.
First to employ the famous Johannson gauges.
First to equip its cars with electric starting, lighting and ignition.
First to build a high-class car in quantities.
First to offer a line of closed bodies as standard.
First to develop thermostatic control of the cooling system.
First to develop thermostatic carburetion.
First to build a V-type high-speed, perfectly balanced eight-cylinder engine.
First to protect its buyers with Security-Plate glass as standard equipment.
First to perfect the clashless Syncro-Mesh transmission.
First to establish country-wide service on a uniform basis.
First to build a 16-cylinder automobile engine.
First to introduce crankcase ventilation.
First to use hydraulic valve silencers.
First to use aluminum brake shoes.
First to use Duplex electric furnace iron for brake drums.
First to use roller bearings for brake connections.
First to provide the Full-Range Ride Regulator.
First to provide the Super-Safe Head Lighting System.
First to use an air-cooled generator and fuel lines.
First fine car to use Fisher No-Draft Individually Controlled Ventilation.



UPPER—Cadillac Engineering Building.
RIGHT—General Motors Research Building.







Scenes at General Motors 1268 acre Proving Grounds—the world's largest outdoor experimental laboratory.

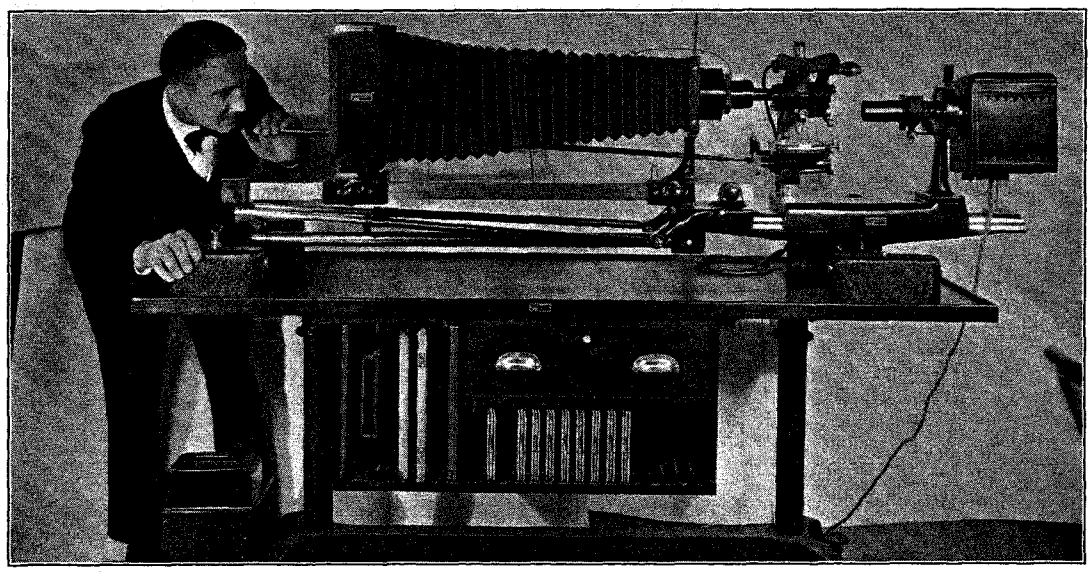
"Constant progress" is the creed of Cadillac engineers. Co-operation with General Motors Research Engineers also provides unlimited facilities for the most advanced engineering and scientific research developments. New designs and new principles are continuously being tried out. As they are proven satisfactory, through actual testing, both at the General Motors Proving Grounds and on the highways of the country, they are incorporated into production, and manufactured and passed on to the buying public with the full and complete confidence that they will work successfully. This is what is known in Cadillac as "proven design before production"—an engineering policy that always safeguards the buyer's investment.

Metallurgy

All raw materials purchased are specified to Cadillac's rigid standards of quality, for the particular work they must do when converted into the finished product.

To determine these standards, all classes of materials are constantly subjected to various research tests by the metallurgical department before they are approved for design and use by Cadillac Engineers.

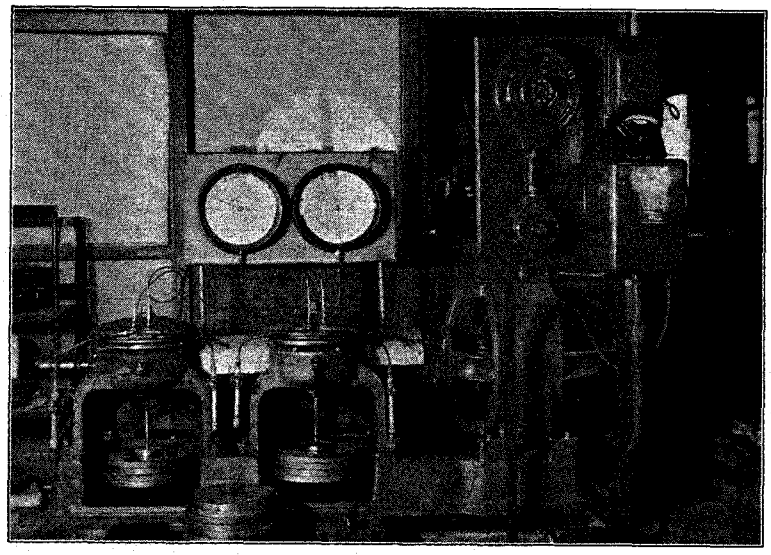
The following pictures illustrate a few of the many examples of the great care taken by the Cadillac Metallurgical Department, showing to what lengths Cadillac goes in its efforts to build the best.



The metallographic microscope was developed by Cadillac in its laboratories to overcome the shortcomings of standard microscopes. It offers the means of making accurate metallographic examinations more positively and quickly.

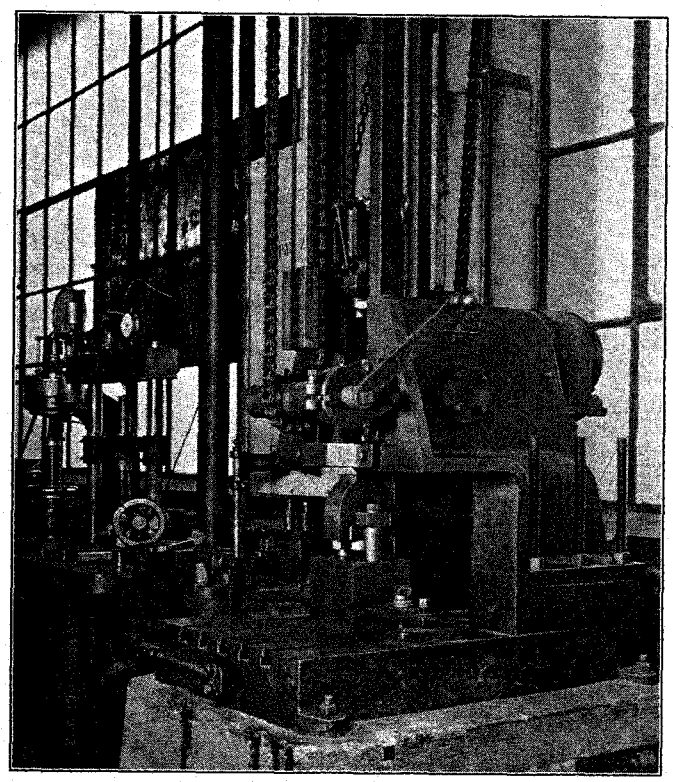
Steel structures may be determined to within the 100,000th part of an inch. By the mere touch of a button the path of light rays can be changed from the binocular eye-piece to either a horizontal or vertical camera capable of taking a picture magnified 5,000 times.

This is only one of many special instruments developed by Cadillac to enable it to be constantly informed in its development and research work in connection with production materials and experimental engineering work.



MATERIAL TESTING—Cadillac originated and developed testing methods for brake linings, clutch facings and many other materials to determine their "wear out" point.

Continuous research and experiments are carried on for new materials that will give improved operation and longer life in service.

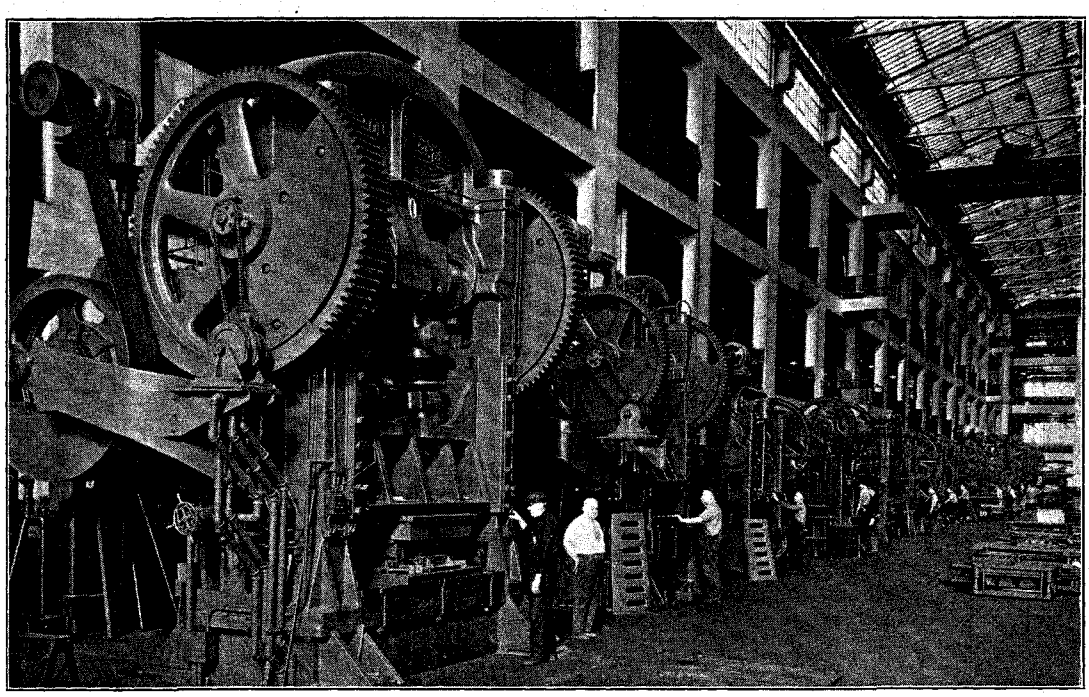


GENERAL TESTING—Cadillac has also developed testing machines and devices for impact testing which are unique. In these machines parts such as steering parts, piston pins, connecting rod bolts, axle parts, etc., are held in the same relation as they would be in a car on the road. They are struck alternating and repeated blows, approximating car operation on rough roads at high speed, until complete failure ensues. Thus materials and their processing can be studied and improved to give large factors of safety and longer life.

Manufacturing Craftsmanship

Presses

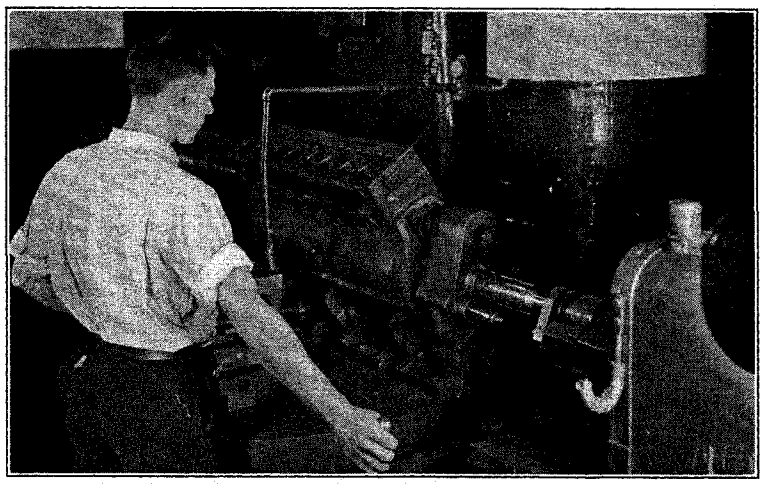
The fashioning of fenders, radiator shells, hoods, trunk racks, frames, body panels and other parts from sheet metal, is done by these large presses. Some of them weigh more than 110 tons each and are capable of exerting a pressure exceeding 750 tons. Cadillac uses more than 100 of these presses in various sizes. Several cost more than $20,000 each.



Cadillac Sheet Metal Department

Crankcases and Cylinder Blocks

Crankcases must be machined with great precision to assure perfect alignment of crankshafts, camshafts and bearings. The bearing holes are held to 1/1,000th of an inch limits. The hole for special hard babbitt surfaced camshaft bushings are machined in the crankcase to very close limits, and the wall thicknesses of the crankshaft bearings are not permitted to vary more than 2/10,000ths of an inch. This precision manufacture with such close limits permits interchangeability of bearings without the customary hand scraping used by many manufacturers. It assures the long trouble-free operation of Cadillac-La Salle engine parts.

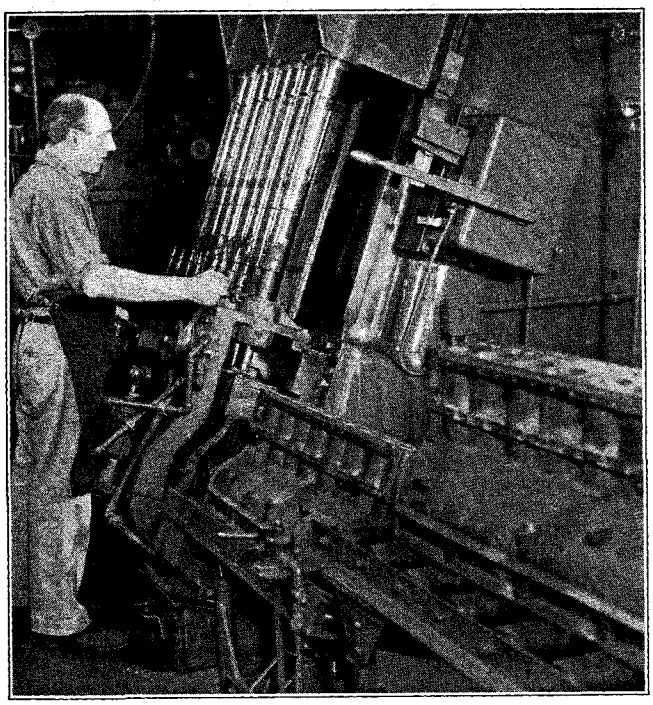


Boring Crankcase Bearings

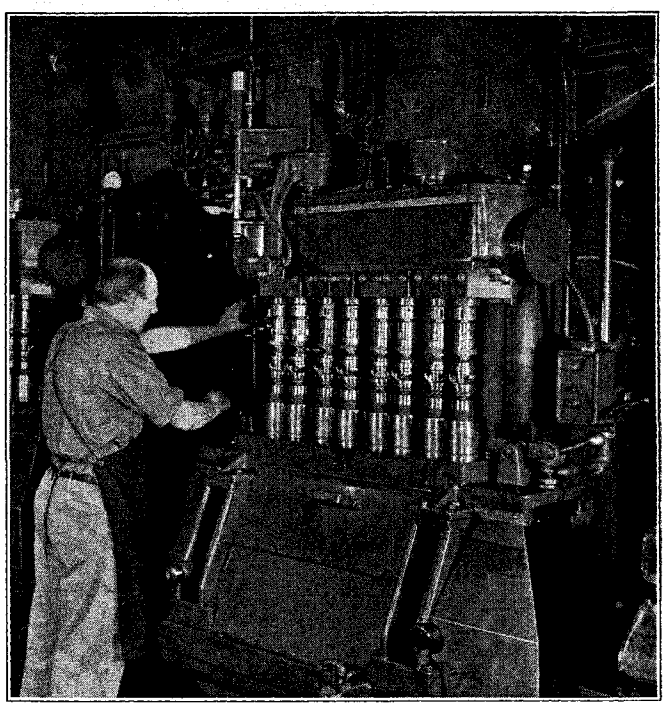
Crankcases and Cylinder Blocks

La Salle engines are made with relatively greater care and precision than the parts of the finest timepieces. Every operation is one of unusual accuracy to assure a satisfactory balance of the many parts in their complete assembly.

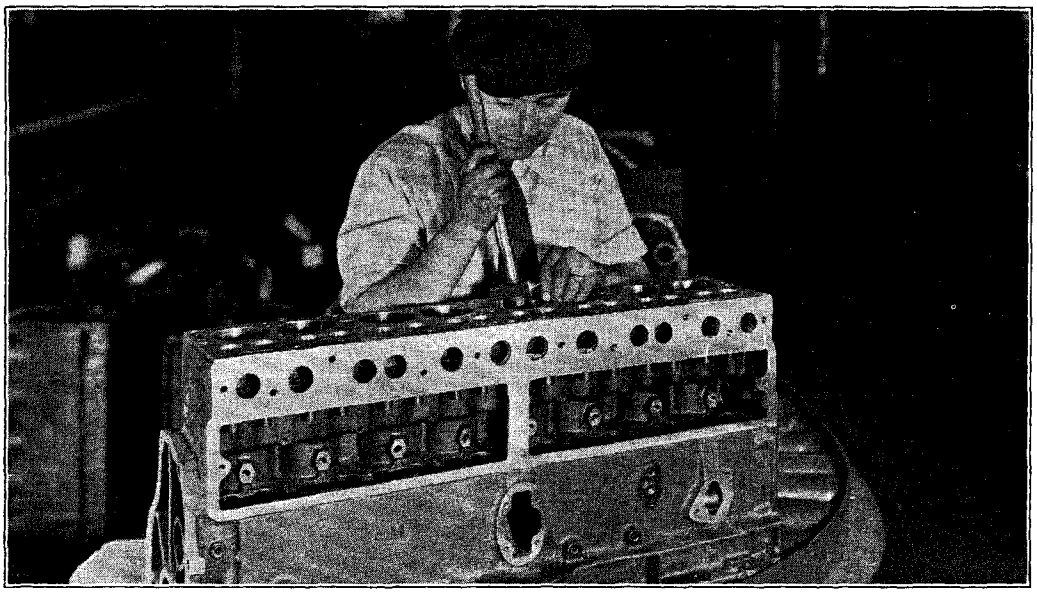
Cadillac uses three boring, one reaming and two honing operations on La Salle engine cylinder blocks to produce cylinder walls that are round and straight and have a hard, highly polished surface. In no case is a variation of more than 1/1000th of an inch permitted in the finished cylinders.



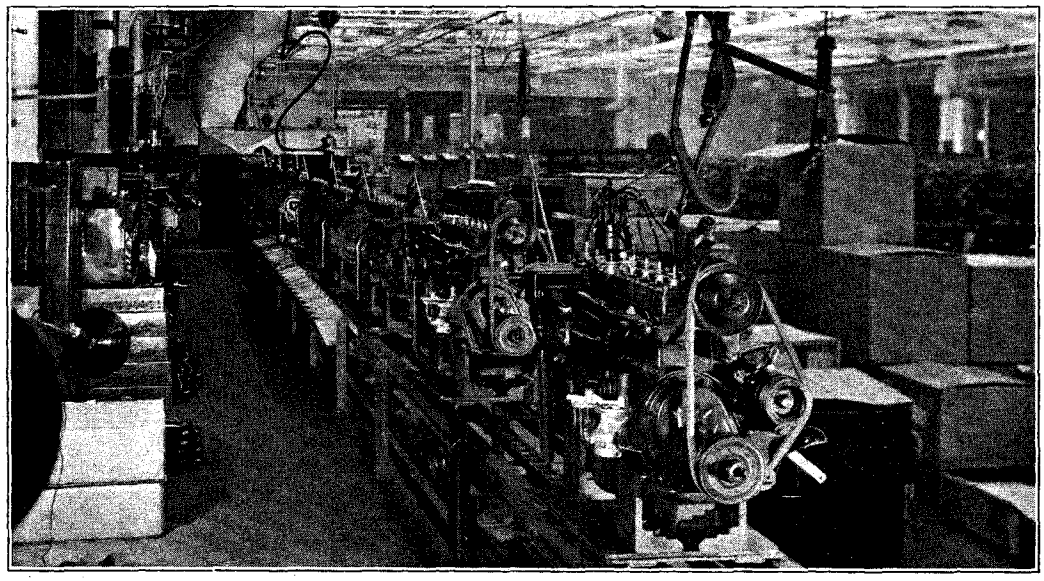
Boring La Salle Engine Cylinders



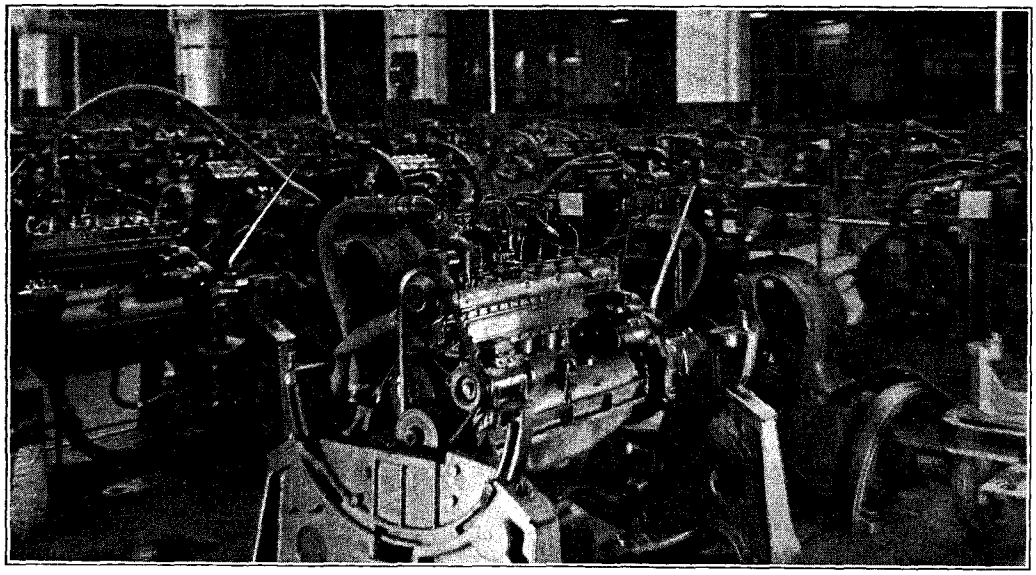
Honing La Salle Engine Cylinders



Checking La Salle engine cylinder bores.



La Salle engine assembly line.



Cadillac dynamometer engine test room for Cadillac and La Salle engines

PISTONS

The manufacture of Cadillac-La Salle pistons is a good example of the extent to which Cadillac goes in building the finest possible product regardless of the expense involved.

After the piston, which is of a low-expansion, high strength aluminum alloy, is formed in the mold; it is heat-treated to harden and toughen it. This also "seasons" or relieves the internal stresses which would otherwise cause finished pistons to change their shape in service.

The pistons of this alloy, so treated, are lighter for a given strength than has been commercially possible with any other satisfactory material. This enables greatly improved performance as regards acceleration, speed and power.

Machining operations are carried out in such sequence as not to disturb the stability of the structure which resulted from heat-treating. This permits a piston which will preserve its size and shape indefinitely under gruelling service.

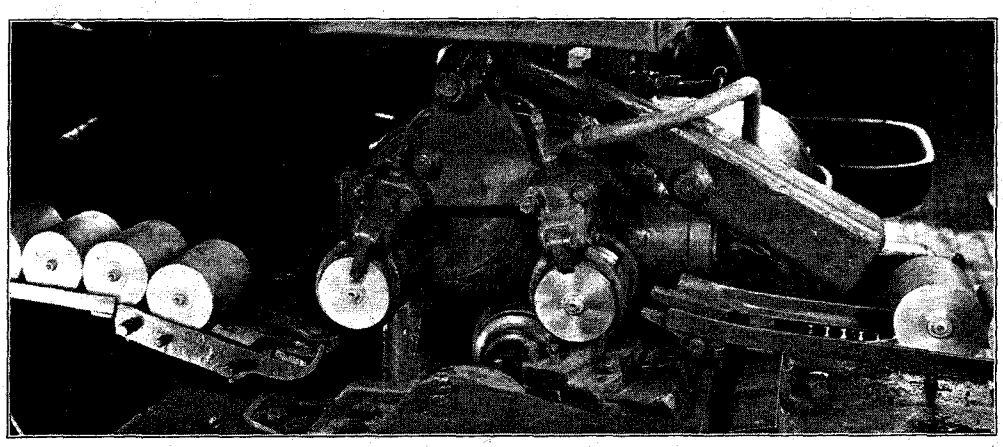
As an instance of this extreme care, the wrist pin hole is rough drilled after the piston is turned. The piston is next ground, after which it is slotted. After slotting, it is finish ground to a maximum variation of 2/10,000ths part of an inch.

Then the wrist pin hole is diamond bored true and square with the piston and to a maximum variation of 3/10,000ths part of an inch.

When all machining, grinding and diamond boring operations are finished to such precise limits, a most important and interesting operation is done. This is the "anodizing," whereby the surface of the aluminum alloy, which has only moderate hardness in itself, is electrolytically transformed into a material called "alumilite." This surface structure is of extremely high hardness, being about the same as a sapphire.

The extremely hard anodized surface, backed by the strong, tough aluminum alloy, affords a combination which is greatly superior in wearing properties to any aluminum alloy piston yet developed.

The considerably increased cost which is involved by these intricate processes results in superior performance, long wear and care-free service which is so characteristic of Cadillac and La Salle engines.



Piston Turning

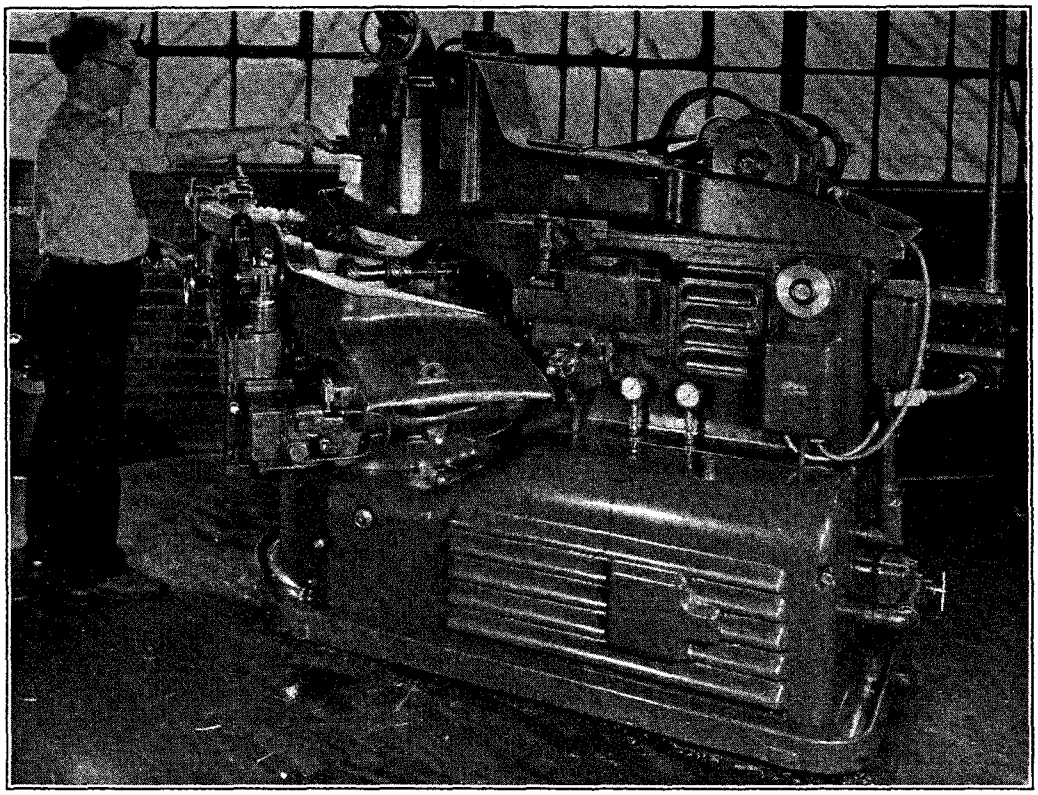
Transmission Gears

The quietness of operation in La Salle's new Triple Silent Syncro-Mesh Transmission is due largely to the special grinding operations on the helical gears used.

The usual practice in gear cutting is to consider them completed after they have been cut on the hobbing machines and are heat-treated to strengthen the teeth and harden the contacting tooth faces.

Cadillac, however, goes far beyond these operations to correct the distortions, always caused by heat-treating, that in turn result in noisy gears.

Special grinding and lapping operations on all gears with limits held to 1–10,000th of an inch are performed to correct the contours of the gear teeth, thus insuring positive quietness in operation when assembled in the transmission unit. One of the many grinding machines used is illustrated below. Each machine costs over $7,000.



Tooth Grinding on La Salle Helical Transmission Gears

PRECISION INSPECTION

While the workmen in the Cadillac factory are among the most skilled craftsmen in the world and have, to a very unusual degree, pride in work well done, this fact alone does not satisfy the Cadillac standards of manufacture.

To make doubly sure that all materials produced are perfect and up to Cadillac's high precision standards before they reach the departments of final assembly (where they are converted into units before being put into the car), Cadillac employs an inspection department of carefully trained and selected workmen whose duty it is to check each step of the manufacturing of the thousands of parts produced each day.

These inspectors are stationed throughout the entire plant and it is their duty to safeguard "Cadillac Standards of Manufacture"—the finest in the industry.

Because these men are in constant contact with the various departments and the workmen in them, there is a greater degree of co-operation to attain the one objective, to keep Cadillac "*Standard of the World,*" than can be obtained by any other production supervision plan.

In the fulfillment of their duties, these Cadillac inspectors use the finest precision gauges to check the various parts



Master Gauge Inspection Department

and keep the workmen informed as to the efficiency of their work in maintaining the fine standards of precision workmanship specified by the engineers.

Nearly twenty-five thousand gauges of various kinds are used. These gauges are in sets and at frequent intervals the gauge inspector changes sets and returns his old ones for checking as to accuracy. The tool inspection division is provided with virtually every known high precision instrument for the measurement of close dimensions. Among them are several sets of Johannson blocks. These blocks were used by Cadillac years before other American companies adopted them.

Also included in this department are optical screw thread projectors, special equipment for checking hobs for cutting gear teeth and splines, and special master gauges of all kinds. An example of these fine precision instruments is the electric amplifier which will measure one quarter of one tenth of a thousandth part of an inch or, simply stated, twenty-five millionths of an inch.

In this department, measurements or dimensions as small as one hundred thousandth part of an inch (1/100,000th) are common occurrences.

As an example of the fine work accomplished during production inspection, the following are indicative of many hundreds of others equally as important and interesting.



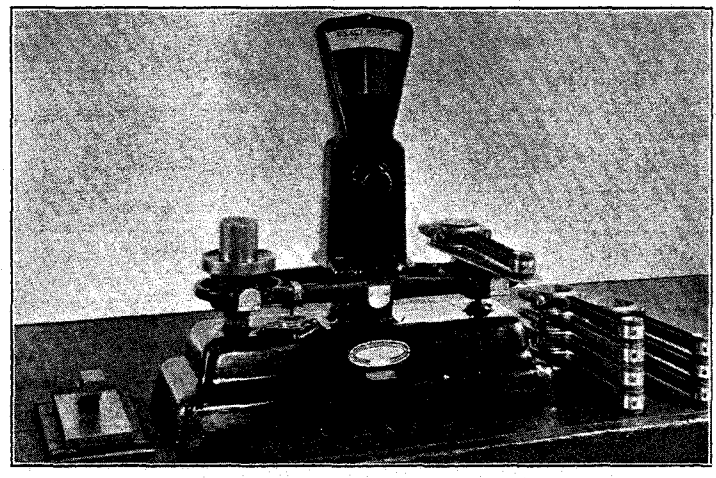
Master Tool Inspection Department

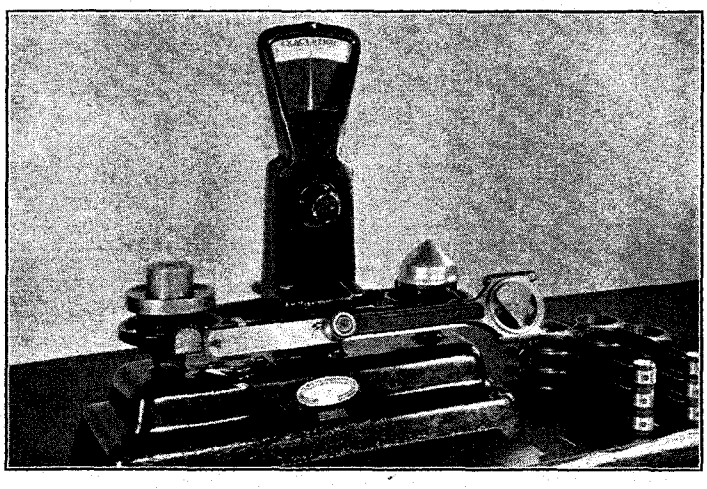
Connecting Rods and Pistons

Another factor which contributes to the smooth vibrationless operation of La Salle engines is the close limits and accurate weights and dimensions of reciprocating parts such as connecting rods, pistons and pins.

Each piston and connecting rod assembly is held to a weight limit of 1/32 part of an ounce (Picture A). This is equivalent to one-sixth of the weight of a penny. Jewel pivoted scales are used in weighing all of these parts.

Connecting rods move in two directions in the engine and their balance must be correct from end to end because one end moves up and down with the piston while the other moves in a circle with the crankshaft. The small end of the rod is placed on the center of the scale and the exact proportion of weight toward the large end weighed (Picture B).



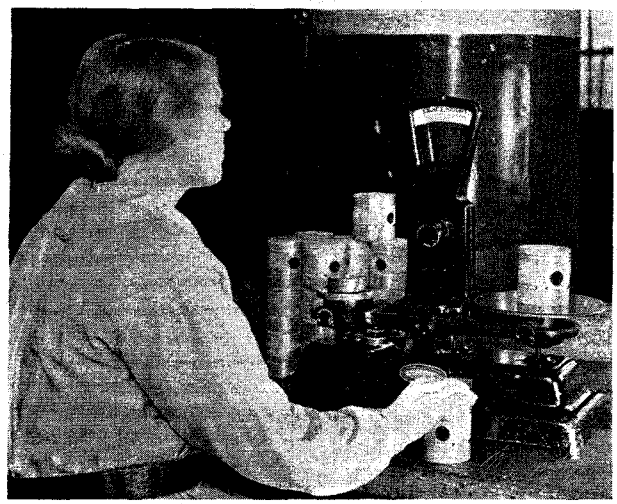


A (above)
B (below)

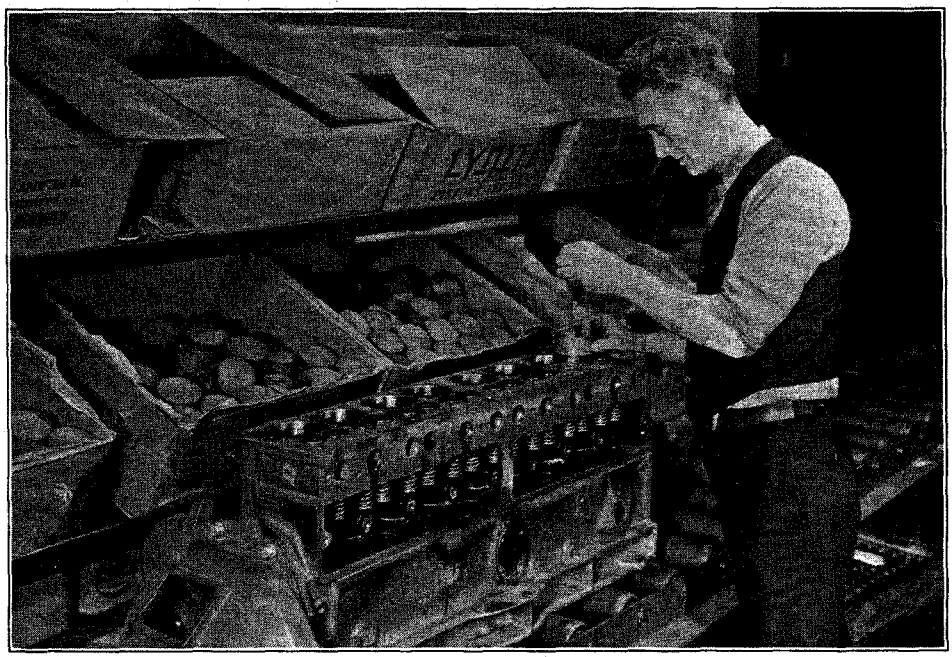
Inspection of Connecting Rods

Cylinders

The cylinder bores of every La Salle engine must be as nearly perfect as it is possible to produce. Each cylinder is tested for size, out-of-roundness and taper with special precision gauges that measure to limits of 1/10,000th part of an inch. Such care and inspection in manufacture assure long life of the engine with smooth performance, and carefree operation by the purchaser.



La Salle Piston Inspection

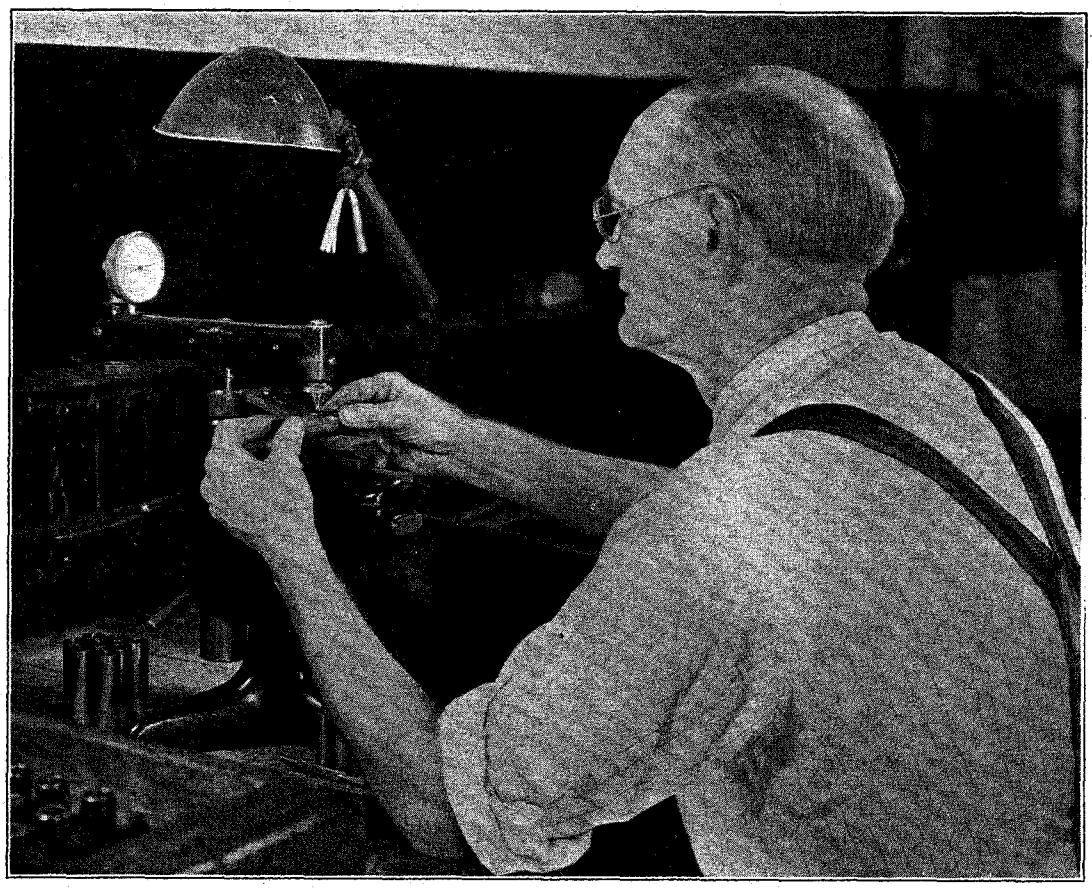


La Salle engine precision piston fitting

Piston Pins *and* Piston Fitting

Piston pins are ground to limits of 5/10,000ths of an inch, and are afterwards re-checked on an amplifying gage and divided into groups. The piston pins in each of these groups vary one from another, less than 1/10,000th of an inch, and the piston pin hole in the piston is diamond bored to the most exacting tolerances, insuring an ideal fit between piston pin and piston pin hole.

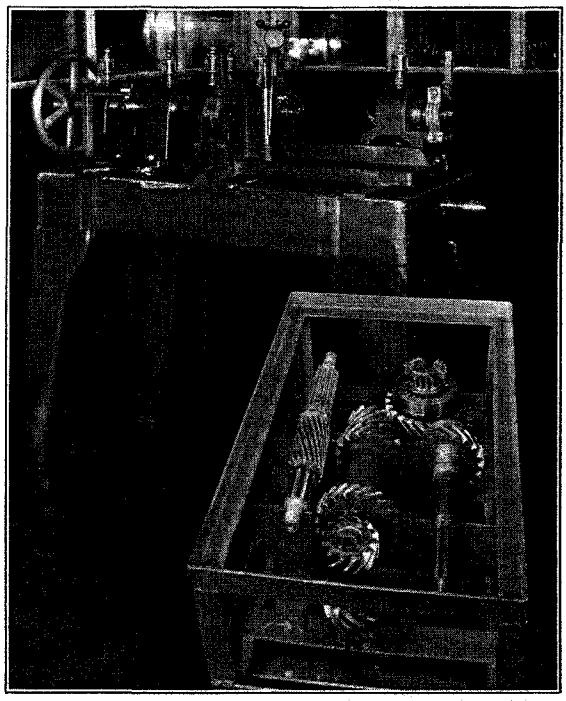
In fitting pistons to cylinder bores extreme care is used to maintain the proper clearance. Cadillac accomplishes this by measuring the pistons with a newly created electrically operated amplifying gage which permits finer measurements than were heretofore possible. With this gage the pistons are graded into groups and the proper piston selected from these groups for each cylinder bore, the size of the cylinder bore having in turn been determined by careful measurement with a precision cylinder bore measuring gage. This careful measuring and selecting insures a uniform and correct clearance between cylinder walls and pistons—one of the most important fits in an automobile.



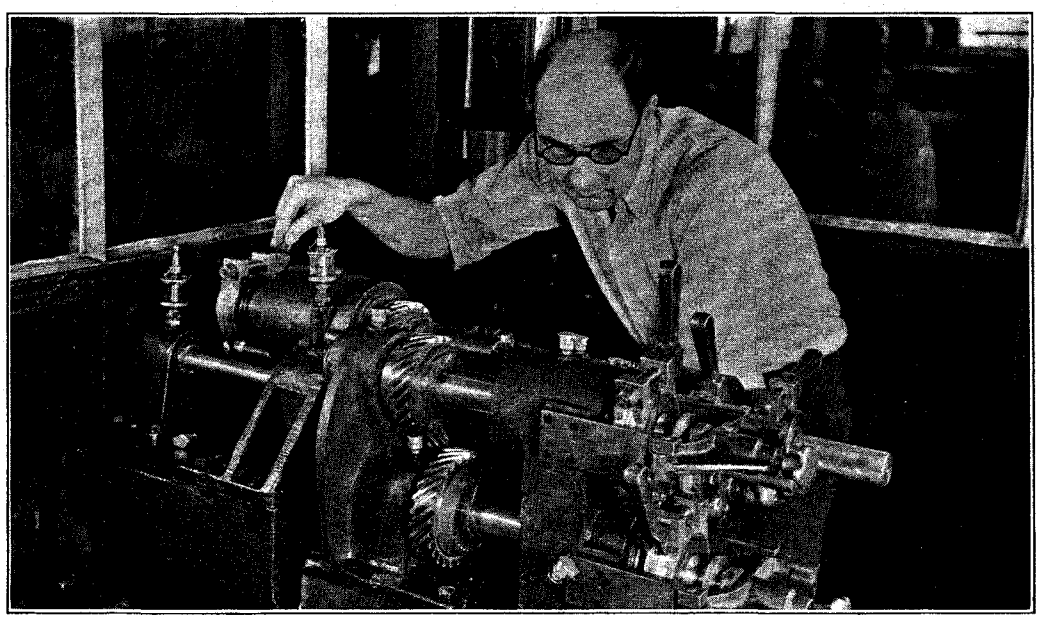
La Salle engine—Precision grading of Piston Pins

Transmission Gears

La Salle transmissions are quiet in all speeds, forward and reverse. Many cars claim quiet transmissions but all La Salle transmissions are positively quiet or they are not passed for manufacture into the car. Rigid inspection is made of every set of gears, by matching gear to gear. They are all individually tested for sound on this special machine which has brakes, with which loads on each pair of gears can be checked independently. Every La Salle transmission is built with a perfectly matched set of gears instead of being assembled with gears from stock sizes.



Matched set of Transmission Gears

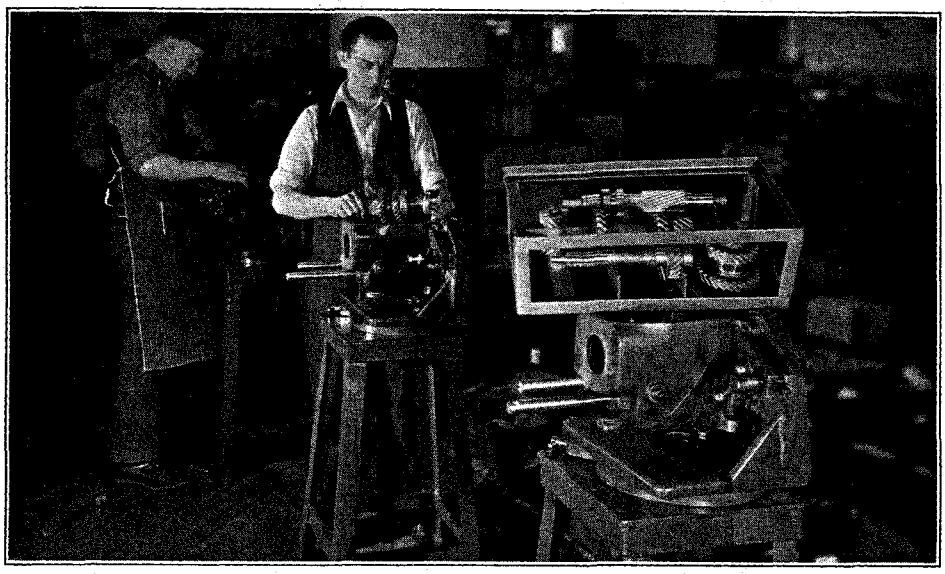


Matching of La Salle Transmission Gears in Sets

Transmission Inspection

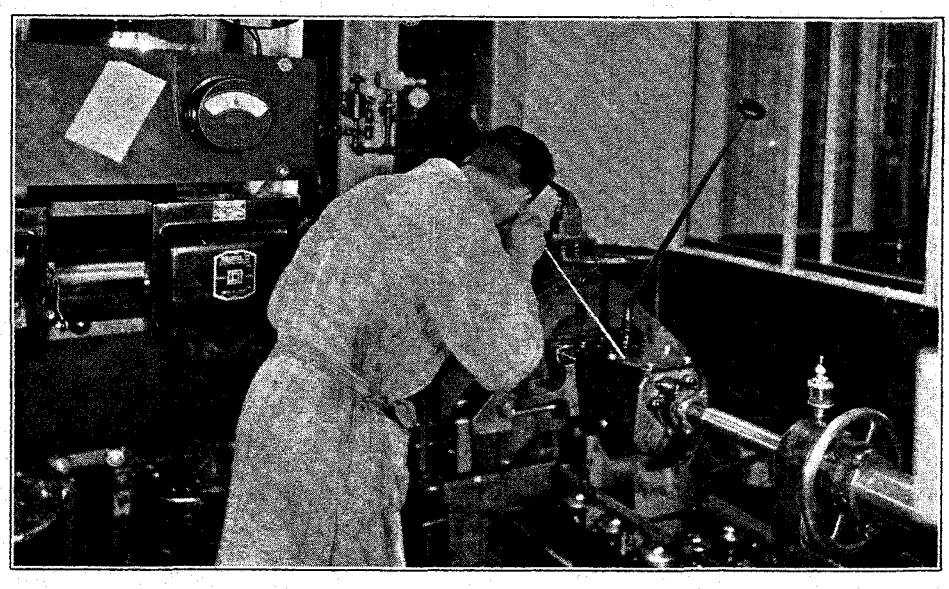
After the gears are passed OK and assembled in the transmission case, they are again passed through another inspection in a soundproof room before being built into the chassis.

The transmission is placed in an electrical dynamometer having motors at each end, and a clutch pedal to provide the same conditions and action as that obtained in normal car operation. The inspector checks the sound of both driving and coasting side of the gears of each speed in the transmission under various loads, thereby duplicating all car conditions.



La Salle Transmission Assembly

Soundproof Room Test of La Salle Transmissions



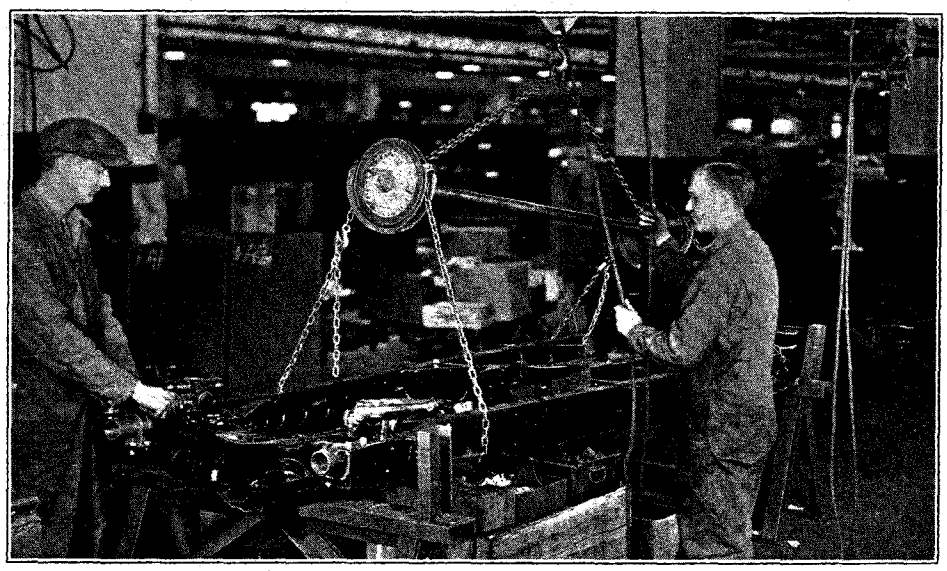
CADILLAC AND LA SALLE CARS ARE BUILT TO THE SAME HIGH STANDARDS OF CADILLAC PRECISION

In the preceding pages are shown some of the many manufacturing operations on La Salle in the building of the individual unit assemblies by Cadillac craftsmen.

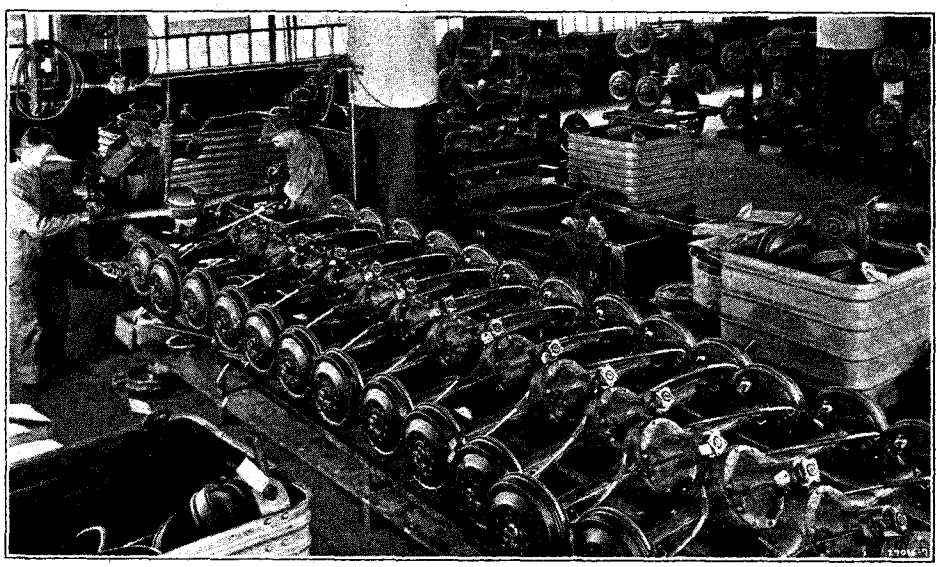
When these parts are brought together for final assembly in the chassis they are routed over the same production lines as the Cadillac V-8, V-12 and V-16, and are assembled by the same craftsmen to the same high standards of Cadillac precision.

Every part in the La Salle and Cadillac receives the same careful inspection and check-up so that it will contribute its individual share of the 100 per cent efficient operation that makes up a perfect whole.

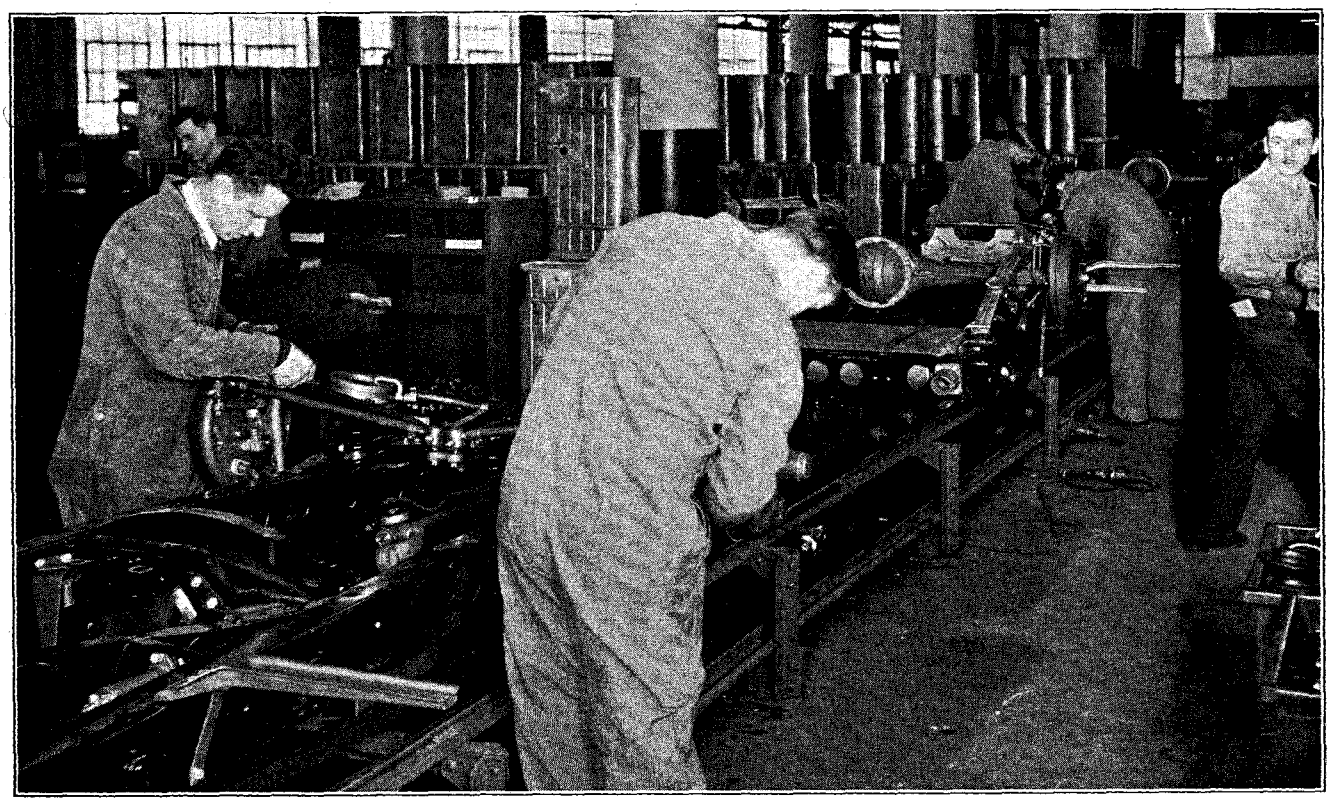
In the following pictures are illustrated the La Salle chassis in production and it is interesting to note that they are moving simultaneously with Cadillac chassis both in the final assembly and final inspection departments.



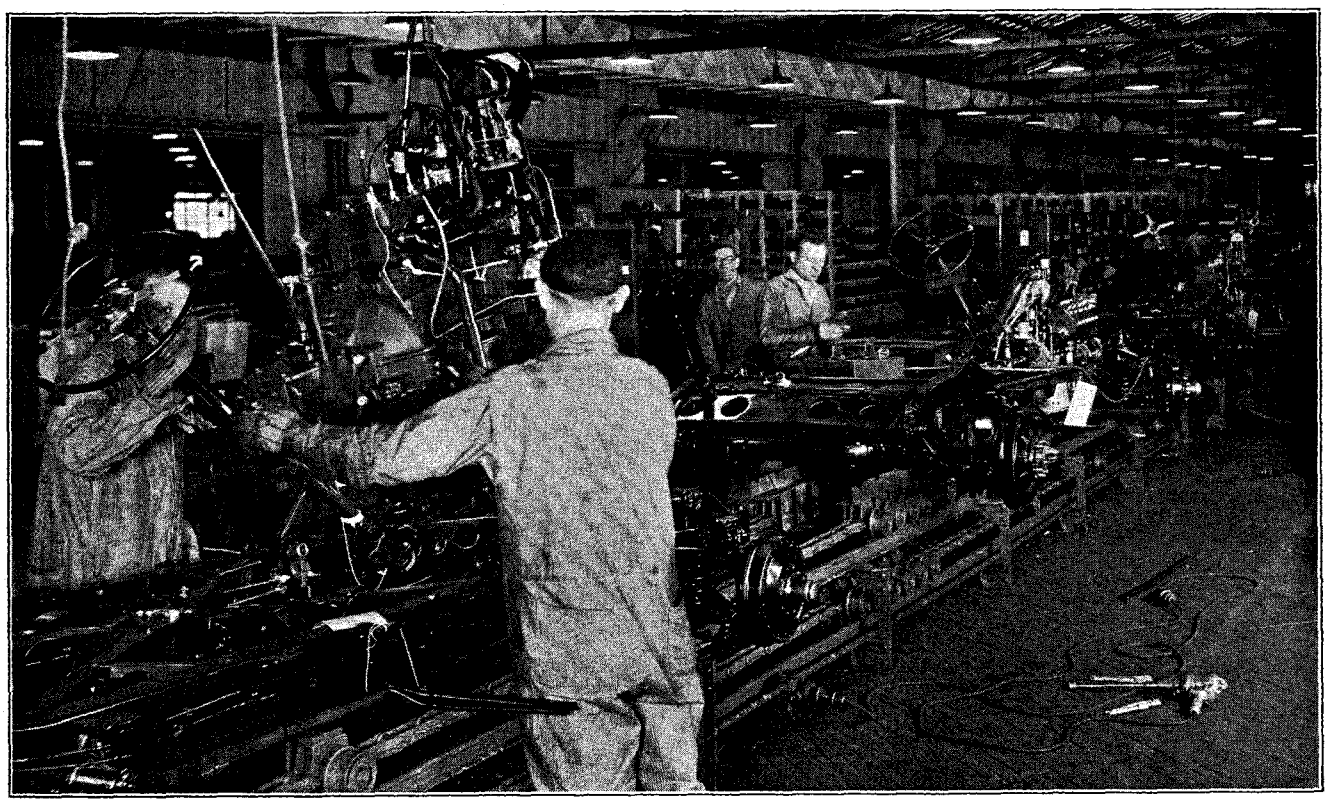
La Salle Frame Starting on Final Chassis Production Line



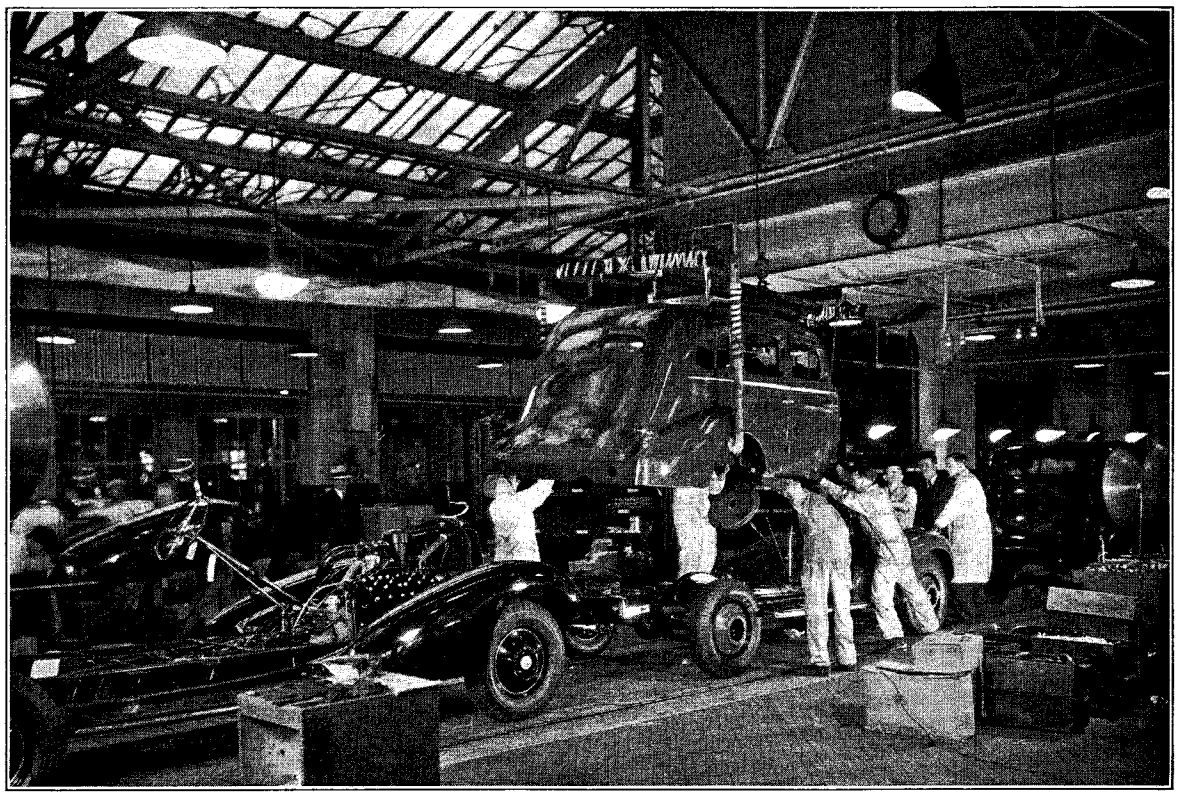
La Salle Rear Axle Department



La Salle Chassis Production Line with Springs, Brakes and Rear Axle Assembled



La Salle Chassis Production Line with La Salle Engine Installation



When the La Salle chassis assembly is completed, the body is mounted and the complete car then moves down the line to the final inspection and testing department



The La Salle moving down the final inspection line. At this point it has been road-tested and passed final inspection as to construction. When given the final o. k. by the inspectors as to equipment and finish, it is then sent to the loading dock for shipment

As a consequence, when the La Salle car leaves the Cadillac factory it has been built with the best known scientific practice in engineering, metallurgy, manufacturing and precision workmanship and inspection. Cadillac recognizes its obligation to the public, in the confidence bestowed upon it as "Standard of the World," and will ever seek to maintain that high honor by building the finest cars regardless of price.

CONDENSED SPECIFICATIONS

La Salle—Series 350

List Price (5-Sedan)	$1595 (f.o.b. Detroit)
Wheelbase	119″
Overall Length	202¼″
Engine: No. Cyl., Type, Make	8—In Line—Own
Valve Arrangement	L-head
Bore and Stroke	3 x 4¼
Piston Displacement	240.3 cu. in.
Taxable Horsepower	28.8
Maximum Brake Horsepower	95 at 3700 R.P.M.
Compression Ratio	6.5 to 1
Rubber Mountings	Yes—6 points
Crankshaft: No. main bearings, type	5—bronze backed babbitt
Counterweighted, method	Yes, 8, integral with shaft
Balancer	Yes
Piston, material, No. rings	Anodized aluminum alloy, 4 R
Timing drive	Chain
Generator drive	Belt
Lubrication: Pressure to	Main bearings, connecting rods, wrist pins, camshaft bearings
Crankcase ventilation	Yes
Chassis lubrication	Alemite—Zerk
Fuel feed type	A. C. Pump
Windshield wiper vacuum pump	Yes
Carburetor: Make, type	Stromberg, Dual downdraft
Automatic choke	Yes
Air cleaner and silencer	Yes, A. C.
Fuel tank capacity	20 gallons
Radiator type	Cellular
Thermostatic circulation control	Yes—in engine
Capacity of Cooling System	4.65 gals. (18 qts.)
Starter drive	Solenoid gear
Control	Button on instrument panel
Clutch: Size and type	9⅞″ x 6⅛″, single plate
Transmission: Syncro-Shift	Yes
Helical silent gears	All forward and reverse
No. forward speeds	3
Final drive: Type	Hotchkiss drive
Universal joints, how lubricated	Manually (12,000 miles)
Rear axle: Type gears	Spiral bevel
Gear ratio	4.78 to 1
Brakes: Service, type	Hydraulic
Drum material and diameter	Centrifuse 12″
Hand brakes: Location	Rear, service brakes
Springs: Type	Front, helical Rear, semi-elliptic—Metal covers with graphite bronze inserts for permanent lubrication
Shackles	Threaded (rear) U type
Shock absorbers	Double acting
Tires	16—7.00
Steering Ratio	18¾ to 1
Steering wheel size	18½″, Tri-spoke

COMPLETE DETAILED LA SALLE MECHANICAL SPECIFICATIONS

LA SALLE—MODEL "350"

ENGINE

Number of cylinders	8
Valve arrangement	L-Head
Bore and stroke	3 x 4¼
Engine mounted on	Bolts through rubber
Rubber mounting used at	All points
Number of points of suspension	6
Engine make	Own
Engine model	"350"
Cylinder arrangement	In line
Cylinder head, Cast Iron or Aluminum	Cast Iron
Piston displacement	240.3
Taxable horsepower	28.8
Maximum brake horsepower at R. P. M.	95 at 3700
Standard compression ratio	6.5 to 1
Optional compression ratio	
Standard compression pressure	158 lbs. at 1000 R.P.M. 176 lbs. at 2500 R.P.M.

PISTONS AND RINGS

Piston make	Lynite
Piston material	Lo-Ex Aluminum Alloy
Piston features	T-slot
Piston weight, ounces (without rings, pin and locking screw)	12.048
Piston weight, ounces (with rings, pin and locking screw)	18.160
Piston length	3 11/16"
Piston clearance, top	.016"
Piston clearance, bottom	.0018"
Piston ring groove depth, oil (minimum)	.130"
Piston ring groove depth, compression (minimum)	.135"
Is lower groove drilled radially	Yes
Number of oil rings used per piston	2
Width of oil rings	One .1545"-.1550", one .1235"-.1240"
Width of oil ring gap	.007"-.015"
Number of compression rings used per piston	2
Width of compression rings	.1235"-.1240"
Width of compression ring gap	.007"-.012"
Maximum wall thickness of oil rings	.130"
Maximum wall thickness of compression rings	.130"

RODS AND PINS

Wrist pin length	2 11/16"
Wrist pin diameter	⅞"
Wrist pin locked in rod, piston or floating	Locked in piston
Wrist pin clearance	.0005" press at locked end .0003" clearance free end
Wrist pin hole finish	Diamond bored
Connecting rod length, center to center	9"
Connecting rod material	X-1335-A
Connecting rod weight, ounces	29.565
Crankpin journal diameter and length	2¼" x 1 1/64"
Connecting rod bearing material	Steel backed babbitt
Connecting rod bearing make	Own
Connecting rod bearing clearance	.0015"
Connecting rod bearing end play	.005"
Connecting rod bearing shim, type of	None
Connecting rod bearing—poured or separate	Separate
Rods and pistons removed from above or below	Below

CRANKSHAFT

Front flywheel used	None
Vibration dampener	Yes
Vibration dampener type	Harmonic
Crankshaft counterweights used, number of	8
Which main bearing takes thrust	No. 1
Crankshaft end play	.004
Main bearing material	Bronze backed babbitt
Main bearing clearance	.002"
Main bearing, slip-in type or integral with cap and case	Slip-in
Main bearing shim	None
No. 1 main bearing diameter and length	2⅜" x 1⅝"
No. 2 main bearing diameter and length	2 5/16" x 1½"
No. 3 main bearing diameter and length	2⅝" x 1⅝"
No. 4 main bearing diameter and length	2 11/16" x 1½"
No. 5 main bearing diameter and length	2¾" x 1 25/32"
Crankshaft gear make	Whitney
Crankshaft gear material	No. 1315 steel

CAMSHAFT

Camshaft gear make	Whitney
Camshaft gear material	Steel
Generator gear	Belt driven
No. 1 bearing front, diameter and length	2 5/16" x 1¼"
No. 2 bearing front, diameter and length	2¼" x 1"
No. 3 bearing front, diameter and length	2 3/16" x 1"
No. 4 bearing front, diameter and length	2⅛" x 1"
No. 5 bearing front, diameter and length	2 1/16" x 1"
No. 6 bearing rear, diameter and length	1 3/16" x 1 7/32"

TIMING CHAIN

Timing chain make	Whitney
Timing chain model	CL-205
Timing chain length, inches	23
Timing chain, number of links	46
Timing chain width	1¼"
Timing chain pitch	½
Timing chain adjustment	None

VALVES

Intake valve model	Thompson
Intake valve head material	No. 3140 steel
Intake valve head actual overall diameter	1 9/16"
Intake valve angle seat	30°
Is valve seat an insert	No
Intake valve stem material	No. 3140 steel
Intake valve stem length	5 9/32"
Intake valve stem diameter	11/32"
Stem to guide clearance	.002"
Intake valve lift	.291"
Intake valve spring pressure and length, with valve closed	
Intake valve spring pressure and length, with valve open	
Is valve tappet clearance automatically adjusted	No
Exhaust valve make	Thompson
Exhaust valve head material	No. 3140 steel
Exhaust valve actual overall diameter	1 7/16"
Exhaust valve angle of seat	30°
Is valve seat an insert	No
Exhaust valve stem material	No. 3140 steel
Exhaust valve stem length	5 9/32"

VALVES—*Continued*

Exhaust valve stem diameter	11/32"
Stem to guide clearance	.003"
Exhaust valve lift	.289"
Exhaust valve spring pressure and length, valve closed	
Exhaust valve spring pressure and length, valve open	
Is valve tappet clearance automatically adjusted	No
Operating tappet clearance—Intake	.006"
Tappet clearance for valve timing—Intake	.015"
Operating tappet clearance—Exhaust	.008"
Tappet clearance for valve timing—Exhaust	.015"
Valve timing—Intake opens	6°-A.T.C.
Valve timing—Intake closes	37°-A.B.C.
Valve timing—Exhaust opens	34°-B.B.C.
Valve timing—Exhaust closes	5°-A.T.C

LUBRICATION

Lubricating system type—pressure or splash	Pressure
Oil pressure to main bearings	Yes
Oil pressure to connecting rods	Yes
Oil pressure to wrist pins	Yes
Oil pressure to camshaft bearings	Yes
Timing gear lubrication	Positive
Oil pump type	Gear
Oil grade recommended—S.A.E. viscosity—Summer	S.A.E. 40
Winter	S.A.E. 20
Normal oil pressure	30 lbs. at 60 m.p.h.
Pressure at which relief valve opens	30 lbs.
Capacity of oil reservoir—quarts	7
Oil pressure gauge make	A.C.
Drain oil, miles	2000
Type of oil drain	Threaded plug
Oil reservoir gauge type	Stick
External oil filter make	None
Oil cooler make	None
Chassis lubrication type	Pressure
Chassis lubrication make	Alemite-Zerk
Crankcase ventilation system	Yes

FUEL

Gasoline tank make	Own
Gasoline tank capacity	20 gallons
Fuel feed type	Camshaft pump
Fuel feed make	A.C.
Gasoline filter make	A.C.
Carburetor make	Stromberg
Carburetor model	S-50
Carburetor size	1¼"
Carburetor type	Plain tube
Up or down draft	Down draft
Single or dual	Dual
Heat adjustment	None
Automatic choke, make	Stromberg
Electric mixture heating	None
Air cleaner make	A.C.
Intake silencer make	A.C.
Exhaust pipe diameter	2"
Muffler make	Oldberg

COOLING

Cooling circulation, type of	Pump
Water pump type	Centrifugal
Water pump drive	Vee Belt
Water circulation thermostat make	Harrison
Radiator shutter make	None
Radiator core type	Cellular
Radiator core make	Harrison
Cooling system capacity, gallons	4.6
Lower radiator hose, inside diameter	1¾"
Lower radiator hose, length	Two used—2⅝" and 3"
Upper radiator hose, inside diameter	1½"
Upper radiator hose, length	5⅞"
Fan belt type	Vee
Fan belt make	
Fan belt length, outside	52⅞"
Fan belt width, maximum	51/64"
Fan make	Automotive Fan and Bearing Co.

IGNITION

Ignition unit make	Delco-Remy
Manual advance, degrees	20
Automatic advance, degrees	28
Vacuum advance	None
Distributor breaker gap	.018"-.024"
Timing	8° before
Firing order	1, 6, 2, 5, 8, 3, 7, 4
Ignition coil make	Delco-Remy
Amperage draw of coil, with engine stopped	4.4
Amperage draw of coil, with engine idling	2.2
Ignition switch make	Delco-Remy Coil Lock No. 431-G
Spark plug thread	18 M.M.
Spark plug model	G-6
Spark plug make	A.C.
Spark plug gap	.025"-.027"
Ignition cable make	Delco-Remy

BATTERY

Battery make	Delco
Standard number	17 D.W.
Capacity—ampere hours	130
Battery bench charging rate—start	10
Battery bench charging rate—finish	8
Which battery terminal is grounded	Positive

STARTING MOTOR

Starting motor make	Delco-Remy 727-N
Starting motor lock torque in foot pounds	15
Starting motor lock amperage	600
Starting motor lock voltage	3.0
Starting motor type of drive	Solenoid shifter gear
Automatic starting device	Push button—Delco-Remy
Starting motor pinion meshes front or rear	Front
Number of teeth in flywheel	145
Face width of flywheel teeth	9/16"
Flywheel teeth integral or steel ring	Steel ring
Gear ratio between starter armature and flywheel	16.1 to 1

GENERATOR

Generator make	Delco-Remy 961-C
Generator driven by	Belt
Generator field fuse capacity	6 amps.
Generator thermostat opening temperature	
Cutout relay make	Delco-Remy
Voltage at cutout closing	6.8-7.3
Car speed at cutout closing	12 m.p.h.
Amperes to open cutout	O-2
Generator normal charging rate—Hot—lights on	16.25
Hot—lights off	12.00
Cold—lights on	19.75
Cold—lights off	14.25

GENERATOR—*Continued*

Generator armature speed for normal charging rate.....Constant rate above 1200 R.P.M.
Car speed for maximum charging rate.Constant above 16 m.p.h.
Voltage for maximum charging rate.....
Ammeter make.....A.C.

LAMPS

Lighting switch make.....Delco-Remy
Are double or triple filament bulbs used.....Double 32-32 c.p.
How are headlights dimmed.....Depressed beam-foot switch
Are tail and dash lights in series.....No
Headlight make.....Guide
Headlight reflector type.....Parabolic
Headlight cover glass make.....Guide
Headlight cover glass diameter.....7″
Parking light make.....Guide
Tail light make.....Guide
Horn type.....Airtone
Horn make.....Delco-Remy
Amperage draw of horns.....24-28

CLUTCH

Clutch make.....Borg and Beck
Operated dry or in oil.....Dry
Vibration insulation or neutralizer.....
Number of clutch driving discs.....2
Number of clutch driven discs.....1
Clutch facing material, woven or moulded.....Moulded
Clutch facing inside diameter.....6⅛″
Clutch facing outside diameter.....9⅞″
Clutch facing thickness..... .133″
Number of clutch facings required.....2

TRANSMISSION

Transmission make.....Own
Transmission location.....Unit
Number of forward speeds.....3
Gear ratio in high, standard 5-pass. sedan.....4.78 to 1
Transmission ratio in second.....1.70 to 1
Transmission ratio in low.....2.68 to 1
Transmission ratio in reverse.....2.90 to 1
Type of gears, first and second.....Helical
Type of gears, reverse.....Helical
Synchronous meshing second and third gears.....Yes
Transmission oil capacity.....
Transmission oil grade recommended, S. A. E. viscosity—Summer.....S.A.E. A-160
Winter.....S.A.E. 90
Free wheel unit.....None
Front universal make.....Spicer
Front universal model.....No. 1251
Front universal type.....Needle bearing
Rear universal make.....Spicer
Rear universal model.....No. 1258
Rear universal type.....Needle bearing
Universal joints lubricated.....Permanently
Drive taken through.....Springs
Torque taken through.....Springs

REAR AXLE

Rear axle make.....Own
Rear axle type—semi, full or three-quarter floating..Semi-floating
Minimum road clearance under center of rear axle—tires inflated.....8 5/16″
Differential gear make.....Brown Lipe
Rear axle oil capacity—quarts.....1½
Rear axle oil capacity—grade recommended, S. A. E. viscosity—Summer.....
Winter.....
Type of final gearing.....Spiral bevel
Gear ratio—standard 5-pass. 4-door Sedan.....4.78 to 1
Optional gear ratios.....
Number of teeth in ring gear.....43
Number of teeth in pinion.....9
How is pinion adjusted.....Screw
How is pinion bearing adjusted.....Screw
Are pinion bearings in sleeve.....No
Backlash between pinion and ring gear..... .004″-.008″

TIRES AND WHEELS

Tire make.....U. S.
Tire size.....7.00—16
Number of plies.....4
Inflation pressure, front and rear.....25
Wheels fitted with demountable rims.....No
Rim make.....
Rim diameter.....16″
Rim width.....4.50
Axle clearance for jack, tire inflated, front.....10 1/16″
Axle clearance for jack, tires inflated, rear.....9¾″
Wheels, type.....Disc
Wheels, make.....Motor Wheel

SPRINGS

Front suspension, independent or conventional.....Independent
Front spring type.....Helical
Front spring make.....Own
Front spring material.....G. M. No. 9260 steel
Rear suspension, independent or conventional.....Conventional
Rear spring type.....Semi-elliptic
Rear spring make.....Spring perch
Rear spring material.....G. M. No. 9255 steel
Rear spring length.....54¼″
Rear spring width.....2″
Rear spring, number of leaves, 5-pass. Sedan.....8
Spring leaves lubricated with.....Graphite Bronze inserts
Spring shackles, type.....Threaded
Spring shackles, make.....Own

STEERING

Steering gear type.....Worm and roller
Steering gear make.....Saginaw
Number of turns of steering wheel for full left to right swing of wheels.....
Car turning radius, right.....19½′
Car turning radius, left.....20′
Caster angle.....2°
Camber angle.....1°
Toe-in, inches.....⅛
Crosswise inclination of king-pin, degrees.....4° 51 min.
Steering wheel make.....Inland
Front suspension type.....Forked arms
Front suspension make.....Own
Forked arm bearings, type.....Threaded
Adjustment of steering column and wheel—¾″ lower, ⅝″ raise

BRAKES

Number of complete brakes....4
Foot brakes, make....Bendix
Foot brakes, type of mechanism....Hydraulic
Vacuum booster make....None used
Brake lining, moulded or woven....Moulded
Rear brake drum material....Centrifuse
Rear brake drum diameter....12″
Rear brake lining, length per wheel....25 7/8″
Rear brake lining width....2″
Rear brake lining thickness....3/16″
Rear brake clearance....010″
Front brake drum diameter....12″
Front brake drum material....Centrifuse
Front brake, internal or external....Internal
Front brake lining, length per wheel....25 7/8″
Front brake lining width....2″
Front brake lining thickness....3/16″
Front brake clearance....010″
Total foot braking area....207 sq. in.
Per cent braking power on rear wheels....44
Hand brake lever location....Central
Hand brake lever operates on....Rear service brakes

FRAME

Frame make....A. O. Smith
Frame depth, maximum....6 1/32″
Frame thickness, maximum....9/64″
Frame flange width, maximum....2 1/2″
Wheelbase....119″
Tread, front....58 15/16″
Tread, rear....60 1/2″
Curb weight of standard 5-pass. Sedan....4100 lbs. (approx.)
Price of standard 5-pass. 4-door Sedan....
First serial number, this series....2,100,001
Serial number location. At top of left side cylinder block at front
Overall length of car *with* bumpers....202 1/4″

BEARINGS

Starting motor commutator end bearing—Make or type....In cast iron frame
Size or number....9/16″ dia.

Starting motor drive end bearing—Make or type....None
Size or number....

Starting motor outboard bearing—Make or type. Bronze bushing
Size or number... 1/2″x9/16″x7/8″

Generator commutator end bearing—Make or type....Bronze bushing
Size or number....19/32″x11/16″x27/32″

Generator drive end bearing—Make or type....N. D. Ball
Size or number....No. 1203

Clutch throwout bearing—Make or type....Graphite
Size or number....1 1/2″x2 3/8″x3/4″

Clutch pilot bearing—Make or type....Graphite bronze bushing
Size or number.... .875″x.942″x1.485″

Transmission pocket or spigot bearing—Make or type....Hyatt
Size or number..99016

Transmission main shaft front bearing—Make or type. N. D. Ball
Size or number...47507

Transmission main shaft rear bearing—Make or type..N. D. Ball
Size or number...47507

Transmission countershaft front bearing—Make or type....Hyatt
Size or number .92424

Transmission countershaft rear bearings—Make or type....Hyatt
Size or number. 92424

Rear axle pinion shaft front bearing—Make or type...N. D. Ball
Size or number..No. 5306

Rear axle pinion shaft rear bearing—Make or type....Hyatt
Size or number....111336

Differential right bearing—Make or type....N. D. Ball
Size or number....No. 0100

Differential left bearing—Make or type....N. D. Ball
Size or number....No. 0100

Rear wheel bearing—Make or type....N. D. Ball
Size or number....No. 3104

Front wheel inner bearing—Make or type....N. D. Ball
Size or number....No. 24

Front wheel outer bearing—Make or type....N. D. Ball
Size or number....No. 23

Kingpin bearing—Make or type....Leaded bronze bushing
Size or number.... .863″x1″x1 1/4″

Kingpin thrust bearing—Make or type....Special ball
Size or number....G. M. No. 230679

Rear spring front bushing....(Threaded) 11/16″—11″x7/8″x2″
Rear spring rear bushing...(Threaded) 5/8″—11″x7/8″; 11″x2 9/16″
Rear spring shackle....(U-type) 5/8″—11″x2 3/8″
Rear spring bolt, front....11/16″—11″x3 7/32″

PRINTED IN U. S. A.

THE CADILLAC
FLEETWOOD PROGRAM

The Fleetwood program for Cadillac for 1934, assumes considerable importance; not only are all V-16 Cadillac cars, but also all V-12 Cadillacs Fleetwood body equipped. A complete Fleetwood line is also offered on the V-8 Cadillac 146″ wheelbase chassis, and Fleetwood body types on the new La Salle.

Our continued offering of an appealing Fleetwood line has created a very definite demand for Fleetwood body types.

The facilities of Fleetwood are always available to Cadillac dealers and salesmen in securing custom body business, and you are earnestly invited to take advantage of them.

This book will deal with the Fleetwood types on the various Cadillac chassis, V-8, V-12 and V-16.

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THE NEW CADILLAC
FLEETWOOD LINE

Cadillac offers for 1934 twenty (20) appropriate body styles on the V-8 and V-12 146″ wheelbase chassis, and the V-16 154″ wheelbase chassis with style numbers as follows:

	FLEETWOOD STYLE NUMBERS		
	V-8	*V-12*	*V-16*
Body Type	*146″ W. B.*	*146″ W. B.*	*154″ W. B.*
*Five-Passenger Town Sedan	6033-S	6133-S	6233-S
*Five-Passenger Sedan	6030-S	6130-S	6230-S
*Five-Passenger Imperial Cabriolet	6030-FL	6130-FL	6230-FL
*Seven-Passenger Sedan	6075-S	6175-S	6275-S
*Seven-Passenger Limousine	6075	6175	6275
*Seven-Passenger Imperial Cabriolet	6075-FL	6175-FL	6275-FL

*Above body styles have straight slanting windshields.

All body styles below have modified "V" windshields:

Stationary Coupe, with inside auxiliary seats	5676	5776	5876
Convertible Coupe, with inside auxiliary seats	5635	5735	5835
Convertible Sedan (with division)	5680	5780	5880
Convertible Five-Passenger Coupe	5685	5785	5885
Special Five-Passenger Town Sedan	5633-S	5733-S	5833-S
Special Five-Passenger Sedan	5630-S	5730-S	5830-S
Special Five-Passenger Imperial Cabriolet	5630-FL	5730-FL	5830-FL
Special Seven-Passenger Sedan	5675-S	5775-S	5875-S
Special Seven-Passenger Limousine	5675	5775	5875
Special Seven-Passenger Imperial Cabriolet	5675-FL	5775-FL	5875-FL
Aero-Dynamic Five-Passenger Coupe	5699	5799	5899
Five-Passenger Town Cabriolet	5612	5712	5812
Seven-Passenger Town Cabriolet	5625	5725	5825
Seven-Passenger Limousine Brougham	5691	5791	5891

A policy of limited options regarding upholstery, method of trimming, interior appointments, etc., will apply on the V-8 and V-12 Cadillac Fleetwood line and the Fleetwood 6200 line on the V-16 Cadillac chassis, but a policy of wide options will be effective on the V-16 Cadillac Fleetwood 5800 line and the three V-8 and V-12 Cadillac Fleetwood Town Car types.

FLEETWOOD UPHOLSTERY

For the *V-8* and *V-12 Cadillac Fleetwood* models, and the *Fleetwood 6200 line on the V-16 Cadillac chassis*, eight (8) exclusive upholstery materials are offered as follows:

Wiese 4542 . . . . . Taupe Plain Broadcloth
Wiese 4543 . . . . . Gray Plain Broadcloth
Wiese 4540 . . . . . Taupe Whipcord
Wiese 4541 . . . . . Gray Whipcord
Wiese 4538 . . . . . Taupe Pin Stripe Broadcloth
Wiese 4539 . . . . . Gray Pin Stripe Broadcloth
Wiese 4536 . . . . . Taupe Mixture Broadcloth
Wiese 4537 . . . . . Gray Heather Broadcloth

V-8 and V-12 Cadillac Fleetwood models brought through for stock will be upholstered in these materials.

All special upholstery materials are subject to extra charge. (See Special Features section, page 64).

For the *V-16 Cadillac Fleetwood* 5800 line and the *three V-8 and V-12 Cadillac Fleetwood Town Car types*, nine (9) exclusive upholstery materials are offered. A number of these materials can be used throughout the body, or in combination with plain materials of matching color:

Wiese 4305 . . . . . Brown Vogue Weave Broadcloth
Wiese 4307 . . . . . Gray Vogue Weave Broadcloth
Wiese 4308 . . . . . Brown Plain Broadcloth
Wiese 4310 . . . . . Gray Plain Broadcloth
Wiese 4568 . . . . . Tan Crenelure Cloth
Wiese 4570 . . . . . Tan Demi-Corde
Wiese 4571 . . . . . Tan Plain Broadcloth
Wiese 4567 . . . . . Gray Crenelure Cloth
Wiese 4569 . . . . . Gray Demi-Corde

These materials may be specified in V-8 and V-12 Cadillac Fleetwood models without extra charge, but subject to some delay in bringing the bodies through. In addition, any of the materials in the current Wiese Collection No. 70 can be specified in the V-16 Cadillac Fleetwood 5800 line and the three V-8 and V-12 Cadillac Fleetwood Town Car types, without extra charge, but subject to some delay in procuring the required material and the necessary matched accessories.

UPHOLSTERY MATERIALS—*Continued*

Fleetwood Leathers:

For Fleetwood Convertible types, on all Cadillac chassis, Cadillac offers four special high-grade Eagle Ottawa top grain leathers as follows:

Eagle Ottawa No. 814 Black
Eagle Ottawa No. 815 Tan
Eagle Ottawa No. 816 Green
Eagle Ottawa No. 817 Gray

All V-8, V-12 and V-16 Cadillac Fleetwood 6200 line Limousines and Imperials will have Eagle Ottawa No. 814 Black leather in the front compartment as standard.

For the chauffeur's compartment in all Fleetwood Town Car types and the V-16 Cadillac Fleetwood 5800 line Limousines and Imperials, a soft Black down cushion leather (Eagle Ottawa K-31) is offered, and will be used as standard in these body types.

METHOD OF TRIMMING
CADILLAC V-8, V-12 AND V-16 6200 LINE

The style of trimming used in the *V-8 and V-12 Cadillac Fleetwood models*, and the *Fleetwood 6200 line* on the *V-16 Cadillac chassis*, will be plain with French seaming, including center folding arm rest in the rear seat, Fleetwood method No. 401 (see page 51).

Fleetwood method No. 402 of pleating and tufting (see page 52), can be specified in these bodies, including center folding arm rest in the rear seat, without extra charge, but subject to delay in bringing the body through production.

Any other method of trimming in V-8 and V-12 Cadillac Fleetwood bodies and the Fleetwood 6200 line on the V-16 Cadillac chassis, will be subject to extra charge.

When preferred, Fleetwood Five and Seven-Passenger Closed car body types for the V-8 and V-12 Cadillac chassis and the Fleetwood 6200 line on the V-16 Cadillac, can be brought through on order with interior panels as illustrated on page 53, Fleetwood method No. 401-A, without extra charge. These interior panels have a center of straight grained Walnut on the bias four ways, with a border of Ebony to match the garnish mouldings. A polished stainless steel stripe will run lengthwise through the center of the panel, with a perpendicular polished stainless steel stripe at the center of each panel. The panels, when used, will be placed on the doors and quarter windows only, there being no provision made for installation of a panel on the division or the back of the front seat.

METHOD OF TRIMMING—*Continued*
CADILLAC V-16 FLEETWOOD 5800 LINE AND TOWN CAR TYPES

V-16 Cadillac Fleetwood 5800 line models and the three V-8 and V-12 Cadillac Fleetwood Town Car types may be brought through in any of the accepted Fleetwood methods of trimming (see pages 55 through 59) without extra charge. Other options without extra charge, on V-16 Cadillac Fleetwood 5800 line models and the three V-8 and V-12 Cadillac Fleetwood Town Car types, include any variation in the finish or coloring of the regular Fleetwood design hardware, but not including special designs. Also, interior wood paneling, if desired, can be had in any finish (walnut, mahogany, ebony, etc.) as well as variations of design of panels. Interior panels cannot be installed under the rear quarter windows when rear compartment radio control is used, on account of the location of such rear compartment control unit interfering with the panels.

Other options offered may include:

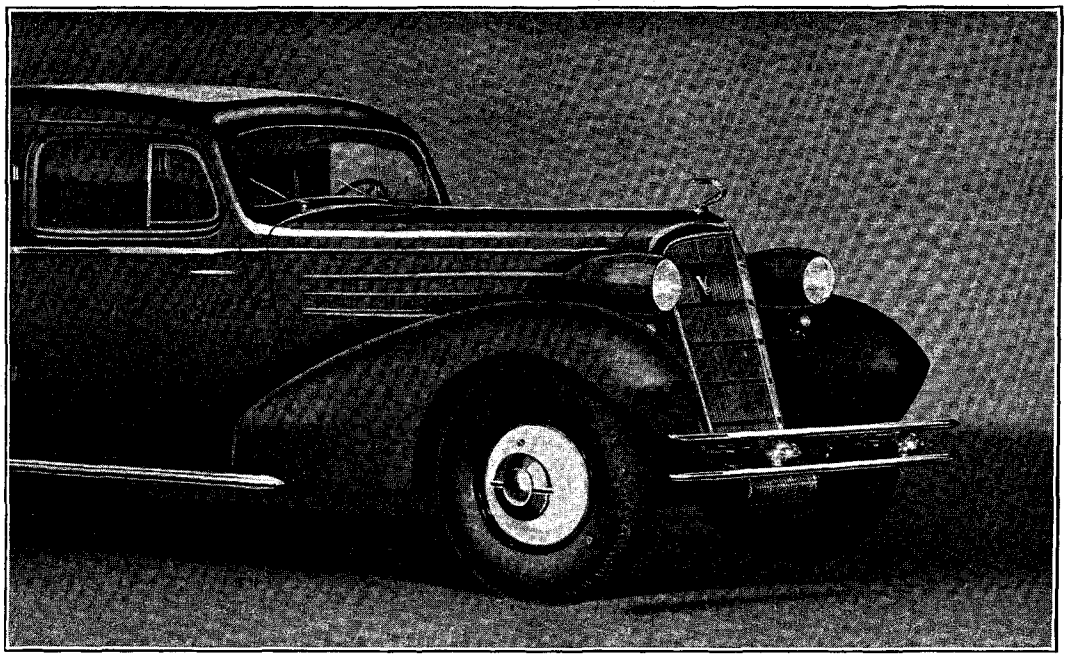
Assist grips, in addition to sliding arm slings.
Hassocks, or oval shaped double adjustment foot rail.
Seats, stationary or adjustable (front seats in Imperial, Limousine and Town Car types cannot be built adjustable).
Sheepskin rear floor rug in chauffeur driven models if desired.

FLEETWOOD TOP MATERIAL

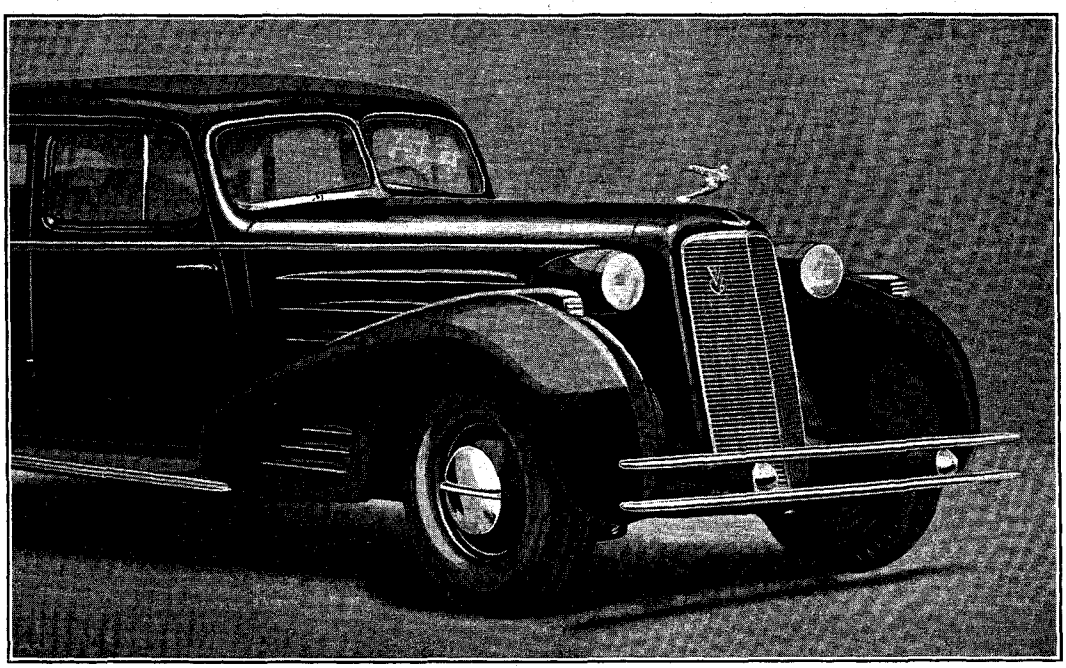
On all Fleetwood Convertible models Jonarts 5000 neutral colored top material will be used as standard. On V-16 Cadillac Convertible models other top materials are optional without extra charge.

PLEASE USE THE SPECIAL FORM PROVIDED FOR V-16 CADILLAC ORDERS, SO THAT THE FACTORY WILL RECEIVE COMPLETE SPECIFICATIONS WITH EACH ORDER.

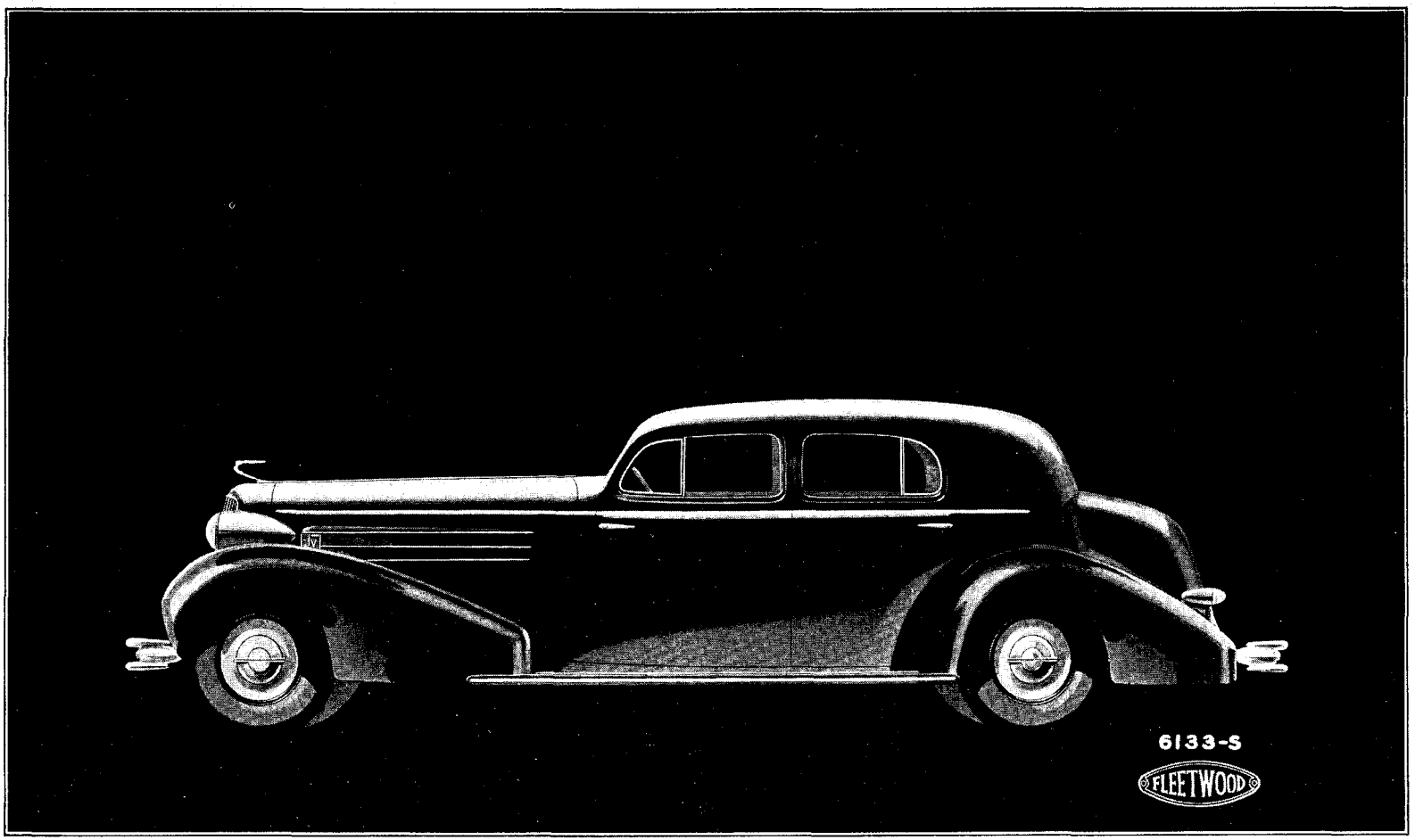
THE V-8 AND V-12 CADILLAC FLEETWOOD



The Cadillac-Fleetwoods present a distinguished and streamlined appearance as one approaches them from the front. Fleetwood designers have made no compromise with the modern trends in motor car style, yet they have kept the feeling of refinement and conservatism so much desired by the exclusive clientele for whom these cars are created.



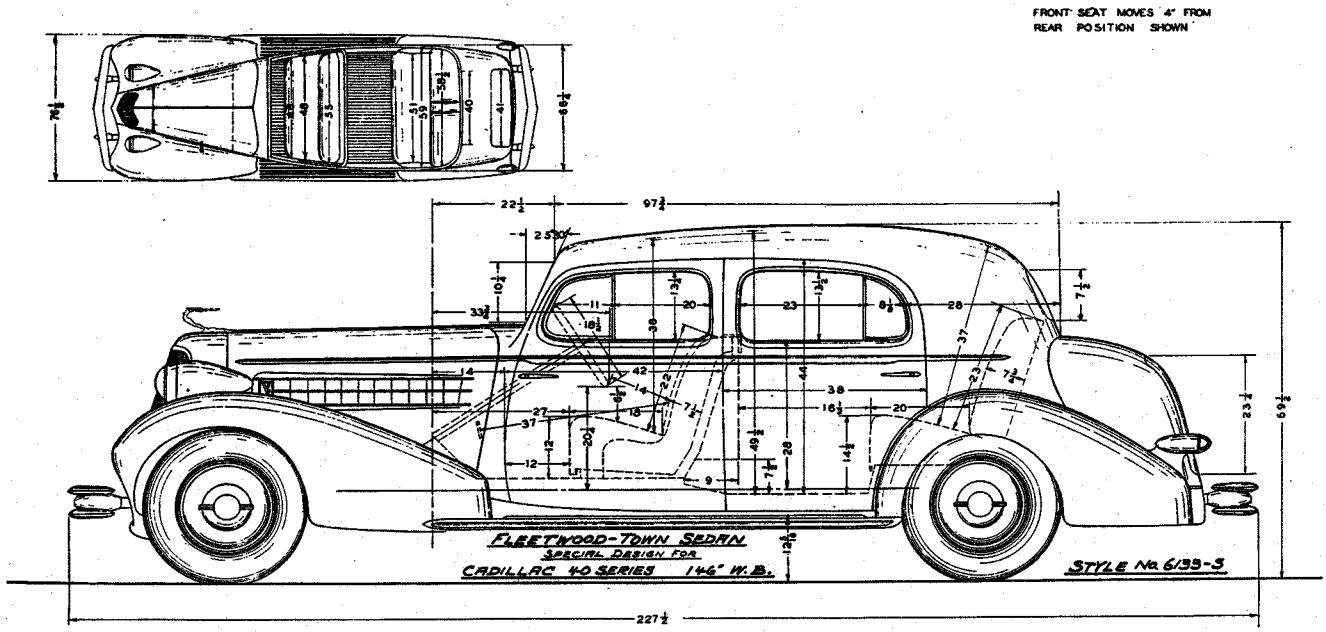
THE V-16 CADILLAC FLEETWOOD



FLEETWOOD FIVE-PASSENGER TOWN SEDAN

(Illustrated on V-12 chassis, Style 6133-S)

Also available on V-8 Cadillac chassis as Style 6033-S and on V-16 as Style 6233-S.



FLEETWOOD FIVE-PASSENGER TOWN SEDAN

(Style 6033-S, 6133-S and 6233-S)

REAR QUARTERS: Full metal back.

FRONT SEAT: Entire front seat cushion and backrest adjustable 4". Front seat back integral with center body pillars.

WINDSHIELD: Stationary, straight across, slanting 25°, non glare, clear vision, security plate glass.

VENTILATORS: One on top of cowl, rear opening, for better ventilation, screened.

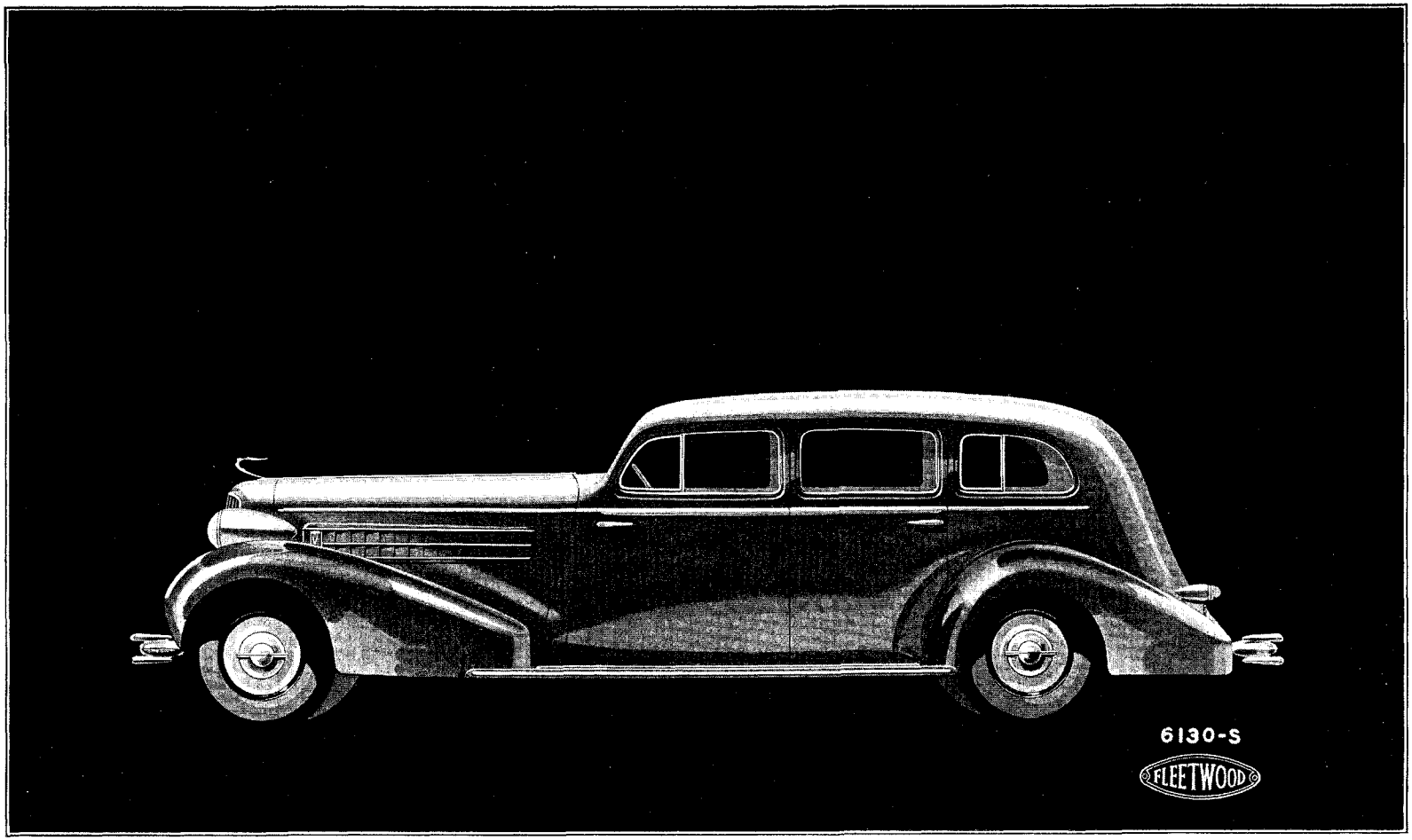
LIGHTING: Dome light operated by rear doors and switch on pillars. Two rear corner lights.

WINDOWS: Front and rear doors are equipped with the new individually controlled ventilation feature; all windows security plate glass.

HARDWARE: Fleetwood design; chromium plated.

SMOKING CASES: Two ash trays recessed in rear doors; conveniently located; Pass-Around cigar lighter located in back of front seat.

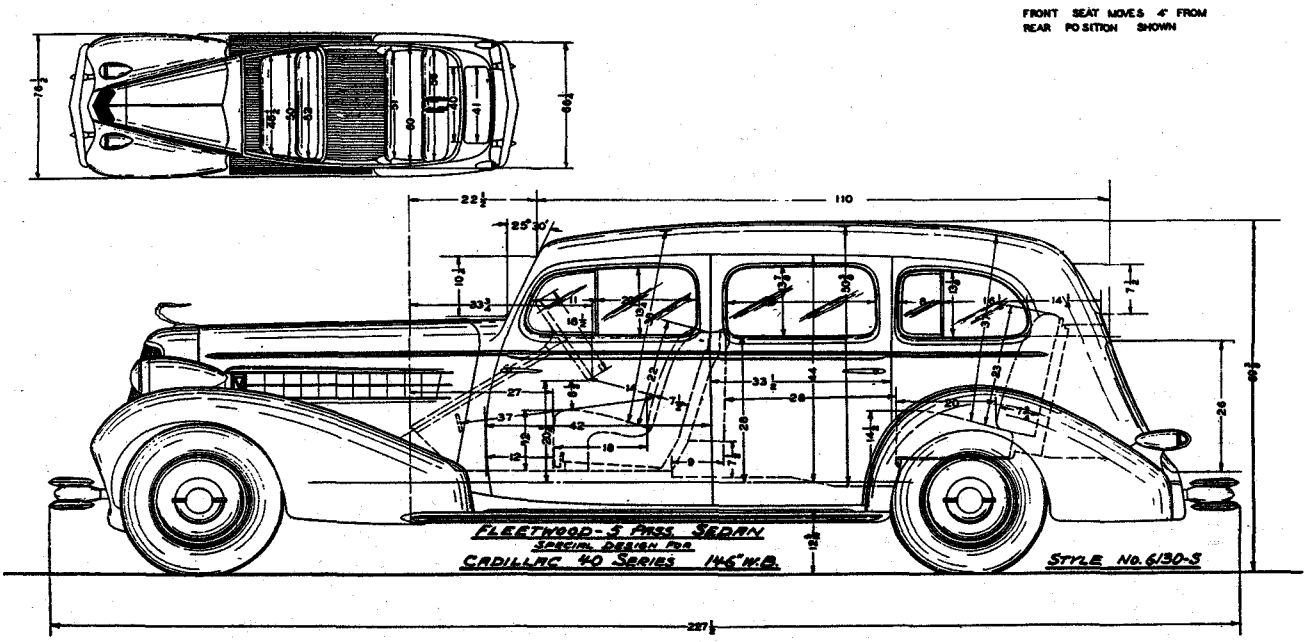
EQUIPMENT INCLUDES: Two spring type wedge-shaped foot hassocks, carpet covered to match body trim; robe cord, center cloth covered; concealed silk curtain on back light; two interior sun visors adjustable to two positions; hand mirror in slash pocket left hand side; large locked compartment located in back of front seat; clock, imported hinged type, recessed in back of front seat; folding center arm rest in rear seat back; side arm rests on front doors.



FLEETWOOD FIVE-PASSENGER SEDAN

(Illustrated on V-12 chassis, Style 6130-S)

Also available on V-8 Cadillac chassis as Style 6030-S and on V-16 as Style 6230-S.



FLEETWOOD FIVE-PASSENGER SEDAN

(Style 6030-S, 6130-S and 6230-S)

REAR QUARTERS: Metal, with quarter windows.

FRONT SEAT: Entire front seat cushion and backrest adjustable 4". Seat back integral with center body pillars.

WINDSHIELD: Stationary, straight across, slanting 25°, non-glare, clear vision, security plate glass.

VENTILATOR: One on top of cowl, rear opening for better ventilation, screened.

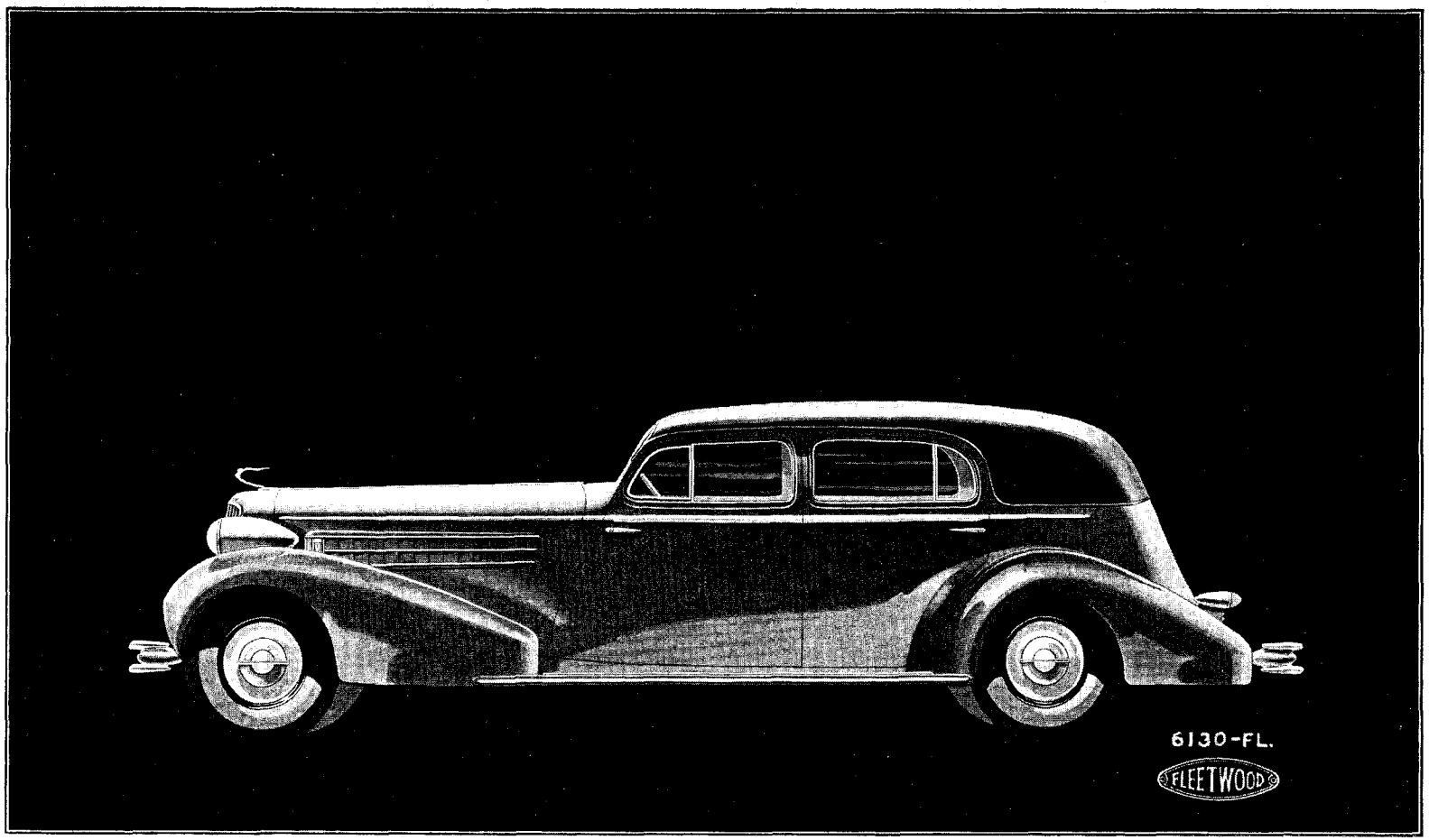
LIGHTING: Dome light operated by rear doors and pillar switch. Two rear corner lights.

WINDOWS: Front door and rear quarter windows are equipped with new individually controlled ventilation feature; all windows security plate glass.

HARDWARE: Fleetwood design, chromium plated.

SMOKING EQUIPMENT: Two covered ash receivers and two Pass-Around lighters located at front of side arm rests.

EQUIPMENT INCLUDES: Oval shaped foot rest, double adjustment, sponge rubber filled carpet covered to match body trim; concealed silk curtains on rear quarter windows and back light; two sliding arm slings; two interior sun visors adjustable to two positions; hand mirror in slash pocket left hand side; two large locked compartments located in back of front seat, lower compartment large enough for golf bag; clock, imported, hinged type, recessed in back of front seat; folding center arm rest in rear seat back; side arm rests on front doors.

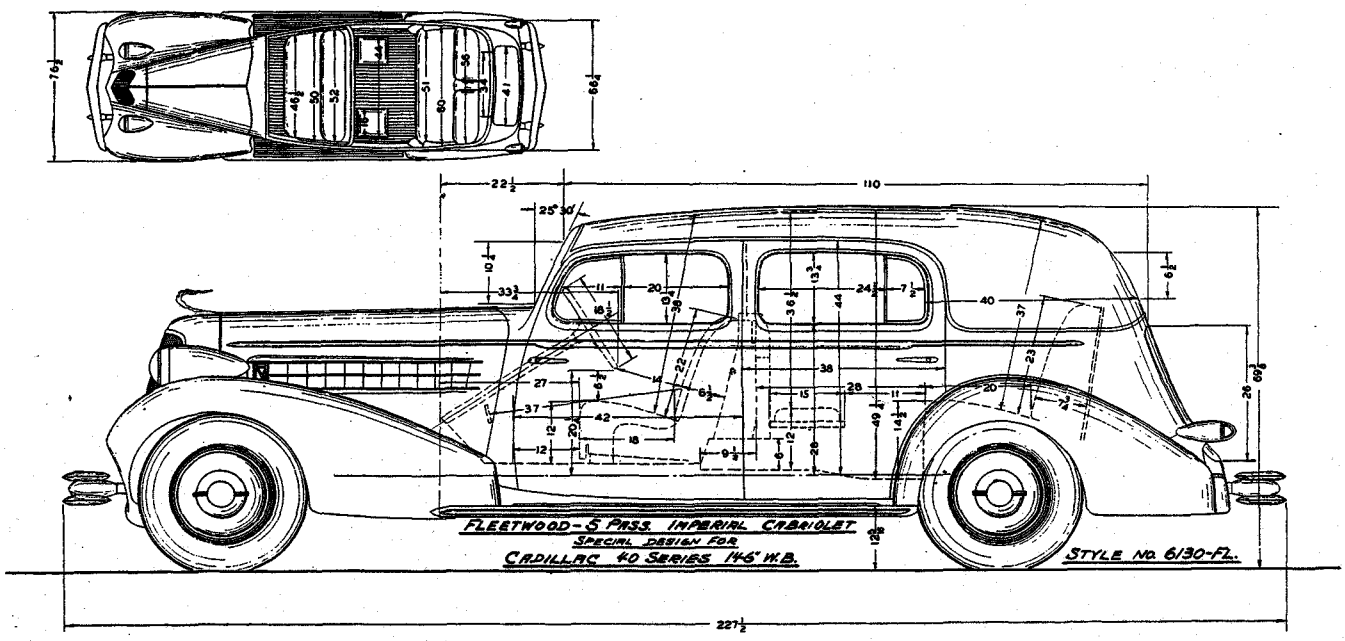


FLEETWOOD FIVE-PASSENGER IMPERIAL CABRIOLET

(OPERA SEATS)

(Illustrated on V-12 chassis, Style 6130-FL)

Also available on V-8 Cadillac chassis as Style 6030-FL and on V-16 as Style 6230-FL



FLEETWOOD FIVE-PASSENGER IMPERIAL CABRIOLET

(OPERA SEATS)

(Style 6030-FL, 6130-FL and 6230-FL)

ROOF AND REAR QUARTERS: Genuine English Landau Leather.

FRONT SEAT: Stationary with form fitting back rest provided by two concave cushions divided in center. Upholstered in leather.

WINDSHIELD: Stationary, straight across; slanting 25°, non-glare, clear vision, security plate glass.

VENTILATOR: One on top of cowl rear opening for better ventilation, screened.

LIGHTING: Dome light operated by rear doors and pillar switches. Two rear corner lights, additional dome light in front compartment.

WINDOWS: Front and rear doors are equipped with the new individually controlled ventilation feature; all windows security plate glass.

HARDWARE: Fleetwood design, chromium plated.

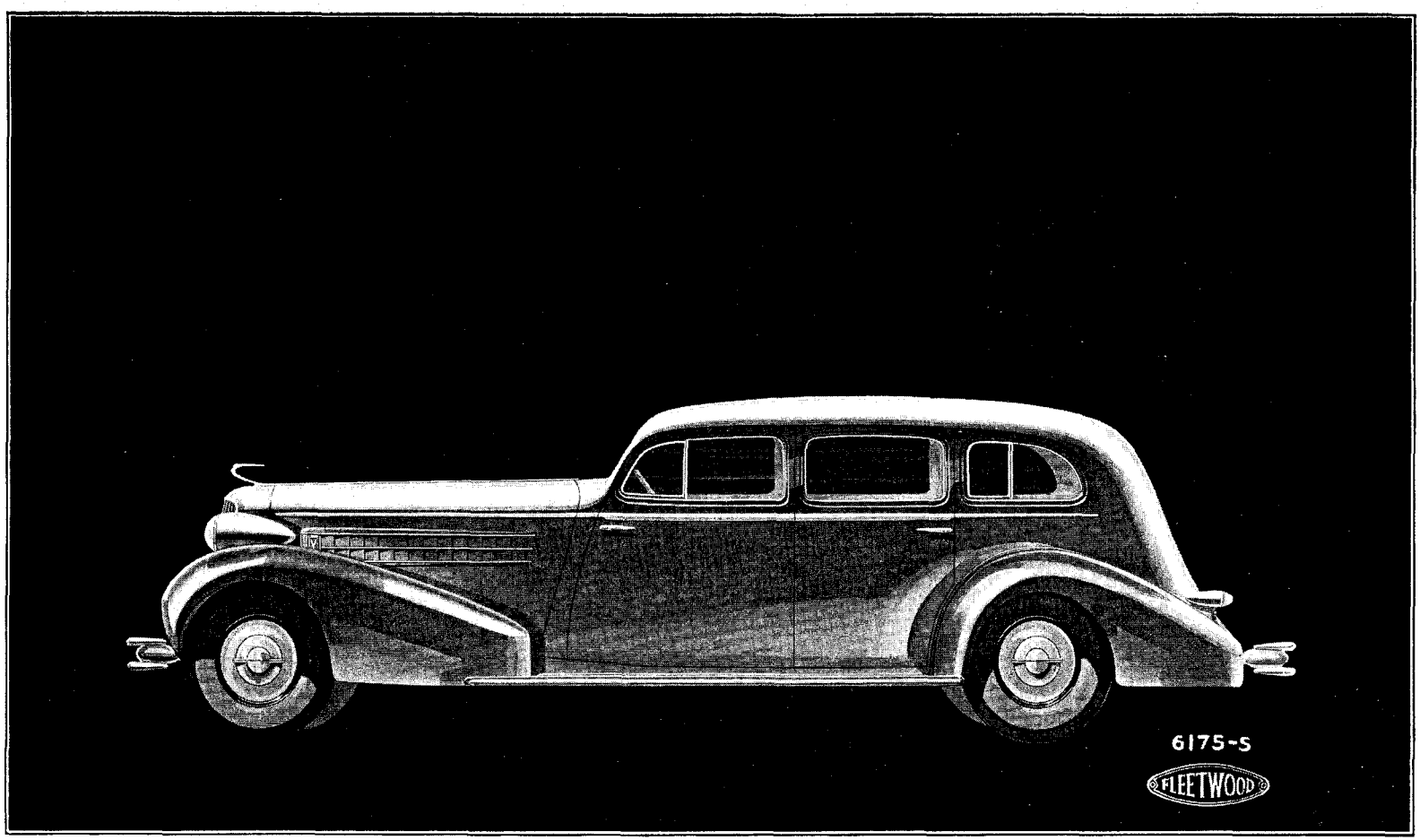
DIVISION: With header board and side pillars. The glass may be raised or lowered between front and rear compartment. Security plate glass.

TELEPHONE: In right rear quarter.

SMOKING EQUIPMENT: Two covered ash receivers and two Pass-Around lighters located at front of side arm rests.

EXTRA SEATS: Two opera type, left seat faces right side with lazy back, right seat faces rear; folding flush with division when not in use.

EQUIPMENT INCLUDES: Oval shaped foot rest double adjustment, sponge rubber filled, carpet covered to match body trim; robe cord, center cloth covered; doorman's umbrella carried under front seat; concealed silk curtain on back light; two sliding arm slings; two interior sun visors adjustable to two positions; two small compartments in back of front seat; hand mirror in slash pocket on left hand side; clock imported, hinged type recessed in division wall; folding center arm rest in rear seat back, side arm rests on front doors.

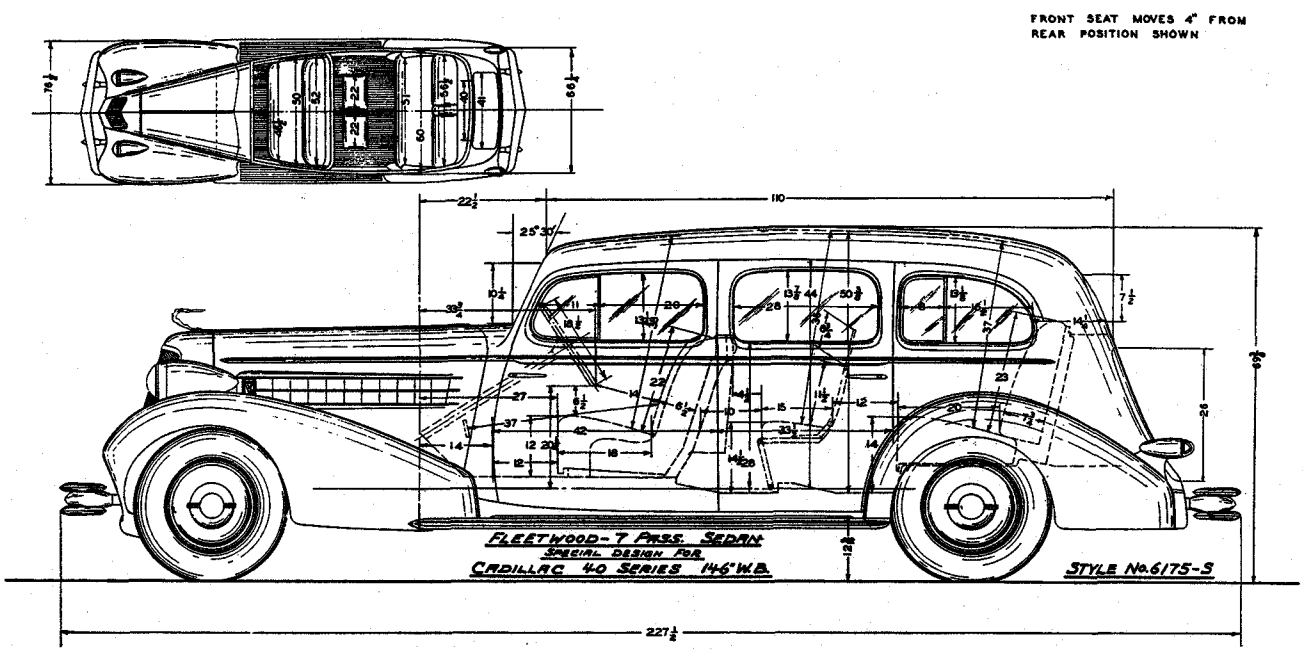


FLEETWOOD SEVEN-PASSENGER SEDAN

(FORWARD FACING AUXILIARY SEATS)

(Illustrated on V-12 chassis, Style 6175-S)

Also available on V-8 Cadillac chassis as Style 6075-S and on V-16 as Style 6275-S.



FLEETWOOD SEVEN-PASSENGER SEDAN

(FORWARD FACING AUXILIARY SEATS)

(Style 6075-S, 6175-S and 6275-S)

REAR QUARTERS: Metal with quarter windows.

FRONT SEAT: Entire front seat cushion and backrest adjustable 4″, front seat back integral with center body pillars.

WINDSHIELD: Stationary, straight across; slanting 25°, non-glare, clear vision, security plate glass.

VENTILATOR: One on top of cowl, rear opening for better ventilation, screened.

LIGHTING: Dome light operated by door and pillar switches. Two rear corner lights.

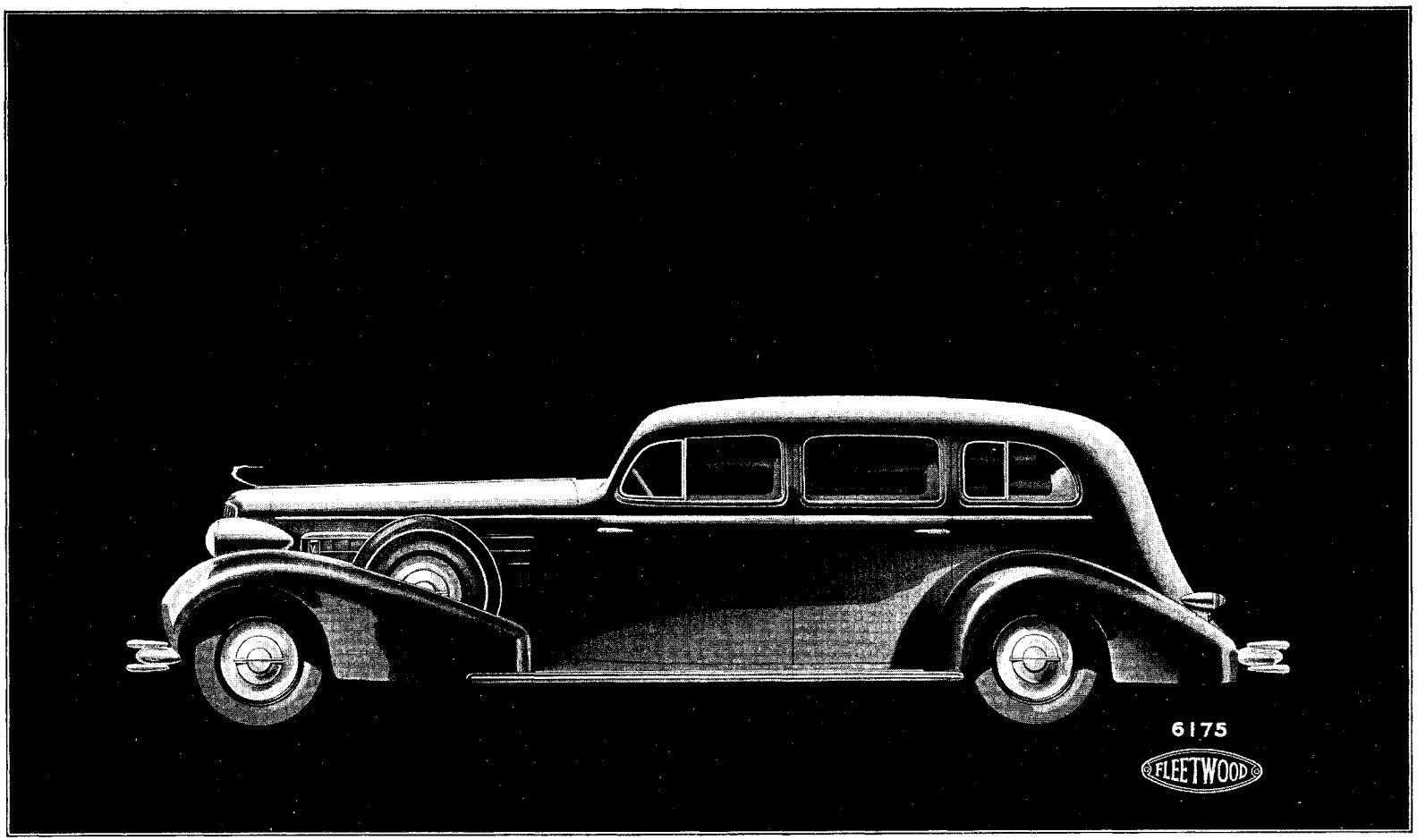
WINDOWS: Front doors and rear quarter windows are equipped with the new individually controlled ventilation feature. All windows security plate glass.

HARDWARE: Fleetwood design, chromium plated.

SMOKING EQUIPMENT: Two covered ash receivers and two Pass-Around lighters, located at front of side arm rests.

EXTRA SEATS: Two forward facing, luxuriously upholstered with Marshall springs and double throw backs; room enough for three passengers, concealed when not in use.

EQUIPMENT INCLUDES: Oval shaped foot rest, double adjustment, sponge rubber filled carpet covered to match body trim; robe cord, center cloth covered; concealed silk curtains on rear quarter windows and back light; two sliding arm slings; two interior sun visors adjustable to two positions; hand mirror in slash pocket on left hand side; clock, imported, hinged type recessed in back of front seat; folding center arm rest in rear seat back, side arm rests on front doors.

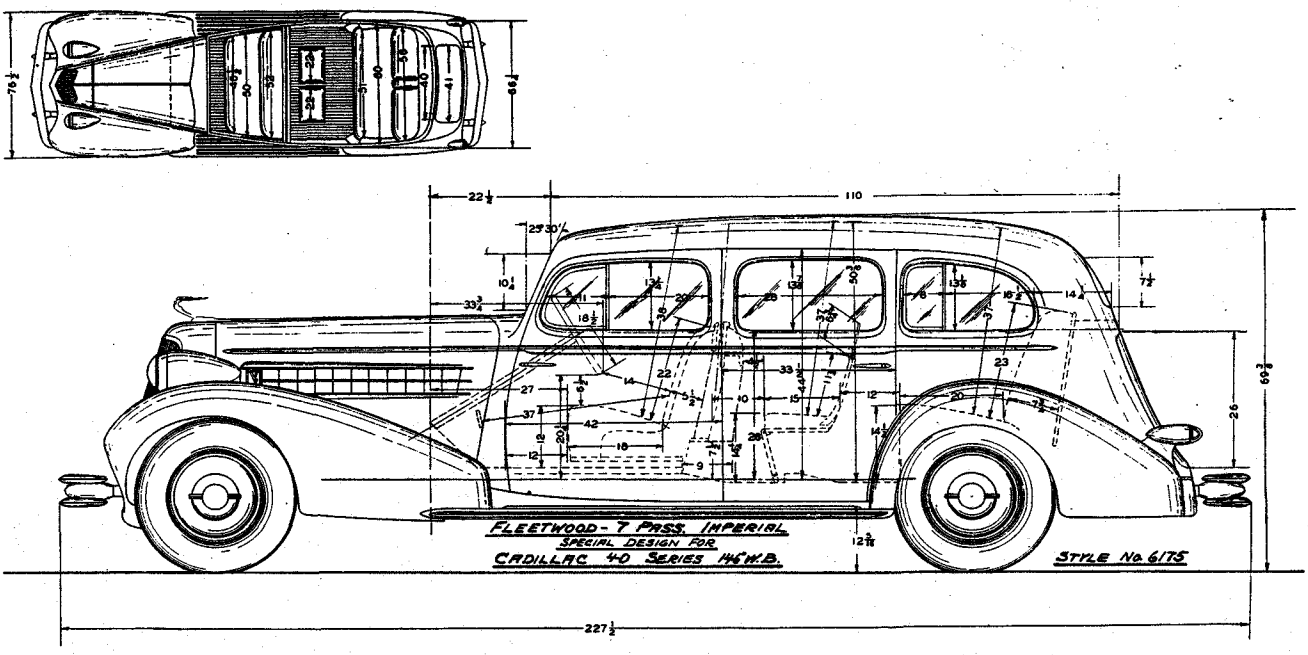


FLEETWOOD SEVEN-PASSENGER LIMOUSINE

(FORWARD FACING AUXILIARY SEATS)

(Illustrated on V-12 chassis, Style 6175)

Also available on V-8 Cadillac chassis as Style 6075 and on V-16 as Style 6275.



FLEETWOOD SEVEN - PASSENGER LIMOUSINE

(FORWARD FACING AUXILIARY SEATS)

(Style 6075, 6175 and 6275)

REAR QUARTERS: Metal with quarter windows.

FRONT SEAT: Stationary, with form fitting backrest provided by two concave cushions divided in center. Upholstered in leather.

WINDSHIELD: Stationary, straight across; slanting 25°, non-glare, clear vision, security plate glass.

VENTILATOR: One on top of cowl, rear opening for better ventilation, screened.

LIGHTING: Dome light operated by rear doors and pillar switches. Two rear corner lights. Additional dome light in front compartment.

WINDOWS: Front doors and rear quarter windows are equipped with the new individually controlled ventilation feature. All windows security plate glass.

HARDWARE: Fleetwood design, chromium plated.

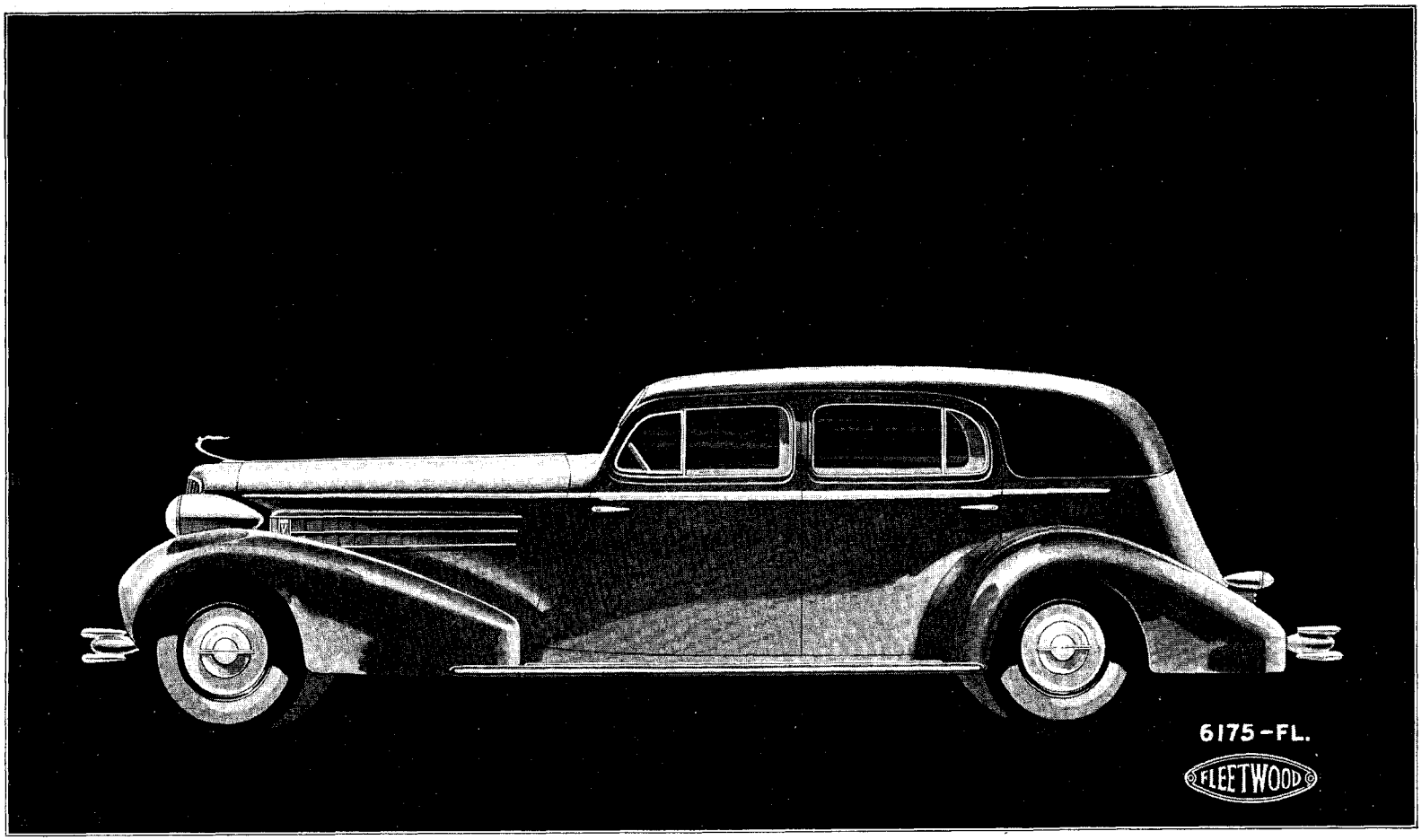
DIVISION: With header board and side pillars. The glass may be raised or lowered between front and rear compartment. Security plate glass.

TELEPHONE: In right rear quarter.

SMOKING EQUIPMENT: Two covered ash receivers and two Pass-Around lighters located at front of side arm rests.

EXTRA SEATS: Two forward facing, luxuriously upholstered with Marshall springs and double throw backs, room enough for three passengers, concealed when not in use.

EQUIPMENT INCLUDES: Oval shaped foot rest, double adjustment, sponge rubber filled, carpet covered to match body trim; robe cord, center cloth covered; doorman's umbrella carried under front seat; concealed silk curtains on rear quarter windows and back light; two sliding arm slings; two interior sun visors adjustable to two positions; two small compartments in back of front seat; hand mirror in slash pocket on left hand side; clock imported, hinged type, recessed in division wall; folding center arm rest in rear seat back, side arm rests on front doors.

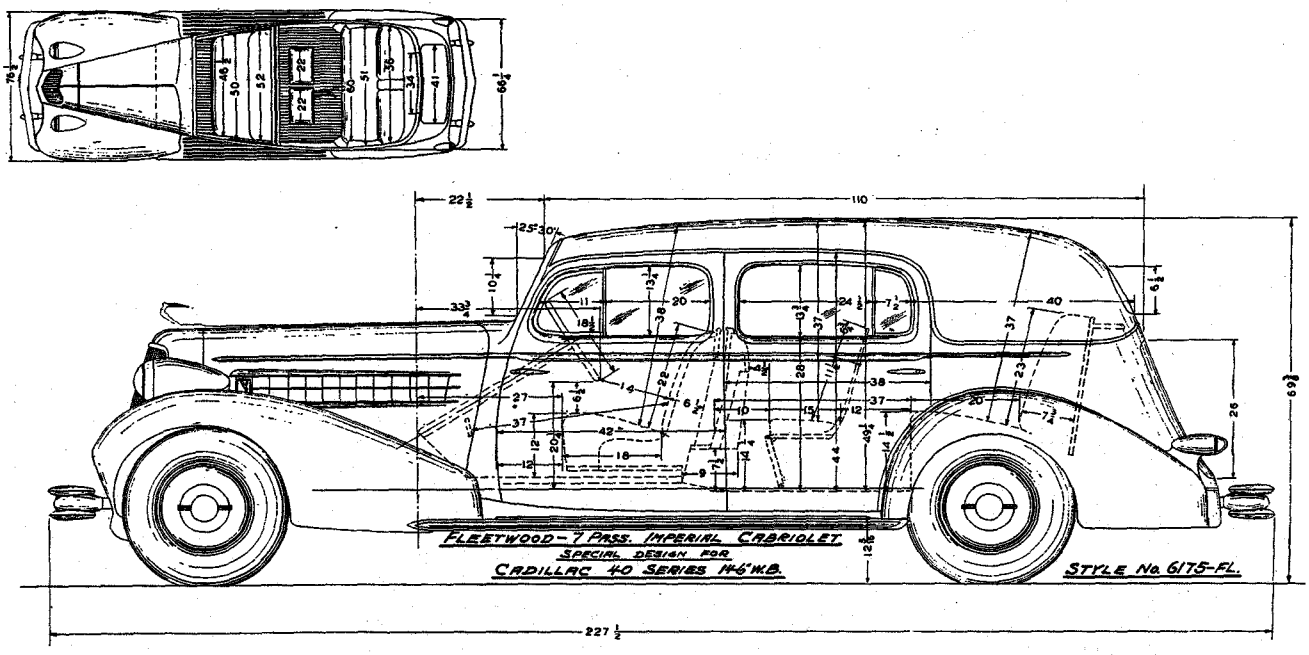


FLEETWOOD SEVEN-PASSENGER IMPERIAL CABRIOLET

(FORWARD FACING AUXILIARY SEATS)

(Illustrated on V-12 chassis, Style 6175-FL)

Also available on V-8 Cadillac chassis as Style 6075-FL and on V-16 as Style 6275-FL



FLEETWOOD SEVEN-PASSENGER IMPERIAL CABRIOLET

(FORWARD FACING AUXILIARY SEATS)

(Style 6075-FL, 6175-FL and 6275-FL)

ROOF AND REAR QUARTERS: Genuine English Landau Leather.

FRONT SEAT: Stationary, with form fitting backrest provided by two concave cushions divided in center. Upholstered in leather.

WINDSHIELD: Stationary, straight across; slanting 25°, non-glare, clear vision, security plate glass.

VENTILATOR: One on top of cowl, rear opening for better ventilation, screened.

LIGHTING: Dome light operated by rear doors and pillar switches. Two rear corner lights. Additional dome light in front compartment.

WINDOWS: Front and rear doors are equipped with the new individually controlled ventilation feature. All windows security plate glass.

HARDWARE: Fleetwood design, chromium plated.

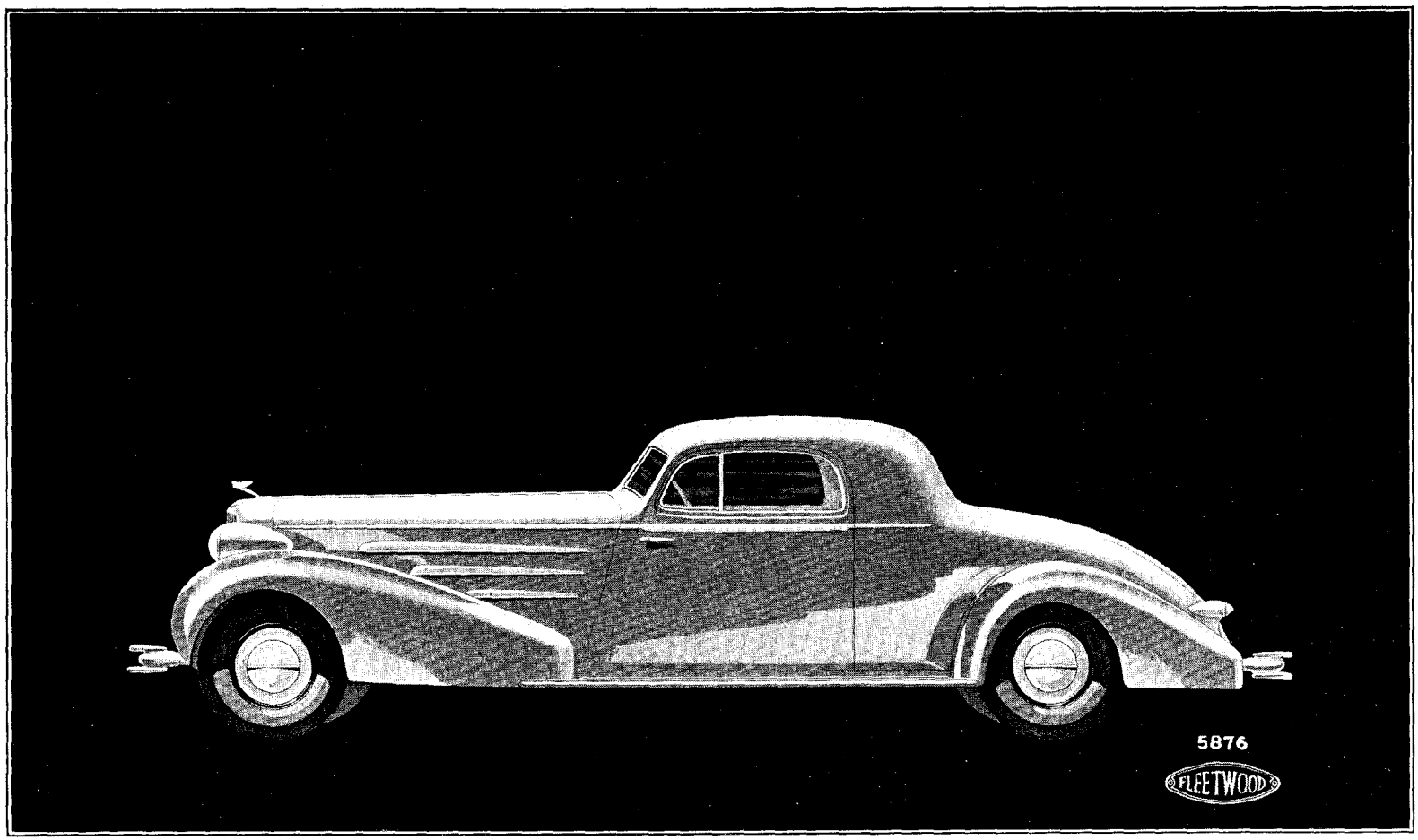
DIVISION: With header board and side pillars. The glass may be raised or lowered between front and rear compartment. Security plate glass.

TELEPHONE: In right rear quarter.

SMOKING EQUIPMENT: Two covered ash receivers and two Pass-Around lighters located at front of side arm rests.

EXTRA SEATS: Two forward facing, luxuriously upholstered with Marshall springs and double throw backs, room enough for three passengers, concealed when not in use.

EQUIPMENT INCLUDES: Oval shaped foot rest double adjustment, sponge rubber filled, carpet covered to match body trim; robe cord, center cloth covered; doorman's umbrella carried under front seat; concealed silk curtain on back light; two sliding arm slings; two interior sun visors adjustable to two positions; two small compartments in back of front seat; hand mirror in slash pocket on left hand side; clock, imported, hinged type, recessed in division wall; folding center arm rest in rear seat back, side arm rests on front doors.

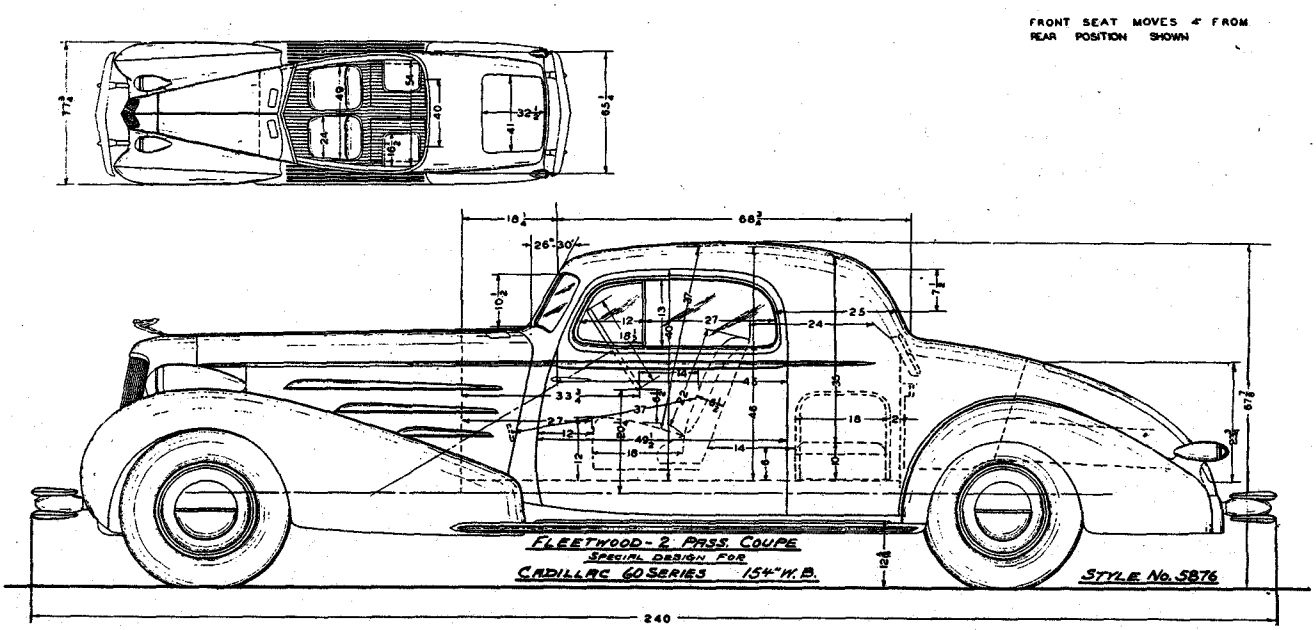


FLEETWOOD STATIONARY COUPE

(WITH INSIDE AUXILIARY SEATS)

(Illustrated on V-16 chassis, Style 5876)

Also available on V-8 Cadillac chassis as Style 5676 and on V-12 as Style 5776.



FLEETWOOD STATIONARY COUPE

(WITH INSIDE AUXILIARY SEATS)

(Style 5676, 5776 and 5876)

REAR QUARTERS: Full metal back.

FRONT SEATS: Two bucket type, both adjustable, backs swing forward, allowing ample room for entering rear compartment.

AUXILIARY SEATS: Two opera type, facing side-ways, concealed in side walls when not in use.

WINDSHIELD: Stationary, V-type, slanting 26°, non-glare, clear vision, security plate glass.

VENTILATORS: Two on top of cowl, rear opening, for better ventilation, screened.

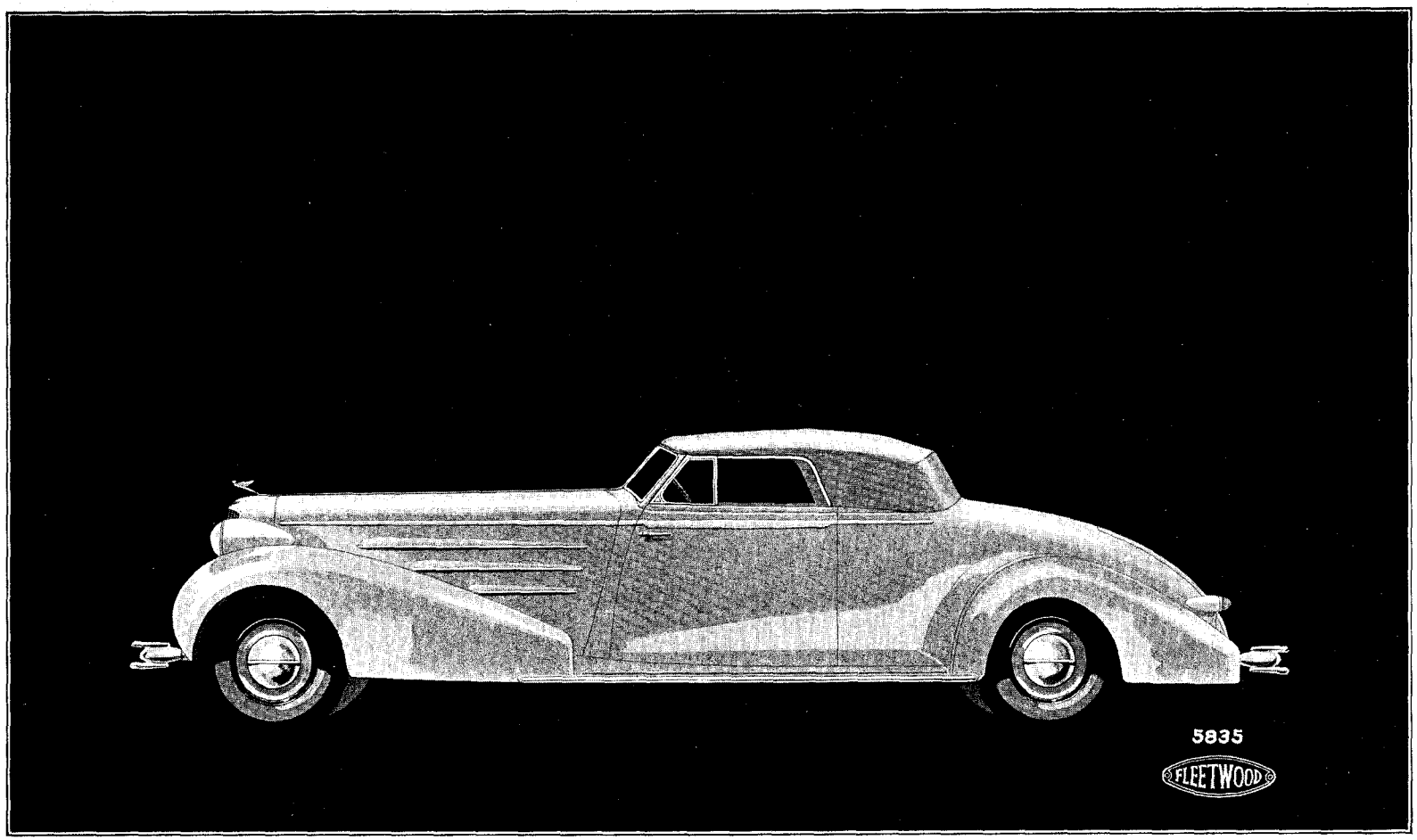
LIGHTING: Dome light operated by doors and pillar switch.

WINDOWS: Front doors are equipped with new, individually controlled ventilation feature, all windows security plate glass.

HARDWARE: Fleetwood design; chromium plated.

SMOKING EQUIPMENT: Pass-Around cigar lighter in center of instrument board. Ash receiver in top of instrument board moulding.

EQUIPMENT INCLUDES: Concealed silk curtain on back light; large compartment located in back of tonneau accessible by two doors; two interior sun visors adjustable to two positions; side arm rests on doors.

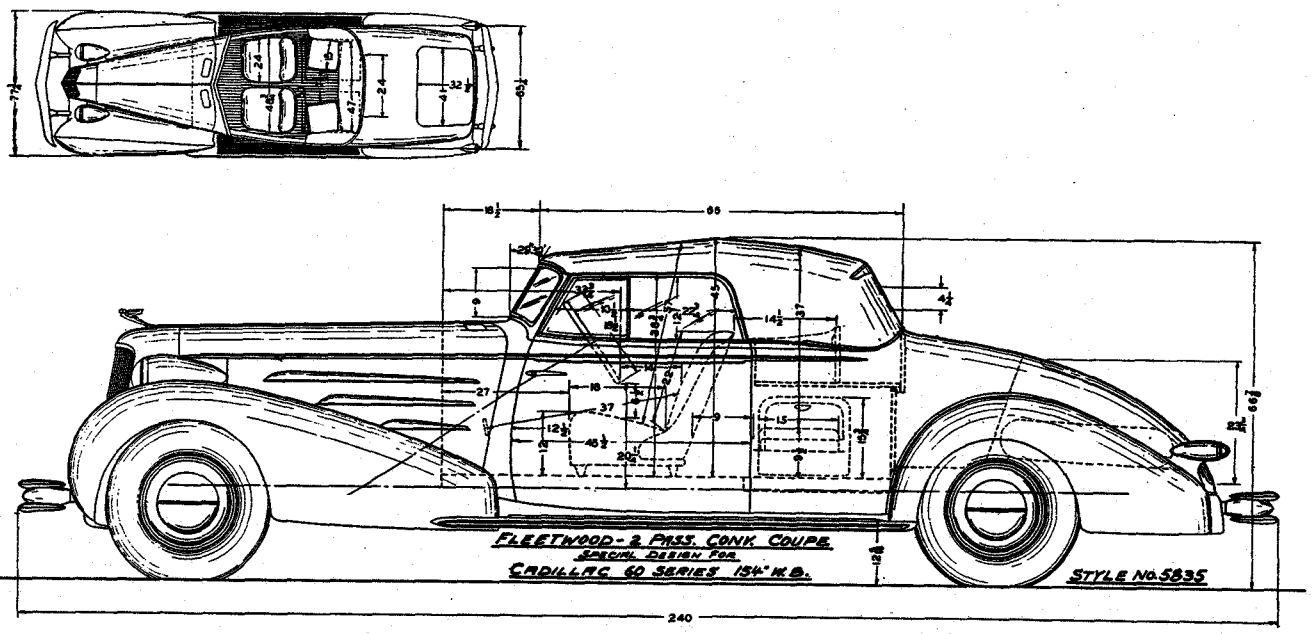


FLEETWOOD CONVERTIBLE COUPE

(WITH INSIDE AUXILIARY SEATS)

(Illustrated on V-16 chassis, Style 5835)

Also available on V-8 Cadillac chassis as Style 5635 and on V-12 as Style 5735.



FLEETWOOD CONVERTIBLE COUPE

(WITH INSIDE AUXILIARY SEATS)

(Style 5635, 5735 and 5835)

TOP AND REAR QUARTERS: Burbank—Fully collapsible, folding into special compartment, semi-concealed.

FRONT SEATS: Two bucket type, both adjustable; backs swing forward, allowing ample room for entering rear compartment.

AUXILIARY SEATS: Two Opera type, facing sideways, concealed in side walls when not in use.

WINDSHIELD: Stationary, V-type, slanting 29°, non-glare, clear vision, security plate glass.

VENTILATORS: Two on top of cowl, rear opening, for better ventilation, screened.

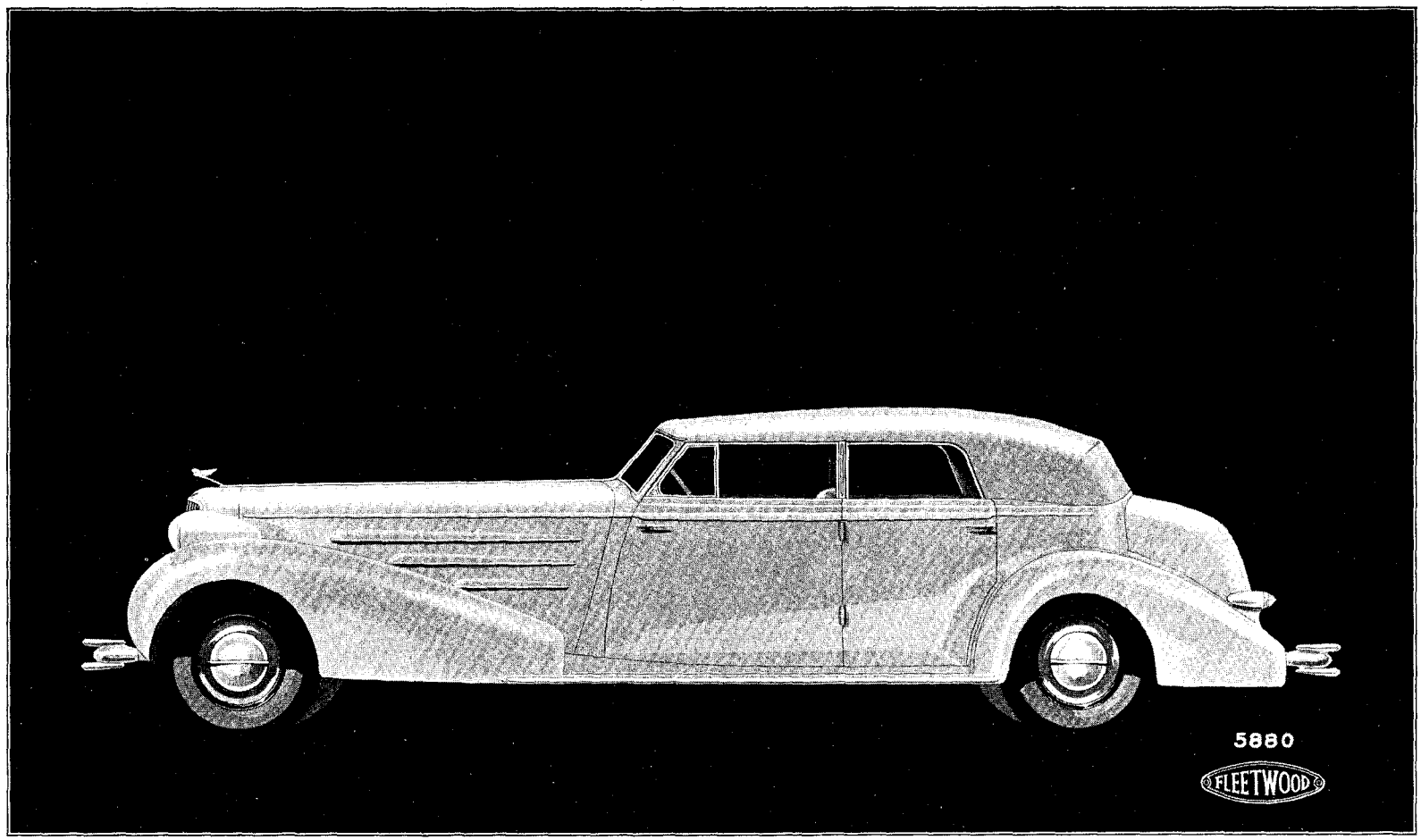
LIGHTING: Courtesy light in rear compartment.

WINDOWS: Front doors are equipped with individually controlled ventilation features, all windows security plate glass.

HARDWARE: Fleetwood design; chromium plated.

SMOKING EQUIPMENT: Pass-Around lighter in center of instrument board; ash receiver in top of instrument board moulding.

EQUIPMENT INCLUDES: Large compartment located in back of tonneau, accessible by two doors; side arm rests on doors; rear curtain with back light is adjustable; two interior sun visors.

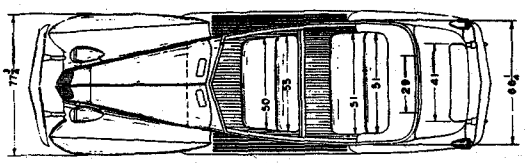


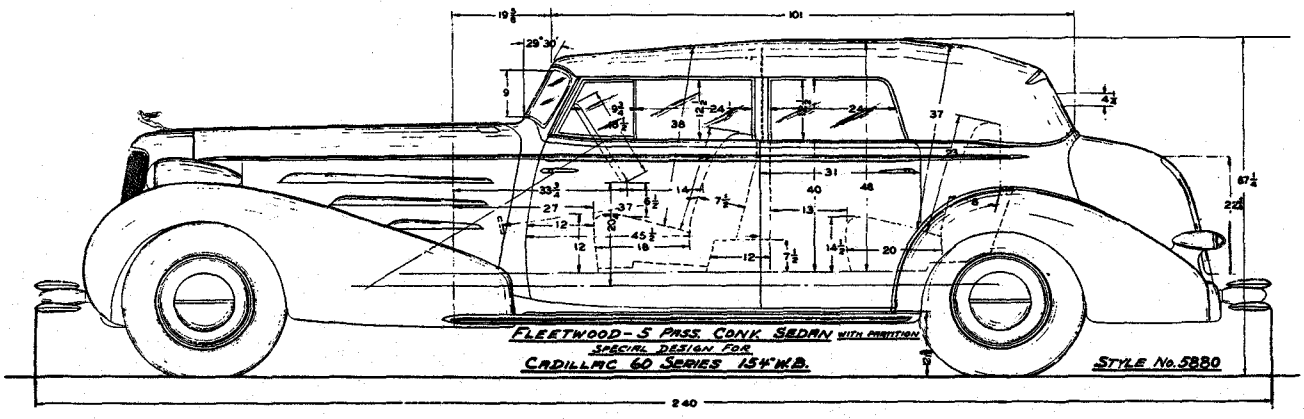
FLEETWOOD CONVERTIBLE SEDAN

(WITH IMPERIAL DIVISION)

(Illustrated on V-16 chassis, Style 5880)

Also available on V-8 Cadillac chassis as Style 5680 and on V-12 as Style 5780.





FLEETWOOD CONVERTIBLE SEDAN

(WITH IMPERIAL DIVISION)

(Style 5680, 5780 and 5880)

TOP AND REAR QUARTERS: Burbank; fully collapsible, folding into special compartment semi-concealed.

FRONT SEAT: Stationary.

REAR SEAT: Stationary.

WINDSHIELD: Stationary, V-type, slanting 29°, non-glare, clear vision, security plate glass.

VENTILATORS: Two on top of cowl, rear opening for better ventilation, screened.

LIGHTING: Lights recessed in front of each side arm rest in rear compartment, operated by door switch.

WINDOWS: Front doors are equipped with new individually controlled ventilation feature, all windows security plate glass.

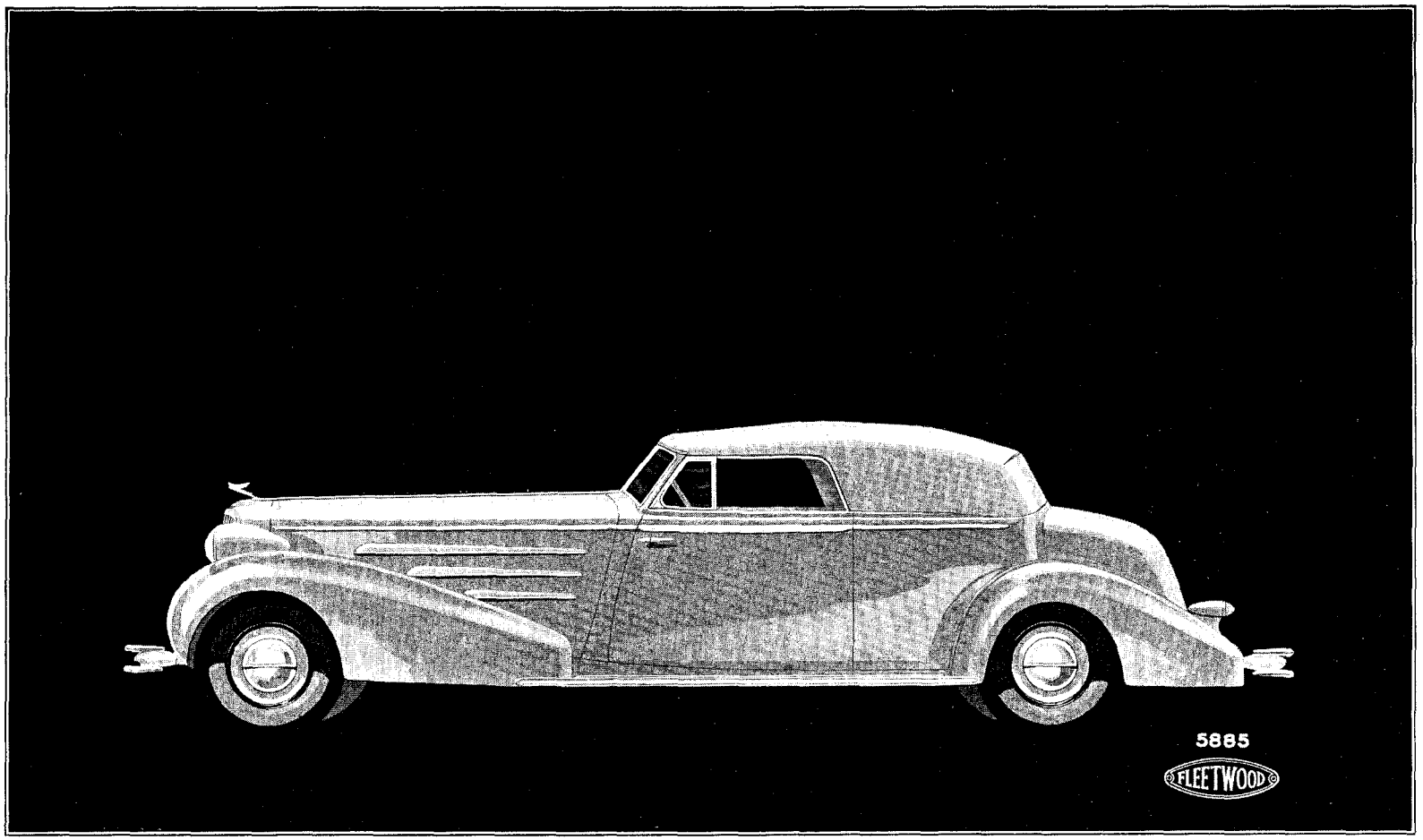
HARDWARE: Fleetwood design, chromium plated.

SMOKING EQUIPMENT: Ash trays recessed in rear doors, Pass-Around lighter located in back of front seat, ash tray above instrument board.

EQUIPMENT INCLUDES: Two spring type wedge-shaped foot hassocks, carpet covered to match body trim; robe cord, center cloth covered; large locked compartment in back of front seat; clock, imported, hinged type, recessed in back of front seat, folding center arm rest in rear seat back; side arm rests on front doors; two interior sun visors.

IMPORTANT: When ordered without division, is identified on V-8 as Style 5680-S, V-12 as Style 5780-S, V-16 as Style 5880-S, Convertible Sedan.

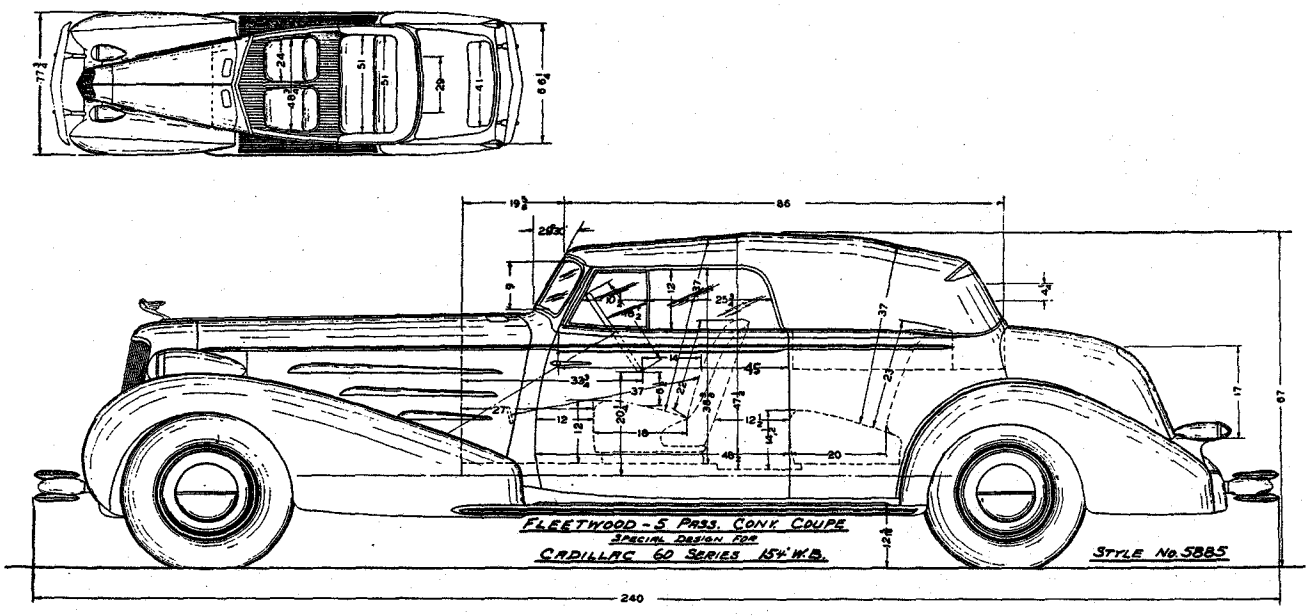
Front seat when ordered as Convertible Sedan (without division), seat cushion and backrest adjustable 4". Seat back integral with center body pillars.



FLEETWOOD FIVE-PASSENGER CONVERTIBLE COUPE

(Illustrated on V-16 chassis, Style 5885)

Also available on V-8 Cadillac as Style 5685 and on V-12 as Style 5785



FLEETWOOD FIVE-PASSENGER CONVERTIBLE COUPE

(Style 5685, 5785 and 5885)

TOP AND REAR QUARTERS: Burbank, fully collapsible folding into special compartment, semi-concealed.

FRONT SEATS: Two bucket type, both adjustable, backs swing forward allowing ample room for entering rear compartment.

REAR SEAT: Stationary.

WINDSHIELD: Stationary, V-type, slanting 29°, non-glare, clear vision, security plate glass.

VENTILATORS: Two on top of cowl, rear opening, for better ventilation, screened.

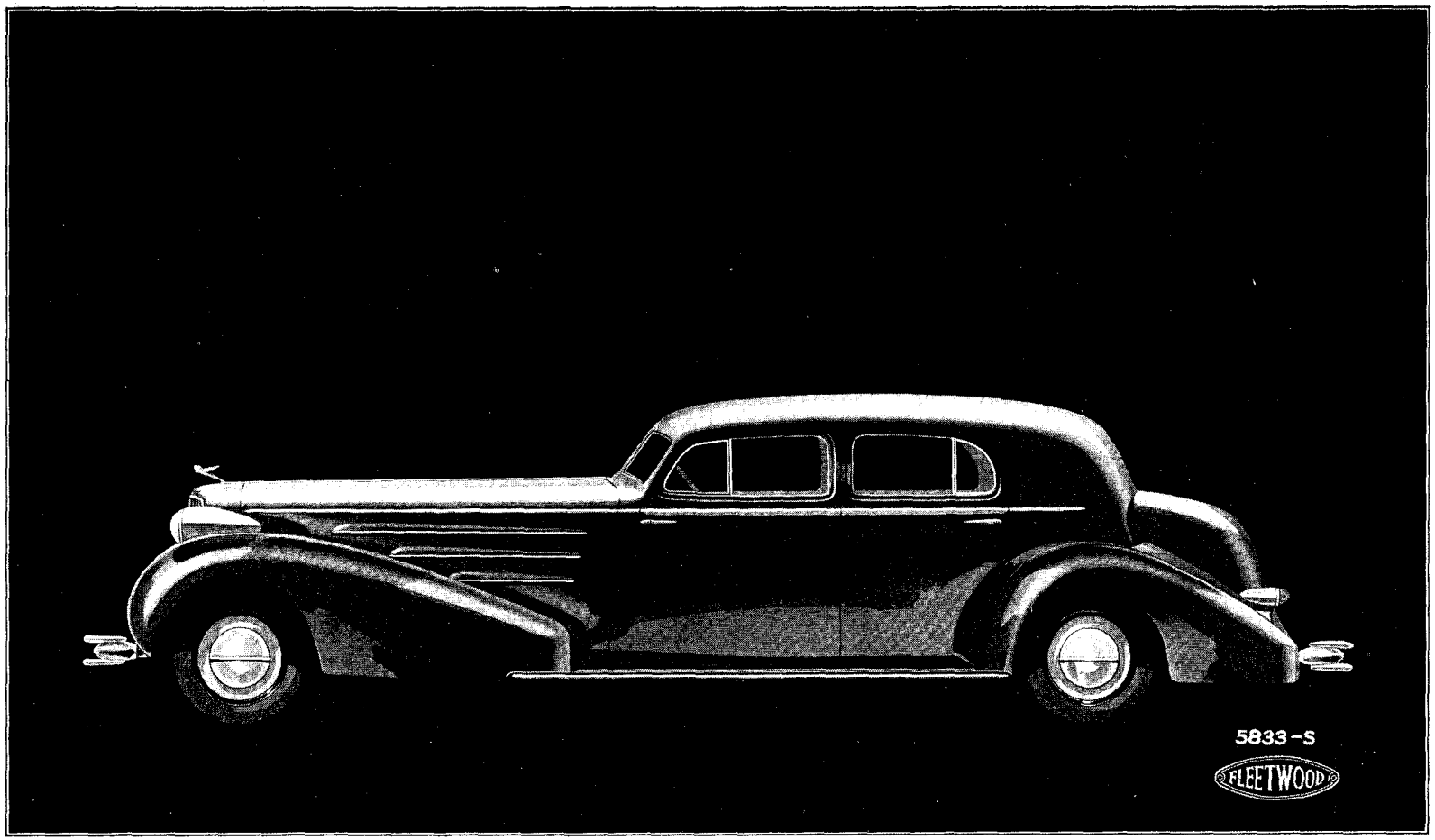
LIGHTING: Lights recessed in front of each side arm rest in rear compartment operated by door switch.

WINDOWS: Doors are equipped with new individually controlled ventilation feature, all windows security plate glass.

HARDWARE: Fleetwood design; chromium plated.

SMOKING EQUIPMENT: Concealed, containing two ash receivers and two Pass-Around lighters; located in rear quarters forward of side arm rests.

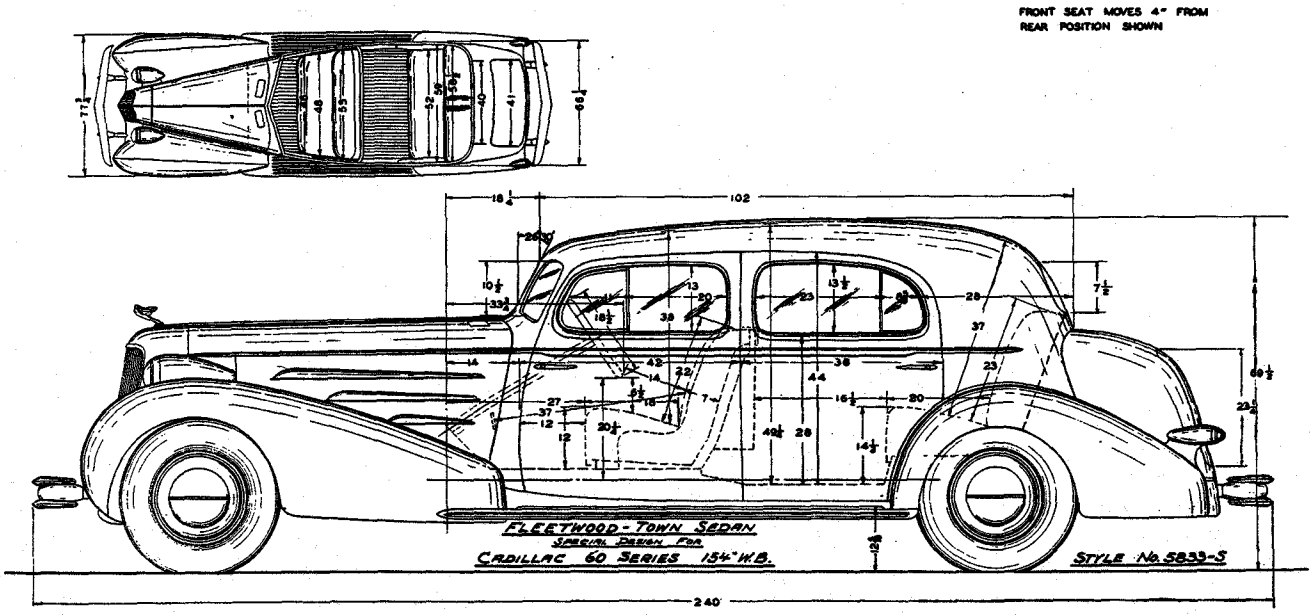
EQUIPMENT INCLUDES: Two spring type, wedge shaped foot hassocks carpet covered to match body trim; folding center arm rest in rear seat back; side arm rests on front doors; two interior sun visors.



FLEETWOOD SPECIAL FIVE-PASSENGER TOWN SEDAN

(Illustrated on V-16 chassis, Style 5833-S)

Also available on V-8 Cadillac as Style 5633-S and on V-12 as Style 5733-S.



FLEETWOOD SPECIAL FIVE-PASSENGER TOWN SEDAN

(Style 5633-S, 5733-S and 5833-S)

REAR QUARTERS: Full metal back.

FRONT SEAT: Entire front seat cushion and backrest adjustable 4″, front seat back integral with center body pillars.

REAR SEAT: Seat cushion and backrest stationary.

WINDSHIELD: Stationary V-type, slanting 26°, non-glare, clear vision security plate glass.

VENTILATOR: Two on top of cowl, rear opening for better ventilation, screened.

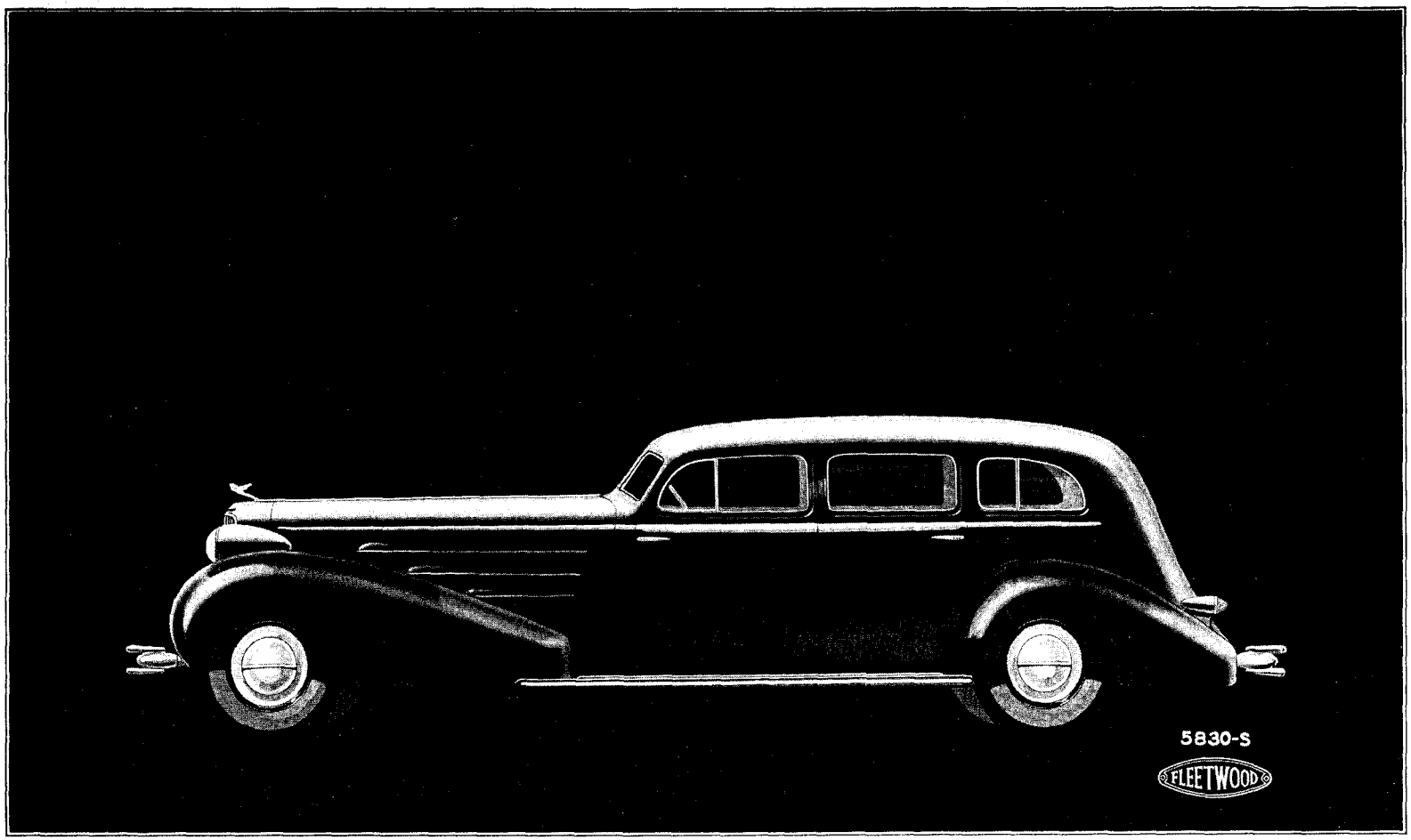
LIGHTING: Dome light operated by rear doors and pillar switch, two rear corner lights.

WINDOWS: Front and rear doors are equipped with new individually controlled ventilation feature. All windows security plate glass.

HARDWARE: Fleetwood design; chromium plated.

SMOKING EQUIPMENT: Ash trays recessed in rear doors; Pass-Around lighter located in back of front seat; ash tray above instrument board.

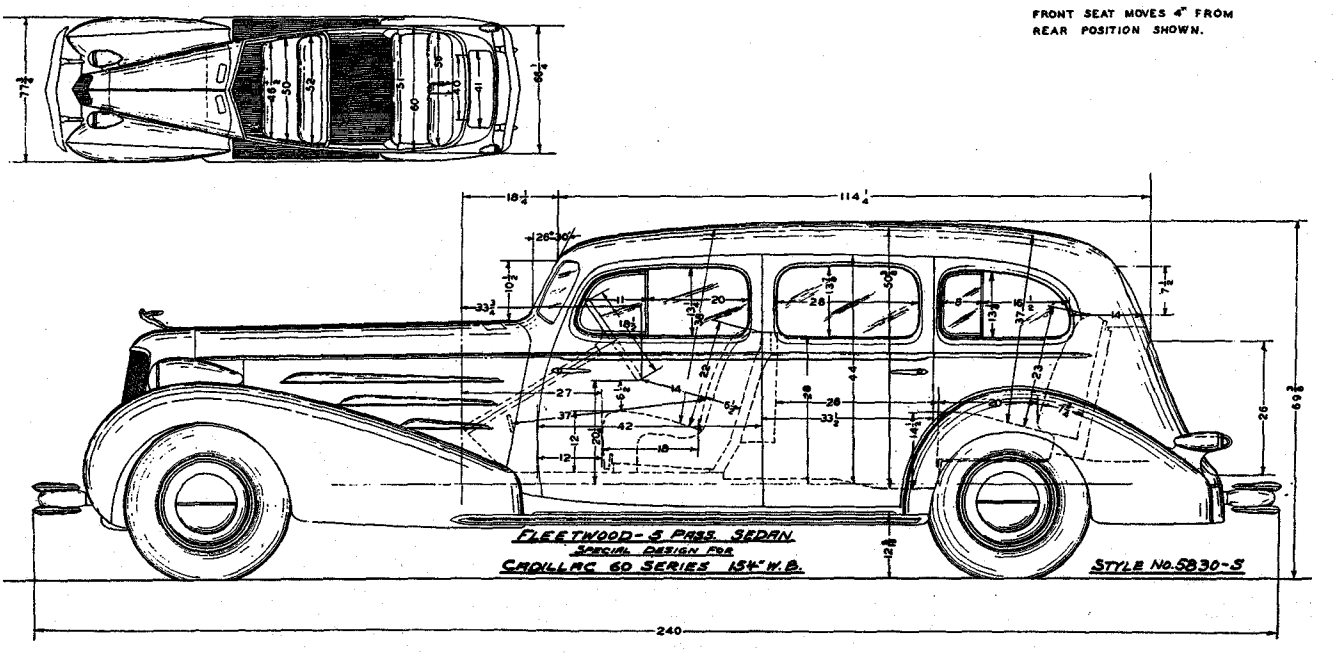
EQUIPMENT INCLUDES: Two spring type wedge shaped foot hassocks, carpet covered to match body trim; robe cord, center cloth covered; concealed silk curtain on back light; two interior sun visors adjustable to two positions; hand mirror in slash pocket left hand side; large locked compartment located in back of front seat; clock, imported, hinged type recessed in back of front seat; folding center arm rest in rear seat back; side arm rests on front doors.



FLEETWOOD SPECIAL FIVE-PASSENGER SEDAN

(Illustrated on V-16 chassis, Style 5830-S)

Also available on V-8 Cadillac as Style 5630-S and on V-12 as Style 5730-S.



FLEETWOOD SPECIAL FIVE-PASSENGER SEDAN

(Style 5630-S, 5730-S and 5830-S)

REAR QUARTERS: Metal with quarter windows.

FRONT SEAT: Entire front seat cushion and backrest adjustable 4". Seat back integral with center body pillars.

REAR SEAT: Seat cushion and backrest adjustable.

WINDSHIELD: Stationary V-type slanting 26°, non-glare, clear vision, security plate glass.

VENTILATORS: Two on top of cowl, rear opening, for better ventilation, screened.

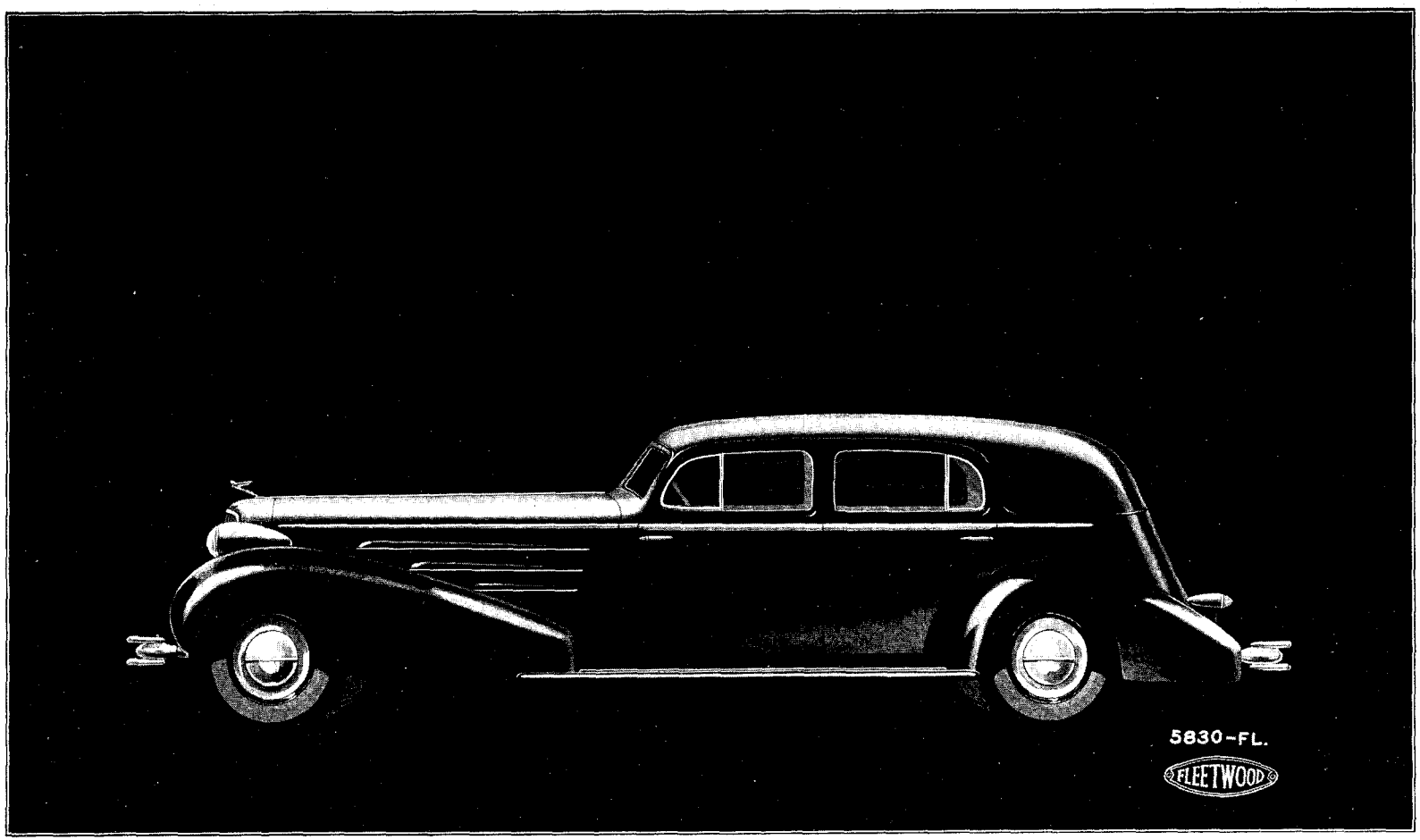
LIGHTING: Dome light operated by rear doors and pillar switch. Two rear corner lights.

WINDOWS: Front doors and rear quarter windows are equipped with new individually controlled ventilation feature. All windows security plate glass.

HARDWARE: Fleetwood design, chromium plated.

SMOKING EQUIPMENT: Two covered ash receivers and two Pass-Around lighters, located at front of side arm rests.

EQUIPMENT INCLUDES: Oval shaped foot rest, double adjustment, sponge rubber filled, carpet covered to match body trim; concealed silk curtains on rear quarter windows and backlight; two sliding arm slings; two interior sun visors adjustable to two positions; hand mirror in slash pocket left hand side; two large locked compartments located in back of front seat, lower compartment large enough for golf bag; clock, imported, hinged type, recessed in back of front seat; ash tray above instrument board; folding center arm rest in rear seat back; side arm rests on front doors.

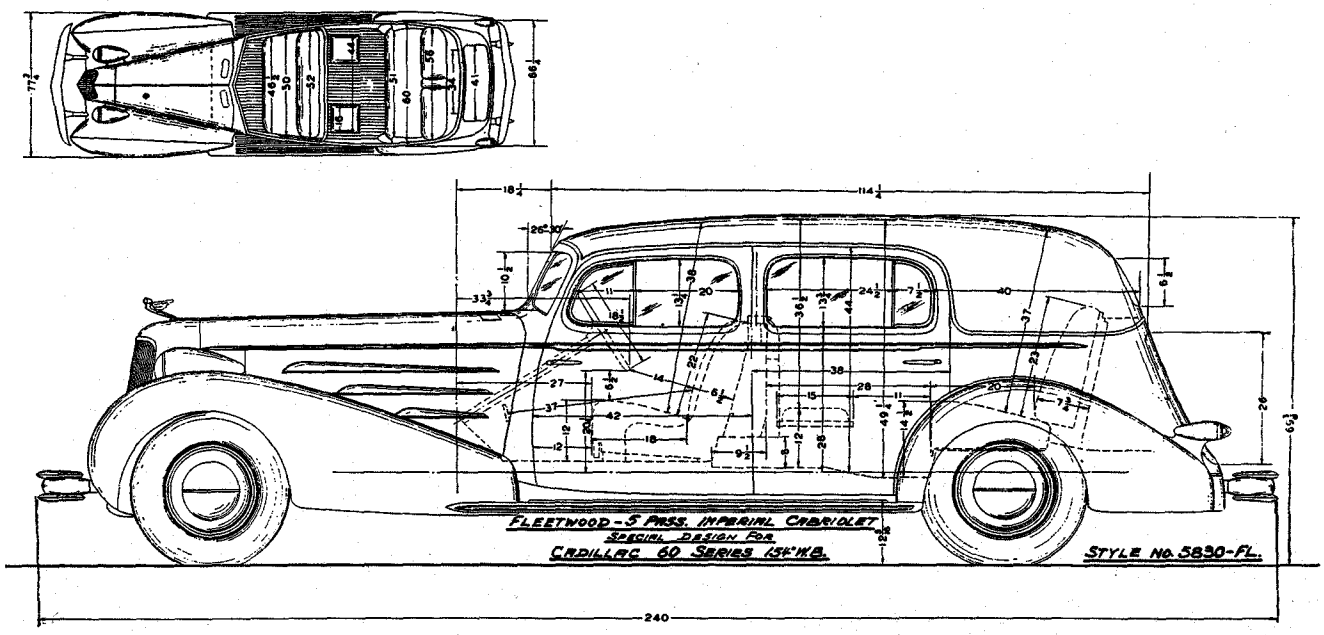


FLEETWOOD SPECIAL FIVE-PASSENGER IMPERIAL CABRIOLET

(OPERA SEATS)

(Illustrated on V-16 chassis, Style 5830-FL)

Also available on V-8 Cadillac chassis as Style 5630-FL and on V-12 as Style 5730-FL.



FLEETWOOD SPECIAL FIVE-PASSENGER IMPERIAL CABRIOLET

(OPERA SEATS)

(Style 5630-FL, 5730-FL and 5830-FL)

ROOF AND REAR QUARTERS: Genuine English Landau Leather.

FRONT SEAT: Stationary, with form fitting backrest provided by two concave cushions divided in center. Upholstered in leather.

REAR SEAT: Seat cushion and backrest adjustable.

WINDSHIELD: Stationary, V-type, slanting 26°, non-glare, clear vision, security plate glass.

VENTILATORS: Two on top of cowl, rear opening for better ventilation, screened.

LIGHTING: Dome light operated by rear doors and pillar switch; two rear corner lights; additional dome light in front compartment.

WINDOWS: Front and rear doors are equipped with new individually controlled ventilation feature; all windows security plate glass.

HARDWARE: Fleetwood design; chromium plated.

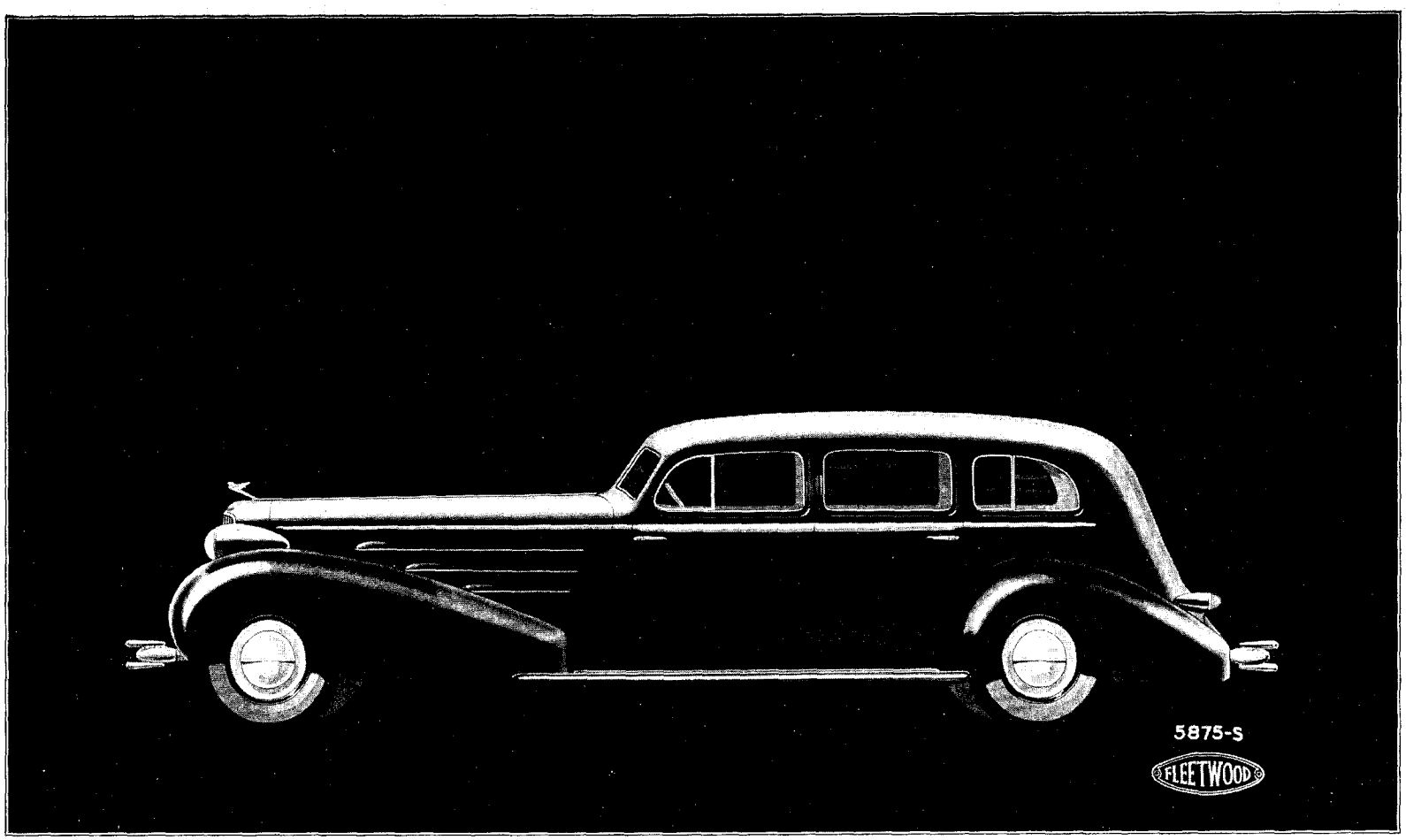
DIVISION: With header board and side pillars; the glass may be raised and lowered between front and rear compartments; security plate glass.

TELEPHONE: In right rear quarter.

SMOKING EQUIPMENT: Two covered ash receivers and two Pass-Around lighters, located at front of side arm rests.

EXTRA SEATS: Two opera type, left seat faces right side with lazy back, right seat faces rear, concealed when not in use.

EQUIPMENT INCLUDES: Oval shaped foot rest, double adjustment, sponge rubber filled, carpet covered to match body trim; robe cord, center cloth covered; doorman's umbrella carried under front seat; concealed silk curtain on back light; two sliding arm slings; two interior sun visors, adjustable to two positions; hand mirror in slash pocket left hand side; two small compartments in back of front seat; clock, imported, hinged type recessed in division wall; folding center arm rest in rear seat back, side arm rests on front doors.

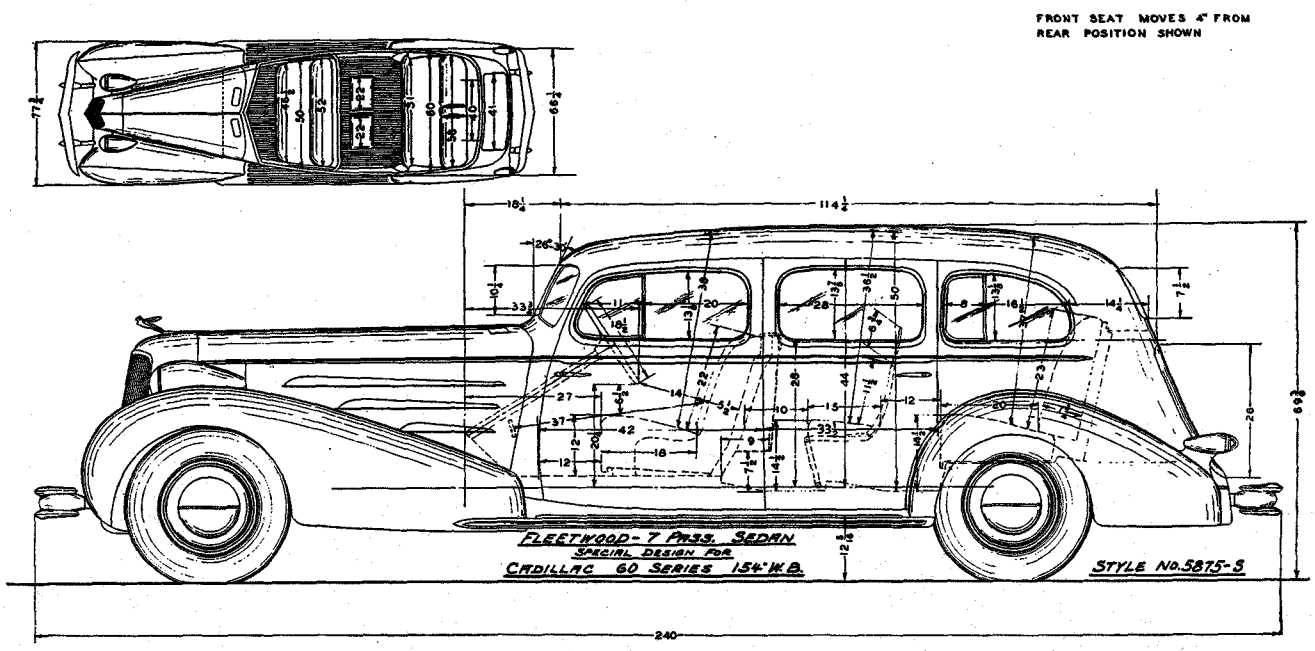


FLEETWOOD SPECIAL SEVEN-PASSENGER SEDAN

(FORWARD FACING AUXILIARY SEATS)

(Illustrated on V-16 chassis, Style 5875-S)

Also available on V-8 Cadillac chassis as Style 5675-S and on V-12 as Style 5775-S.



FLEETWOOD SPECIAL SEVEN-PASSENGER SEDAN

(FORWARD FACING AUXILIARY SEATS)

(Style 5675-S, 5775-S and 5875-S)

REAR QUARTERS: Metal with quarter windows.

FRONT SEAT: Entire front seat cushion and backrest adjustable 4″; seat back integral with center body pillars.

REAR SEAT: Seat cushion and backrest adjustable.

WINDSHIELD: Stationary V-type slanting 26°, non-glare, clear vision, security plate glass.

VENTILATORS: Two on top of cowl, rear opening for better ventilation, screened.

LIGHTING: Dome light operated by rear doors and pillar switch; two rear corner lights.

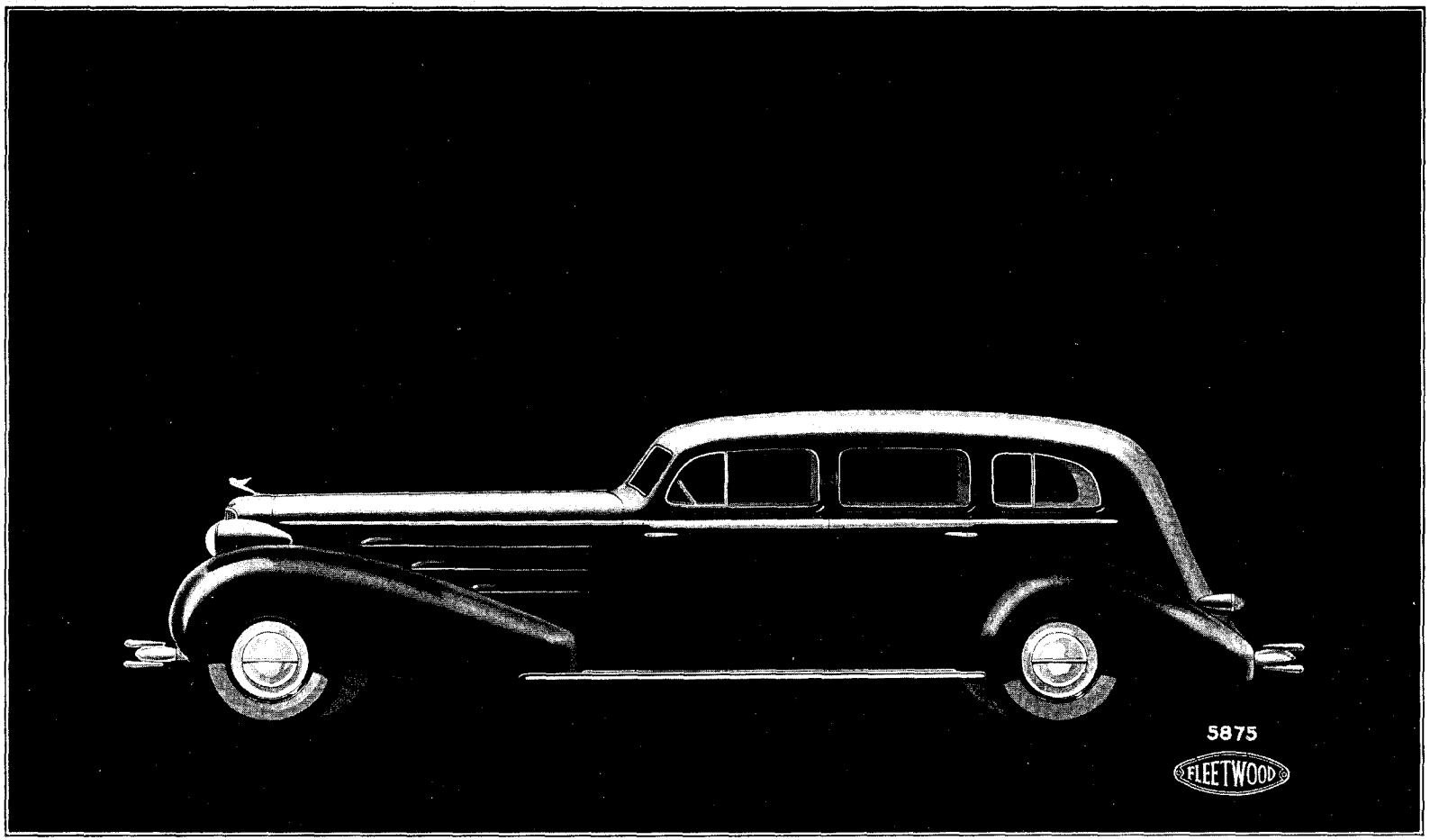
WINDOWS: Front doors and rear quarter windows are equipped with new individually controlled ventilation feature; all windows security plate glass.

HARDWARE: Fleetwood design, chromium plated.

SMOKING EQUIPMENT: Two covered ash receivers and two Pass-Around lighters, located at front of side arm rests.

EXTRA SEATS: Two forward facing, luxuriously upholstered with Marshall springs and double throw backs. Room enough for three people, concealed when not in use.

EQUIPMENT INCLUDES: Oval shaped foot rest, double adjustment, sponge rubber filled, carpet covered to match body trim; robe cord, center cloth covered; concealed curtains on rear quarter windows and back light; sliding arm slings; two interior sun visors adjustable to two positions; hand mirror in slash pocket left hand side; clock, imported, hinged type, recessed in back of front seat; center arm rest in rear seat back; two side arm rests on front doors.

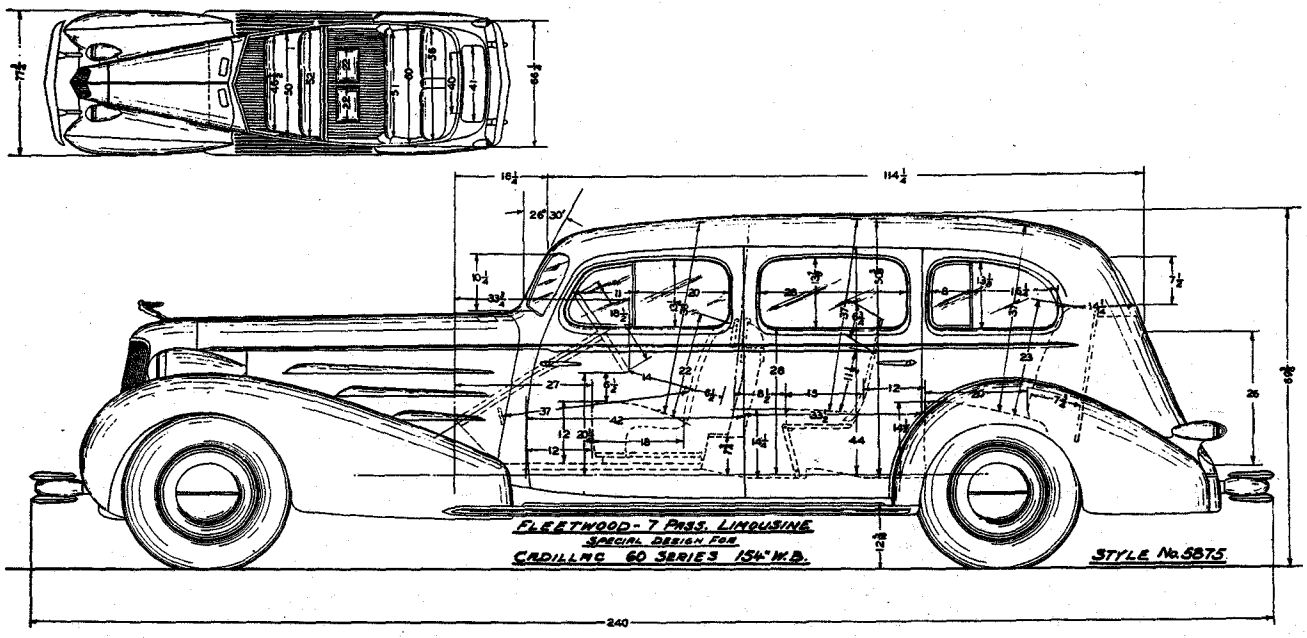


FLEETWOOD SPECIAL SEVEN-PASSENGER LIMOUSINE

(FORWARD FACING AUXILIARY SEATS)

(Illustrated on V-16 chassis, Style 5875)

Also available on V-8 Cadillac chassis as Style 5675 and on V-12 as Style 5775.



FLEETWOOD SPECIAL SEVEN-PASSENGER LIMOUSINE

(FORWARD FACING AUXILIARY SEATS)

(Style 5675, 5775 and 5875)

REAR QUARTERS: Metal with quarter windows.

FRONT SEAT: Stationary, with form fitting backrest provided by two concave cushions divided in center. Upholstered in leather.

REAR SEAT: Seat cushion and backrest adjustable.

WINDSHIELD: Stationary, V-type, slanting 26°, non-glare, clear vision, security plate glass.

VENTILATOR: Two on top of cowl, rear opening for better ventilation, screened.

LIGHTING: Dome light operated by rear doors and pillar switch; two rear corner lights; additional dome light in front compartment.

WINDOWS: Front doors and rear quarter windows are equipped with new individually controlled ventilation feature. All windows security plate glass.

HARDWARE: Fleetwood design, chromium plated.

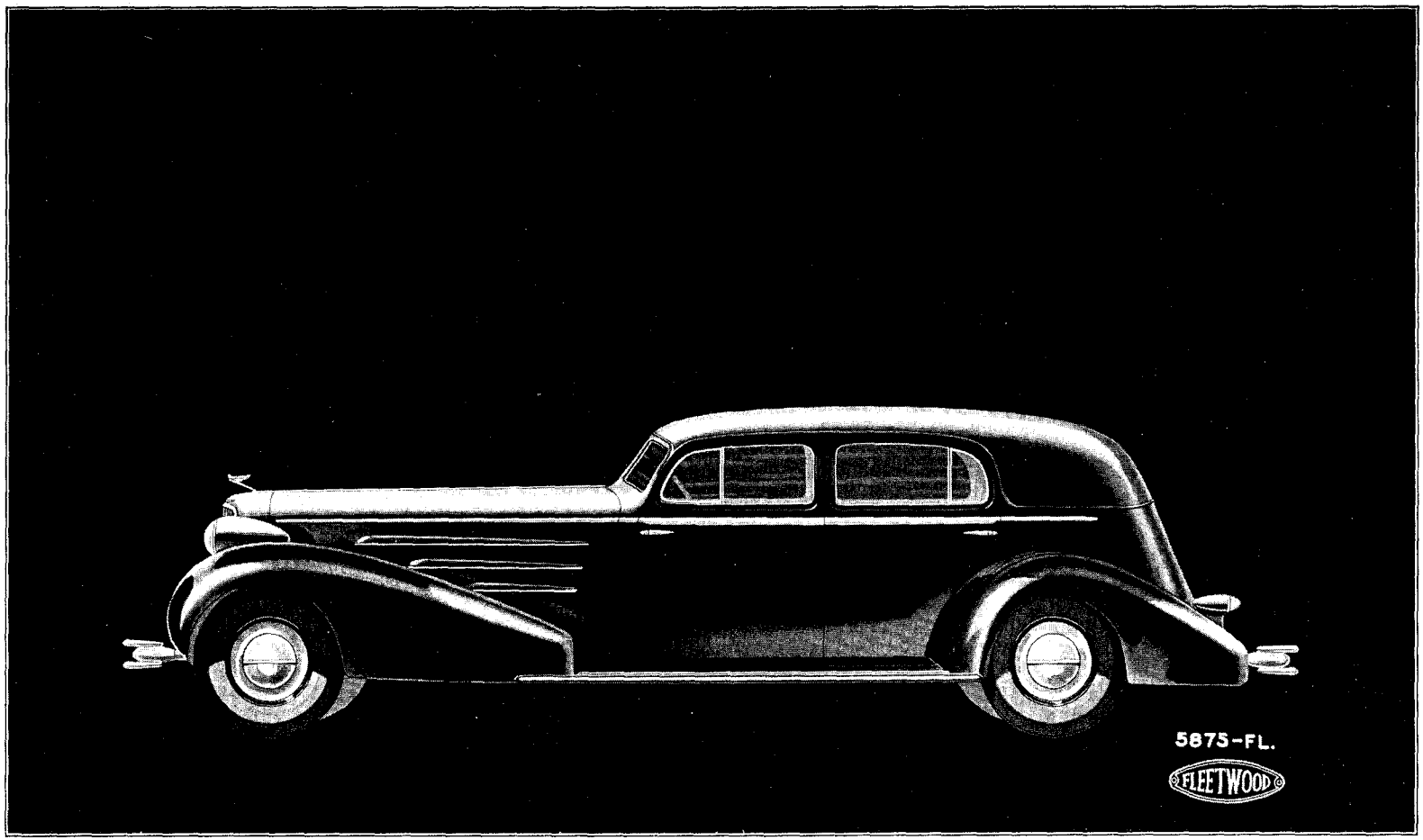
DIVISION: With header board and side pillars; the glass may be raised and lowered between front and rear compartments; security plate glass.

TELEPHONE: In right rear quarter.

SMOKING EQUIPMENT: Two covered ash receivers and two Pass-Around lighters, located at front of side arm rests.

EXTRA SEATS: Two facing forward; luxuriously upholstered with Marshall springs and double throw backs, room enough for three people, concealed when not in use.

EQUIPMENT INCLUDES: Oval shaped foot rest, double adjustment, sponge rubber filled, carpet covered to match body trim; robe cord, center cloth covered; doorman's umbrella carried under front seat; concealed silk curtains on rear quarter windows and back light; two sliding arm slings; two interior sun visors, adjustable to two positions; hand mirror in slash pocket left hand side; two small compartments back of front seat; clock, imported, hinged type, recessed in division wall; center arm rest in rear seat back, side arm rests on front doors.

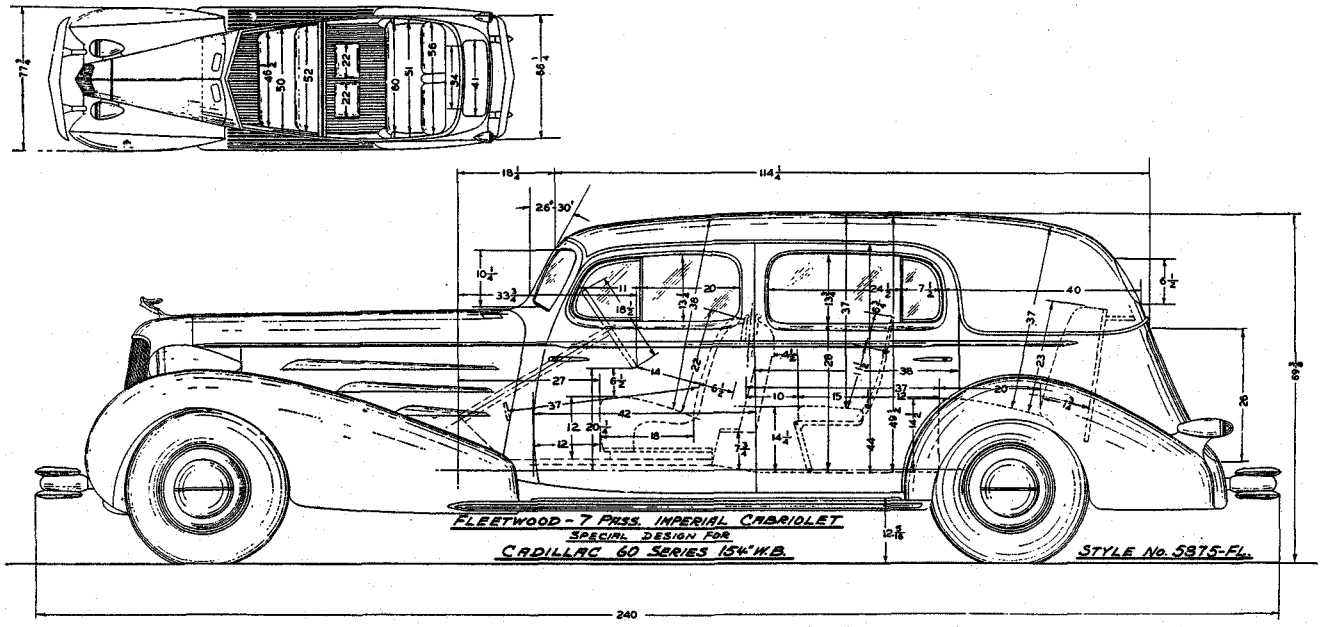


FLEETWOOD SPECIAL SEVEN-PASSENGER IMPERIAL CABRIOLET

(FORWARD FACING AUXILIARY SEATS)

(Illustrated on V-16 chassis, Style 5875-FL)

Also available on V-8 Cadillac chassis as Style 5675-FL and on V-12 as Style 5775-FL.



FLEETWOOD SPECIAL SEVEN-PASS. IMPERIAL CABRIOLET

(FORWARD FACING AUXILIARY SEATS)

(Style 5675-FL, 5775-FL and 5875-FL)

ROOF AND REAR QUARTERS: Genuine English Landau Leather.

FRONT SEAT: Stationary, with form fitting backrest provided by two concave cushions divided in center. Upholstered in leather.

REAR SEAT: Seat cushion and backrest adjustable.

WINDSHIELD: Stationary V-type, slanting 26°, non-glare, clear vision, security plate glass.

VENTILATOR: Two on top of cowl, rear opening for better ventilation, screened.

LIGHTING: Dome light operated by rear doors and pillar switch; two rear corner lights; additional dome light in front compartment.

WINDOWS: Front and rear doors are equipped with new individually controlled ventilation feature; all windows security plate glass.

HARDWARE: Fleetwood design; chromium plated.

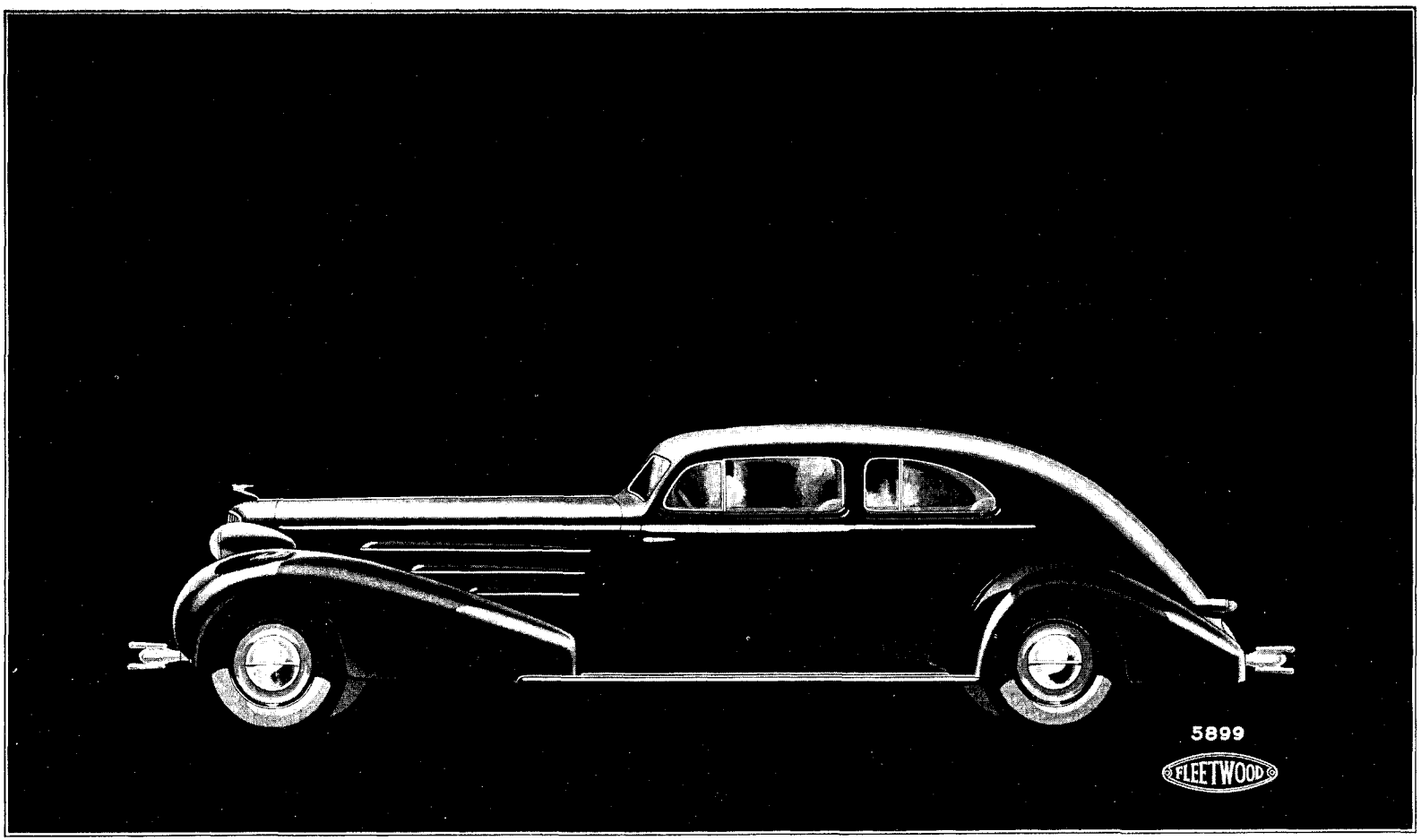
DIVISION: With header board and side pillars; the glass may be raised and lowered between front and rear compartments; security plate glass.

TELEPHONE: In right rear quarter.

SMOKING EQUIPMENT: Two covered ash receivers and two Pass-Around lighters, located at front of side arm rests.

EXTRA SEATS: Two facing forward; luxuriously upholstered with Marshall springs and double throw backs, room enough for three people, concealed when not in use.

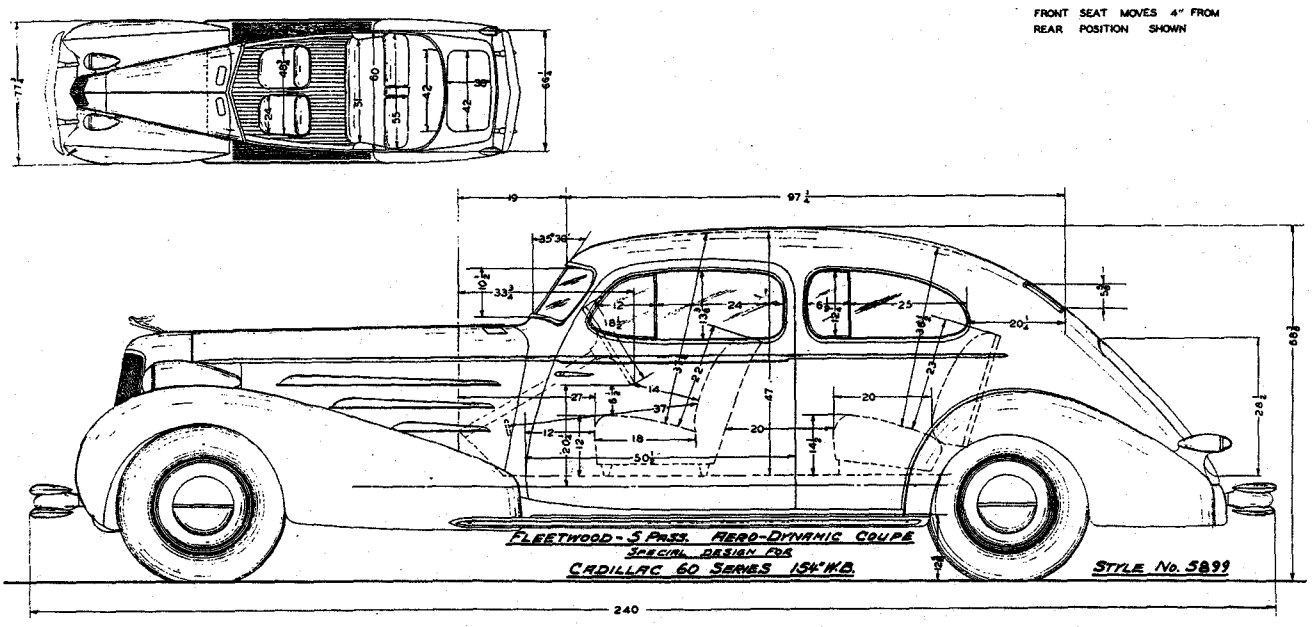
EQUIPMENT INCLUDES: Oval shaped foot rest, double adjustment, sponge rubber filled, carpet covered to match body trim; robe cord, center cloth covered; doorman's umbrella carried under front seat; concealed silk curtain on back light; two arm slings; two interior sun visors, adjustable to two positions; hand mirror in slash pocket left hand side; two small compartments back of front seat; clock, imported, hinged type, recessed in division wall; center arm rest in rear seat back, side arm rests on front doors.



FLEETWOOD AERO-DYNAMIC FIVE-PASSENGER COUPE

(Illustrated on V-16 chassis, Style 5899)

Also available on V-8 Cadillac chassis as Style 5699 and on V-12 as Style 5799.



FLEETWOOD AERO-DYNAMIC FIVE-PASSENGER COUPE

(Style 5699, 5799 and 5899)

REAR QUARTERS: Metal with quarter windows.

FRONT SEATS: Two bucket type, both adjustable, backs swing forward, allowing ample room for entering rear compartment.

REAR SEAT: Seat cushion and backrest adjustable.

WINDSHIELD: Stationary, V-type, slanting 35°, non-glare, clear vision, security plate glass.

VENTILATORS: Two on top of cowl, rear opening, for better ventilation, screened.

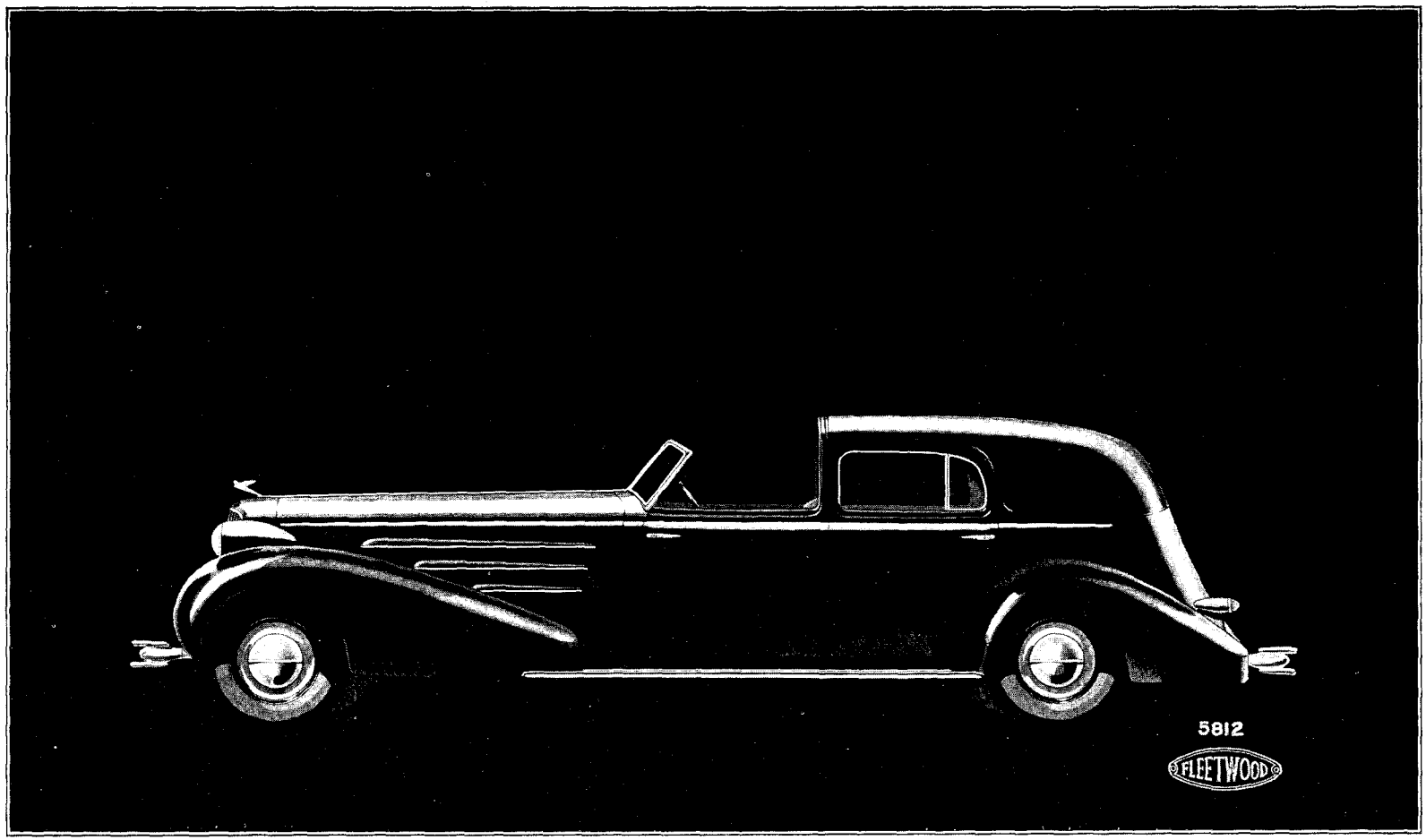
LIGHTING: Dome light operated by doors and pillar switch; two rear corner lights.

HARDWARE: Fleetwood design; chromium plated.

WINDOWS: Front doors and quarter windows are equipped with new individually controlled ventilation feature; all windows security plate glass.

SMOKING EQUIPMENT: Concealed, containing two ash receivers and two Pass-Around lighters located in rear quarters, forward of side arm rests.

EQUIPMENT INCLUDES: Two spring type, wedge-shaped hassocks, carpet covered to match body trim; concealed silk curtains on quarter windows and backlight; two sliding arm slings; two interior sun visors adjustable to two positions; hand mirror in slash pocket; folding center arm rest in rear seat back; side arm rests on front doors.



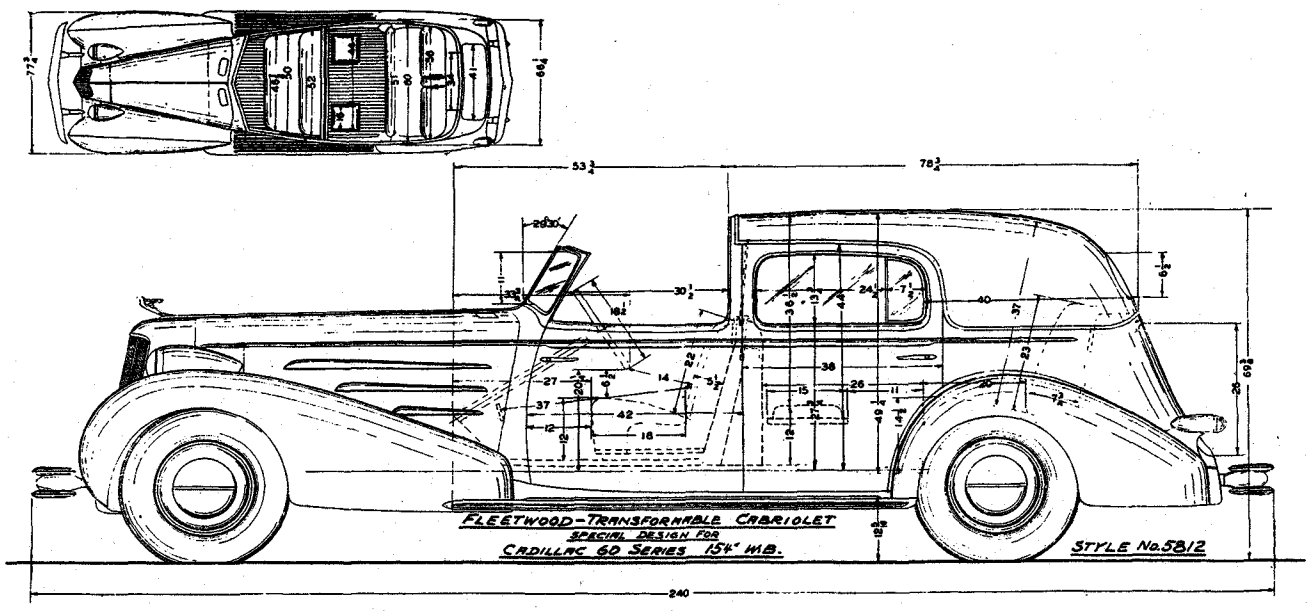
FLEETWOOD FIVE-PASSENGER TOWN CABRIOLET

(OPERA SEATS)

(Illustrated on V-16 chassis, Style 5812)

The Five Passenger Town Cabriolet is also available as Town Brougham with metal back illustrated on Page 48

Also available on V-8 Cadillac as Style 5612 and on V-12 as Style 5712



FLEETWOOD FIVE-PASSENGER TOWN CABRIOLET

(OPERA SEATS)

(Style 5612, 5712 and 5812)

REAR QUARTERS: Full leather; no quarter windows.

FRONT SEAT: Stationary, with form fitting backrest provided by two concave cushions divided in center; upholstered in leather.

REAR SEAT: Seat cushion and backrest adjustable.

WINDSHIELD: Stationary, V-type, slanting 29°, non-glare, clear vision, security plate glass.

VENTILATION: Two on top of cowl, rear opening for better ventilation; screened.

LIGHTING: Dome light operated by rear doors and pillar switch; two rear corner lights.

WINDOWS: Rear doors are equipped with new individually controlled ventilation feature, all windows security plate glass.

HARDWARE: Fleetwood design, chromium or color plated.

DIVISION: With header board and side pillars. The glass may be raised and lowered between front and rear compartments; security plate glass.

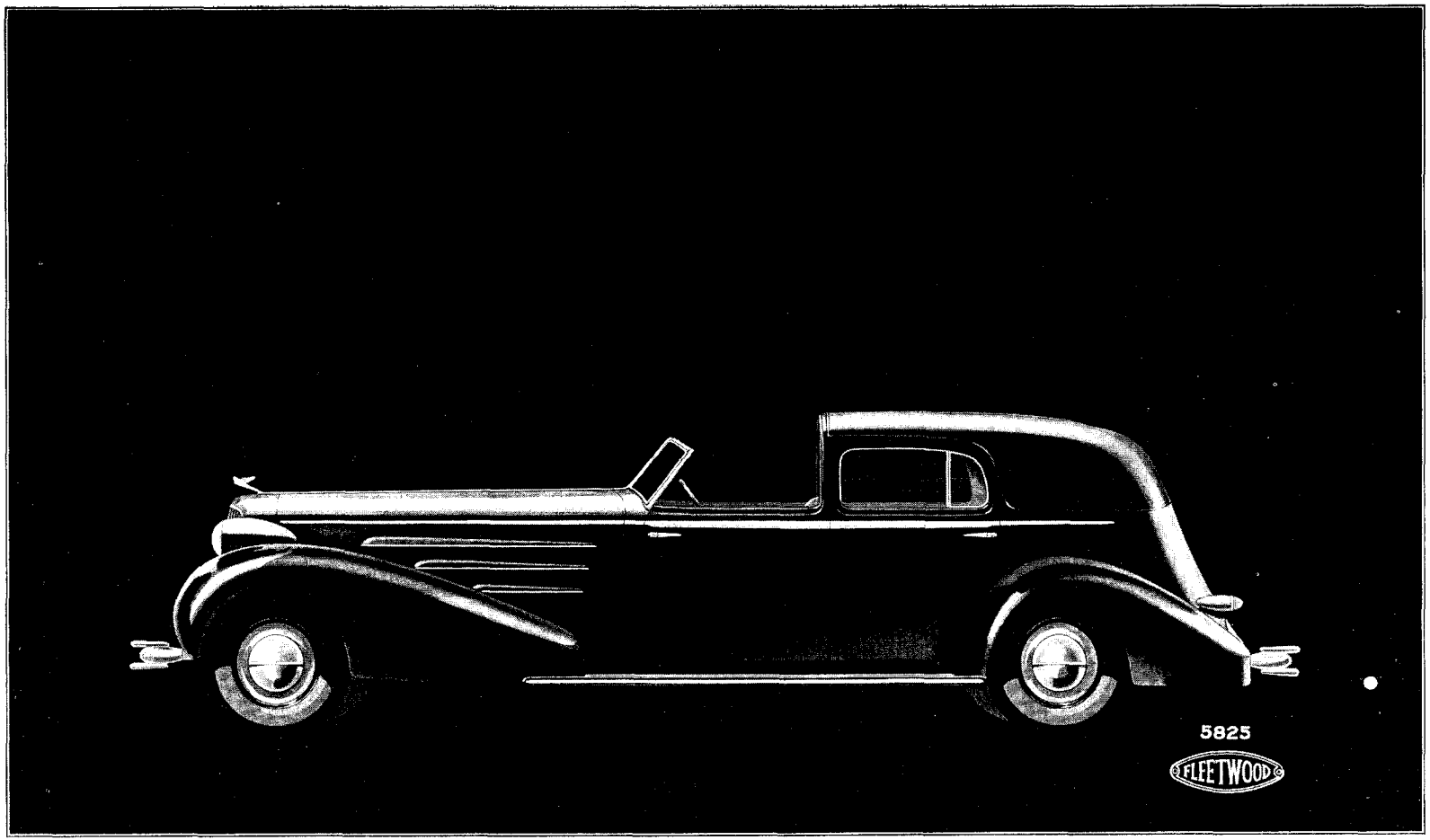
TELEPHONE: In right rear quarter.

SMOKING EQUIPMENT: Concealed, containing two ash receivers and two Pass-Around lighters located in rear quarters forward of side arm rests.

EXTRA SEATS: Two Opera type, left seat faces right side with lazy back, right seat faces rear; concealed when not in use.

EQUIPMENT INCLUDES: Two spring type, wedge shaped hassocks, carpet covered to match body trim; robe cord, center cloth covered; doorman's umbrella carried under front seat; concealed silk curtain for back light; two sliding arm slings; assist grips on each rear door hinge pillar; hand mirror in slash pocket left hand side; two small compartments back of front seat; clock, imported, hinged type, recessed in division wall; folding center arm rest in rear seat back; side arm rests on front doors; sheepskin rug for rear compartment.

Fleetwood patented driver's roof folds into compartment above division header.

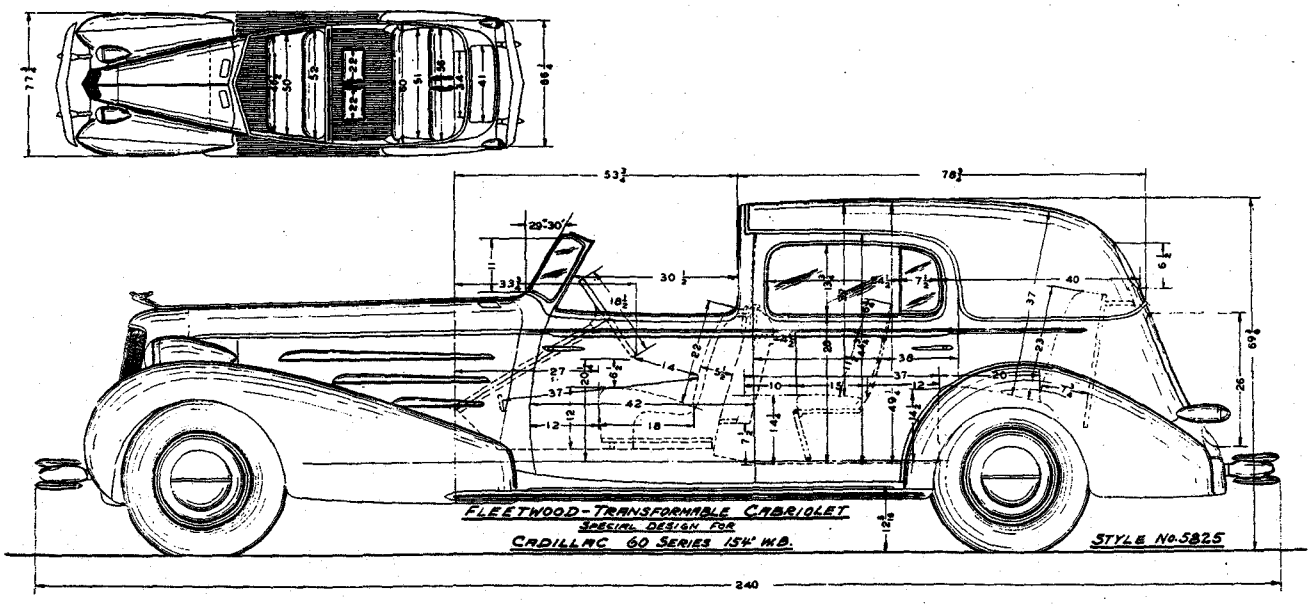


FLEETWOOD SEVEN-PASSENGER TOWN CABRIOLET

(FORWARD FACING AUXILIARY SEATS)

(Illustrated on V-16 chassis, Style 5825)

The Seven-Passenger Town Cabriolet is also available as Town Brougham with metal back, illustrated on page 48.
Also available on V-8 Cadillac chassis as Style 5625 and on V-12 as Style 5725.



FLEETWOOD SEVEN-PASSENGER TOWN CABRIOLET

(FORWARD FACING AUXILIARY SEATS)

(Style 5625, 5725 and 5825)

REAR QUARTERS: Full leather, no quarter windows.

FRONT SEAT: Stationary, with form fitting backrest provided by two concave cushions divided in center; upholstered in leather.

REAR SEAT: Seat cushion and backrest adjustable.

WINDSHIELD: Stationary, V-type, slanting 29°, non-glare, clear vision, security plate glass.

VENTILATORS: Two on top of cowl, rear opening, for better ventilation, screened.

LIGHTING: Dome light operated by rear doors and pillar switch, two rear corner lights.

WINDOWS: Rear doors are equipped with new individually controlled ventilation feature, all windows security plate glass.

HARDWARE: Fleetwood design; chromium or color plated.

DIVISION: With header board and side pillars; the glass may be raised and lowered between front and rear compartments; security plate glass.

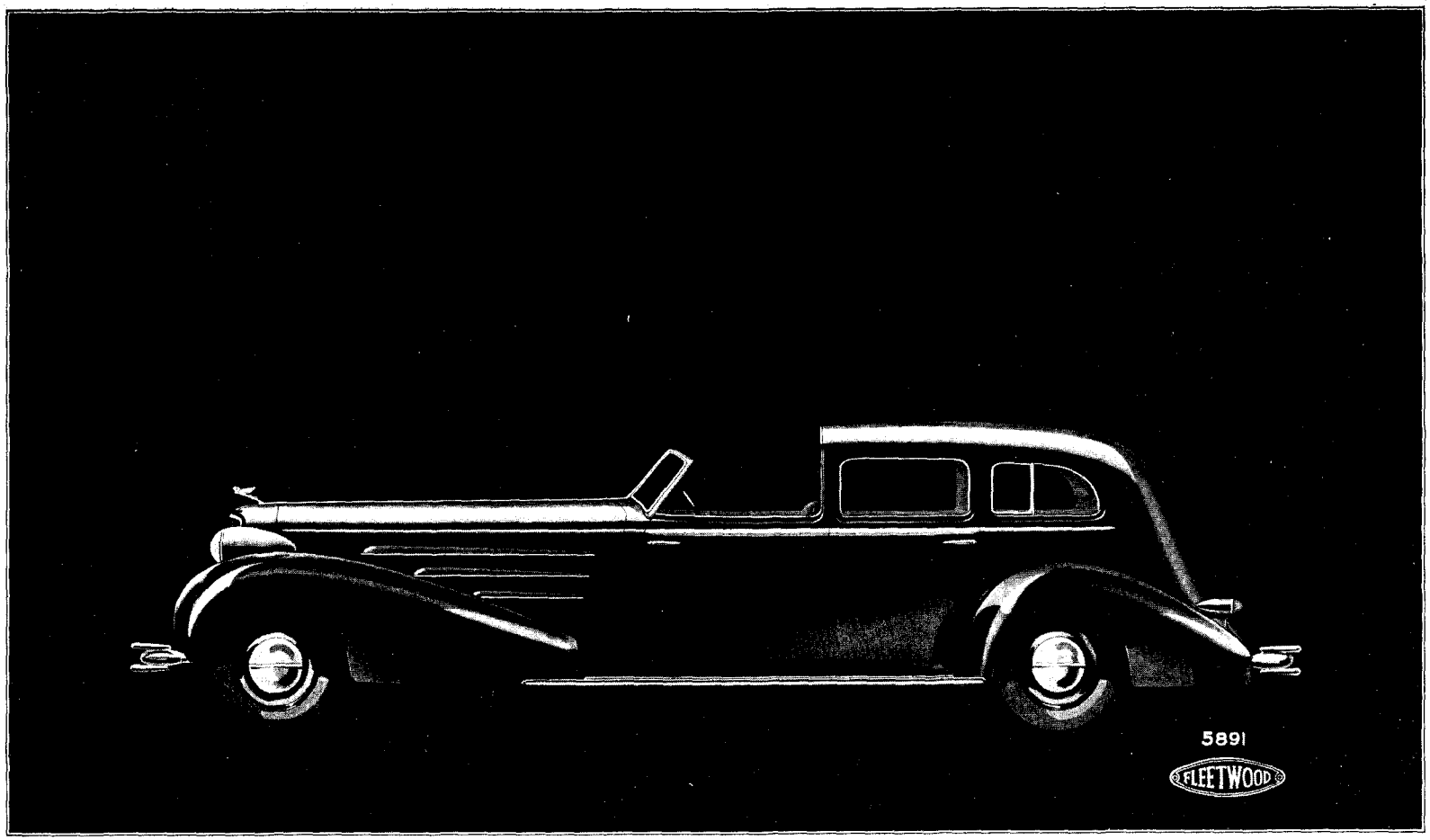
TELEPHONE: In right rear quarter.

SMOKING EQUIPMENT: Concealed, containing two ash receivers and two Pass-Around lighters located in rear quarters, forward of side arm rests.

EXTRA SEATS: Two facing forward; luxuriously upholstered with Marshall springs and double throw backs, room enough for three people, concealed when not in use.

EQUIPMENT INCLUDES: Two spring type wedge-shaped hassocks, carpet covered to match body trim; robe cord, center cloth covered; doorman's umbrella carried under front seat; concealed silk curtains for back light; two sliding arm slings; assist grips on each rear door hinge pillar; hand mirror in slash pocket left hand side; two small compartments back of front seat; clock, imported, hinged type, recessed in division wall; folding center arm rest in rear seat back; side arm rests on front doors; sheepskin rug for rear compartment.

Fleetwood patented driver's roof folds into compartment above division header.

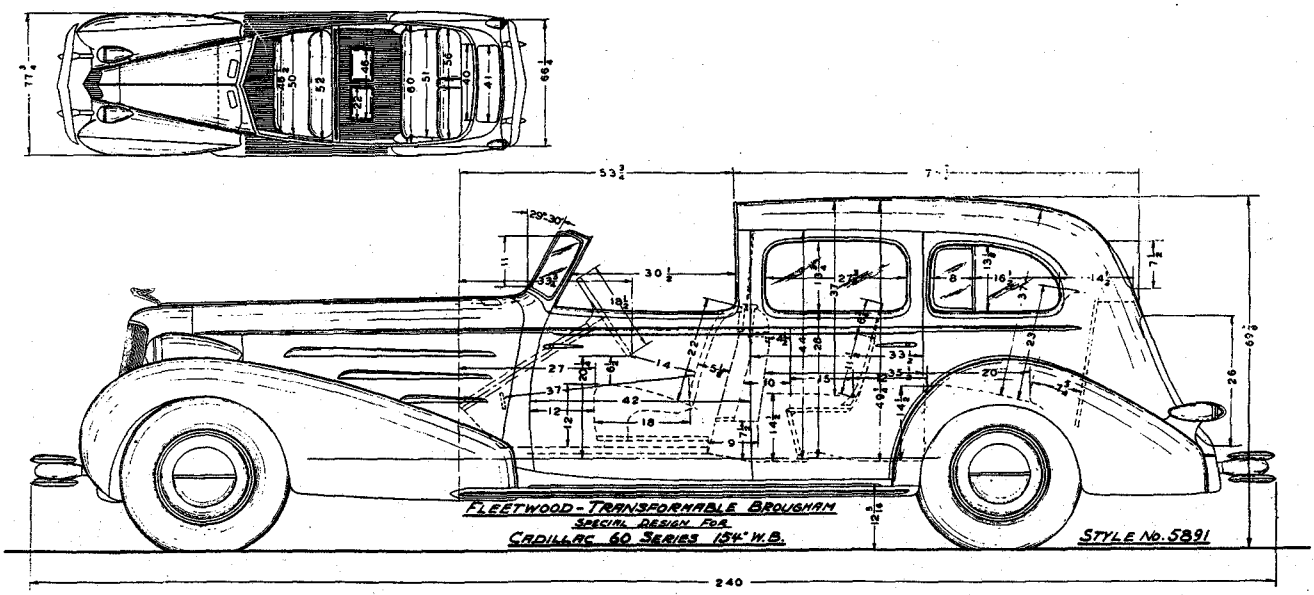


FLEETWOOD SEVEN-PASSENGER LIMOUSINE BROUGHAM

(FORWARD FACING AUXILIARY SEATS)

(Illustrated on V-16 chassis, Style 5891)

Also available on V-8 Cadillac chassis as Style 5691 and on V-12 as Style 5791



FLEETWOOD LIMOUSINE BROUGHAM

(FORWARD FACING AUXILIARY SEATS)

(Style 5691, 5791 and 5891)

REAR QUARTERS: Metal, with quarter windows.

FRONT SEAT: Stationary with form fitting backrest provided by two concave cushions divided in center. Upholstered in leather.

REAR SEAT: Seat cushion and backrest adjustable.

WINDSHIELD: Stationary, V-type, slanting 29°, non-glare, clear vision, security plate glass.

VENTILATORS: Two on top of cowl, rear opening, for better ventilation, screened.

LIGHTING: Dome light operated by rear doors and pillar switch; two rear corner lights.

WINDOWS: Rear quarter windows are equipped with new individually controlled ventilation feature, All windows security plate glass.

HARDWARE: Fleetwood design, chromium or color plated.

DIVISION: With header board and side pillars; the glass may be raised and lowered between front and rear compartments; security plate glass.

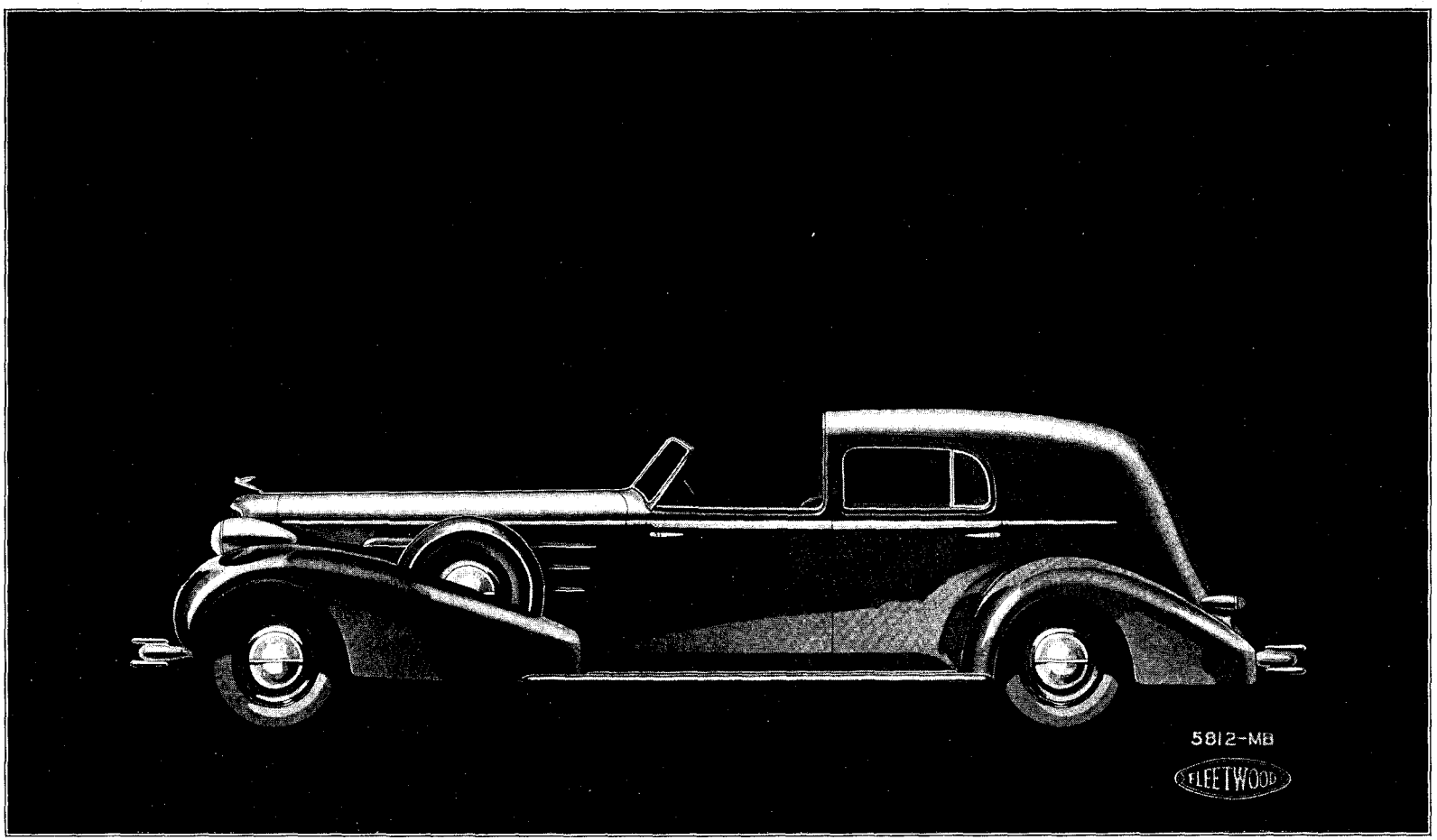
TELEPHONE: In right rear quarter.

SMOKING EQUIPMENT: Concealed, containing two ash receivers and two Pass-Around lighters located in rear quarters forward of side arm rests.

EXTRA SEATS: Two facing forward, luxuriously upholstered with Marshall springs and double throw backs, room enough for three people; concealed when not in use.

EQUIPMENT INCLUDES: Two spring type, wedge shaped hassocks, carpet covered to match body trim; robe cord, center cloth covered; doorman's umbrella carried under front seat; concealed silk curtains on quarter windows and back light; two sliding arm slings; assist grips on each rear door hinge pillar; hand mirror in slash pocket left hand side; two small compartments in back of front seat; clock, imported, hinged type, recessed in division wall; sheepskin rug; folding center arm rest in rear seat back; side arm rests on front doors.

Fleetwood patented driver's roof folds into compartment above division header.



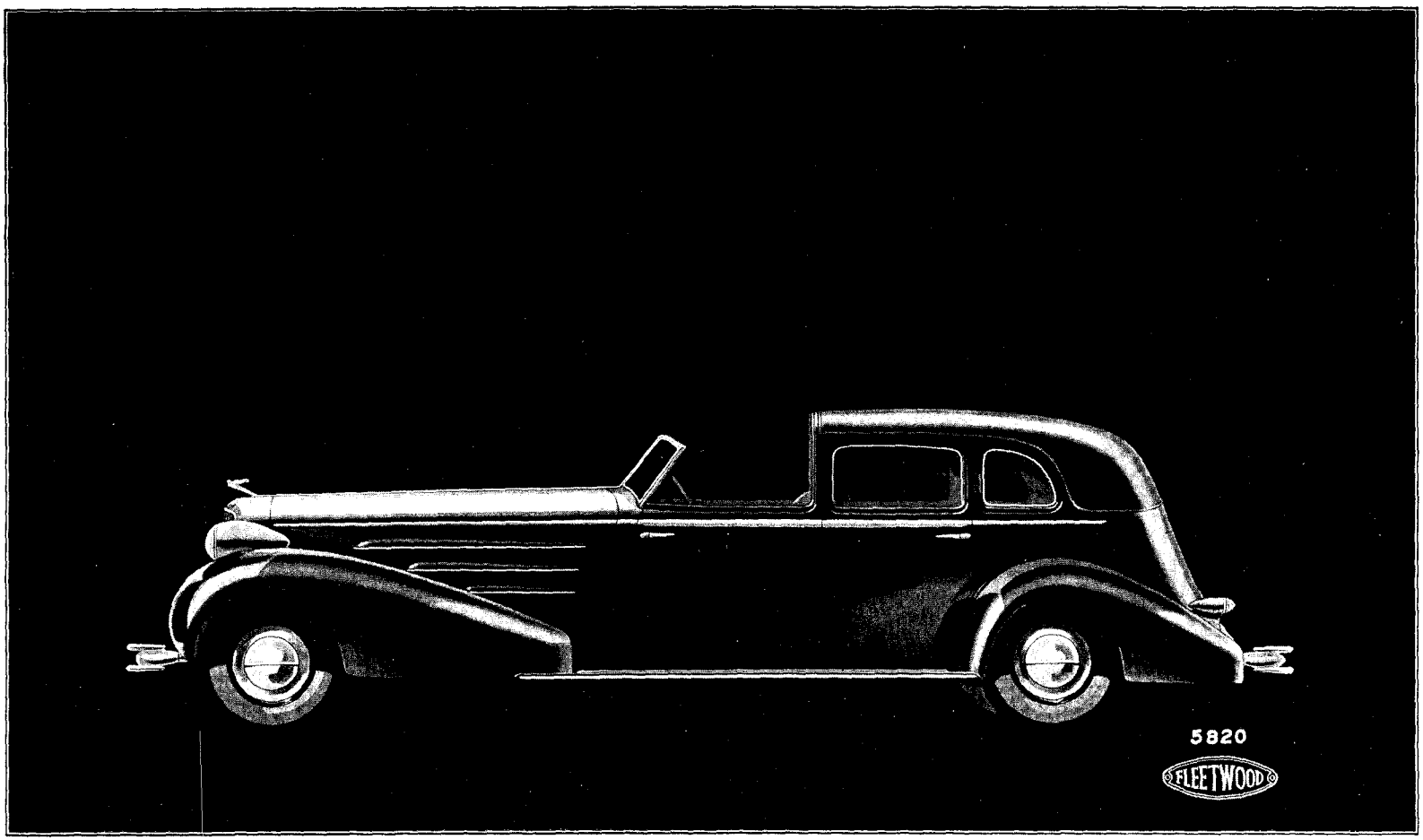
FLEETWOOD FIVE-PASSENGER TOWN BROUGHAM (Full Metal Quarters)

(OPERA SEATS)

(Illustrated on V-16 chassis, Style 5812-MB)

Also available on V-8 Cadillac as Style 5612-MB and on V-12 as Style 5712-MB.

NOTE: Above body style available with full metal rear quarters as illustrated, on special order only; without extra charge.



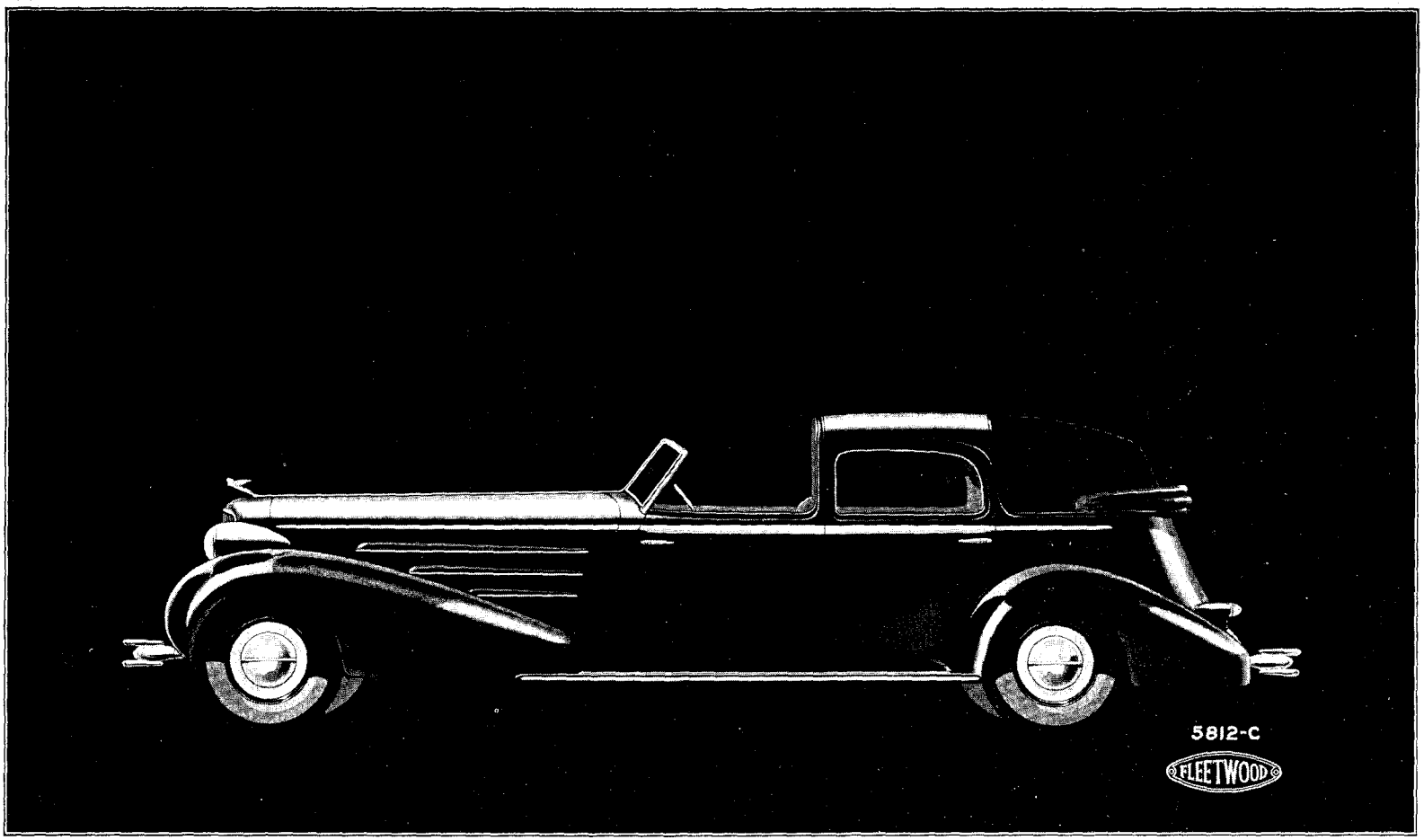
FLEETWOOD SEVEN-PASSENGER TOWN CABRIOLET (With Quarter Windows)

(FORWARD FACING AUXILIARY SEATS)

(Illustrated on V-16 chassis, Style 5820)

Also available on V-8 Cadillac as Style 5620 and on V-12 as Style 5720.

NOTE: Above body style available with quarter windows as illustrated on special order only. See page 66 for extra charge quoted for quarter windows.



FLEETWOOD FIVE-PASSENGER TOWN CABRIOLET (Collapsible Rear Quarters)

(OPERA SEATS)

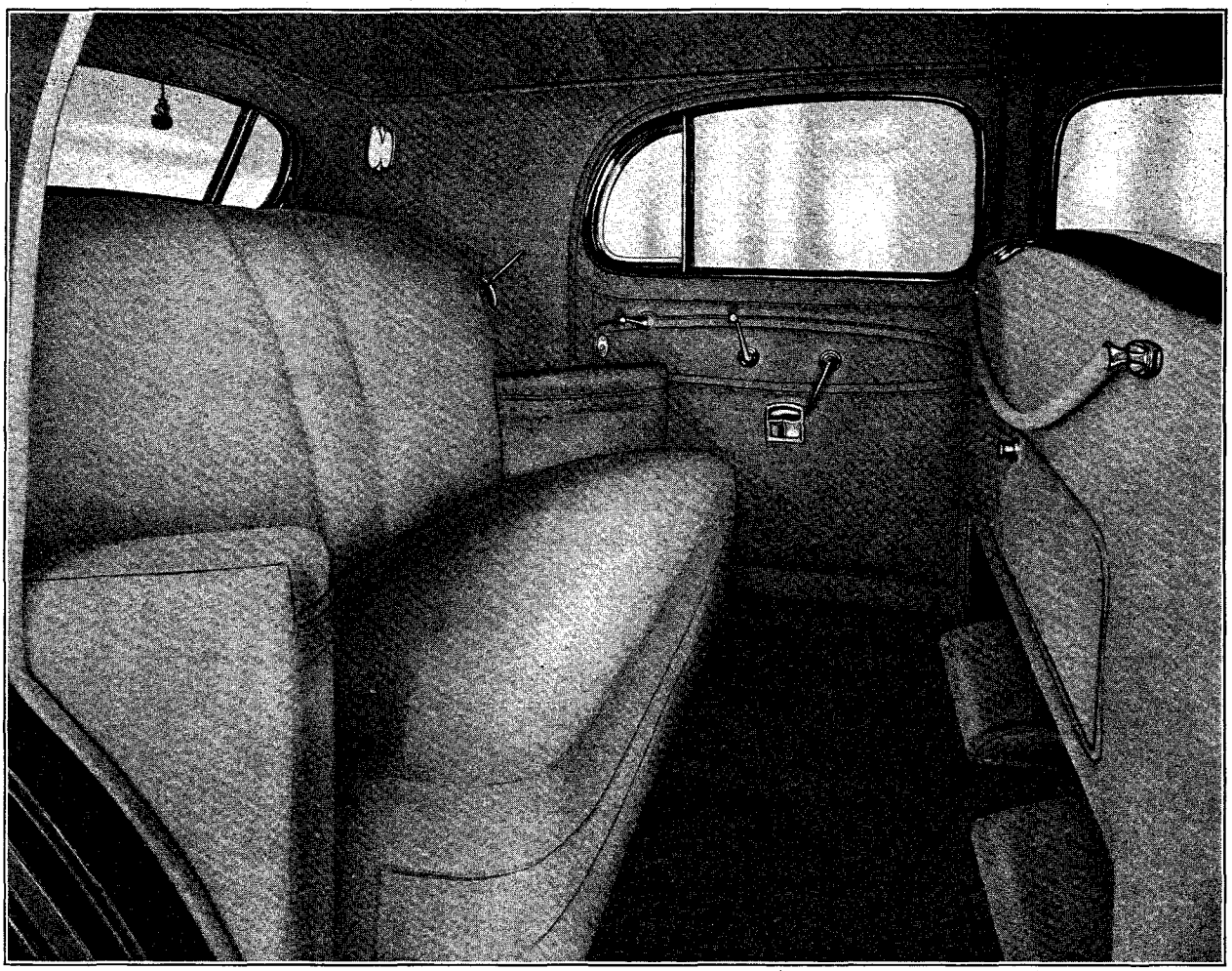
(Illustrated on V-16 chassis as Style 5812-C)

Also available on V-8 Cadillac as Style 5612-C and on V-12 as Style 5712-C.

NOTE: Above body style available with collapsible rear quarters as illustrated, on special order only. See page 66 for extra charge.
Also available with quarter windows (5820-C) on special order only, refer to page 66 for extra charge.

FLEETWOOD BODY INTERIORS

The following illustrations portray the luxurious interiors of typical Fleetwood bodies. Complete details of interior appointments pertaining to each body style will be found accompanying the illustrations of each body type.



FLEETWOOD UPHOLSTERY METHOD NO. 401

Fleetwood Five-Passenger Town Sedan, illustrating trimming method known as Plain style with French seaming, including center folding arm rest.

NOTE: This method of trimming will be considered as standard for V-8 and V-12 Cadillac Fleetwood body types and the Fleetwood 6200 line on the Cadillac V-16 chassis. All V-8 and V-12 Cadillac Fleetwood body types brought through for stock will be trimmed in the above method.



FLEETWOOD METHOD NO. 402

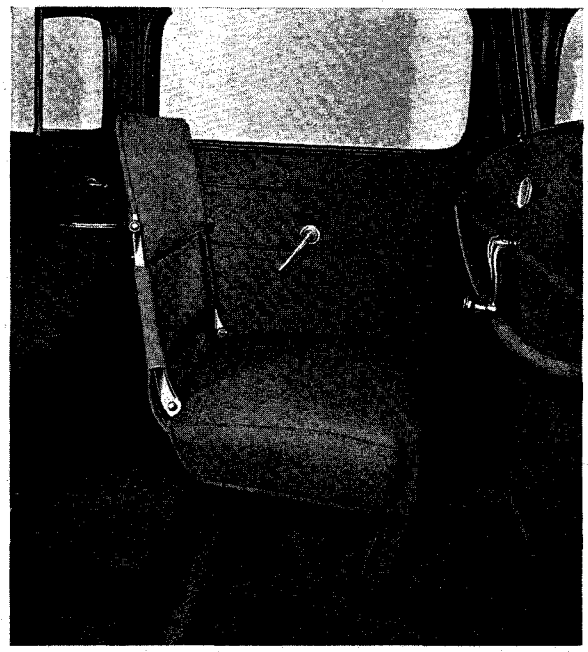
Fleetwood Seven-Passenger Limousine, illustrating trimming method known as Fleetwood pleating and tufting, with center folding arm rest.

NOTE: This method of trimming will be considered as optional on V-8 and V-12 Cadillac Fleetwood body types and the Fleetwood 6200 line on the V-16 Cadillac chassis, without extra charge, brought through on order only.

(*Right*)

FORWARD FACING AUXILIARY SEATS

Fleetwood Seven-Passenger models are equipped with well upholstered, fully cushioned auxiliary seats; seat cushions having Marshall springs and double folding backs to insure generous body and shoulder support. When folded away, the seats are concealed.



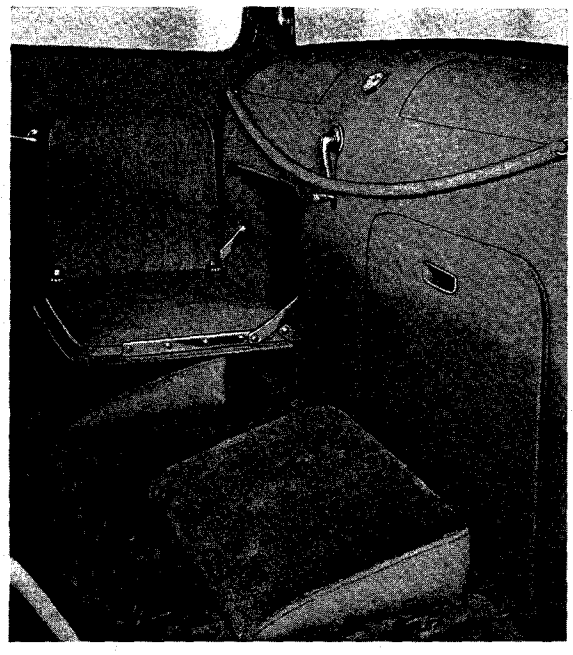


FLEETWOOD METHOD NO. 401-A

(With Interior Panels)

Fleetwood Five-Passenger Sedan, illustrating trimming method known as Plain style with French seaming, modified with the installation of interior wood panels as described on Page 5.

NOTE: These panels optional, on order without extra charge.



(Left)

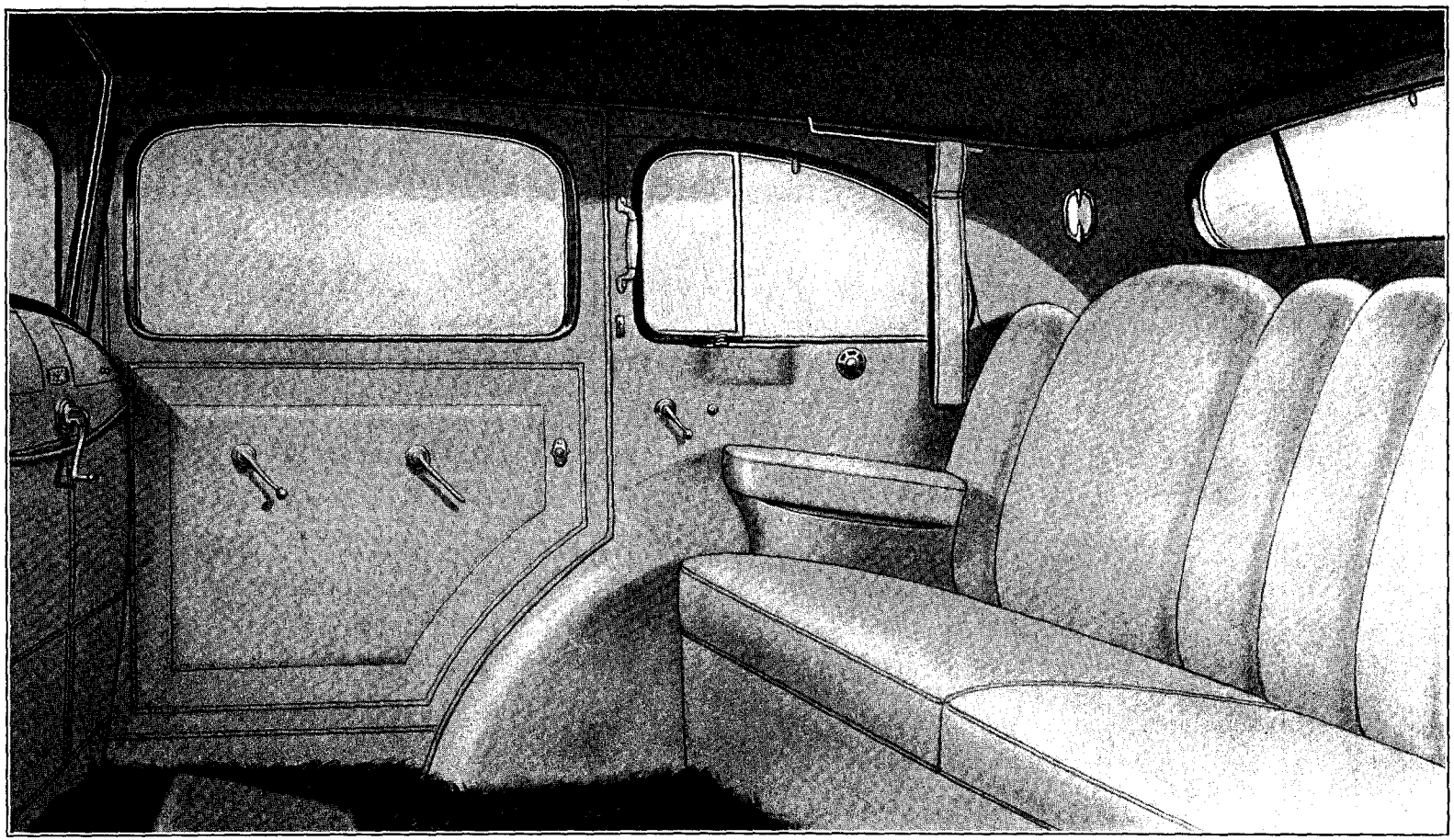
OPERA SEATS

Opera type auxiliary seats are standard equipment in the Five-Passenger Town Cabriolet and Five-Passenger Imperial Cabriolet. Left seat has back facing right door; right seat faces to rear; seats when folded are concealed.

FLEETWOOD
INTERIOR STYLING

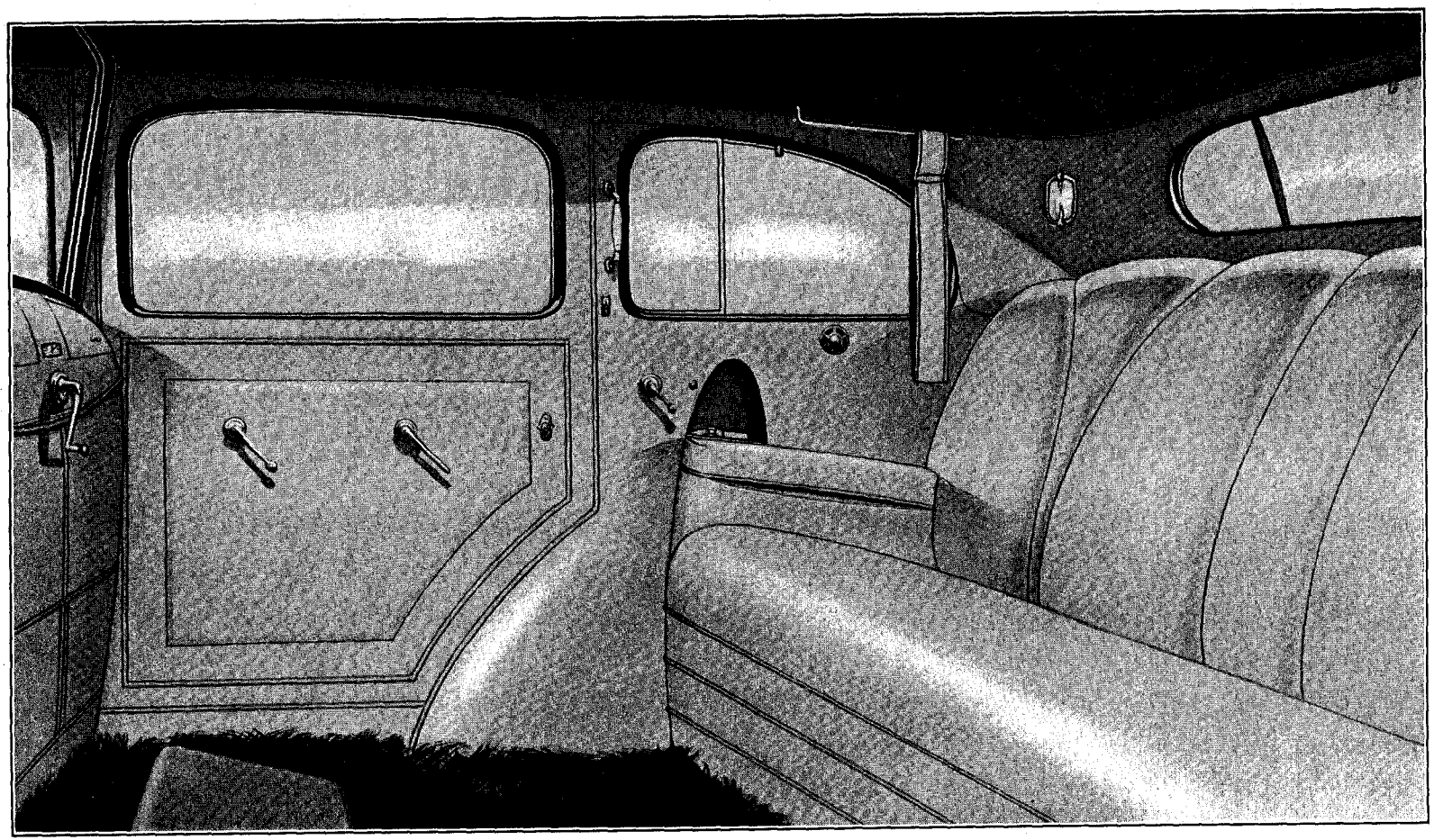
Illustrated on the following pages are five additional interior treatments in styling by skilled artisans of Fleetwood to fulfill the desires of the discriminating owner. Fleetwood offers these merely as suggestions, but believes that they cover practically any variation that a customer may select according to his own personal preference and ideas.

These variations of interior styling treatment are optional without extra charge for the V-16 Cadillac Fleetwood 5800 line body types, and V-8 and V-12 Cadillac Fleetwood Town car types.



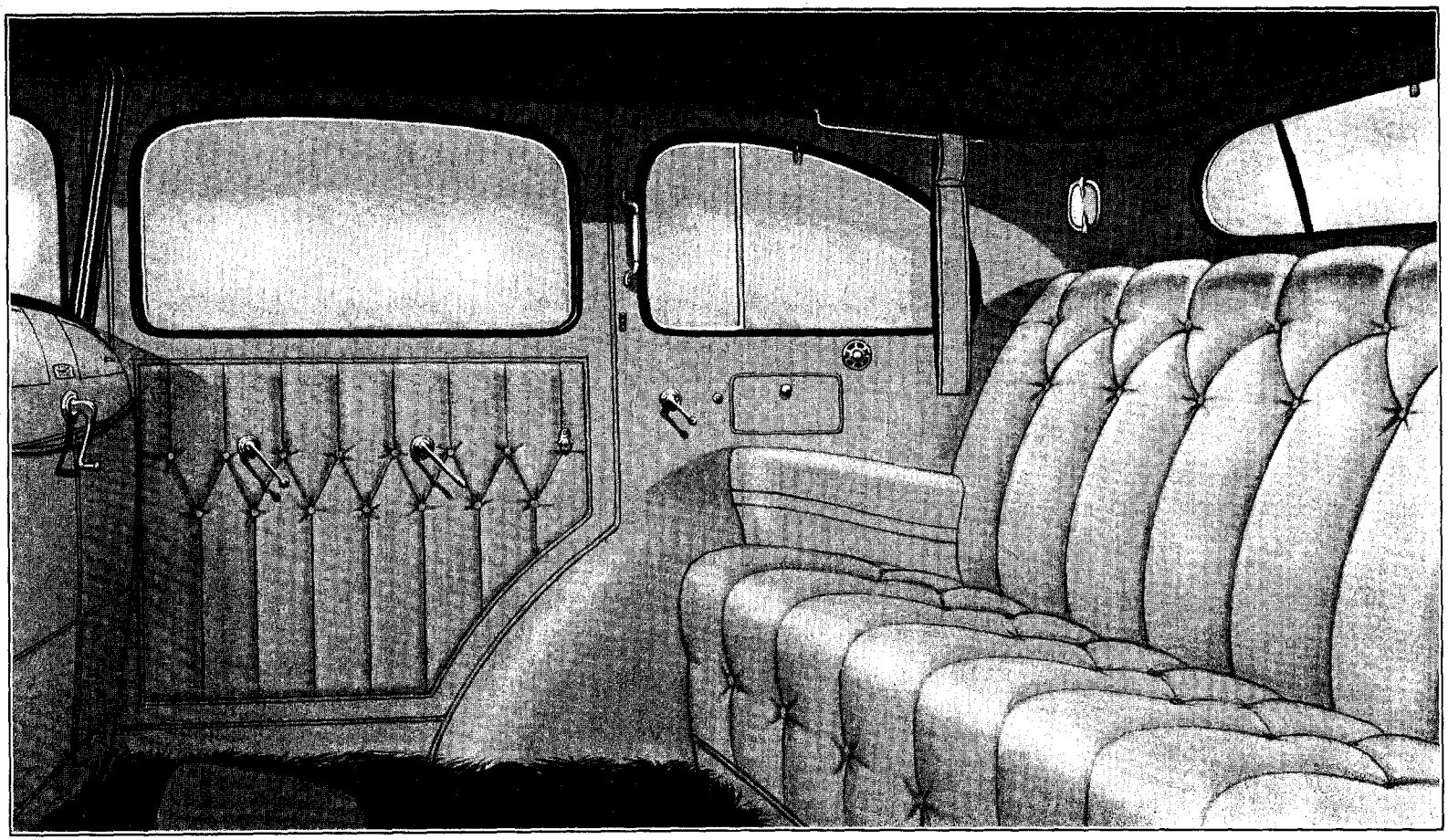
INTERIOR STYLE NO. 403

Showing the skilfully concealed auxiliary seats. A modification of plain style of trimming with center arm rest; cloth covered smoking cases.



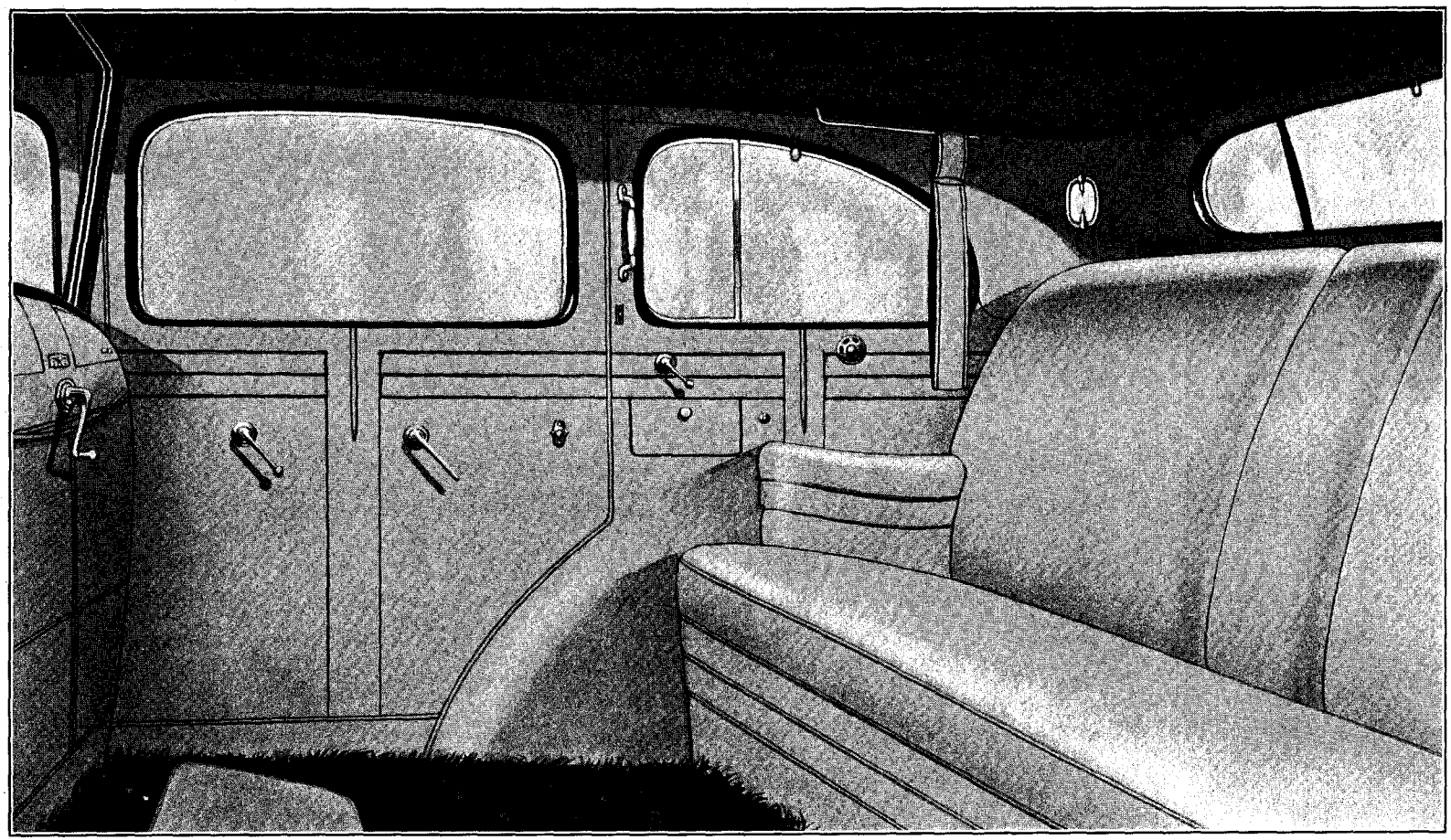
INTERIOR STYLE NO. 404

Plain style of trimming with V-type back panels, folding center arm rest, smoking cases countersunk in rear quarters.



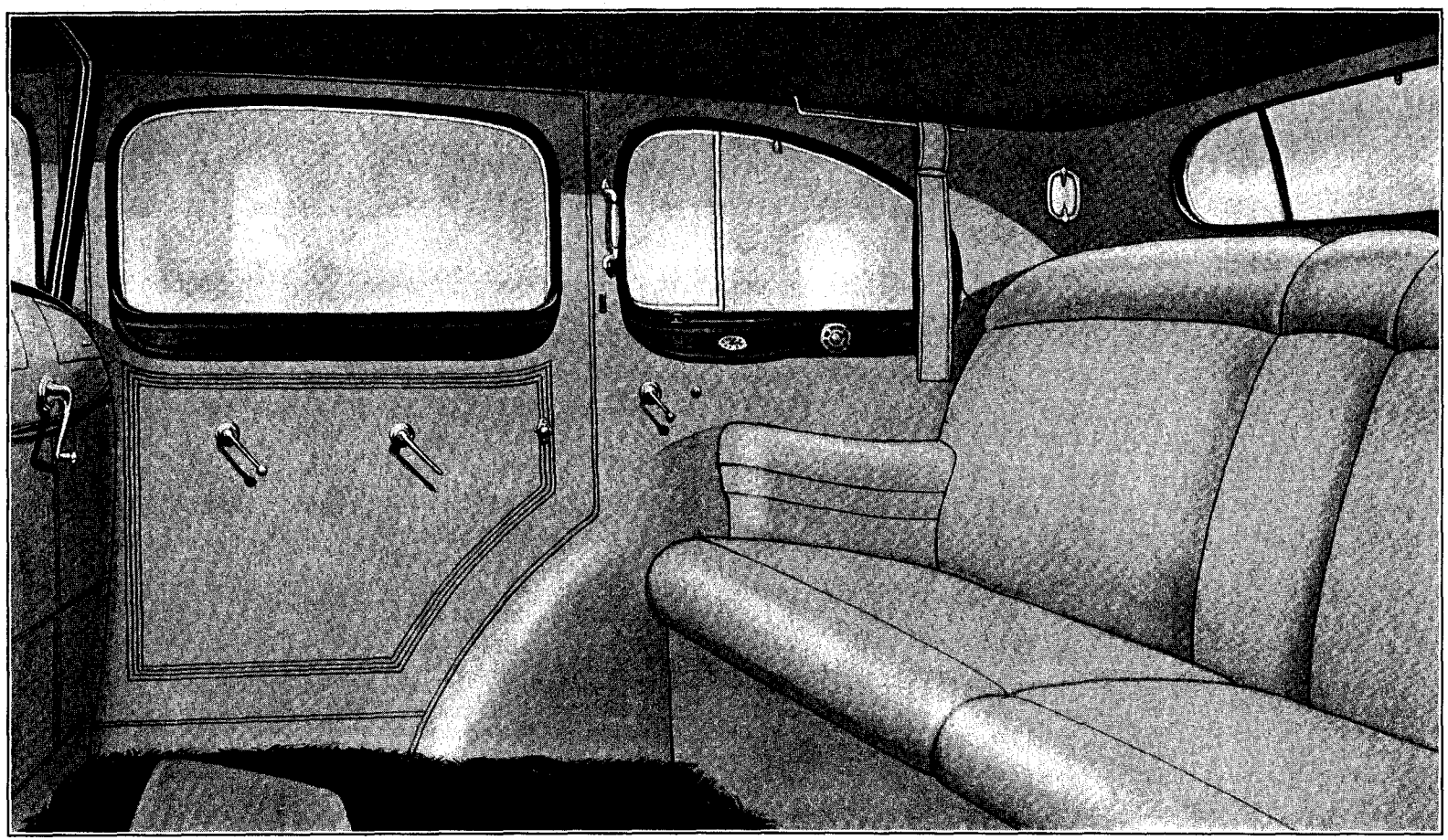
INTERIOR STYLE NO. 405

Tufted style of trimming without folding center arm rest; smoking cases concealed in rear quarters.



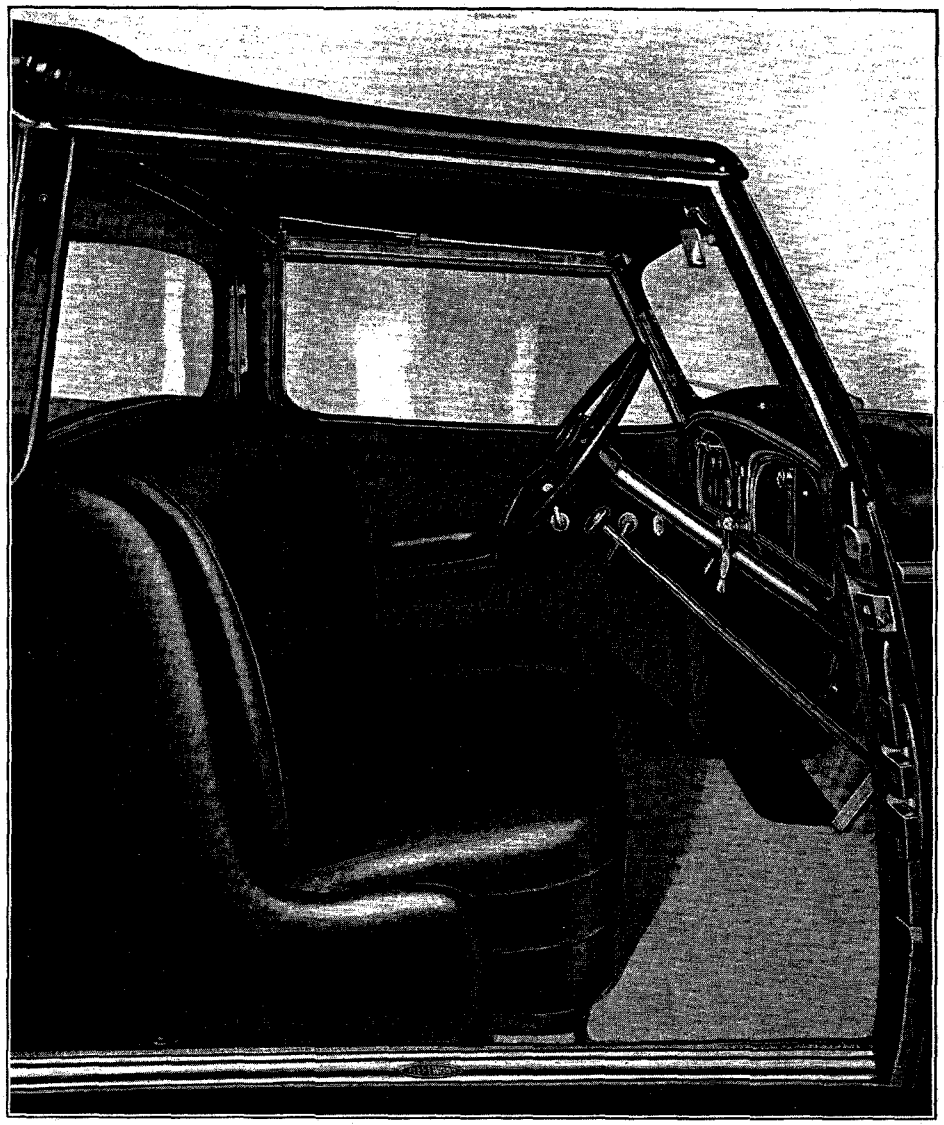
INTERIOR STYLE NO. 406

Plain style of trimming with folding center arm rest; trimming treatment of doors and rear quarters blending to the smartly tailored effect. Smoking cases concealed in rear quarters.



INTERIOR STYLE NO. 407

Plain style of trimming with bolster roll, including center arm rest, suggested wood panelling combining smoking cases.



FLEETWOOD TOWN CABRIOLET

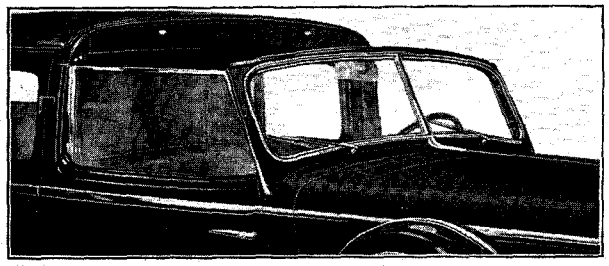
(DRIVER'S COMPARTMENT)

The driver's compartment in all chauffeur driven body styles is upholstered in leather of the finest quality obtainable. Seat backs are of the form fitting concave type and constructed with Marshall springs. With the exception of the Special Transformable roof construction, the front compartments of all chauffeur driven models are the same.

THE FLEETWOOD TRANSFORMABLE DRIVER'S ROOF

The new FLEETWOOD patented transformable driver's roof for Town Car types is of extreme utility and convenience. This advanced custom feature permits the open driver's compartment to be quickly and neatly sheltered, without detracting from the beauty of the car, as the driver's roof, made of double-faced, English Landau Leather, gives the car the appearance of a Limousine.

The roof curtain is easily removed and compactly stored in a covered compartment located above the division header bar, completely enclosed, together with the two side support bars.

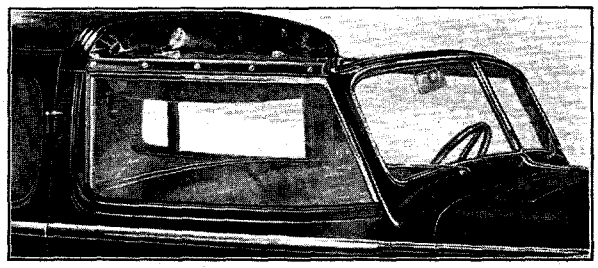


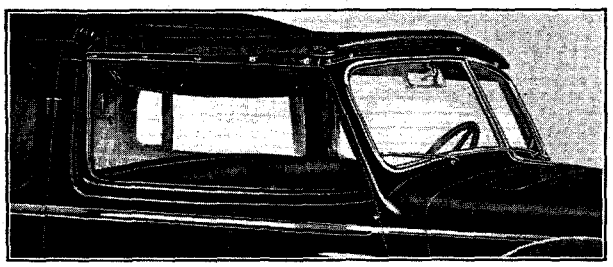
"RIGHT"

Remove the two side support bars from the envelope which is carried in the front of compartment and insert into the partition sockets, fastening the front ends to the windshield by means of thumb screws.

"LEFT"

To install driver's roof curtain, open cover of compartment located above the division header bar after unfastening the thumb screws.



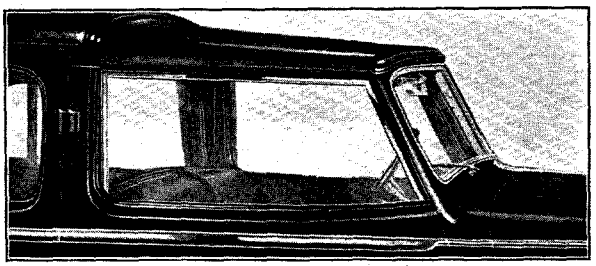


"RIGHT"

Then fasten top glove fasteners to the two side support bars. Raise the two hinged inside fasteners. Then after folding back the two side wings on each end of the door, close the door and tighten the thumb screws.

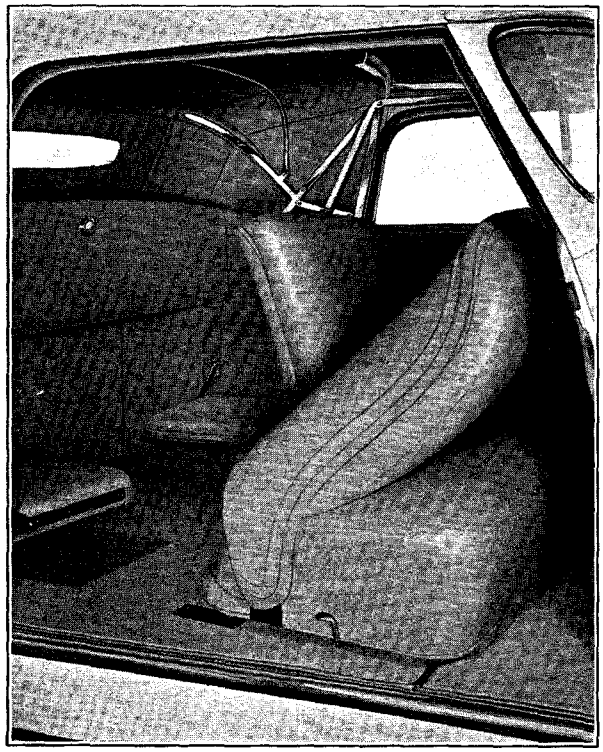
"LEFT"

Lower the two hinged inside fasteners. Pull the top material forward together with the windshield top bar, at the same time spreading the slatirons to the right and left, which automatically forces the top bar towards the windshield. Tighten the three eccentric clamps which hold the top bar to the windshield.

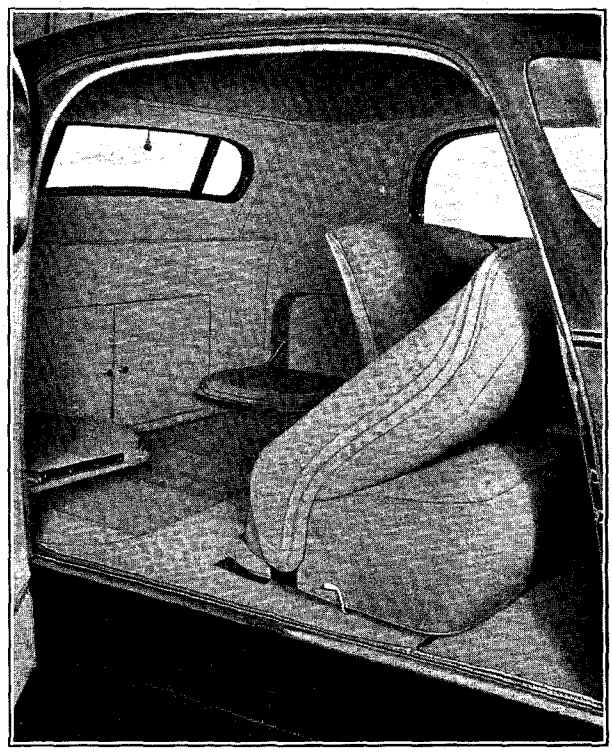


TO REMOVE THE DRIVER'S ROOF CURTAIN, REVERSE THE OPERATION

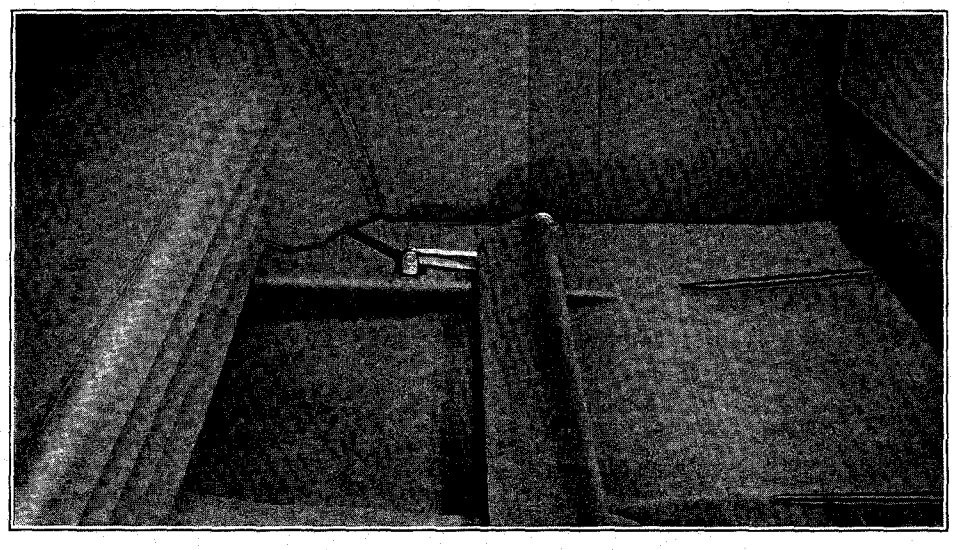
CAUTION: *When putting the driver's roof away it is necessary to keep the top leather "up" and "forward" so that when the windshield top bar is in the compartment the leather remains out, hanging as a "bag." Fold the lower corners of this "bag" towards the center and then roll up from the bottom and tuck neatly in compartment.*



The inside auxiliary seats provided in the Fleetwood Convertible fold into the side walls when not in use completely concealed, providing a large carrying space behind front seats. A compartment accessible from interior of body is provided behind the front compartment.



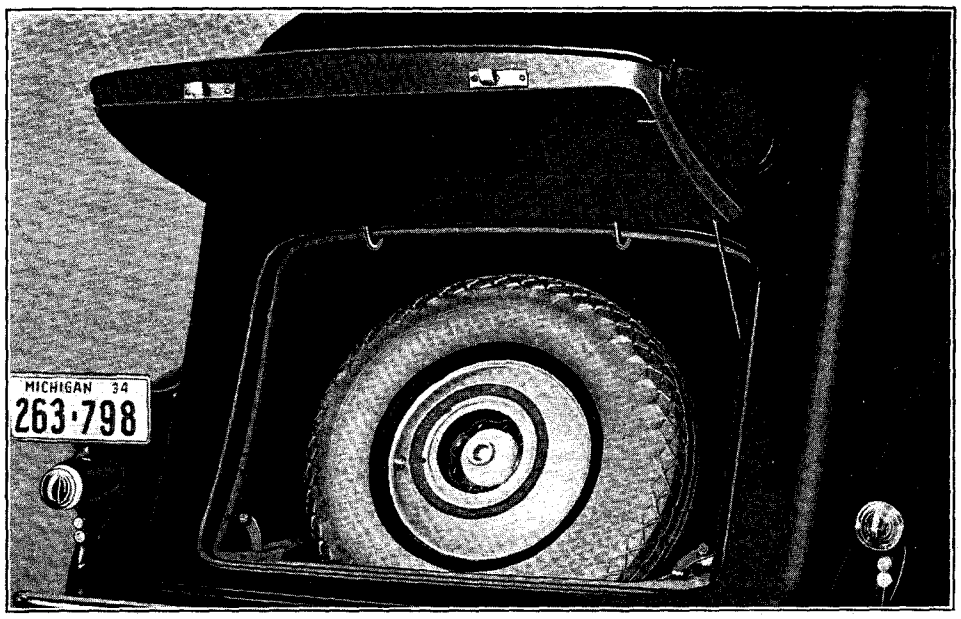
The Fleetwood Stationary Coupe also has the inside auxiliary seats. The passenger seat is folded forward indicating the ample space for entering the rear compartment. This body style also provides a large compartment accessible from interior by means of two doors.



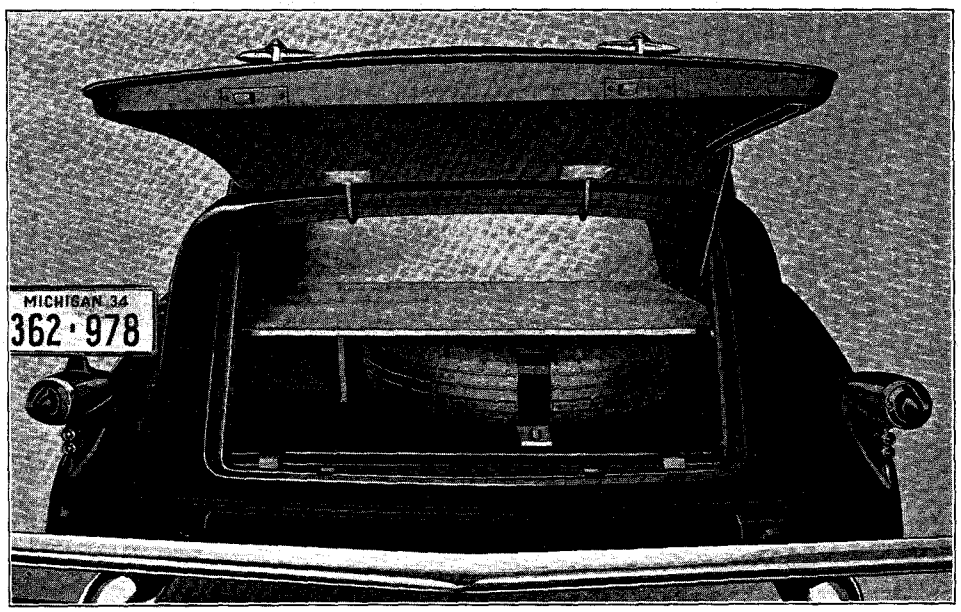
To increase the comfort of the rear seat passengers in five and seven passenger enclosed body types, the floor is slanted to the rear of the body providing a well for the passengers' feet, that affords a natural resting position, when the use of the foot-rail is not desired.

FLEETWOOD REAR DECK COMPARTMENTS

All Fleetwood Body Styles are designed with provision for carrying the fifth wheel and tire concealed in the rear compartment.



In the rear compartment of Five and Seven Passenger Sedans, Imperials and Cabriolet types, the spare tire is concealed as in the above photograph.



In the Town Sedans and Convertible Sedan the rear compartment includes the spare tire and additional luggage carrying space.

SPECIAL FEATURES

Extra Charge and Delivery

Note: The following apply to the Cadillac Fleetwood V-8 and V-12 bodies, except the three V-8 and V-12 Cadillac Fleetwood Town Car types, and also apply to the Fleetwood 6200 Line on the V-16 Cadillac chassis.

	Extra Charge List	Additional Time Required for Delivery
COLOR		
BODY: Finished in any accepted, durable color except opalescent finish (no delay if colors are available)	No Charge	None
Cabriolet leather quarters Town or Imperial in special color; if ordered before body goes to Metal Department	No Charge	1 Week
UPHOLSTERY		
METHOD OF UPHOLSTERING: Plain style French seaming with center arm rest in rear seat back. Fleetwood Style No. 401 (see Page 51)	No Charge	None
Wide tufting with center arm rest in rear seat back. This method optional on order only. Fleetwood Style No. 402 (see Page 52)	No Charge	None
V-16 Fleetwood 5800 line optional methods Style 403 through 407	$175.00	1 Week
SPECIAL FABRICS: Body upholstered in special cloth, mohair or current Wiese Collection	225.00	Depending upon Availability
LEATHER: *Standard or Special*		
Entire interior front and rear compartments including headlining—		
5 Passenger and Town Sedan	$125.00	Depending upon
7 Passenger Sedan	150.00	Availability
Limousine	100.00	
Stationary 2 Passenger Coupe	75.00	
Front and rear cushions and seat backs and body up to belt; balance in standard cloth:		
5 Passenger and Town Sedan	$ 75.00	Depending upon
7 Passenger Sedan	100.00	Availability
Limousine	50.00	
Front and rear cushions and seat backs only; balance in standard cloth:		
Stationary Coupe and Limousine	$ 25.00	Depending upon
Five, Seven, and Town Sedans	50.00	Availability
Special Leather		
Convertible Coupe	$ 50.00	Depending upon
Convertible Sedan and Convertible 5 Passenger Coupe	75.00	Availability
Genuine Pigskin Leather: Entire interior; on quotation, not to exceed	$825.00	Depending upon Availability
HARDWARE, CASES AND INTERIOR WOOD PANELS		
HARDWARE: Color plated to match upholstery	$ 35.00	None
Dull finish	35.00	None
Gun Metal finish	35.00	None
Satin finish	35.00	None

SPECIAL FEATURES—*Continued*

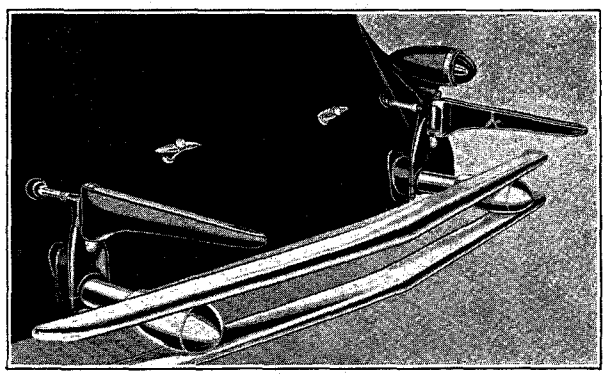
	Extra Charge List	Additional Time Required for Delivery
HARDWARE, CASES AND INTERIOR WOOD PANELS—*Continued*		
CASES: Specially designed vanity and smoking in any finish, including standard garnish mouldings and finishing panels	From $100.00 To 200.00	3 Weeks
PANELS: Fleetwood standard finishing panels of straight grain Walnut on bias four ways with stainless steel stripe with Ebony border in bright or dull satin finish when specified	No Charge	1 Week
Finishing panels on front doors of Limousine (To match standard panels as above)	$ 30.00	None
Fleetwood standard interior wood panels with special marquetry (inlaid lines)	$ 75.00	2 Weeks
EQUIPMENT		
ADJUSTABLE SEAT: Rear seat cushion and back, separately adjustable	$ 75.00	None
SPECIAL POCKETS: On doors in rear compartment, side quarters or in cowl quarters—each	$ 15.00	None
HASSOCKS: Bracketed to replace loose type—(per pair)	$ 10.00	None
Spring type to replace foot rails	18.00	None
FOOT RAIL: Double adjustment to replace Hassocks	$ 15.00	None
RUBBER MATS: Front compartment	$ 15.00	None
Rear compartment	15.00	None
GRIP HANDLES: Installed on rear pillars—(per pair)	$ 10.00	None
CURTAINS: Silk roller type; exposed—(per pair)	$ 14.00	None
SHEEPSKIN RUG	$ 45.00	None
PARCEL HAMMOCK: Net type swung from ceiling	$ 10.00	None
DIVISION CLOCK: Oval shaped with case to harmonize with interior paneling	$ 40.00	None
Square shaped with metal case, chromium finish	15.00	None
PILLOW: Fatigue cushion, down feather filled, to match upholstery	$ 18.00	None
ARM REST: Omit center folding arm rest in rear compartment	$ 20.00	None
DOME LIGHT: Installed in front compartment of Sedans	$ 10.00	None
SPECIAL CONSTRUCTION		
DIVISIONS: X type with side channels only and no header bar		
5-Passenger Sedan	$350.00	1 Week
7-Passenger Sedan (Not including Sheepskin rug)	425.00	1 Week

SPECIAL FEATURES—*Continued*

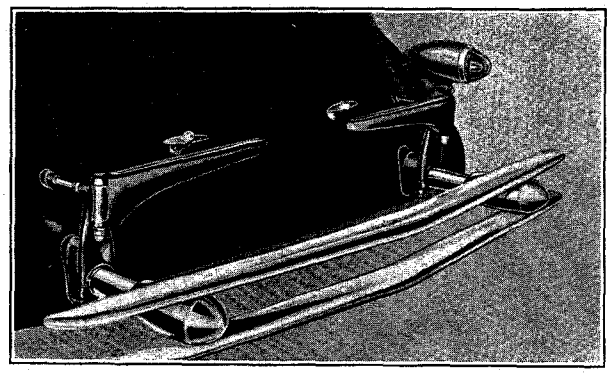
	Extra Charge List	Additional Time Required for Delivery
SPECIAL CONSTRUCTION—*Continued*		
STANDARD TYPE (same as 7-Passenger Limousine) for 5-Passenger Sedan	$200.00	1 Week
EXTRA SEATS: Opera type, installed in 5-Passenger Sedan or 5-Passenger Imperial (See Illustration page 53)	$125.00	1 Week
AUXILIARY SEATS: Changing location	$200.00	1 Week
Seats omitted, with floor blocked in flush; division to remain standard, one piece carpet, seats shipped loose with body	$ 75.00	1 Week
SEAT CUSHIONS: Any height, slope or depth provided standard seat box and springs can be used	No Charge	None
LEATHER ROOF AND REAR QUARTERS: Genuine; installed without Landau bows, retaining quarter windows; non collapsible	$350.00	2 Weeks
COLLAPSIBLE: Rear quarters from back of rear door, converting a Sedan, Limousine or Town car body to collapsible without quarter windows (See Illustration page 50, Style 5812-C)	$750.00	3 Weeks
Converting a Sedan, Limousine or Town car body to collapsible with quarter windows	$800.00	5 Weeks
QUARTER WINDOWS: Installed in Town Cabriolet (See Illustration on page 49, Style 5820)	$350.00	2 Weeks
BACK WINDOW: Special size or shape	$100.00	3 Weeks
QUARTER WINDOWS: Special size or shape	$200.00	3 Weeks
WINDSHIELD: Swingout type, hinged at top for closed bodies	$275.00	3 Weeks

No Credit Allowed for Omission of Standard Equipment

FLEETWOOD TRUNK RACK



The position of the trunk rack when extended for use is indicated above, ready for the installation of the trunk.



The Trunk Rack for Fleetwood body types when not in use is folded in towards the body, presenting a neat and finished appearance.

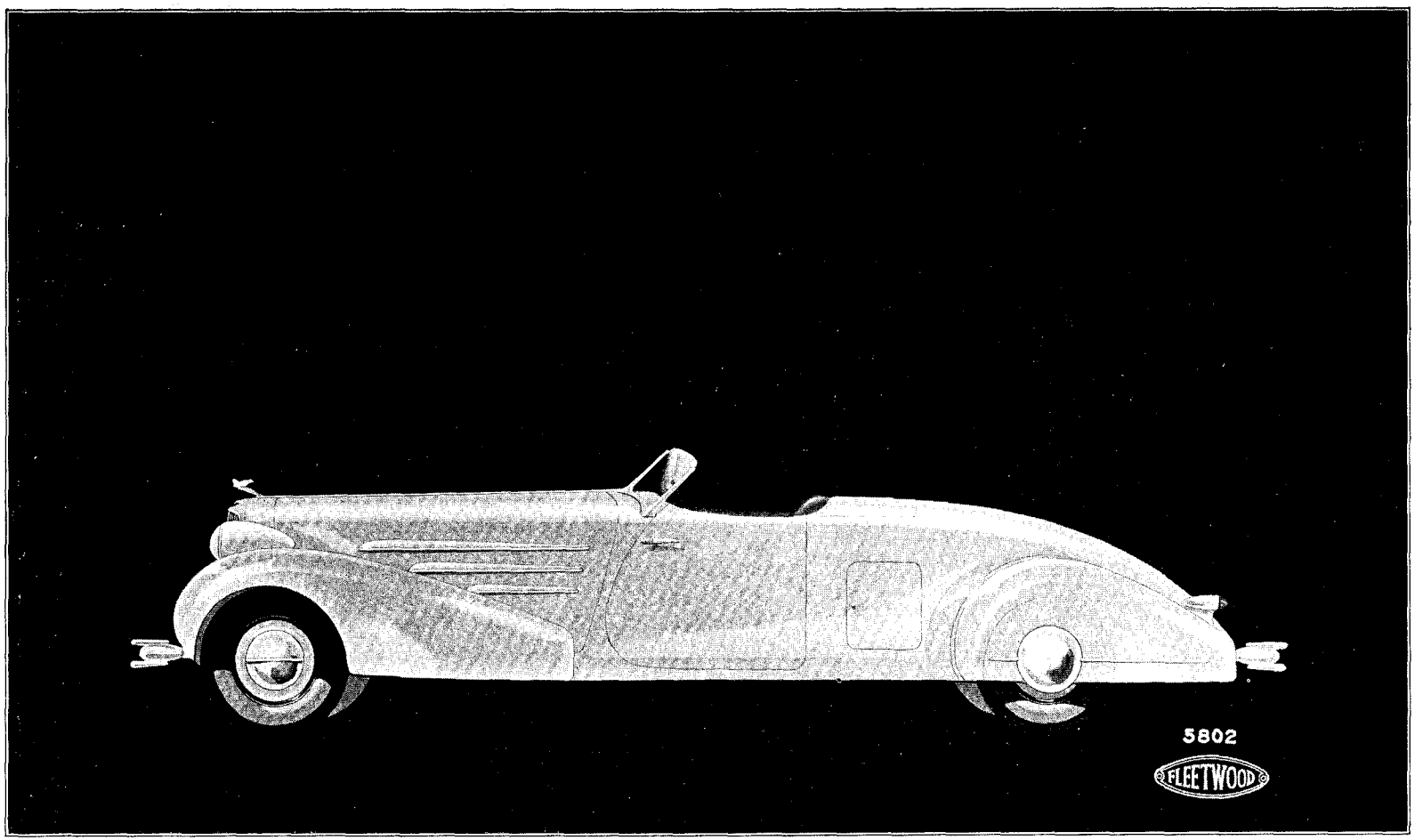
NOTE: *The above trunk rack has been designed especially for the Cadillac Fleetwood, available at slight extra charge, on order only.*

SPECIAL INDIVIDUAL FLEETWOOD CUSTOM BODIES

In addition to the regular line of Fleetwood bodies on the various Cadillac chassis, Fleetwood can bring through on special order, any type of individual body that may be required. Complete price and delivery information, as well as advance information and data required in the proper presentation of such special types can be obtained through the Custom Body Department of the Cadillac Motor Car Company.

For your general information, it usually requires from 15 to 17 weeks to complete a special individual body, depending upon the nature of the design. To establish the list price of a complete car involving a special body, the list price of the chassis on which the body is to be mounted must be added to the list price of the body.

On the following pages we are illustrating a Roadster, Phaeton and Seven-Passenger Touring car of special individual design. Other special designs, if required, can be furnished upon request.

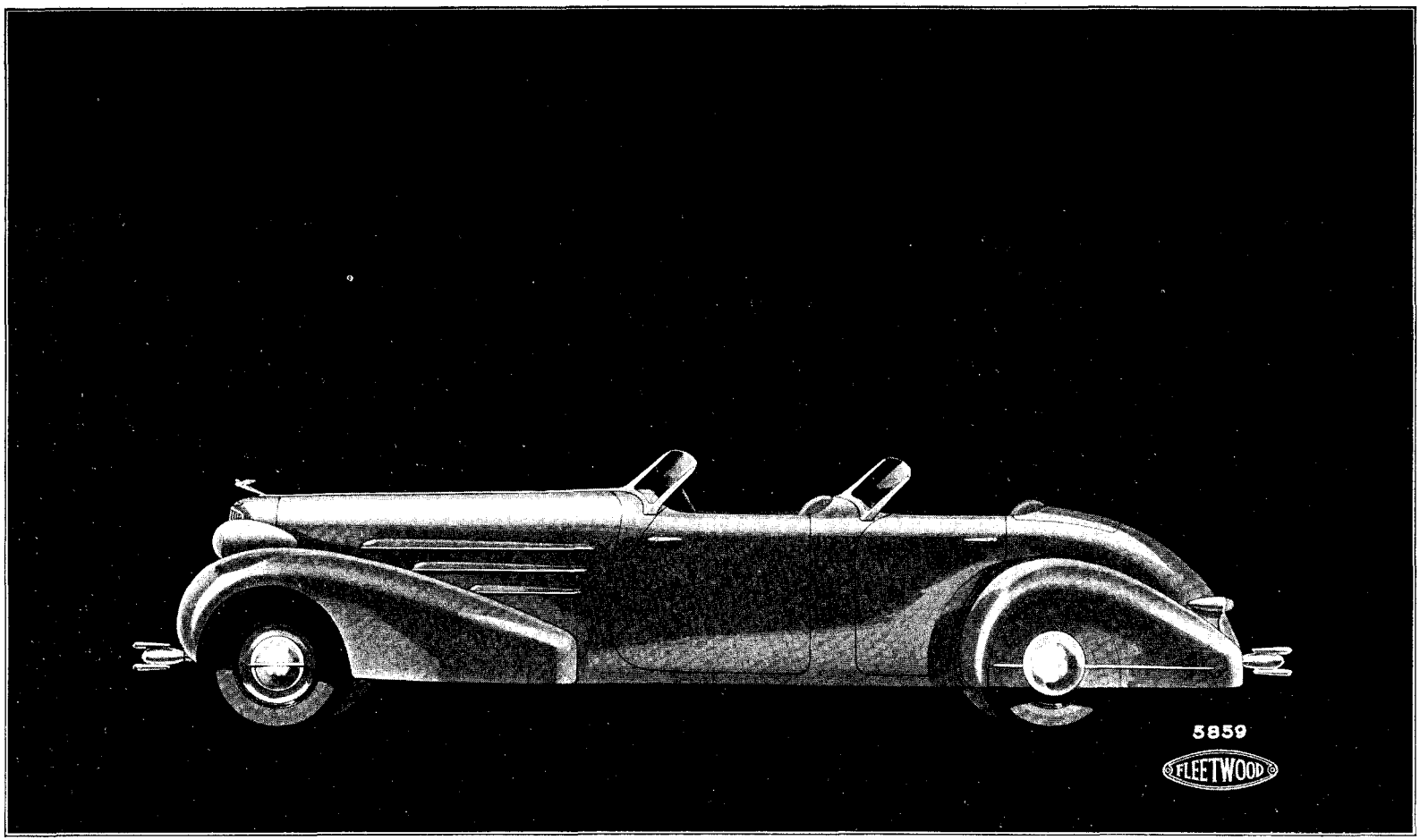


FLEETWOOD TWO-PASSENGER ROADSTER

(CONCEALED TOP AND REAR WHEEL COVERS)

(Illustrated on V-16 chassis, Style 5802)

Also available on V-8 Cadillac chassis as Style 5602 and on V-12 as Style 5702

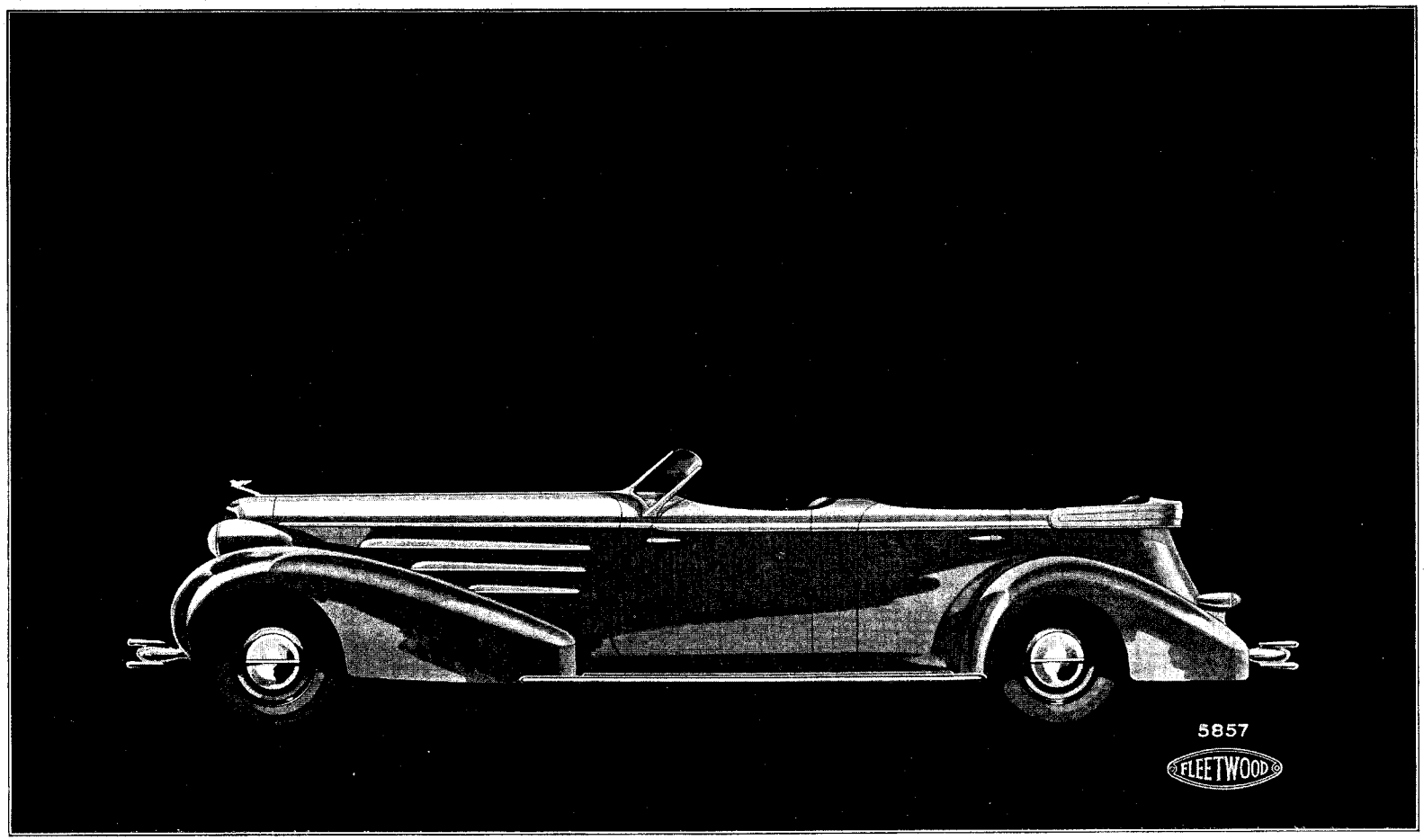


FLEETWOOD FIVE-PASSENGER SPORT PHAETON

(CONCEALED TOP AND REAR WHEEL COVERS)

(Illustrated on V-16 chassis, Style 5859)

Also available on V-8 Cadillac chassis as Style 5659 and on V-12 as Style 5759



FLEETWOOD SEVEN-PASSENGER TOURING CAR

(FORWARD FACING AUXILIARY SEATS)

(Illustrated on V-16 chassis, Style 5857)

Also available on V-8 Cadillac chassis as Style 5657 and on V-12 as Style 5757

FLEETWOOD BODY MEASUREMENTS

DESCRIPTION	Town Sedan	Five Sedan	Seven Sedan	7 Pass. Limousine	5 Town Cabriolet (Op. Seats)	7 Town Cabriolet (F. F. Seats)	Limousine Brougham (F. F. Seats)	Aero-Dynamic Coupe	Stat. Coupe	Conv. Coupe	5 Pass. Conv. Coupe	Conv. Sedan (Division)
HEADROOM												
Front Seat (Seat to Headlining)	38	38	38	38	—	—	—	37½	37	37	37	38
Rear Seat (Seat to Headlining)	37	37	37	37	37	37	37	36½	—	—	37	37
Center of Body (Floor to Headlining)	49¼	50⅜	50⅜	50⅜	49¼	49¼	49¼	47	46	45	47½	48
SEAT WIDTH												
Front Shoulders	55	52	52	52	52	52	52	—	—	—	—	55
Front Hips	48	50	50	50	50	50	50	24 ea.	24 ea.	24 ea.	24 ea.	50
Front Knees	46	46½	46½	46½	46½	46½	46½	—	—	—	—	—
Rear Shoulders	58½	56	56	56	56	56	56	55	—	—	51	51
Rear Hips Over Arm Rest	59	60	60	60	60	60	60	60	—	—	51	51
Rear Knees	52	51	51	51	51	51	51	51	—	—	51	51
Auxiliary Seat (Each)	—	—	22	22	16	22	22	—	18	15	—	—
SEAT HEIGHT (FLOOR TO TOP OF CUSHION)												
Front	12	12	12	12	12	12	12	12	12	12	12	12
Rear	14½	14½	14½	14½	14½	14½	14½	14½	—	—	14½	14½
Auxiliary	—	—	14½	14½	12	14¼	14½	—	10	9½	—	—
SEAT DEPTH (FRONT TO BACK OF SEAT CUSHION)												
Front	18	18	18	18	18	18	18	18	18	18	18	18
Rear	20	20	20	20	20	20	20	20	—	—	20	20
Auxiliary	—	—	15	15	15	15	15	—	16½	15	—	—
SEAT BACK HEIGHT												
Front	22	22	22	22	22	22	22	22	22	22	22	22
Rear	23	23	23	23	23	23	23	23	—	—	23	23
Auxiliary	—	—	18¼	18¼	—	18¼	18¼	—	—	—	—	—
LEG ROOM DISTANCE												
Front of Rear Seat to Back of Front Seat	16½	28	31½	31½	26	31½	31½	20	—	—	12½	13
Front of Rear Seat to Back of Auxiliary Seat	—	—	12	12	11	12	12	—	—	—	—	—
Front of Auxiliary Seat to Back of Front Seat	—	—	10	8½	—	10	8½	—	14	9	—	—
Front of Front Seat to Dash	27	27	27	27	27	27	27	27	27	27	27	27
DOOR WIDTHS												
Front	42	42	42	42	42	42	42	50½	49½	45½	48½	45½
Rear	38	33½	33½	33½	38	38	33½	—	—	—	—	31
WINDOW SIZES (WIDTH BY HEIGHT)												
Front Door	31x13¼	31x13¼	31x13¼	31x13¼	—	—	—	36x13⅜	39x13	33¼x12	36¼x12	34¼x12½
Rear Door	31⅝x13½	28x13⅞	28x13⅞	28x13⅞	32x13¾	32x13¾	27¾x13¾	—	—	—	—	24x12½
Rear Quarter	—	24½x13½	24½x13½	24¼x13½	—	—	24½x13½	31½x12¼	—	—	—	—
Rear Window (Back Light)	40x7½	40x7½	40x7½	40x7½	34x6½	34x6½	40x7½	42x5⅝	40x7½	24x4¼	29x4¼	29x4¼
Distance Between Steer. Wheel & Top of Cushion	6½	6½	6½	6½	6½	6½	6½	6½	6½	6½	6½	6½
Distance Between Steering Wheel & Back Rest	14	14	14	14	14	14	14	14	14	14	14	14
Distance From Front Seat Back Rest to Pedals	37	37	37	37	37	37	37	37	37	37	37	37

Car Width Overall (Including Fenders): V-8 and V-12 Chassis—76½"; V-16 Chassis—77¾"
Car Length Overall (Bumper to Bumper): V-8 and V-12 Chassis—227½"; V-16 Chassis—240"

PRINTED IN U.S.A.

CADILLAC
OPERATOR'S MANUAL



EDITION NO. 355-370-D

In ordering a duplicate of this Manual specify the above number and the engine number of the car.

CADILLAC
OPERATOR'S MANUAL



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CHAPTER I

CADILLAC SERVICE

THE OWNER of a Cadillac motor car has purchased a fine piece of machinery to serve him as a pleasant and dependable means of transportation. The Cadillac provides this means; pleasant because of its fine performance, comfort and ease of control; dependable because of the care with which it was built and because of Cadillac Service, which operates on a standard policy, guaranteeing the owner efficient service everywhere at standard prices under factory regulation.

Cadillac-La Salle Service Stations

Cadillac Service is available wherever Cadillac and La Salle cars are sold. Service stations conducted by Cadillac distributors and dealers are designated as "Authorized Cadillac-La Salle Service Stations," and are identified by the exclusive sign shown on this page. Wherever this sign is displayed, the owner will find an organization prepared to service Cadillac cars. This means proper equipment, factory-trained personnel, a stock of genuine replacement parts and standardized policies and methods.

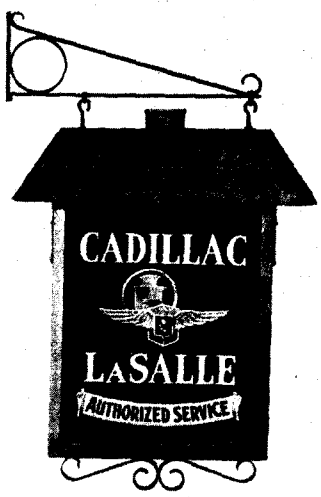

Fig. 1. Authorized Cadillac-La Salle Service Stations display this sign at the service entrance.

The car owner's first and most frequent contact with Cadillac Service naturally will be in the service station of the distributor or dealer who sold him the car and who therefore has the greatest interest at stake in assuring him satisfaction. Cadillac Service is so organized, however, that the owner may feel perfectly free to use his car for extended travel, secure in the knowledge that other Authorized Cadillac-La Salle Service Stations are able and willing to offer the same service benefits to which he is entitled at his local service station.

As an aid to touring owners, Authorized Service Stations are listed under the Cadillac-La Salle trademark in the classified telephone directories of most of the larger cities.

Identification Card

As a means of introduction at other Authorized Cadillac-La Salle Service Stations, every purchaser of a Cadillac car is given credentials in the form of an Identification Card. This card is mailed to the owner by the Cadillac Motor Car Company as soon as delivery of the car is reported by the distributor or dealer. It is supplied in a celluloid case and is intended to be carried in a holder on the car. This holder is located under the cowl in the driving compartment on the right-hand side of the car as shown in figure 3.

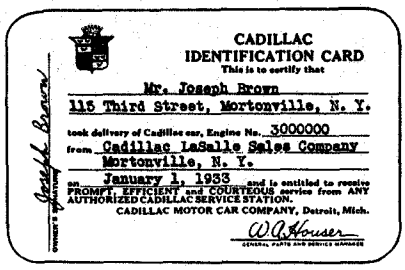
CADILLAC
IDENTIFICATION CARD
This is to certify that
Mr. Joseph Brown
115 Third Street, Mortonville, N. Y.
took delivery of Cadillac car, Engine No. 3000000
from Cadillac LaSalle Sales Company
Mortonville, N. Y.
on January 1, 1933 and is entitled to receive
PROMPT, EFFICIENT and COURTEOUS service from ANY
AUTHORIZED CADILLAC SERVICE STATION.
CADILLAC MOTOR CAR COMPANY, Detroit, Mich.
W. A. Houser
GENERAL PARTS AND SERVICE MANAGER
OWNER'S SIGNATURE Joseph Brown

Fig. 2. The Identification Card, when properly signed, introduces the owner at any Authorized Cadillac-La Salle Service Station.

Upon presentation of this Identification Card at any Authorized Cadillac-La Salle Service Station, the car owner is assured of standard Cadillac Service under factory regulation.

Care of the Car

A fine piece of machinery, such as the Cadillac, naturally requires a certain amount of care to assure smooth running, dependability and long life, and the owner will derive the utmost in continuous satisfaction and utility from operation of the car by following the instructions given below:

1. Drive the car at moderate speeds for the first 500 miles.

2. Operate the car in accordance with the instructions contained in this manual.

3. Check the engine oil level every 100 to 150 miles and add oil as often as necessary to keep the indicator at "Full."

4. Check the air pressure of the tires at least once a week and keep it up to the recommended pressure—35 pounds front and rear.

5. Add distilled water to the storage battery every 1000 miles, and in warm weather every 500 miles, or at least every two weeks.

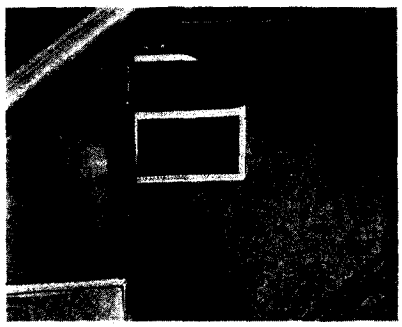

Fig. 3. The Identification Card should be placed in this holder under the cowl.

6. Have the car lubricated every 1000 miles, or approximately once a month, in accordance with the lubrication schedule given on page 10.

7. Have the car inspected by an Authorized Cadillac-La Salle Service Station every 1000 miles, or once a month.

Authorized Service

The first five items above do not necessarily warrant a visit to the service station. The last two, however, require the attention

of those whose knowledge and experience qualify them to perform the required work efficiently and in accordance with factory recommendations.

A car such as the Cadillac, built with skill, precision and fine workmanship, is deserving of the finest care of qualified experts in any service work that may be required. Authorized Cadillac-La Salle Service Stations are qualified to do this work in a manner not to be duplicated elsewhere.

They have a more sincere interest in the operation of the Cadillac owner's car than anyone else could have. Their personnel are specialists, having had more experience on Cadillac and La Salle cars than anyone could have who works on all makes of cars. Furthermore, their personnel secure the benefits of continuous factory training, through the medium of up-to-date, expert information on Cadillac adjustments and service methods, supplied exclusively to them by the Cadillac factory in regular publications and special bulletins.

Preventive Service

Preventive service is the fundamental principle of Cadillac Service. It is based on the knowledge that regular expert attention keeps emergency service at a minimum, assuring continuous satisfactory operation of the car with a minimum of interruption and expense.

The first thought, of course, is the proper protection of all working parts through correct lubrication according to schedule. The second, of great importance, is systematic inspection every 1000 miles, or approximately once a month, so that any necessary adjustments may be made before the need becomes an emergency.

Authorized Cadillac-La Salle Service Stations will make such inspections without charge. Lubrication and any necessary adjustments will then be performed at standard prices under factory regulation after the owner has approved the work and the prices.

Repair Parts

Genuine Cadillac parts, manufactured to the same specifications as the parts originally used in the car, are carried in stock by Authorized Cadillac-La Salle Service Stations. They are sold at uniform prices throughout the United States and are not subject to the addition of handling, excise or other supplementary charges. Printed price lists, published by the Cadillac Motor Car Company, are open to inspection by owners at any Cadillac distributor's or dealer's service station.

Flat Rate Service

Authorized Cadillac-La Salle Service Stations are prepared to offer service to the owner by means of individual operations quoted on a flat rate basis and authorized by the owner as occasion requires.

When a car enters the service station, it is promptly inspected by an expert tester who quotes the owner an exact price, which in practically every case includes material as well as labor, for the work he finds necessary. The owner then authorizes the work at this price and when he receives the bill, this is the price he pays.

Charges prevailing at Authorized Service Stations are based on standard schedules furnished by the Cadillac Motor Car Company. These schedules call for methods and tools approved by the same engineers who designed and built the car, thus assuring the highest quality of work at the lowest possible price. Standard price schedules are open to owners for inspection at any Authorized Cadillac-La Salle Service Station.

Lubrication Agreement

Lubrication according to schedule is the most important service attention required by the car. The Cadillac Lubrication Agreement is made available to Cadillac owners by Authorized Service Stations in order to provide the most convenient and least expensive way of securing this essential service. The Lubrication

Agreement provides, for a period of either 6,000 or 12,000 miles (but within 9 or 18 months), either 6 or 12 scheduled lubrications at a substantial saving over the total cost of the same operations when purchased individually.

The Lubrication Agreement is recognized by all Authorized Cadillac-La Salle Service Stations in the United States, regardless of where it may have been purchased. The owner needs only to present his coupon book and the lubrication work that is due will be performed without any additional charge at any Authorized Service Station.

The holder of a Lubrication Agreement is relieved of the thought of lubrication cost during the entire 6,000 or 12,000 mile period by budgeting his expense beforehand. He needs only take his car to the service station at monthly or 1000 mile intervals and request "schedule lubrication" to obtain all of the lubrication due, performed according to factory specifications.

The surest guarantee of long life and complete motoring satisfaction at the least possible expense is correct lubrication and preventive service rendered every 1,000 miles or once a month by an Authorized Cadillac-La Salle Service Station.

CHAPTER II

LUBRICATION

Lubrication Schedule

THE moving parts of the Cadillac car, built with infinite care and fitted to precision limits, deserve *effective* lubrication to preserve their smooth operating efficiency. Lubrication, to be most effective, must be done systematically at regular mileage intervals. To assist the owner in obtaining proper lubrication, a complete lubrication schedule is reproduced on page 10. This schedule, if faithfully followed, will insure correct lubrication of each moving part. As a further aid to the owner, an illustrated lubrication chart, based on the lubrication schedule, is furnished with this Manual to assist the operator in visualizing the location of the various lubricating points.

The unit of the chart as well as the schedule is 12,000 miles, which is divided into twelve 1000-mile intervals. Corresponding to these is a series of lubricating operations, grouped and numbered consecutively from 1 to 12, intended to be performed successively at each 1000 mileage interval until the 12,000 mile cycle has been completed. At 13,000 miles, the schedule begins again with Lubrication No. 1 and continues through the series of twelve operations.



Fig. 4. The lubrication notice plate can be seen by opening the left front door a few inches.

LUBRICATION SCHEDULE

CADILLAC 355-D, 370-D

DO NOT WAIT FOR SCHEDULE LUBRICATIONS BEFORE ADDING ENGINE OIL. THE OIL LEVEL SHOULD BE CHECKED EVERY 100 TO 150 MILES AND OIL ADDED IF THE INDICATOR BALL IS BELOW "FULL." THIS IS ESPECIALLY IMPORTANT ON CARS DRIVEN AT HIGH SPEEDS.

		LUBRICANT	LUBRICATION NO. AND MILEAGE AT WHICH DUE											
			1	2	3	4	5	6	7	8	9	10	11	12
			1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
LUBRICATION NOS. 1, 5, 7 AND 11	ADD LIQUID TO RADIATOR	WATER OR ANTI-FREEZE	O	O	O	O	O	O	O	O	O	O	O	O
	ADD ENGINE OIL AS NECESSARY	ENGINE OIL	O		O		O		O		O		O	
	STARTER, GENERATOR AND DISTRIBUTOR OIL CUPS	ENGINE OIL	O	O	O	O	O	O	O	O	O	O	O	O
	BRAKE AND RIDE REGULATOR PINS AND CONNECTIONS	ENGINE OIL	O	O	O	O	O	O	O	O	O	O	O	O
	ACCELERATOR ROCKER SHAFT	ENGINE OIL	O	O	O	O	O	O	O	O	O	O	O	O
	DOOR HARDWARE	LIGHT OIL	O	O	O	O	O	O	O	O	O	O	O	O
	GREASE GUN CONNECTIONS	CHASSIS LUBRICANT	O	O	O	O	O	O	O	O	O	O	O	O
	WATER PUMP	WATER PUMP LUBRICANT	O	O	O	O	O	O	O	O	O	O	O	O
	CLUTCH RELEASE FORK	WHEEL BEARING LUBRICANT	O	O	O	O	O	O	O	O	O	O	O	O
	*ADD WATER TO STORAGE BATTERY	DISTILLED WATER	O	O	O	O	O	O	O	O	O	O	O	O
	CHECK TIRE INFLATION		O	O	O	O	O	O	O	O	O	O	O	O
LUBRICATION NOS. 2, 4, 8 AND 10	DRAIN AND REPLACE ENGINE OIL	ENGINE OIL		O		O		O		O		O		O
	CLUTCH RELEASE BEARING	WHEEL BEARING LUBRICANT		O		O		O		O		O		O
LUBRICATION NOS. 3 AND 9	†TRANSMISSION—ADD LUBRICANT	TRANSMISSION LUBRICANT			O			O			O			O
	†REAR AXLE—ADD LUBRICANT	REAR AXLE LUBRICANT			O			O			O			O
	STEERING GEAR—ADD LUBRICANT	STEERING GEAR LUBRICANT			O			O			O			O
LUBRICATION NOS 6 AND 12	BRAKE ASSISTER	LIGHT MACHINE OIL						O						O
	FRONT WHEEL BEARINGS	WHEEL BEARING LUBRICANT						O						O
	UNIVERSAL JOINTS	CHASIS LUBRICANT						O						O
	SPEEDOMETER DRIVE SHAFT	CHASSIS LUBRICANT						O						O
	DRAIN OIL FILTER—V-12 ONLY							O						O
	**SHOCK ABSORBERS—ADD FLUID	SPECIAL FLUID						O						O
	**CLEAN CARBURETOR AIR CLEANER							O						O
	**FLUSH COOLING SYSTEM AND ADD INHIBITOR							O						O
	**CLEAN OIL PAN AND SCREEN						EVERY 12,000 MILES							O

*IN SUMMER INSPECT BATTERY EVERY 500 MILES OR AT LEAST EVERY 2 WEEKS.
**RECOMMENDED BUT NOT INCLUDED IN LUBRICATIONS 6 AND 12.
†CHANGE REAR AXLE AND TRANSMISSION LUBRICANT—AS REQUIRED FOR LOW TEMPERATURES IN FALL OR WINTER AND AT BEGINNING OF MILD WEATHER IN SPRING.

Fig. 5. Effective lubrication of the Cadillac car can be assured only by following this schedule exactly.

Lubrication Notice

A metal plate in the shape of the Cadillac Crest is provided to serve as a lubrication notice and record. This plate is mounted on the left front door pillar as shown in figure 4.

Authorized Cadillac-La Salle Service Stations, after performing each schedule operation, post on this plate the number of the next operation and the mileage at which it will be due. Thus, when the mileage recorded on the speedometer is the same as the mileage marked on the notice, the car may be taken to any Authorized Cadillac-La Salle Service Station, and, without further ordering other than specifying "schedule lubrication," the car will receive the exact lubrication necessary.

Although the schedule is expressed in terms of miles, the car should be lubricated approximately once each month even though the mileage indicated on the speedometer is less than 1000 since the last lubrication operation was performed. The lubrication work can be done while the car is in the service station for its regular monthly or 1000 mile inspection.

Lubricants

The selection of proper lubricants should be one of the first concerns of the owner in his attention to the lubrication of the car. The lubricants must not only be of high quality but their viscosity and other characteristics must be suited to the purpose for which they are to be used.

Cadillac engineers have worked out in detail the specifications for the lubricant required for each point to meet the particular conditions of speed, load, temperature and kind of metals in contact.

Authorized Cadillac-La Salle Service Stations are prepared to furnish lubricants under these specifications to give the best results in their respective localities. When the car is lubricated by

someone not familiar with Cadillac specifications, lubricants should be called for by the S. A. E. viscosities recommended in the following paragraphs.

Engine Oil

Engine oil recommendations are given in the chart below. It should be noted that different grades of oil are to be used for moderate driving and for prolonged high speed driving in both summer and winter.

<table>
<tr><td rowspan="2">TYPE OF SERVICE</td><td>SUMMER</td><td colspan="2">WINTER</td></tr>
<tr><td>All Temperatures Above 32°</td><td>Between 32° and 0° Fahrenheit</td><td>Between 0° and 15° Below</td></tr>
<tr><td rowspan="2">MODERATE DRIVING</td><td>S.A.E. visc. 30</td><td>20-W</td><td>10-W</td></tr>
<tr><td colspan="3">These oils are not suitable for prolonged high speed driving and if used under such conditions the oil level must be closely watched, as the rate of consumption will be higher than with heavier oils.</td></tr>
<tr><td>HIGH SPEED DRIVING</td><td colspan="3">"HEAVY DUTY" OILS
Oils having an S. A. E. viscosity of 40-50-60 will show lower oil consumption for prolonged high speed driving than the lighter oils which afford easy starting. Some of these heavy oils demonstrate greater fitness for extreme high speed, due to their meeting certain specifications as to volatility. To make certain of using an oil suitable for this service, consult your Cadillac dealer.
Heavy duty oils vary in their suitability for winter use. If a heavy duty oil with sufficiently low cold viscosity is not available and if the car is not kept in a heated garage, the lighter oils specified above for moderate driving must be used to avoid hard starting. In this case, be sure to watch the oil level closely as cautioned above.</td></tr>
</table>

Transmission Lubricant

Gear oil of S. A. E. viscosity 160 should be used in the transmission at temperatures above 20° F. For temperatures below

20° F, a light oil of S. A. E. viscosity 90 should be used or the oil used during summer weather should be thinned with kerosine.

Soap greases will not satisfactorily lubricate the transmission gears and should not be used.

Rear Axle Lubricant

Gear lubricant of S. A. E. viscosity 160 should be used in the rear axle. For extremely low temperatures, it may be necessary to change to a light lubricant of S. A. E. viscosity 90 or to thin the lubricant with kerosine.

Steering Gear Lubricant

The selection of the proper lubricant for the steering gear is of special importance, particularly to avoid hard steering in cold weather. A special steering gear lubricant suitable for extreme heat and cold is available and should be used in the steering gear the year round.

Chassis Lubricant

A good grade of chassis lubricant should be used for all chassis points indicated in the lubrication chart as requiring this type of lubricant. Ordinary cup grease is not satisfactory and if, in an emergency, it is used in place of chassis lubricant, the car should again be lubricated within 300 or 400 miles.

Clutch and Wheel Bearing Lubricant

The front wheel bearings and the clutch release bearing and release fork should be lubricated with a good grade of Clutch and Wheel Bearing Lubricant having a high melting point. Ordinary grease at these points is likely to melt and run on to the brakes or the clutch.

Water Pump Lubricant

A water-resistant calcium soap lubricant having a high melting point is recommended for use in the water pump grease cup. Only lubricants of this type should be used; other lubricants will be dissolved into the cooling system liquid. Cup greases and wheel bearing lubricants are entirely unsuited for this purpose.

Engine Lubrication

The supply of engine oil is carried in an oil pan at the bottom of the crankcase and is circulated through the engine by means of a gear pump inside of the crankcase. The oil circulated by this pump lubricates the main and connecting rod bearings, the camshaft bearings, the cylinder walls, the pistons and the piston pins, the front end chains, and the valve mechanism.

There are a few points on the engine that cannot be taken care of by the pressure system and these points should be lubricated

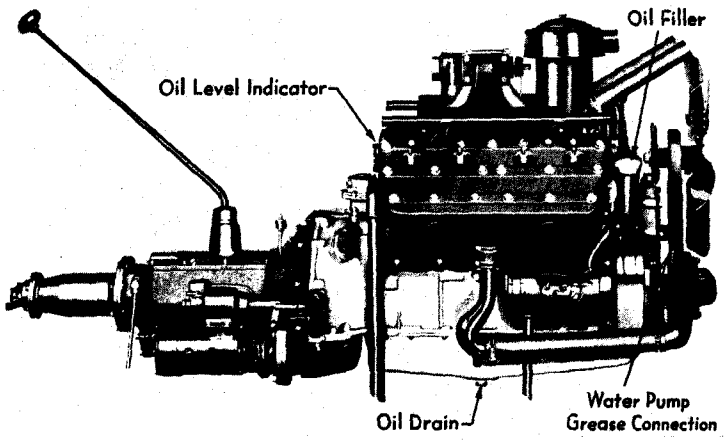

Fig. 6. The external features of the V-8 engine lubricating system.

according to the instructions given in the lubrication chart. This includes the starting motor, the generator, the distributor, and the water pump.

Oil Level

The normal capacity of the oil pan is eight quarts for the V-8 engine and nine quarts for the V-12, which fills it to the level of the screen in the pan. When the oil pan contains the correct amount the oil level indicator (see figures 6 or 7) shows "Full." The oil level should be checked every 100 to 150 miles and, whenever necessary, enough oil should be added to bring the indicator up to "Full." It should never be permitted to drop below "Fill."

Particular attention should be paid to the oil level in case of prolonged driving at high speed. At high speeds

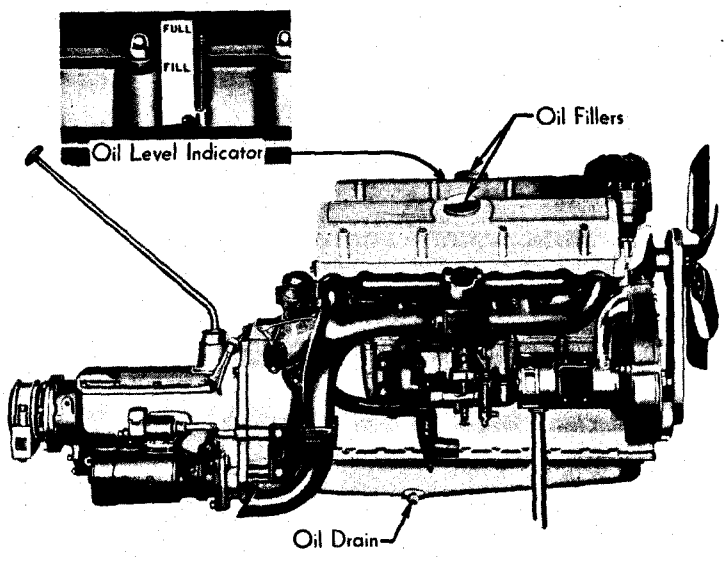

Fig. 7. The external features of the V-12 engine lubricating system.

the oil is consumed many times as rapidly as at city driving speeds and oil must be added more frequently to maintain the proper level.

Crankcase Ventilating System and Oil Screen

Cadillac engines are equipped with a crankcase ventilating system to keep the oil in the best condition possible. The ventilating system, which functions automatically, prevents dilution and contamination of the oil by removing the vapors which seep past the pistons.

A screen in the oil pan removes any solid matter from the oil. The oil pan and screen should be removed and thoroughly washed with gasoline every 12,000 miles to remove any carbon or foreign particles that may have collected. In addition, the V-12 engine is fitted with a self-cleaning oil filter which assures absolutely clean oil for the overhead valve mechanism. It requires no attention other than draining every 6000 miles, as described on page 47.

Changing Engine Oil

The useful life of the engine oil is greatly prolonged by the Cadillac crankcase ventilating system, but the oil pan should be drained and the engine oil replaced every 2000 miles. To drain the oil, simply remove the drain plug (figures 6 and 7) and allow the oil to flow into a receptacle placed under the car. The drain plug should then be reinstalled and tightened securely before pouring in fresh oil.

CHAPTER III

OPERATION

ONE of the first things the driver should do is to familiarize himself with the location and use of the instruments and controls described in this chapter.

Gasoline Gauge

The gauge marked "Gasoline" indicates the quantity of fuel in the tank at the rear of the car. This gauge operates electrically and indicates the quantity of fuel *only when the ignition is turned on.* When the tank is being filled and the driver wishes to check the amount of fuel in the tank, he should first shut off the engine to comply with filling station regulations and then switch on the ignition so that the gauge will operate.

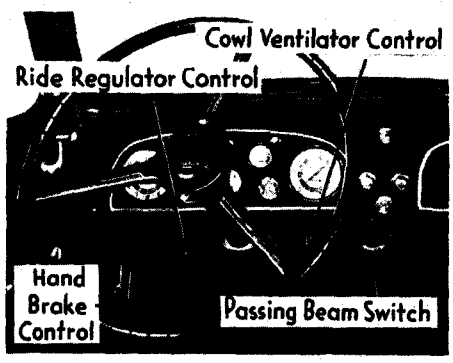

Fig. 8. General arrangement of the driving controls.

Oil Pressure Gauge

The oil pressure gauge indicates only the pressure under which the oil is being forced to the engine bearings. It *does not* indicate the *quantity* of oil in the engine. The gauge should indicate zero as long as the engine is not running, but as soon as it is started and as long as it runs, it should show pressure. If no pressure is indicated when the engine is running, the engine should be stopped at once. Serious damage may result if the engine is run for any length of time whatever with no oil pressure.

Ammeter

The gauge marked "Amperes" indicates the rate of charge or discharge of the battery It does not indicate the total output of the generator at any time nor does it indicate the current drawn by the starting motor when starting the car.

The ammeter should indicate on the charge side most of the time; otherwise more current will be drawn from the battery than is put into it and the battery will eventually become fully discharged. Normally, when no lights are in use, the ammeter

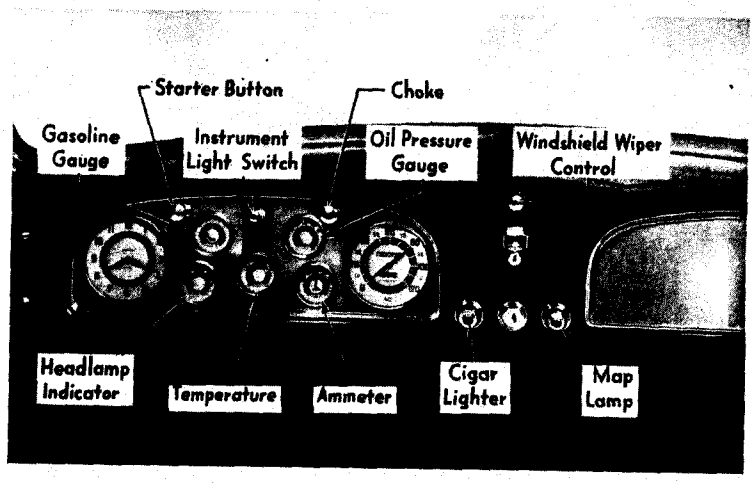

Fig. 9. Arrangement of the instrument panel.

should show "charge" as soon as the car is running ten or twelve miles an hour in high gear. If it fails to show a charge under these conditions, or if it shows a discharge when the engine is not running and no electrical equipment is in use, the cause should be investigated.

Temperature Indicator

The temperature of the cooling liquid in the radiator is indicated by the gauge marked "Temperature." For ordinary driving, after the engine has warmed up, the indicator should

stay within the "Normal" range, but under conditions of long hard driving, especially in summer weather, it may indicate "Hot." This is to be expected and will not interfere with efficient operation of the engine. If it indicates "Hot" after short runs and under average operating conditions, however, the cause should be investigated. The temperature indicator will always show a temporary rise in temperature immediately after stopping the engine. This likewise is a natural condition and is due to the residual heat in the engine.

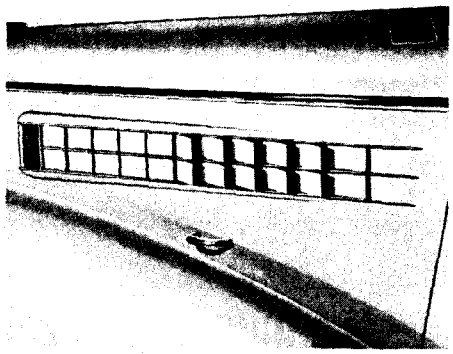

Fig. 10. The hood ports can be opened in groups of five.

The hood is fitted with hood ports which operate in tandem. Ordinarily, these ports should be opened at the beginning of warm weather in the spring and left open until the beginning of cold weather in the fall. Even in the closed position, the ports are open slightly to insure efficient engine cooling.

Throttle Control

The throttle of the carburetor (or of the two simultaneously operated carburetors on the V-12) is controlled by a hand lever and a foot pedal or accelerator. The normal position of the hand lever for driving the car is all the way up to "CLOSED." In this position the throttle of the carburetor is open just enough to permit the engine to run at idling speed after it is warm.

The hand throttle should be opened only when the engine is to be run at a speed slightly faster than idling, as when warming up the engine. For starting a cold engine, the hand throttle should always be in the fully closed position to insure the proper pro-

portion of gasoline and air getting to the cylinders. The correct throttle opening for starting under these conditions is automatically set when the choke button is operated. Opening the hand throttle increases the proportion of air rather than of gasoline and may make starting difficult rather than easy. For starting a hot engine, however, when the choke is not used, it may be advisable to open the hand throttle part way.

Carburetor Choke Control

The Cadillac carburetors are fitted with a choke control that is partly automatic and partly hand operated. The automatic control provides the correct mixture for warming up the engine, but when *starting* a cold engine, the choke button must be used. The button should be pulled out as far as is necessary to provide the proper mixture while cranking the engine, but as soon as the engine starts, the button should be pushed all the way in.

If the engine still retains heat from previous running, the choke button should not be used without first attempting to start the engine on the normal mixture. If the choke button is pulled out for starting a hot engine the mixture may be made so rich that starting will be impossible.

The choke button is not a priming device. It has no effect whatever on the fuel or the fuel mixture unless the engine is being cranked or is running under its own power. To have any effect, it must be pulled out and kept partly out during the cranking operation.

Starting the Engine

To start the engine, first make sure that the transmission is in neutral and ***the hand throttle is in the fully closed position.*** Then switch on the ignition by turning the key to the right, pull out the choke button (unless the car is warm from previous running), and press the starter button on the instrument panel.

(See Figure 11). Only a moderate pressure is required to close the electrical contact which first engages the starter gears by means of a magnetic device and then turns on the current that cranks the engine.

As soon as the engine starts, release the starter button and push the choke button all the way in. While the engine is warming up, do not open the throttle suddenly or too far, as this may result in "popping back" in the carburetor. The engine should never be raced to warm it up. Racing the engine is not only unnecessary, but ineffective.

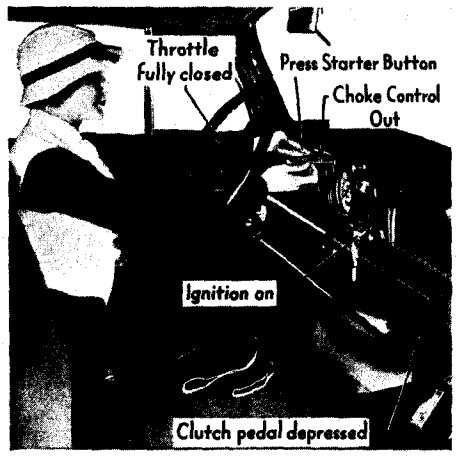

Fig. 11. The position of the hand throttle and the proper use of the choke control are of particular importance in starting the car.

Starting Hints

In cold weather, disengage the clutch to get a quicker start and to relieve the battery of the strain of turning the transmission gears.

If the engine does not start readily, release the starter button and look for the cause.

Do not run down the battery by too much use of the starting motor when the engine does not start readily. First find the cause; otherwise, the battery may be run down sufficiently to make starting impossible.

Check the contents of the gasoline tank.

See that the throttle hand lever is in the correct starting position and that the choke control has been used properly.

If the carburetor is flooded from unnecessary use of the choke control or unnecessary priming with the accelerator pedal (see

page 31), turn off the ignition, move the hand throttle to the fully open position and crank the engine with the starter for 10 to 15 seconds to get rid of the surplus gasoline. Next, return the hand throttle to the normal starting position, turn on the ignition and try again to start the engine.

Ride Regulation

The driver may control the action of the shock absorbers at any time to suit the conditions of road and speed. The control handle is located beneath the instrument panel on the left-hand side of the car next to the steering column.

The control handle has three positions, "firm," "moderate" and "free." In general, "free" is for slow speeds over city pavements, while "firm" is for fast speeds over rough roads, but the driver can best determine by trial the degree of firmness or softness best suited to his requirements under conditions of car load, speed and the road.

Headlamps

The Cadillac headlamps provide three driving beams: a low beam for city driving or driving on lighted highways, a high beam for country driving, and a beam for country passing that deflects the light largely to the right and out of the eyes of approaching drivers.

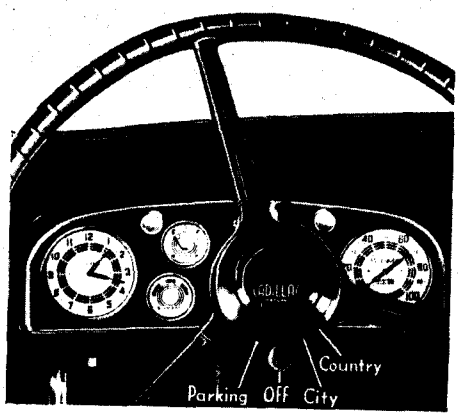

Fig. 12—The positions of the lighting switch lever are indicated here.

The beams are controlled by two switches, a lever at the steering wheel hub and a foot switch at the left of the clutch pedal. The

lever at the steering wheel has three positions beside the "off" position, namely, "parking," "city" and "country." When the lever is in the "country" position, the driving or passing beam can be selected by pressing the foot switch.

A unique feature of the Cadillac lighting system is the headlight indicator dial on the instrument panel, which indicates in illuminated letters which one of the three driving beams is in use, and assures the use of the right beam at the right time without needless switching.

The switch for the instrument panel lights is located at the top center of the panel.

Hand Brake

The hand brake control is located just beneath the left hand end of the instrument panel. In this location it is out of the way and yet easily accessible to the driver's left hand at any time. The hand control operates the rear brake shoes through a special cable connection.

Driving Hints

The driver owes it to other users of the streets and highways as well as himself to drive in such a way that the car is always under his complete control. The driving equipment on the Cadillac car—the brakes, the ride control, the lighting equipment and the synchro-mesh transmission—is designed to afford maximum safety at all times, but there are certain conditions requiring special care to make its use fully effective.

Speed

The Cadillac can be driven at speeds faster than the driver will ever require. The car operates so smoothly that the driver sometimes fails to appreciate the speed at which he is driving. He must, therefore, use judgment in driving to keep the car always

in control. Blind curves, hills, rough roads, side roads and winding roads require a slower speed than smooth concrete straightaways where the driver may see clearly for considerable distance ahead. Where the vision ahead is limited, speed should be kept low enough so that the car can be stopped within a safe distance for any emergency.

Gravel Roads

Adjust the ride regulator control to whatever degree of firmness required to prevent excessive bouncing and side sway. Do not swerve quickly or hold to the outside edge of the road on a curve.

Hills

When approaching the top of a hill, be prepared for any cars coming up the other side.

The transmission should never be shifted to neutral for coasting downhill. If it is desired to coast, keep the transmission in gear and simply disengage the clutch. If the speed of the car becomes excessive while coasting down hill, engage the clutch gradually and use the engine to assist the brakes. It must be remembered that the brakes are subjected to much more severe use on grades, where they must absorb the force of gravity as well as the momentum of the car.

Ordinarily, the resistance offered by the engine with the transmission in high gear, supplemented by moderate use of the brakes, is sufficient to control the speed of the car. If excessive use of the brakes is still required, however, the transmission should be shifted to intermediate.

Slippery Roads

When stopping on slippery pavements, keep the car in gear and the clutch engaged until the car is nearly stopped. Apply the brakes gently. This will minimize the possibility of skidding. Do not attempt sudden stops.

Carbon Monoxide

Always open the doors of the garage before starting the car.

Carbon monoxide, a deadly poison gas, is present in the exhaust of all internal combustion engines and for safety, this gas must be allowed to escape outside the garage. Under normal starting and warming up of the engine in a two car garage enough gas will accumulate in three or four minutes to overcome any occupants. When the choke is used excessively, such as for cold weather starting, the accumulation is more rapid.

Carbon monoxide is colorless, tasteless and almost odorless. It gives no warning.

Open the garage doors before starting the engine.

CHAPTER IV

COLD WEATHER OPERATION

SATISFACTORY operation of the car in freezing temperatures depends upon having the car prepared for cold weather and in giving it the special attentions which are required under such conditions. All the information relating to the care and operation of the car during cold weather has been grouped in this chapter to assist the operator in maintaining the fine performance of the car throughout the winter as well as the summer. This chapter should be reviewed just before the beginning of the winter season so that full benefit may be had of all the suggestions it contains.

Preparing for Cold Weather

Anti-Freezing Solutions

In selecting anti-freezing solutions for winter operation the local conditions and the type of service must be considered. The following information is given to enable the individual owner to more intelligently select the anti-freezing solution best suited to meet his own conditions.

The available commercial materials for preparing anti-freezing solutions for automobile radiators are denatured alcohol, methanol (synthetic wood alcohol), distilled glycerine, and ethylene glycol.

Alcohol and Methanol

Denatured alcohol and methanol solutions have been the most generally used anti-freezing solutions. Denatured alcohol and methanol are widely distributed, afford protection against freezing, and are not injurious to the materials used in the cooling system.

There are two principal objections to denatured alcohol and methanol. These materials are lost by evaporation, especially on heavy runs, and unless the solution in the radiator is tested periodically and sufficient anti-freeze added to replace the loss by evaporation, the engine or radiator, or both, are likely to be damaged by freezing. The car finish is damaged by contact with denatured alcohol or methanol solutions or vapors, and any material accidentally spilled on the finish should be flushed off immediately with a large quantity of water.

Methanol for anti-freeze purposes is sold in the United States in the correct concentration to give the same protection against freezing as denatured alcohol. The table below may be used for both denatured alcohol and methanol.

Lowest Temperature Expected	Per cent by Volume	Specific Gravity (at 60° F.)	
		Denatured Alcohol	Methanol
10 F.	30	.9668	.972
0 F.	38	.9567	.964
—10 F.	45	.9475	.957
—20 F.	51	.9350	.950
—30 F.	57	.9260	.944

Important: The special inhibitor used in the cooling system (see page 44) affects the hydrometer readings of the solution and allowances must be made for the difference. With the inhibitor in the cooling system, the actual freezing temperature of an alcohol or methanol solution is five degrees higher than indicated by the hydrometer. In other words, if the hydrometer reading indicates protection down to zero, the actual protection would be only down to five degrees above zero and similarly throughout the scale.

Glycerine and Ethylene Glycol

Distilled glycerine and ethylene glycol solutions are, in first cost, more expensive than alcohol but, as they are not lost by evaporation, only water need be added to replace evaporation

losses. Any solution lost mechanically, however, either by leakage or foaming, must be replaced by additional new anti-freezing solution. These solutions, under ordinary conditions, are not harmful to the car finish.

The principal objections to glycerine and ethylene glycol are the tendency of these solutions to loosen rust and scale, which form in the water passages of the cylinder blocks and heads, and the difficulty of securing and maintaining tight, leakproof connections. It is absolutely necessary that the entire cooling system be thoroughly cleaned and flushed before glycerine or ethylene glycol is used.

It is also necessary to tighten or replace the cylinder head gaskets, hose connections and pump packing. The cylinder head gaskets must be kept tight to prevent the solution from leaking into the crankcase where it might cause gumming and sticking of the moving parts. The pump packing must be kept tight to prevent air from being drawn into the cooling system, in order to avoid foaming and other difficulties which may result when air is present.

Ethylene glycol (Prestone), sold in the United States for anti-freezing purposes, and radiator glycerine, produced under the formula approved by the Glycerine Producers' Association, are chemically treated to overcome the difficulties mentioned in the above paragraph, and, under normal operating conditions, with tight hose connections and cylinder head gaskets, should be satisfactory for use in the cooling system.

Glycerine and ethylene glycol should be used in accordance with the instructions and in the proportions recommended by the anti-freeze manufacturer. These solutions generally contain inhibitors acting in the same manner as the special inhibitor used in Cadillac cars, and when these solutions are used, the proportion of the inhibitor should not be increased by the use of the special inhibitor in the cooling system. Too large a percentage of the inhibitor will increase rather than retard foaming and result in more rapid formation of rust and scale as well as the loss of the anti-freeze solution by spillage.

Use of Hydrometer

In using a hydrometer to determine the temperature at which a solution will freeze, the test must be made at the temperature at which the hydrometer is calibrated. If the solution is warmer or colder, it must be brought to this temperature or large errors may result. In some cases these errors may be as large as 30 degrees Fahrenheit. Freezing point hydrometers are not interchangeable. A different float is required for denatured alcohol, methanol, glycerine and ethylene glycol.

Salt solutions, such as calcium chloride, magnesium chloride or sodium silicate, kerosine, honey, glucose and sugar solutions are not satisfactory for use in automobile radiators.

Winter Lubrication

Lubrication of the car requires special attention in winter, not only to insure proper protection for the moving parts, but to secure the same ease of operation in starting, steering and shifting gears as during warm weather.

The chart of engine oil recommendations on page 12 gives the proper grade of engine oil to be used for cold weather driving. It will be noticed that lighter oils can be used during cold weather providing the car is not driven at high speeds. "Heavy duty" oils, however, must be used for prolonged high speed driving in winter as well as summer to prevent excessive oil consumption.

The lubricant in the transmission and rear axle should be thinned or replaced with a lubricant of suitable cold viscosity as soon as the gears are hard to shift.

Lubricants approved for use in the steering gear have a low viscosity and a temperature range that permits efficient steering gear action in either hot or cold weather. If Cadillac-approved lubricants are used, therefore, seasonal changes of lubricant will be unnecessary.

Storage Battery

The electrical system of a car has much more to do in winter. The stiffness of the lubricant makes the engine harder to crank in

cold weather and it generally is cranked longer before it starts. The lights are also used to a much greater extent than during the long days of summer. All this means that the battery must be ready for increased demands.

It is a good plan in preparing for the winter season, therefore, to see that the battery is fully charged and that the battery connections are clean and tight. At the same time, the spark plugs, the contact points and the ignition timing should be checked to assure easy starting and smooth performance.

Gasoline System

A small amount of water in the gasoline system during warm weather has little or no effect on the running of the engine. In freezing weather, however, even a small amount of water may freeze and stop the entire flow of fuel to the carburetors. It is important, therefore, to clean the filter and the strainers in the gasoline system before the start of cold weather. (See page 45.) It is also advisable to check the adjustment of the carburetors and the operation of the choke control.

Starting the Engine

The regular starting procedure, as outlined on page 20, should be followed in cold weather but with special emphasis upon the following points:

Clutch Pedal

The clutch pedal should always be disengaged while cranking the engine in winter weather in order to relieve the strain on the battery. With the clutch disengaged, the starter is not called upon to turn the transmission gears which are immersed in lubricant. At ordinary temperatures the resistance created by the gears turning in the lubricant is negligible, but in cold weather, when the lubricant is stiffened considerably, the strain is sufficient to retard the cranking speed and increase the demand on the battery.

Throttle Hand Lever

The correct position of the throttle hand lever for starting in cold weather is the same as for starting a cold engine under other conditions, namely, *in the fully closed position*. It may be necessary, however, as soon as the engine starts, to open the hand throttle slightly in order to permit the engine to idle without stalling until it becomes warm. Never attempt to start a cold engine with the throttle partly open, as this will increase the proportion of air and result in a lean mixture that is difficult to ignite.

Choke Button

Gasoline does not vaporize as readily in cold weather as in warm weather, and in order to supply the cylinders with a gaseous mixture rich enough to be ignited, the proportion of liquid gasoline to air must be increased. This is accomplished by greater use of the choke.

In cold weather, the choke button should be pulled out all the way and held out until the engine starts. Although the button should ordinarily be pushed all the way in as soon as the engine starts, it may be advisable to warm up the engine with the choke button about one quarter out during severe weather. The button should be kept in this position for not more than one or two minutes at the most. Do not start the car until the engine is warm enough to run smoothly without the hand choke.

Priming the Carburetors

In extremely cold weather the carburetors may be primed by quickly depressing and releasing the accelerator pedal a few times. This procedure forces a larger quantity of gasoline into the mixing chambers and provides a richer mixture. The carburetors should never be primed in warm weather or in cold weather when the engine is warm. Excessive priming at any time is likely to make starting difficult rather than easy.

Use of Starter

If the engine does not start readily, release the starter button and look for the cause (see page 21). Avoid particularly continuous cranking for a period of over half a minute. Intermittent cranking for about 8 or 10 seconds imposes far less strain on the battery and is fully as effective for starting.

Use of Accelerator

In cold weather, after the engine is started and before it has run long enough to become warm, the engine cannot deliver its normal power and should not be called on to do so. In accelerating the engine to start the car and in accelerating the car after the transmission is in gear, the throttle should not be opened too suddenly or too far. This merely invites "popping back" in the carburetor and an increase in the amount of excess unvaporized gasoline in the combustion chamber. Unvaporized gasoline in the cylinders washes the oil off of the pistons and cylinder walls, leaving the surface unprotected and open to scoring.

CHAPTER V

EQUIPMENT

THE equipment provided on the Cadillac car is designed for the comfort, convenience and protection of the occupants. The driver, therefore, should acquaint himself with the operation of the equipment described in this chapter so that he may derive full benefit from its use as occasion demands.

Locks and Keys

The locks on the car are for protection against theft, and full use should be made of this protection whenever the car is to be left unattended for any length of time whatever.

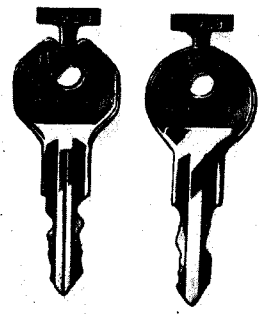

Fig. 13—The key numbers appear on metal tabs, which should be detached as soon as the car is received.

Two sets of two keys each, which may be distinguished by the shapes of their handles, are provided with the car. Two different keys are provided so that the owner may leave the car temporarily in the hands of another operator without foregoing the protection of the various compartments.

The handle of one key is hexagonal in shape while the other is rounded. The hexagonal shaped key operates the ignition switch, the right front door and the spare wheel carrier. The key with the rounded handle operates the instrument panel package compartment lock, the rear deck lock, the trunk lock on town sedans

and 5-passenger coupes, and the rear door lock on town cars and imperial sedans.

To prevent unauthorized persons from securing keys, the key numbers do not appear either on the keys or on the face of the locks. At the time a new car is delivered, small metal tabs with the key numbers on them are fastened to the keys. As soon as the keys are received, these metal tabs should be removed and either saved or a record made of the key numbers so that in the event both keys are lost, a duplicate key may be easily obtained from a Cadillac distributor or dealer.

Ignition Switch Lock

The ignition switch lock is located in the central part of the instrument panel. This switch makes or breaks the circuit at the ignition coils by means of connections carried through an armored cable. The ignition is switched off when the key is in the vertical position. To turn the ignition on, turn the key about one quarter turn to the right. The key can be removed only when the switch is in the "off" position. *Be sure to remove the key before leaving the car.*

Door Locks

All doors of the car can be locked from the inside merely by pushing up the small button just below the door moulding. These buttons snap to the unlocked position when the doors are closed, *unless* the door handle is being held all the way down while the door is being closed. Whenever the doors are locked from the outside in this fashion, however, be careful not to lock the keys inside the car. The right front door can be locked or unlocked from the outside with the hexagonal handled keys.

Radio

The installation of the Cadillac motor car radio has been anticipated in the design of the Cadillac car. A radio aerial has been built into the car, space has been provided under the cowl for

the set and the speaker, and the instrument panel has been so arranged as to make the radio controls an integral part of the design.

Package Compartment

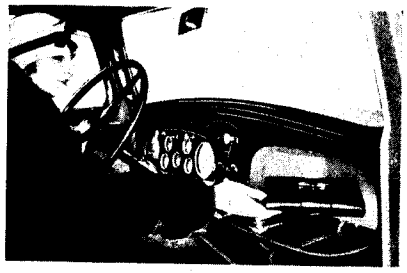

Fig. 14. The compartment on the right-hand side of instrument panel may be used for carrying small articles.

A compartment is provided at the right hand side of the instrument panel for the convenience of the driver in carrying small articles where they will be readily accessible. Maps, gloves, small packages and other articles can be carried there within easy reach The Operator's Manual should be carried in this compartment to be available for handy reference. The door of the compartment swings down to a horizontal position for convenience in resting maps or making notes.

Interior Lights and Switches

A map lamp which may be turned on by pulling it straight out is located so that it may be used to illuminate the driving compartment for reading maps or making notes when driving at night. This lamp is located in the central part of the instrument panel. It may be turned around in its socket to-

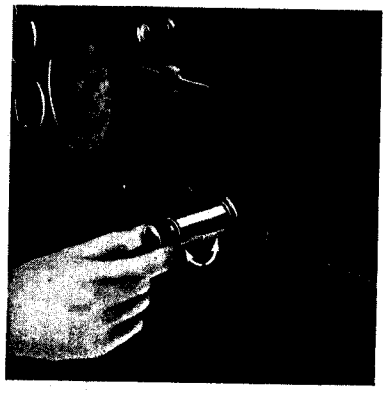

Fig. 15. The map lamp may be turned to either side.

ward either side to throw the light in any direction desired.

Dome lights on sedans and town cars and quarter lights on coupes turn on automatically when the doors are opened. When the doors are closed the lights are turned off, but they may also be turned on and off when the doors are closed by a switch located on the right-hand door pillar. Quarter lights on cars having dome lights do not operate with the doors but can be controlled by a switch on the left hand rear door pillar.

Phaeton and All Weather Phaeton cars have a tonneau light operated by the door and by a switch integral with the lamp.

A chart of bulbs for replacement on all of these lights will be found on page 50, Chapter VI.

No-Draft Ventilation

Cadillac closed cars are provided with the "No-Draft" system of ventilation which makes it possible for any occupant, while the car is moving, to control the circulation of air in the area of the car in which he is seated without noticeably affecting any other area. This is accomplished by means of the laterally operated ventilators in the front compartment windows and in the rear-quarter windows in the rear compartment.



Fig. 16. The front ventilators are operated by the smaller of the two cranks.

The No-Draft ventilators are operated by a small crank just

below and toward the front of the windows as shown in the illustration. The ventilator may be turned in or out to obtain the desired circulation by turning this handle. In order to make sure the car is safe against intrusion when the car is to be locked, the ventilators should be tightly closed.

The front compartment is provided with a screened cowl ventilator in addition to the No-Draft system. This ventilator is controlled by the knob at the right-hand side of the steering column and may be opened for increased air circulation in the front compartment as desired.

Windshield Cleaner

The windshield cleaner consists of two wiper blades operated simultaneously by suction from a vacuum pump on the engine. On some models the wiper motors are above the windshield and the control button is located in the center of the windshield header board. On other models the inverted type wipers are used, and on these the control button is located in the center of the instrument panel.

Sun Visor

Sun visors are provided to protect the occupants of the driving compartment from the glare of the sun at either the front or the sides. The visors are mounted with a swivel in the corner so that they can be swung either above the

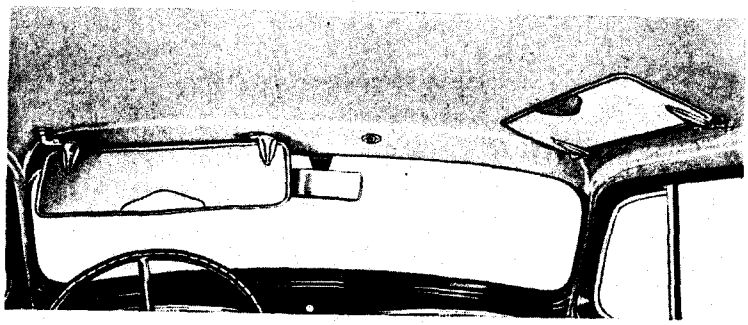

Fig. 17. The sun visors can be clasped in place either at the front or at the side.

windshield or the front window. When not in use, the visors fold up to the car roof.

Cigar Lighter

Cordless lighters are provided on the instrument panel and in the smoking sets of the various body styles. These lighters have a green translucent button through which the glow of the heating element may be seen when the lighter is ready for use. To use a lighter, press it all the way into its socket and hold it there until the glow of the heating element is seen; then lift it out.

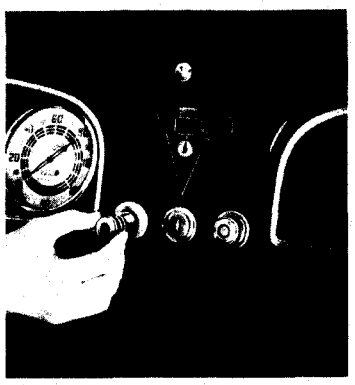

Fig. 18. To operate the cigar lighter press it in its socket, hold until the glow is seen; then remove it.

Adjustable Seat

The driver's seat on closed cars may be adjusted to suit individual requirements and provide the most comfortable driving position. The adjustment can be made by raising the control handle at the left side of the seat base and rolling the seat either forward or backward to the desired location.

Tools

The compartment for the tools is located in the special spare tire compartment in the rear on those cars having this special compartment. On other cars, the tool compartment is located under the front seat.

It is important that the tools be placed in the compartment under the seat in such a way that they do not interfere with the proper placing of the seat cushion or with the seat adjusting mechanism. The jack should be placed under the driver's seat with the base toward the rear.

Tool equipment provided with the car is as follows:

Hammer	Jack Handle
Large Screw Driver	Jack
Small Screw Driver	Wheel Mounting Wrench
Pliers	Tool Bag
Spark Plug Wrench	Operator's Manual
Crescent Adjustable Wrench	

Tires

The front and rear tires should be inflated to a pressure of 35 lbs. The tires should be checked at least weekly and brought up to the recommended pressure if necessary. The pressure should never be permitted to drop more than three or four pounds. If this is done, tire wear will be kept at a minimum.

Use of Jack

To facilitate raising the car when a tire is flat, special pads are fitted to the chassis in accessible positions near the front and rear wheels, and the jack ***must*** be placed under these pads or removal of wheels will be exceedingly difficult. The locations of these pads are shown in Fig. 19.

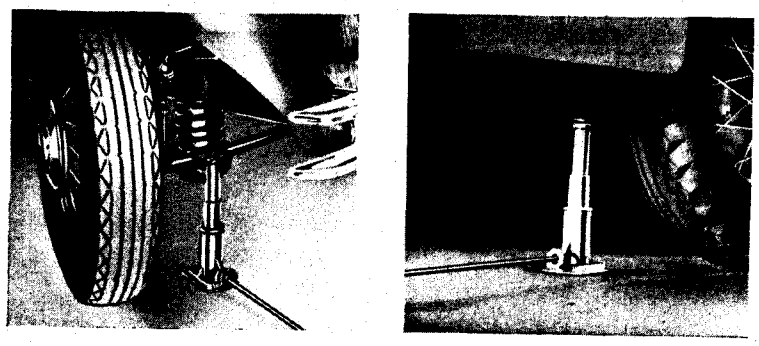

Fig. 19. The jack must be placed under the pad shown at the left when a front wheel must be raised and under the pad shown at the right when a rear wheel must be raised.

Spare Wheel Carrier

Three types of spare wheel carriers are used on the various model Cadillac cars; an external rear carrier of conventional type, a rear carrier in a special enclosed compartment, and fenderwell carriers.

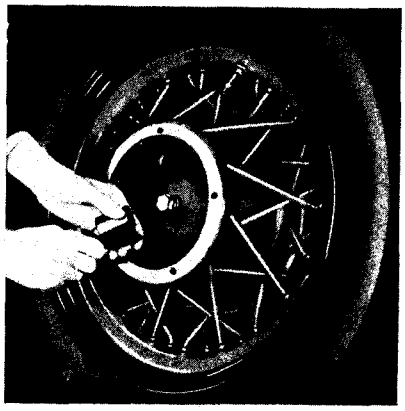

Fig. 20. The bolt head and wheel clamp are accessible after the lock has been removed.

To remove a spare wheel from an external rear carrier or a fenderwell, snap the hub cap off, then unlock and remove the lock from the bolt head, after which the bolt and clamp can be removed and the wheel taken off the carrier or out of the fenderwell.

To reinstall a spare wheel, set it firmly against the wheel support and install the clamp and bolt, tightening the bolt securely. Then install the lock over the bolt head, making sure that the lock plunger enters the groove, and snap the hub cap in place.

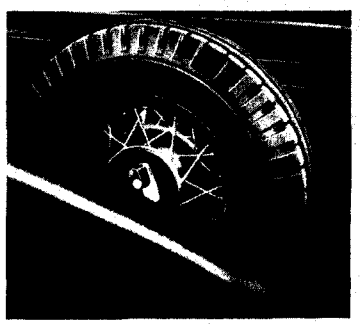

Fig. 21. The spare wheel can be lifted out of the fenderwell after removing the lock, the bolt and the clamp.

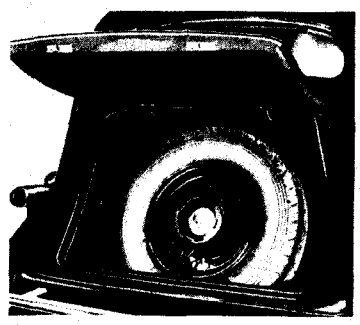

Fig. 22. The spare wheel in the compartment is clamped to the support with the same type of bolt and clamp.

The rear carrier in the compartment is operated in the same manner as the external rear carrier except that a hub cap and lock are not used, as the entire compartment can be locked. Always keep this compartment locked, as it contains the total equipment as well as the spare wheel.

Changing Wheels

If a fully inflated spare tire is always carried, it is only necessary, in case of tire trouble, to remove the wheel with the flat tire and install the spare wheel in its place. Illustrated directions for performing this work are given below.

Fig. 23a. Set the hand brake lever to prevent the car from rolling. Put the jack under the jack pad and jack up the car until an inflated tire would be about 2 inches above the road. Remove the hub cap by snapping it off. Loosen the nuts around the wheel hub by turning them in a counter clockwise direction with the wrench. Remove the nuts and lift the wheel off of the hub. Then swing the front end of the wheel inward and the wheel can be rolled back and out from under the fender.

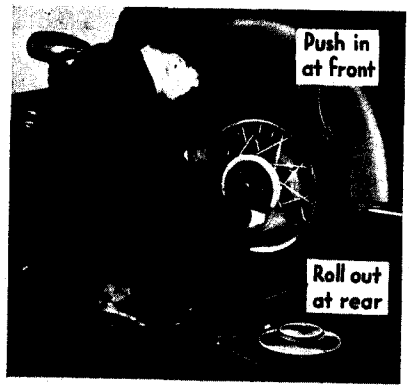

Fig. 23b. To remount the wheel, roll it in under the fender in the reverse of the manner of rolling it out, set it up on the hub and start the nuts by hand; then tighten the nuts with the wrench, but not in rotation. After tightening one nut, tighten the nut directly opposite until all have been securely drawn up.

In drawing up the nuts to the last turn, a slight alternate increase and decrease in resistance may be noticed which simply indicates that the locking feature is taking effect. After all the nuts have been tightened, they should again be tried to make sure that none has been resting on a high point without being sufficiently tight.

Install the hub cap, using the hub cap wrench, and lower the jack.



CHAPTER VI

GENERAL CARE

No attempt has been made to include in this manual directions for making adjustments and repairs to the car. Most Cadillac owners prefer to depend on authorized Cadillac-La Salle service stations for such work as these stations can invariably perform the work more conveniently and economically.

Every owner should, however, know how to perform the few simple operations of general care described in this chapter. These operations are not difficult enough to necessitate a visit to the service station, although this work also can be done in the service station if desired.

Storage Battery

The Delco Storage battery is carried under the front seat on some models and on the others in a compartment beneath the right front fender. In this latter location, the battery is accessible after lifting the right side of the hood.

The battery is filled with an acid solution from which the water slowly evaporates and fresh distilled water must be added to each of the three cells at regular intervals to bring the level up to the bottom of the filling tubes. Distilled water should be added at least every 1000 miles and, in warm weather, every 500 miles or at least every two weeks. Hydrant water or water that has been in contact with metallic surfaces is not satisfactory.

After adding water to the storage battery in freezing weather, the car should immediately be run far enough to thoroughly mix the water with the acid solution. If the car is parked immediately after water is added, the water is likely to stay on top of the acid

solution and may freeze, thus causing extensive damage to the battery.

No attempt should be made to add acid or any so-called "rejuvenator solution" to the battery. Adding anything other than distilled water will materially shorten the life of the battery.

The specific gravity of the acid solution changes as the battery is charged and discharged. The state of charge of the battery can thus be determined by measuring the specific gravity of the solution with a hydrometer. As the battery is charged, the specific gravity of the solution increases, reaching 1.270 to 1.285 when the battery is fully charged. A fully discharged battery has a specific gravity of 1.150 to 1.165.

An accurate test cannot be made immediately after adding distilled water. The hydrometer reading should be taken before water is added, or, if the solution is so low that it cannot be reached, distilled water should be added to bring the solution up to the proper level and the car run for several hours until the solution is properly mixed before the test is made.

Spark Plugs

The spark plugs provide the spark which ignites the gasoline mixture in the cylinders, and smooth and economical engine performance depend largely upon their efficiency. The accumulation of carbon and improper gap setting are generally the cause of inefficient spark plug operation. Their efficiency can be increased in such cases by cleaning out the carbon and by resetting the gap. Authorized Service Stations have equipment that will clean spark plugs quickly, thoroughly, and inexpensively.

Whenever spark plugs are reinstalled in the engine, the firing points should be tested to make sure they are properly spaced. The gap should be .025 to .028 inches, measured with a feeler gauge. All adjustments of the gap should be made by moving the side wire only.

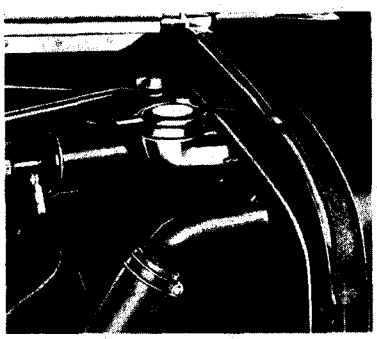

Fig. 24. The radiator filler cap is on the right hand side of the car under the hood.

Cooling System

The radiator filler cap is located on the right hand side of the engine under the hood. When the car is delivered to the owner, the cooling system contains, in addition to the water and whatever anti-freeze is used, a small amount of a special inhibitor which gives the cooling liquid a milky appearance. This inhibitor has particular advantages in reducing foaming and retarding the formation of rust and scale, thus helping to keep the cooling system clean so that it will better perform its cooling action. It is not necessary to add the inhibitor each time water or anti-freeze is added. Whenever the cooling system is drained and refilled, however, it is recommended that ⅓ of a pint (about 6 ounces) of a suitable inhibitor be added. Consult your distributor or dealer concerning the proper inhibitor to use.

In freezing weather a suitable anti-freeze solution, such as those described on page 26, should be used. The inhibitor, although it has no anti-freezing qualities in itself, will blend satisfactorily with any approved anti-freeze but should not be used with any solution already containing a similar inhibitor (see page 27). Allowances must, of course, be made when testing the cooling solution for the effect the inhibitor has on its specific gravity.

Before the start of cold weather, the cooling system should be cleaned and thoroughly inspected to make sure all connections are tight. If the inhibitor is used, this cleaning will suffice for the entire year; otherwise it is advisable to clean it thoroughly every 6000 miles, using the reverse flow method

which is standard at all Authorized Cadillac-La Salle Service Stations.

If this is not possible, a satisfactory cleaning, although not as effective as the reverse flow-method, may be obtained by using the following procedure:

Run the engine until the opening of the radiator shutters indicates that the engine is warm; then stop the engine and open the drain valve on the right-hand side of the engine as shown in figure 25. After the liquid has drained off, refill the cooling system with warm water, run the engine for a few moments, and drain the system. Repeat this operation until the water is clean when it is drained.

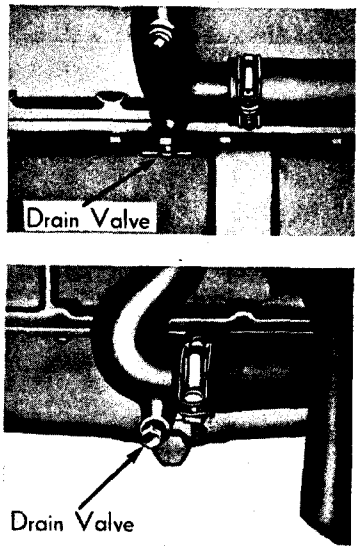

Fig. 25. The cooling system may be drained by opening the one valve. The V-12 is shown above, the V-8 below.

In cases where the accumulation of rust and scale is so great that this method does not clean the system sufficiently, the flushing operation should again be repeated after one or two handfuls of sal soda have been added. Care must be taken, of course, that the cooling system is thoroughly flushed after this operation to clean out all traces of the sal soda, and that none of the solution is allowed to reach the car finish.

Gasoline System

A gasoline filter is provided at the bottom of the fuel pump on the front left-hand side of the engine. Any accumulation of

water or sediment should be cleaned out when it can be seen in the glass bowl.

The bowl may be removed by unscrewing the thumb nut on the underside of the bowl and swinging the yoke to one side. The screen strainer at the top of the bowl usually comes off with the bowl but if it does not, it may be removed by pulling it straight down.

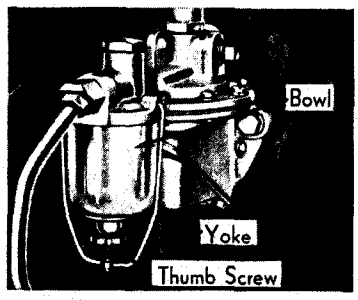

Fig. 26. The gasoline filter should be removed and cleaned whenever water or sediment appears in the bowl.

Any dirt on the strainer should be washed off with gasoline and the bowl should be wiped clean. The bowl should then be reinstalled with the screen on top. Make sure the bowl seats properly against the cork gasket at the top of the filter, swing the yoke into place and tighten the thumb nut

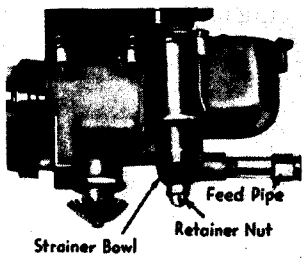

Fig. 27. The strainer in the carburetor may be removed with the bowl by disconnecting the feed pipe and removing the retaining nut.

The strainer on the carburetor where the gasoline enters should also be cleaned periodically. It may be removed by disconnecting the feed pipe and unscrewing the nut at the bottom of the bowl as shown in figure 27. Both the strainer and the sediment chamber should be cleaned in the same manner as the gasoline filter.

Carburetor Air Cleaner

The carburetor intake silencers serve also as air cleaners. The cleaners are designed to catch any dust or lint in the air before it is drawn into the carburetors. They are automatic in operation and require no attention other than periodic cleaning.

The mileage at which the air cleaners requires attention depends entirely upon the conditions under which the car is operated. For normal driving in cities and on hard surfaced roads, cleaning once every 6000 miles is sufficient. Under extreme conditions,

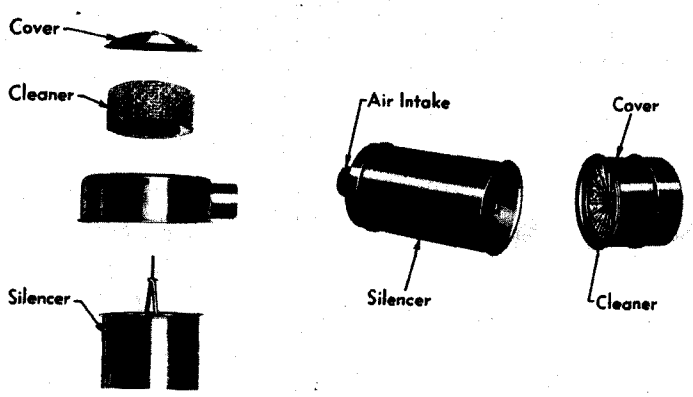

Fig. 28. The air cleaner should be disassembled from the silencer and cleaned at regular intervals. The V-8 cleaner is shown at the left, the V-12 at the right.

however, such as continuous driving on dusty roads or in localities where there is considerable dust in the air, cleaning may be required as frequently as every 2000 miles.

The air cleaners may be lifted out, as shown in figure 28, after the air intake pipes have been disconnected and the covers of the silencers removed. The cover of each silencer is held by a screw in the center of the silencer. After the air cleaner has been removed it should be thoroughly washed in gasoline, permitted to drain and then dipped in fresh engine oil. *Do not wash the cover.*

Oil Filter (V-12 Only)

The oil filter used on the V-12 engine, located at the rear of the engine on the right-hand side, is of the self-cleaning disc type. The engine oil, on the way to the valve mechanism, passes through this filter, depositing any impurities and foreign particles in the receptacle. A connection to the front brake cable automatically

rotates the discs slightly every time the brake pedal is depressed. The filter should be drained every 6000 miles to prevent the accumulation of foreign matter from clogging the discs and allowing the unfiltered oil to reach the working parts of the engine.

Brakes

The importance of the proper operation of the brake system as an essential measure of safety is so great that all service on it should be performed at a service station where proper adjustments and tests can be made with the greatest accuracy. Adjustment should never be neglected so long that the pedal reaches the floor board before the brakes take effect. In case of emergency, however, should this occur, the following temporary adjustment can be made by the driver.

Turn the adjusting nut on the cam lever, shown in figure 29, of each of the four brakes one half a turn in a clock-wise direction. These adjusting nuts lock each sixth of a turn to hold the adjustment.

A permanent adjustment should be made as soon as a service station can be reached.

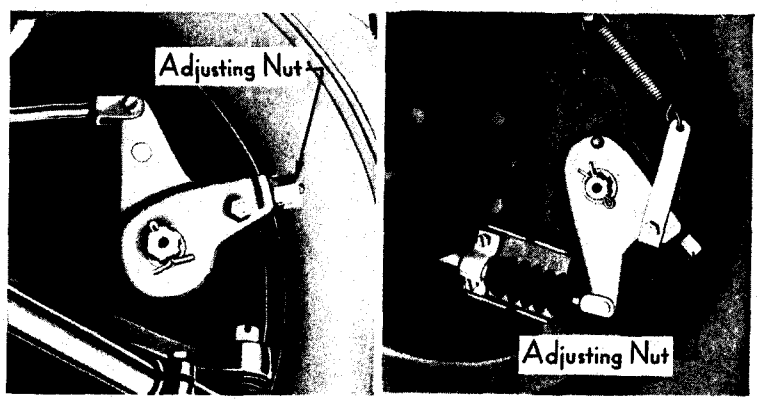

Fig. 29. A temporary brake adjustment can be secured by turning the adjusting nut on each brake one-half a turn clockwise.

Tires

The most important factor in the life of a tire is its inflation pressure. Each tire should be tested at least once a week and the pressure should be kept at 35 pounds front and rear.

With the inflation pressure properly maintained injuries to the tire structure will be kept at a minimum. Severe cuts, however, caused by sharp obstructions in the street or on the road, will invariably appear. If these cuts are neglected, the action of the weather and grit and gravel will in time weaken the tire around those points. If the cuts are sealed immediately by a good vulcanizer, however, these points will be protected and the life of the tire will be lengthened.

Tire Balancing Marks

The tires used on the Cadillac are balanced to offset the weight of the valve stem and if a tire is removed it must be reinstalled in its original position with respect to the rim, otherwise the tire and wheel will be unbalanced.

A small red or black dot branded in the side wall of the tire indicates the point of balance. This mark must always be kept in line with the valve stem.

Lamp Bulbs

In replacing lamp bulbs in any of the lights on the car, the same candle power bulb should be used for replacement as was originally installed. This is particularly important in the case of the headlamps, in which a special 2 filament pre-focused bulb with a flanged base is used. It is a good plan to carry a spare set of these lamp bulbs at all times in the car.

The bulb in the map lamp may be replaced after unscrewing the knob at the end of the shield.

The lamp bulbs used in the car are as follows:

Location	Voltage	Candle Power	Mazda No.
Headlamps	6-8	32-32	2330-L
Rear Lamp (signal position)	6-8	15	87
Rear Lamps (parking. driving)	6-8		
Instrument Lamp	6-8	3	63
Map Lamp	6-8		
Parking Lamps	6-8		
Dome Lamp	6-8		
Quarter Lamps	6-8	6	81
Deck Compartment Lamps	6-8		
Tonneau Lamp	6-8		

Care of Headlamps

The headlamps require periodic cleaning and occasional re-adjustment. To clean the headlamps, remove both headlamp doors. Clean the lenses with alcohol inside and outside. Carefully wipe all dust from the reflectors and, if necessary, polish them with a soft rag dipped in a mixture of lamp black and alcohol. In polishing reflectors, always rub from the center straight out to the rim; *never* rub in circles.

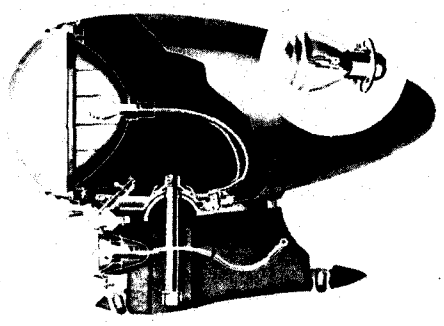

Fig. 30. Sectional view of headlamp, showing adjusting screw for aiming beams. Insert shows special pre-focused bulb.

Inspect the gaskets and replace them if they are damaged or do not register properly. Replace any bulbs that are burnt out or that show signs of blackening. Try the lighting switches in all positions to see that all bulbs burn properly.

The headlamps are designed for prefocused bulbs, so no focusing adjustment can be made in the lamps. On this account, *only prefocused bulbs can be used in these lamps*, and no other bulbs will be satisfactory. Because of this design, aiming is the only adjustment required by the headlamps.

Set-Up for Aiming Lamps

Place the car on a level surface with the headlamps aimed toward and 25 feet from a garage door or other reasonably light colored vertical surface. Draw a horizontal line on this surface at the level of the headlamp centers. If your state requires a loading allowance, draw this horizontal line the required distance below the level of the lamp centers. Sight through the center of the rear window over the radiator cap to determine the center point of the horizontal line and draw vertical lines through points at the right and left of this center point directly ahead of the center of each headlamp.

Aiming the Headlamps

The lighting switches should be turned to the "Driving" position, which means that the lower filaments will be lighted in both lamps. The headlamp doors must be removed and one of the headlamps covered. The beam from the uncovered lamp should then be centered sideways on the vertical line directly

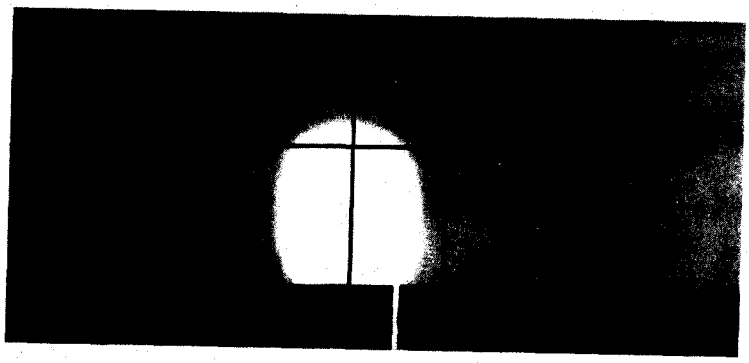

Fig. 31. Correctly aimed upper beam of left headlamp without lens.

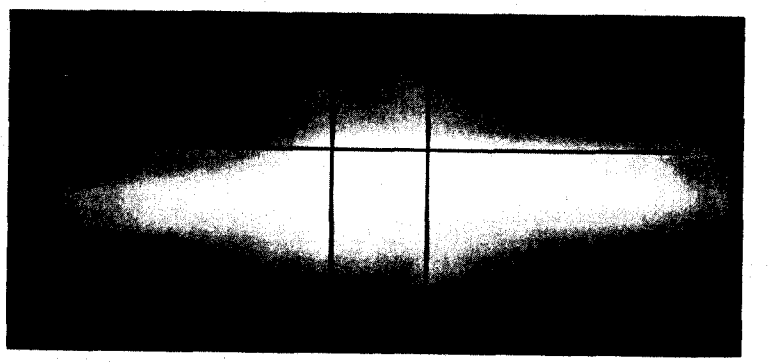

Fig. 32. Correctly aimed upper beam of left headlamp with lens.

ahead of it and the top of the beam should be just at the horizontal line, as shown in Fig. 31 for the left headlamp.

The beam is aimed up or down by means of the adjusting screw at the bottom of the lamp, as shown in Fig. 30. The beam will very seldom require adjustment sideways but when this adjustment is required, it can be made after loosening the headlamp support.

When replacing the headlamp doors, reinstall the cork gaskets with care and be sure to place the door with the "left" lens on the left lamp and the "right" lens on the right lamp. Then check

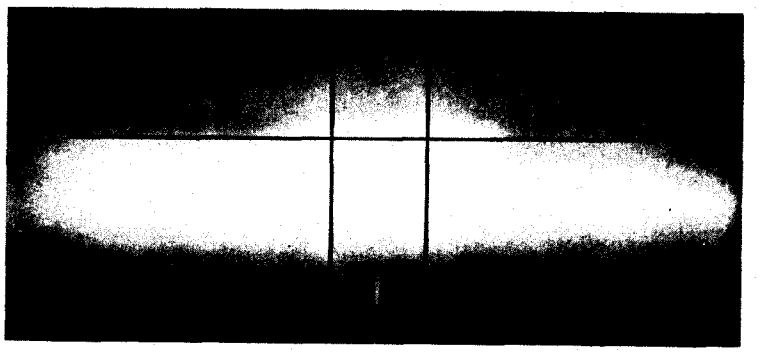

Fig. 33. Correctly aimed upper beam of right headlamp with lens.

again the beams from the two lamps, one at a time. The beam from the left headlamp should have the upper edge of the hot spot at the horizontal line and the left edge at the vertical line directly ahead of the lamp as shown in Fig. 32. The beam from the right headlamp should likewise have the upper edge of the hot spot at the horizontal line, but with the maximum intensity centered on the vertical line directly ahead of the lamp and the right cut-off of the hot spot about a foot to the right of this line as shown in Fig. 33.

No further aiming is required for the lower or passing beams.

Storing the Car

If the car is to be stored for any length of time it is important that a few precautions be taken to protect it from deterioration. Blocking up the car to take the weight off of the tires, partially deflating the tires, and placing a cover over the entire body will protect the tires and finish. The engine and the storage battery, however, require special attention.

Oil should be injected into the cylinders while the engine is warm. This may be done by pouring two or three tablespoonsful of engine oil into the spark plug holes after the engine has been run long enough to warm it up. Cranking the engine a few times after this is done will distribute the oil evenly over the pistons and cylinder walls. The cooling system should then be drained.

The battery should be fully charged and the solution should be at the proper level. If possible, arrangements should be made to have the battery charged from an outside source every two months during the storage period.

Body

The body of a Cadillac car is deserving of care and attention the same as the most intricate working parts of the chassis. In recognition of this fact, Authorized Cadillac-La Salle Service Stations displaying the *Complete* Service Sign, shown in figure 34,



Fig. 34. Authorized Cadillac-La Salle Service Stations displaying this sign are equipped to render complete body service.

at the bottom of the authorized service sign, have equipped themselves to service the body with as much expert skill and care as the chassis. The simple attentions described below, however, are frequently performed by the owner or under his immediate supervision.

Care of the Finish

Keeping the lacquer finish of the car new and lustrous requires only a thorough wiping with a soft dry cloth every few days and an occasional polishing with a recognized lacquer polish. With this care, the car will need to be washed only when considerable mud or dust has accumulated.

Washing of the car can be accomplished simply and easily with plenty of clean cold water, a soft wool sponge and a clean chamois. Soap and hot water are not only unnecessary but undesirable. The dust or mud should be flushed off with a *gentle* stream of water from a hose without a nozzle, using the sponge merely to loosen the dirt. After all the dirt has been removed in this way, the sponge should be squeezed dry and used to pick up the water from the crevices. Thoroughly wet the chamois and squeeze it dry, then rub the finish with it until all of the water has been removed.

Care of the Top

The top may be kept clean by an occasional wiping to remove the dust. This is all the care required to keep the top clean unless grease spots, stains or dirt film occur. In these cases washing with a mild, neutral soap may be resorted to. Gasoline, naphtha, kerosine and fabric cleaners should never be used since such preparations can easily dull the finish and damage the fabric. Soap and water is not harmful and is fully as effective.

Cleaning Upholstery

Regular monthly cleaning of the car interior with a vacuum cleaner and a whisk broom will keep the upholstery in the best of condition and will prevent excessive wear. The whisk broom should be used to loosen the dirt and grit, which causes more rapid wear than use, while the vacuum cleaner should be used to lift out the loosened dirt.

Spots on the upholstery may be cleaned with any good dry cleaner used sparingly. When the cleaner has thoroughly evaporated, fold a piece of cheese cloth four or five times, dampen it, and place it over the spotted surface; then run a hot iron over surface just long enough to raise a good steam. Plush fabrics can be restored to their original appearance by rubbing lightly against the nap with a brush after the fabric has been steamed in this way.

Door Hardware

The lubrication of the body hardware on the car is fully as essential as the lubrication of chassis parts if it is to work smoothly and silently. Directions for the lubrication of door locks, hinges and striker plates every 1000 miles are included on the lubrication chart. These directions should be followed as faithfully as the rest of the chart.

Body Adjustments

Preventive service on the body at regular intervals will keep the appearance of the car at its best and will eliminate more extensive repairs at a later date. This service should include body bolts, tie-down bolts, door adjustments and the operation of window regulators.

Authorized Cadillac-La Salle service stations include the body as well as chassis in the regular monthly or 1000 mile inspection and quote flat rate prices for necessary body service. The necessary work may be authorized by the owner at the time he has chassis adjustments made and the car lubricated.

CHAPTER VII

SPECIFICATIONS AND LICENSE DATA

	V-8	V-12
Bore	3⅜ in.	3⅛ in.
Stroke	4 15/16 in.	4 in.
Piston Displacement	353 cu. in.	368 cu. in.
Horsepower (N. A. C. C.)	36.45	46.9
Engine number	See below	See below
Wheelbase	128 and 136 in., 146 in.	146 in.
Gasoline tank capacity	22, 22, 30 gal.	30 gal.
Engine oil capacity	8 qts.	9 qts.
Cooling system capacity	4¾ gals.	4½ gals.
Transmission capacity	2¼ qts.	2¼ qts.
Rear axle capacity	3 qts.	3 qts.
Tire size	7.00-17	7.50-17
Spark plug setting	.025-.028 in.	.025-.028 in.
Contact point setting	.012-.018 in.	.018-.024 in.

Engine and Unit Assembly Numbers

Each Cadillac car, when shipped, carries an "engine number" which is also a serial number. This is the number to be used in filling out license and insurance applications and in general reference to the car. The engine number is stamped on the right hand side of the crankcase, near the water inlet on V-8 cars, and on the generator drive chain housing on V-12 cars, and is also stamped on the upper surface of the inner frame side bar on the right hand side, just in back of the radiator.

In addition to the engine or serial number, each Cadillac car has a unit assembly number for the engine, stamped on the upper

surface of the right rear crankcase support arm, and job and body numbers for the body stamped on the right hand side of the cowl under the hood. These numbers are so located that all can be seen upon lifting the right side of the hood.

In ordering replacement parts, always give the engine number of the car and, in addition, the engine unit number when ordering engine parts, and the job and body numbers when ordering body parts.

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370-D AND 452-D

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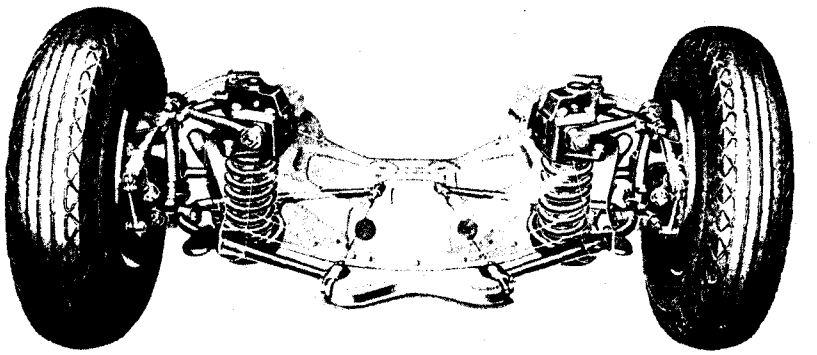
355-D—Series 10, 20 and Fleetwood 370-D and 452-D



Service Department
CADILLAC MOTOR CAR COMPANY
DETROIT, MICHIGAN

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Front Wheel Suspension

The front end construction of the new Cadillac cars is entirely new and is a distinct departure from conventional design in that the front axle is entirely eliminated. See Fig. 1.

In this new construction, the front wheels are mounted independently of each other. They are fastened directly to the frame with sturdy arms (Fig. 2) hinged in such a way as to permit vertical movement only. The up and down movements of the wheels are controlled by means of special frictionless helical springs instead of the conventional leaf springs. This suspension of the front wheels makes possible a "gliding ride" which eliminates pitching and neck-snapping in the rear seat.

The new helical springs have no function except that of springing the car as they are not depended upon to hold the front wheels in position nor to absorb the driving and braking forces. As a result, it has been possible to redistribute the weight of the car and to soften the front springs to provide maximum riding comfort. Moreover, the front wheel suspension system as used by Cadillac adds materially to the roadability, safety and ease of steering in the new cars.

Inasmuch as the front wheels are mounted independently of each other, it is obvious that either wheel may follow the irregularities of the road without carrying that side of the car with it and without transferring the resultant movement or

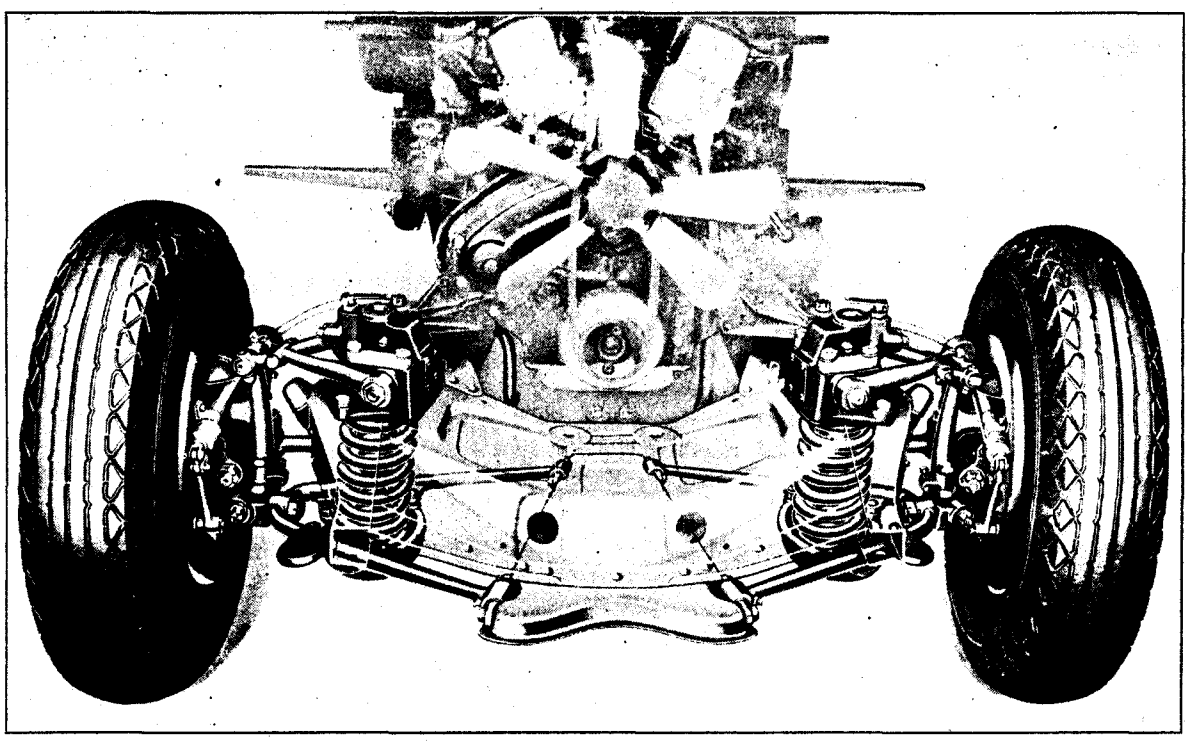

Fig. 1. Phantom view of the front wheel suspension system

this new type of steering system, despite the use of very soft acting front springs, the accuracy of steering the car, especially at high speeds is greater than can possibly be obtained with the conventional type of front axle.

The new front wheel suspension system should be thoroughly studied in order that the principles of construction and operation may be well understood. This is necessary for intelligent and efficient servicing of this new assembly.

Adjustments

Maintenance of correct front wheel alignment is of special importance to service.

The amount of caster in the new cars is 1 to 2° with the weight of the car on the front wheels. The caster may be checked in the same manner as on previous model cars or with Tool No. J-631 using it against the pads on the front side of the steering knuckle supports. See Fig. 2. No method should be used, however, that will necessitate raising the wheels off the floor.

Necessary corrections in caster may be made by adjusting the threaded pin (Fig. 4), which connects the shock absorber arms to the upper end of the steering knuckle support. Turning this pin to the right or clockwise on the right side of the car as viewed from the driver's seat moves the top of the steering knuckle support toward the rear, increasing the caster, and turning it oppositely moves the top of the support toward the front, decreasing the caster.

On the left side of the car, the caster adjusting pin is installed with the head toward the front. Therefore, the left pin must be turned to the left or counter clockwise to increase the caster and to the right to decrease the caster. One complete turn of the threaded pin changes the caster one-half degree. After completing the adjustment, the threaded pins should be securely locked in position. Precaution should be taken to adjust both wheels to have exactly the same amount of caster.

Camber of the front wheels should be ¾ to 1½° with the weight of the car on the front wheels. It may be checked in the same manner as in previous cars with the conventional type of front axle. As formerly, no provision is made for changing the amount of camber other than the replacement of parts.

Toe-in of the front wheels should be $\frac{1}{16}$ to $\frac{3}{16}$ in. Adjustment for toe-in is made in the same manner as on previous Cadillac cars, simply by turning the tie rods in or out of the tie rod ends. The tie rod ends, however, are assembled with the right hand threads at the left ends and the tie rods must be turned in the opposite direction to previous Cadillac practice to make the toe-in adjustment. Turning the tie rods in the same direction as the road wheels revolve decreases the toe-in and turning them in the opposite direction increases the toe-in.

When making this adjustment, the rear end of the intermediate steering arm must be exactly at the center of the car. Both tie rods are then turned an equal amount to retain the same distance between the rear end of the intermediate steering arm and the front wheels. Do not adjust one tie rod alone.

The tie rod and intermediate steering arm ends are also new. See Fig. 5. They are, however, similar in construction to those used in earlier Cadillac cars, but differ in the method of adjustment. Adjustment of these ends is made by screwing the plug all the way in, using new Tool No. J-630 and then backing it out ¼ turn.

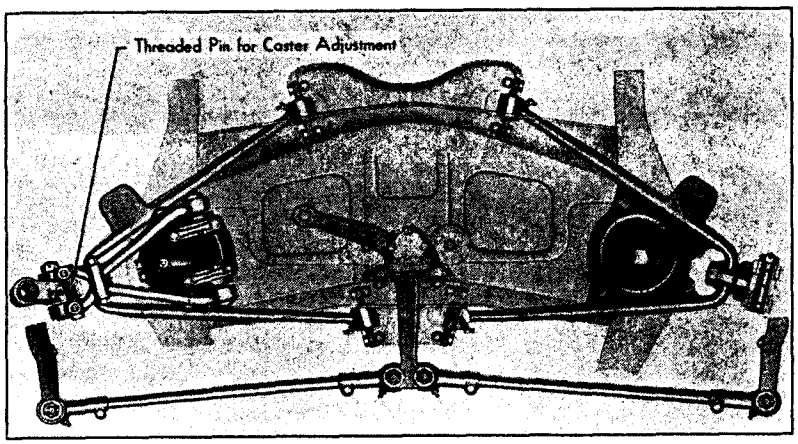

Fig. 4. Front wheel suspension system viewed from above, showing the shock absorber arms at the left and the lower suspension arm at the right

Removal of the tie rod end pivots from the intermediate steering arm may be accomplished with hand screw press Tool No. J-624. To use this tool it may be necessary in some cases to disconnect and raise the outer ends of one or both tie rods to provide clearance between the inner tie rod ends for using the removing tool.

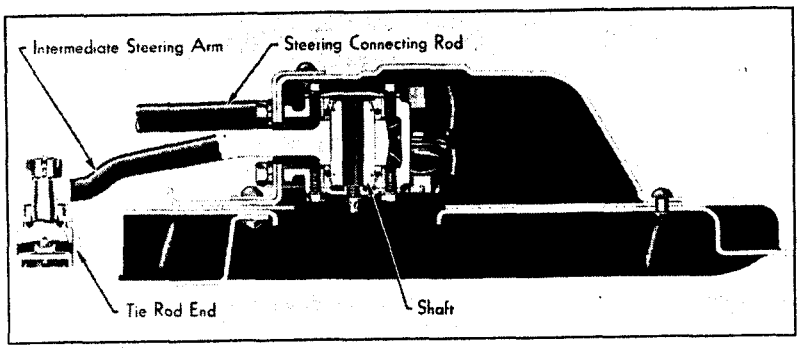

Fig. 5. Sectional view of the intermediate steering arm assembly viewed from the right side

The intermediate steering arm bearings are adjusted by means of shims under the top cover. These bearings should be adjusted so that a load of one to two pounds will be required to move the arm with a spring scale fastened to the end to which the steering connecting rod is connected. Care must be exercised not to get the bearings too tight.

Removal and Disassembly

Disassembly of the front wheel suspension mechanism is obvious upon inspection and no special instructions are necessary except for the removal of the front helical springs and the intermediate steering arm.

To remove a front spring, it is necessary as with the conventional type front axle to support the front end of the chassis in addition to raising the front wheel by means of a jack. With this done, first disconnect the outer end of the tie rod from the steering knuckle arm and then remove the threaded pin connecting the shock absorber arms to the upper end of the steering knuckle support after which swing the front wheel and steering knuckle assembly down out of the way. See Fig. 6. Next, lower the lower suspension arm far enough to release the helical front spring. If the front fenders are in place, removal of the spring can be made much easier by first removing the road wheel.

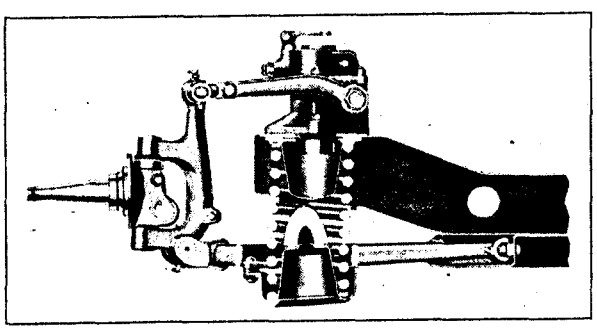

Fig. 6. Sectional view of the left front wheel suspension system viewed from the rear

When removing and installing front helical springs, with the engine out of the chassis it will be necessary to block the top of the frame against the ceiling in order to compress the spring for the removal or installation of the threaded pin at the top of the steering knuckle support. Easier access may be gained to the front wheel suspension mechanism by removing the front fenders and radiator as a unit.

In case it is necessary to remove the steering knuckle support, the support must be disconnected from the lower suspension arm yoke. To do this it is only necessary to remove the yoke bolt and turn out the threaded bushings in the yoke. Inasmuch as this yoke bolt is a taper fit in one of the bushings it may be necessary to force it out under pressure. The yoke retaining nut may be removed if necessary with Tool No. J-602.

When installing the steering knuckle support on the lower suspension arm yoke the threaded bushings should be turned in against the steering knuckle support centering the support in the yoke, after which install the yoke bolt and securely tighten and lock it in position.

After installing the front spring and reassembling the various other parts, the caster must be readjusted as the caster setting is destroyed by the removal of the threaded pin at the top of the steering knuckle support.

To remove the intermediate steering arm, it is necessary first to remove this arm and bracket assembly from the frame. Then the top and bottom covers and bearings are removed and the

shaft pressed out of the steering arm, using the press block J-606-1 and spindle J-606-2. The removal and installation of this shaft will require the use of a large press as it fits very tightly in the arm. The spindle J-606-3 when used with the press block also serves as a depth gauge for locating the shaft in the correct position.

Because of their location, the parts of the front wheel suspension system are more subject to damage by accident than any other part of the chassis. In case of damage to any of these parts, it is recommended that new parts be used. Under no circumstances should any of the parts be repaired.

Several new lubrication points are provided on the front wheel suspension mechanism. These places should be lubricated with chassis lubricant at 1000 mile intervals.

Rear Axle

The construction of the rear axle is essentially the same as in the "C" series cars. Several changes have been made, however, to meet the demand of the new brakes and the Hotchkiss type of drive now employed in the new models. See Fig. 7.

The rear brakes are now operated by pull rods and cables the same as the front ones and the brake cross-shafts on the axle housing have been eliminated. Likewise, the radius rods and torque tube have been discontinued.

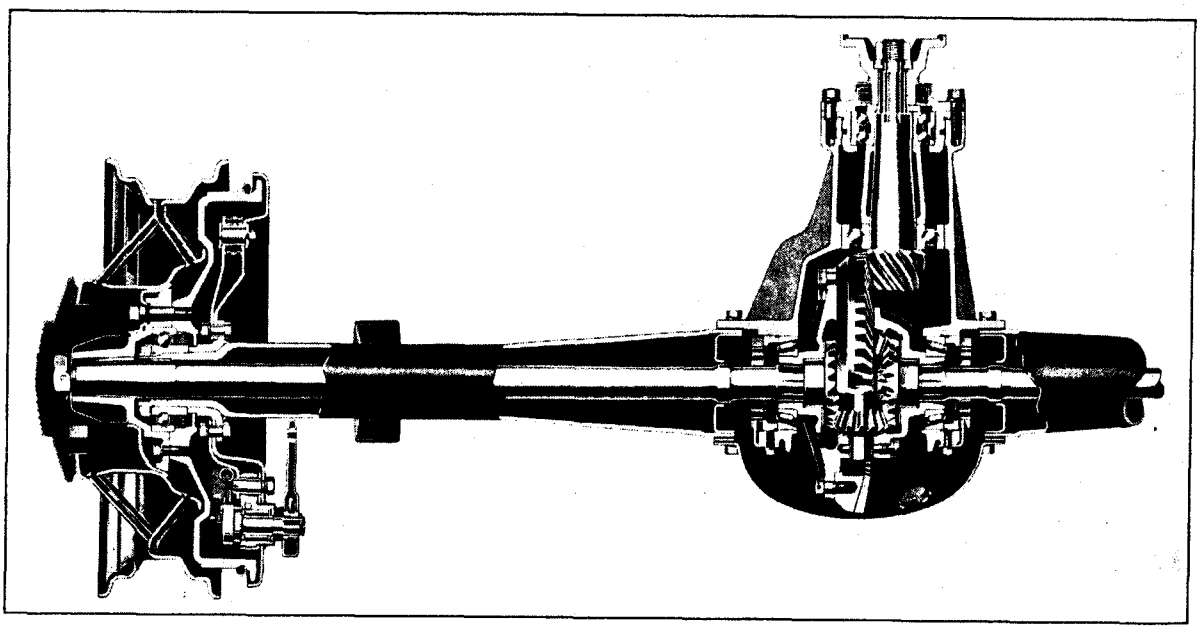

Fig. 7. Sectional view of the rear axle

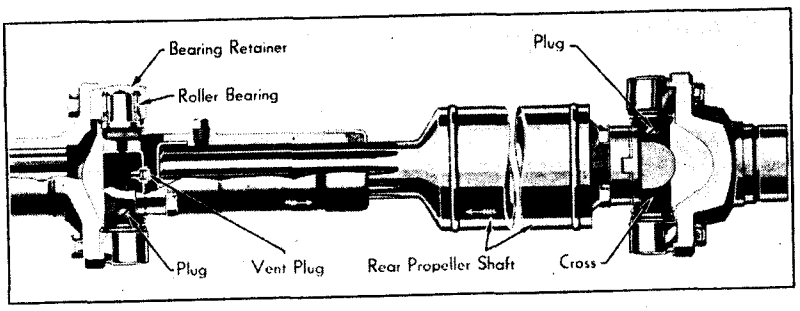

Fig. 8. Rear propeller shaft and universal joints

Only slight changes have been made in the gear ratios of the new models. The new gear ratios are as follows:

Car Model		*Standard Gear Ratio*	*Optional Gear Ratio*
355-D	Series 10 and 20	4.60 to 1	4.36 to 1
	Fleetwood	4.80 to 1	4.60 to 1
370-D		4.80 to 1	4.60 to 1
452-D		4.64 to 1	4.31 to 1

As was previously mentioned, the Hotchkiss type of drive is now employed. With this drive, the car is driven through the rear springs, rather than through a torque tube as formerly.

The propeller shaft is also new. It is made in two sections, a rear section (Fig. 8), which is not enclosed and a front section which is carried in a housing attached to the rear of the transmission. See Fig. 61. Two new type universal joints are used, one at either end of the rear propeller shaft. A cutaway view of the front universal joint is shown in Fig. 9.

The journals of the universal joints oscillate in roller bearings instead of bushings as formerly.

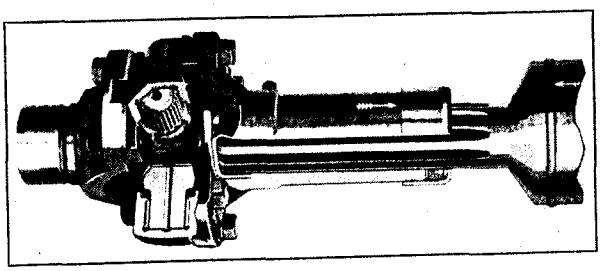

Fig. 9. Cut away view of the front universal joint showing the needle type roller bearings

These journals should be lubricated every 6000 miles. To lubricate the joints it is necessary to remove the screw plug in the cross, and install a grease gun fitting. A grease gun fitting must not be installed permanently as it will affect the balance of the joint.

To remove the new type universal joint it is necessary only to remove the cap screws fastening the bearing retainers or journal caps to the yokes. If a joint is removed and not to be dissassembled opposite retainers should be tied or wired together to keep them in place on the journals of the cross.

Disassembly of the joint after removal from the yokes may be accomplished simply by pulling the retainers off the cross journals and taking out the roller bearings.

Before reassembling a joint, wash all parts thoroughly in gasoline or kerosine and blow them out with air to remove all traces of dirt and grit. This is extremely important in order to insure quietness and long life of the bearing surfaces.

When reinstalling a universal joint, either the original retaining cap screws or screws secured from the Factory Parts Division under Part No. 1405167 should be used. This is important, as these screws are made of special material and heat treated for this purpose.

Ordinary cap screws are not suitable for mounting these new type universal joints. New locking plates should also be used whenever the retaining screws are reinstalled. Care should be exercised to assemble the front universal joint on the rear propeller shaft in the proper position. The arrow on the splined sleeve of the universal joint should be in line with the arrow on the propeller shaft.

The remaining service operations on the rear axle including adjustments for gear mesh are the same as on the "C" series cars.

Body

The bodies on the "D" series cars are new, both in appearance and in constructional detail. See Fig. 10. Particular attention has been given to the insulation of the body to insulate against engine heat and noise.

Frame Details

The sills are made from straight grained wood and are wider than in previous bodies. The rear sill or kickup, on the Series 10 and 20 cars, is laid horizontally the same as the main sill. On the 355-D Fleetwood, the 370-D and the 452-D cars, this part of the sill is made of steel and is formed into a U shape to make it possible to carry the tires in the back of the body. A larger brace is also used in all bodies to hold the side sills to the rear sill.

The body bracing on the Series 10 and 20 cars is similar to that of the "C" Series bodies except that the corner bracket holding the wooden cowl bar to the front pillar is larger and has a gusset at the corner for additional strength. The top windshield header pillar facing from the belt up and the front top corner bracket are welded into one unit. This whole assembly is then bolted and screwed to the wood cowl bar, the front pillars and the roof. The toe riser has also been reinforced for greater strength and is bolted to the dash and screwed to the main sill.

On the 355-D Fleetwood, the 370-D and the 452-D cars, the lower windshield bar or cowl bar, the corner braces holding the instrument board to the front pillars, the pillar reinforcement, and the top windshield header and braces are one massive stamping bolted to the pillars and roof. The lower bracket from the sill to the front pillar has also been made larger than in previous bodies. The toe board riser is of a box construction bolted to the dash and screwed to the main sill, making it stronger than ever before. The cowl bar is of a U section, and is wider in the center to take the windshield wiper.

The cowl panel is made in three sections and then welded into one unit to which the dash is also welded. This front end stamping is then nailed at the bottom of the sill and on the lower part of the front pillar and welded to the upper part of the pillar and around the complete windshield opening.

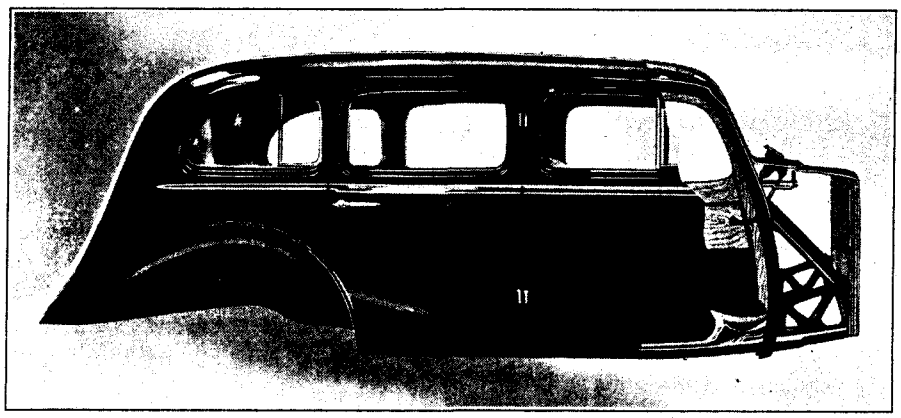

Fig. 10. Typical body showing the front end construction

New diagonal angle iron braces have been added on the back of the Series 10 and 20 bodies to give additional strength. This brace is made of 7/8 in. angle iron 3/16 in. thick and is held to the belt rail by machine bolts and to the rear sill by machine bolts and wood screws.

The rear corners above the belt on 355-D Fleetwood, the 370-D and 452-D cars have also been reinforced by a large stamped bracket which extends from the belt rail up to the roof rail and from the rear of the rear quarter window around to the end of the back window. This replaces the conventional wooden cross piece.

BODY STYLES AND JOB NUMBERS

Fisher and Fleetwood Bodies

Body Type	Job Number	Wheelbase
355-D Series 10		
Fisher Bodies		
2-Pass. Sport Coupe	34-728	128″
2-Pass. Convertible Coupe	34-718	128″
5-Pass. All-Weather Phaeton	34-721	128″
5-Pass. Town Coupe	34-722	128″
5-Pass. Sedan	34-709	128″
5-Pass. C. C. Sedan	34-702	128″
355-D Series 20		
Fisher Bodies		
2-Pass. Sport Coupe	34-678	136″
2-Pass. Convertible Coupe	34-668	136″
5-Pass. All-Weather Phaeton	34-671	136″
5-Pass. Sedan	34-659	136″
5-Pass. C. C. Town Sedan	34-652	136″
7-Pass. Sedan	34-662	136″
7-Pass. Imperial Sedan	34-663	136″
355-D Fleetwood		
Standard Fleetwood Bodies		
5-Pass. Sedan	6030-S	146″
5-Pass. Town Sedan	6033-S	146″
7-Pass. Sedan	6075-S	146″
7-Pass. Imperial Sedan	6075	146″
370-D		
Standard Fleetwood Bodies		
5-Pass. Sedan	6130-S	146″
5-Pass. Town Sedan	6133-S	146″
7-Pass. Sedan	6175-S	146″
7-Pass. Imperial Sedan	6175	146″
452-D		
Standard Fleetwood Bodies		
5-Pass. Sedan	6230-S	154″
5-Pass. Town Sedan	6233-S	154″
7-Pass. Sedan	6275-S	154″
7-Pass. Imperial Sedan	6275	154″
355-D Fleetwood		
Special V-Front Fleetwood Bodies		
2-Pass. Coupe	5676	146″
2-Pass. Convertible Coupe	5635	146″
5-Pass. All-Weather Phaeton	5680-S	146″

Body Type	Job Number	Wheelbase
355-D Fleetwood		
Special V-Front Fleetwood Bodies Continued		
5-Pass. All-Weather Phaeton with Division	5680	146″
5-Pass. Coupe (Aerodynamic)	5699	146″
5-Pass. Collapsible Coupe	5685	146″
5-Pass. Sedan	5630-S	146″
5-Pass. Town Sedan	5633-S	146″
5-Pass. Town Cabriolet—metal back	5612-MB	146″
5-Pass. Town Cabriolet—leather back	5612-LB	146″
7-Pass. Sedan	5675-S	146″
7-Pass. Imperial Sedan (Limousine)	5675	146″
7-Pass. Town Cabriolet—metal back	5625-MB	146″
7-Pass. Town Cabriolet—leather back	5625-LB	146″
7-Pass. Limousine Brougham—rear quarter window—metal back	5691	146″
370-D		
Special V-Front Fleetwood Bodies		
2-Pass. Coupe	5776	146″
2-Pass. Convertible Coupe	5735	146″
5-Pass. All-Weather Phaeton	5780-S	146″
5-Pass. Phaeton with Division	5780	146″
5-Pass. Coupe (Aerodynamic)	5799	146″
5-Pass. Collapsible Coupe	5785	146″
5-Pass. Sedan	5730-S	146″
5-Pass. Town Sedan	5733-S	146″
5-Pass. Town Cabriolet—metal back	5712-MB	146″
5-Pass. Town Cabriolet—leather back	5712-LB	146″
7-Pass. Sedan	5775-S	146″
7-Pass. Imperial Sedan (Limousine)	5775	146″
7-Pass. Town Cabriolet—metal back	5725-MB	146″
7-Pass. Town Cabriolet—leather back	5725-LB	146″
7-Pass. Limousine Brougham—rear quarter window—metal back	5791	146″
452-D		
Special V-Front Fleetwood Bodies		
2-Pass. Coupe	5876	154″
2-Pass. Convertible Coupe	5835	154″
5-Pass. All-Weather Phaeton	5880-S	154″
5-Pass. All-Weather Phaeton with Division	5880	154″
5-Pass. Coupe (Aerodynamic)	5899	154″
5-Pass. Collapsible Coupe	5885	154″
5-Pass. Sedan	5830-S	154″
5-Pass. Town Sedan	5833-S	154″
5-Pass. Town Cabriolet—metal back	5812-MB	154″
5-Pass. Town Cabriolet—leather back	5812-LB	154″
7-Pass. Sedan	5875-S	154″
7-Pass. Imperial Sedan (Limousine)	5875	154″
7-Pass. Town Cabriolet—metal back	5825-MB	154″
7-Pass. Town Cabriolet—leather back	5825-LB	154″
7-Pass. Limousine Brougham—rear quarter window—metal back	5891	154″

New type braces have been added on all bodies between the rear roof subrail and the main roof rail.

The No. 1 body bracket is a separate unit in the new cars and is bolted to the front of the dash and to the chassis frame. The construction of this bracket adds materially to the rigidity of the body at the front.

All body retaining bolts are of special hardened steel and the size has been increased from $\frac{7}{16}$ in. to $\frac{1}{2}$ in. Hard shims are used at the No. 1 body bolt and composition shims in place of rubber at the remaining body bolts.

All pillars are of composite wood and steel construction and are held to the sill and the roof rail by heavy brackets and bolts.

Improvements have been made in the method of attaching the side roof rail cover panels to the main and subroof rails. The panels are both nailed and bolted to these rails.

A new rubber material, F.S. 1001, is used to replace glue where there is undue stress. A similar material only lighter is used between all metal brackets and the woodwork to eliminate squeaks and rattles. This antisqueak compound is also sprayed on all panels and inside of the doors before they are assembled to the wood framework to insulate against noise.

The hood antisqueak on the cowl is made in one piece and is held to the cowl by clips spaced about 6 in. apart. The lower ends of the antisqueak are, however, held in place by self-tapping screws at the bottom of the shroud.

The dash is insulated on the inside with $\frac{1}{2}$ in. felt against the dash, $\frac{1}{2}$ in. insulating board and $\frac{1}{8}$ in. K.B. board which is finished to blend with carpet.

The toe and floor boards are made of laminated wood. The center piece, however, is made of steel with a felt underneath and around the edges for sealing against heat and noise.

Doors

All doors are of the overhanging type. A diagonal guide rod has been placed in the front door so that the weight can be more evenly distributed. This diagonal rod fastens on the door at the upper hinge at the door center and extends to the bottom edge of the door on the locking side. At this point a brass take-up nut is conveniently located so that the door may be brought to proper alignment. By adjusting this nut, the door load can be distributed to both hinges and at the same time if the door is away from the top pillar bumper it can be adjusted so that the pressure on the bumper is even.

Locks and dovetails have been improved for easier door operation. The locks are fastened to the door by means of machine screws and wood grip nuts.

New half round lock bolts are used to give easier door operation and greater bearing and strength. Springs have also been added to take up the play in the lock bolts. An oiled spring loaded guide is used to help eliminate any play and to keep the lock bolt oiled.

The doors are fitted with pawl levers which protrude inside of the door. Shutting the door and tripping the pawl lever up locks the door. Opening the door from inside the car through the remote control handle automatically unlocks the door and the pawl lever returns to its original or unlocked position.

All doors can be locked from the inside by pawl levers or from the outside by first tripping the pawl levers up and then holding the outside handle all the way down while closing the door.

Double dovetails in tandem are used on the front doors of the Fleetwood bodies. Single type dovetails are used on the rear doors of these bodies and on both the front and rear doors of Fisher bodies. The shoe has a spring rubber action to keep the door load higher and more uniform and to assist in opening the door.

The hinges are made of cold drawn steel and have been moved in closer toward the body not only for appearance but for additional strength. The hinges continue to have the bronze bushings and the oiling feature. A spiral oil groove has, however, been added on all hinge pins.

Both the front and rear doors on Fleetwood sedans are hinged on the center pillar.

Garnish Mouldings

The garnish mouldings on the Series 10 and 20 Fisher Bodies are made of steel, grained to look

like wood. The finishing panels are attached to the doors separate from the garnish mouldings. These panels have a Meracord inlay. The garnish mouldings for the Fleetwood bodies are made of wood and are furnished either in natural colors or ducoed. Finishing panels are optional on bodies with a V front.

The garnish mouldings on the Fleetwood bodies are invisibly fastened on all doors except at the front pillar. The mouldings are removed and installed in practically the same manner as on the "C" bodies. Visible fasteners are used to retain the garnish mouldings in place on the Fisher bodies. The windshield and back window mouldings are fastened with visible screws at the sides and top.

Ventilators

The new screened cowl ventilator is reversed or open toward the windshield for better ventilation.

Two cowl ventilators are used on V-front bodies. While these ventilators are a part of the body, the top hood panels are pierced for the lid of the ventilators. An adjustment is provided in the ventilator hinge assembly to line up the ventilator lid with the opening in the hood.



Fig. 11. General arrangement of the driving compartment

A new feature of the I.C.V. front door ventilators is a rain deflector installed at the top of the ventilator opening. The purpose of this deflector is to deflect rain or snow when the ventilator is open for ventilating purposes.

The I.C.V. ventilator on the front part of the door on Convertible Sedan and Convertible Coupes is stationary. The ventilator frame is chrome plated and is bolted to the door. The rear part of the door glass, however, lowers as in the regular closed bodies.

All windshields are stationary the same as in the "C" series cars.

Windshield Wiper

The windshield wiper on Fleetwood bodies with a straight windshield is of a special design with the blades and arms connected in tandem and driven with one vacuum wiper unit. The wiper unit is of the inverted type and is located back of the instrument panel.

Two complete wiper assemblies are used with V-front bodies.

These are fastened to the cowl bar back of the instrument panel and are also of the inverted type.

Only one wiper unit is used on Fisher bodies. This is located inside of the top header board with the toggle ends and a housing on the outside at the bottom of the header. This housing which fastens to the lower part of the outside header must be lined up properly with the gear inside of the toggle end.

To align these parts it is necessary to run the wiper unit a few minutes and then shut it off leaving the gear in the toggle end in the parked position against the header. Then the arm and blade are installed on the housing. The next procedure is to install the housing against the header with the arm and the blade in the parked position. Next install the retaining screws. The teeth on the gear in the housing and in the wiper unit are fine enough to give the proper adjustment. In order to remove the complete wiper unit for any

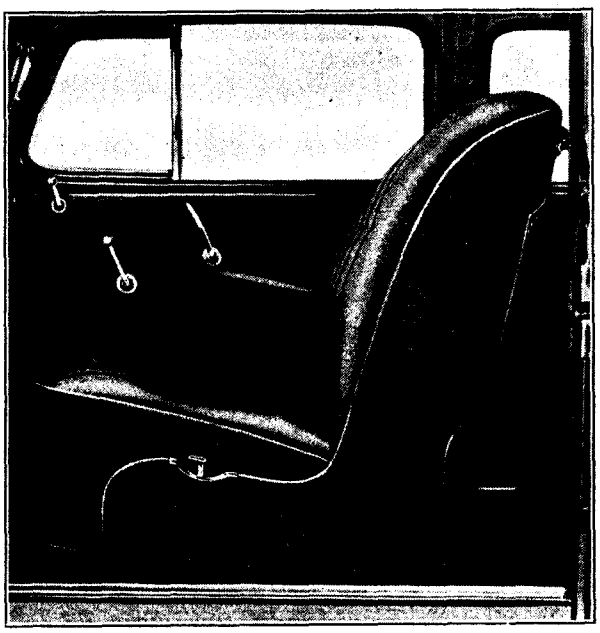

Fig. 12. The front seat adjusting lever is located on the left side rail of the seat

repairs, it is necessary to remove the garnish mouldings, the mirror and the header board.

Visors

Two visors trim covered to match the body upholstery are used. They are adjustable to any desired height, either for windshield or side door protection from the sun.

Instrument Panel

The appearance of the instrument panel has been improved. The instruments are new and the fittings and finishing panel have been redesigned. See Fig. 11. A headlight beam indicator is provided to show which of the headlight beams is in use.

Minor changes have also been made in the glove compartment.

Front Seat

The front seat in the Fisher bodies is adjustable back and forth. In the Fleetwood bodies the back framework of the seat is fastened to the center pillars with only the cushion and the back of the driver's seat being adjustable.

The adjusting lever is located on the left side rail of the seat as shown in Fig. 12. By pulling the lever up, the seat can be adjusted to any desired position.

The Imperial bodies have no front seat adjustment. The V front Fleetwood bodies have an adjustable rear seat cushion and back, the cushion being adjusted by a Tee handle at the bottom and the back by a Tee handle back of the center arm rest.

Arm Rests

An arm rest is provided on both front doors. Rear side arm rests with sash pockets are provided on all cars in addition to the rear center arm rest.

Curtains

The curtains at the back window and the rear quarter windows are concealed.

Keys

All keys are of a new type and are not numbered as in the past. The key number, however, is stamped on a tab which should be broken off and retained by the dealer or distributor upon delivery of the car. A record of the key number should also be kept by the new owner.

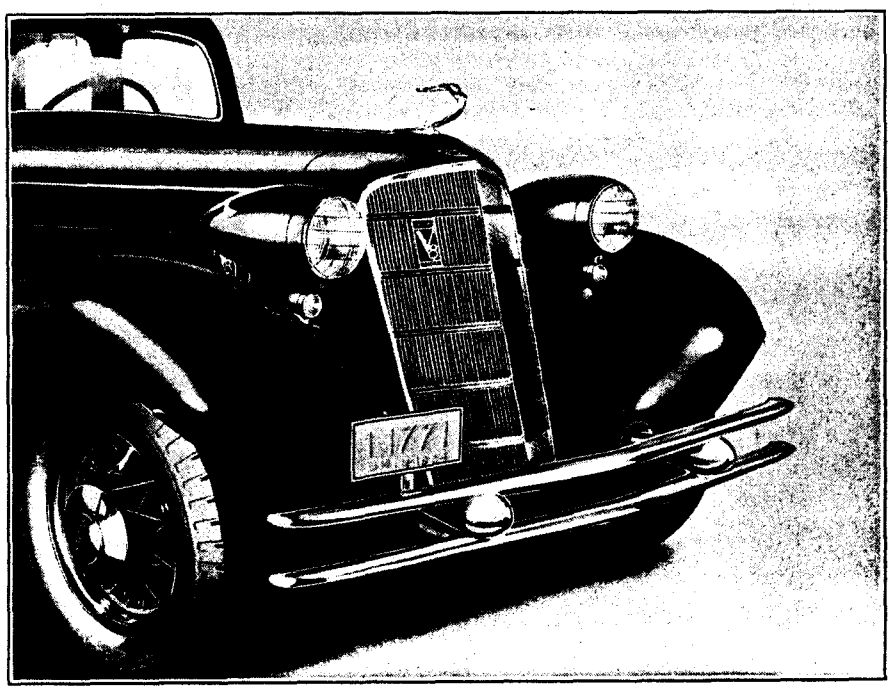

Fig. 13. Typical front end view of car

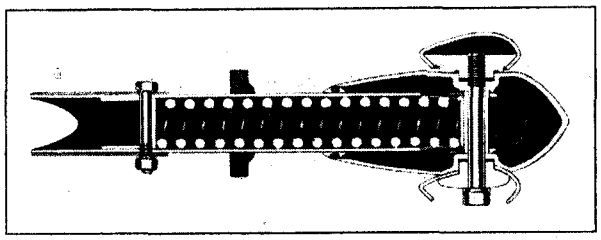

Fig. 14. Sectional view of bumper support

The new keys are of the double edge type and cannot be duplicated by anyone not having a special cutter for them. Duplicate keys, however, can be secured from any Briggs and Stratton distributor or Cadillac dealer or distributor or from the Cadillac factory Parts Division. In case all keys and the key number are lost by the owner replacement keys can be obtained only from the dealer or distributor from whom the car was purchased originally or from the Cadillac factory Parts Division. It is important, therefore, that all owners be cautioned to record the number of their keys when purchasing their car in order to secure replacement keys with the least inconvenience in case the original ones are lost.

Hood

The hoods on all cars are longer than in previous models and extend nearly to the windshield. The new hood port doors on the 355-D and 370-D cars are of the shutter type interconnected to operate in sets of five instead of individually as on former models.

Fenders

The fenders are new in design and appearance but are installed on the body in the same general way as on previous models. See Fig. 13. The method of servicing the front fenders, however, differs from previous practice in that the removal of either fender, the radiator or the radiator casing, or any engine or steering gear part covered by the fenders or radiator, is greatly facilitated by first removing both front fenders, the radiator and radiator casing as a unit, due to the front fender supports being rigidly bolted to the radiator casing.

The removal of the fender and radiator assembly is accomplished simply by draining the radiator, disconnecting the hose and the headlamp wires, removing the hood and loosening the radiator and front fenders from the frame and the running boards. Front fenders are supplied by the factory Parts Division without the supports.

Bumpers

Both the front and rear bumpers are new. They are of the horizontal bar type, of a channel construction, and operate in conjunction with coil springs located in the bumper arms or supports. A sectional view of a bumper support is shown in Fig. 14.

Brakes

The new brakes are essentially the same on all "D" series cars and are similar to the "C" series brakes. See Fig. 15.

A slight change, however, has been made in the new brake hook-up in that the braking power is applied through diagonal pull rods and cables. The position of the brake assister also differs. In the Series 10 and 20 cars the assister is mounted farther back in the frame X-member than in the longer wheelbase cars. Cables are now used to connect the rear pull rods with the rear brakes the same as for the front brakes. Consequently cross-shafts are no longer used on the rear axle housing. This construction eliminates a number of wearing parts.

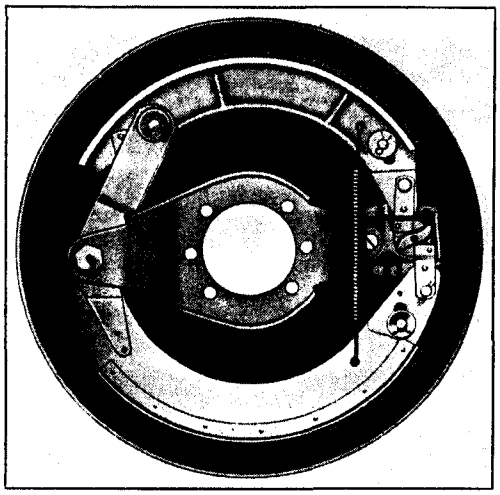

Fig. 15. The front brakes are of the same construction as the rear brakes

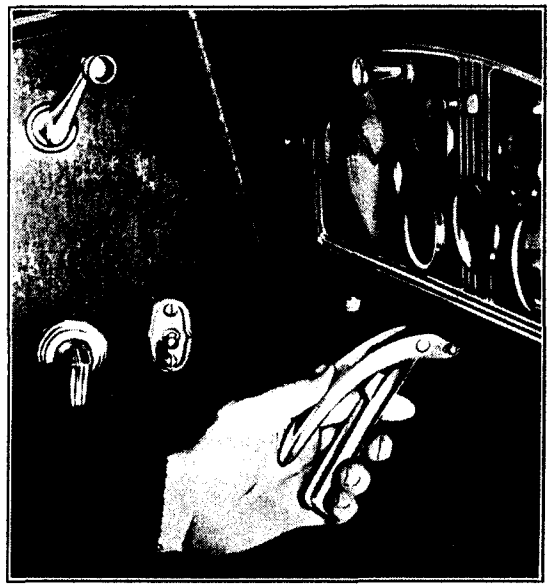

Fig. 16. The hand brake lever is located at the left directly under the instrument panel

The location of the hand brake lever has also been changed. Instead of being mounted on the transmission, this lever is now located underneath and at the left side of the instrument panel as shown in Fig. 16. The hand brake lever is connected to the rear service brake linkage by a cable.

The brake assister used on the "D" series cars is similar in construction and operates on the same principle as the 355-C brake assister. Lubrication and adjustment of the brake assister are practically the same as on the 355-C.

No attempt should be made to disassemble the brake assister. In the event that the assister unit cannot be made to function satisfactorily, it should be returned to the factory on an exchange basis.

Brake adjustments are similar to those on corresponding "C" series cars, except the control for the rear brakes. The method of adjusting the brakes is shown in Figs. 17 and 18, the assister

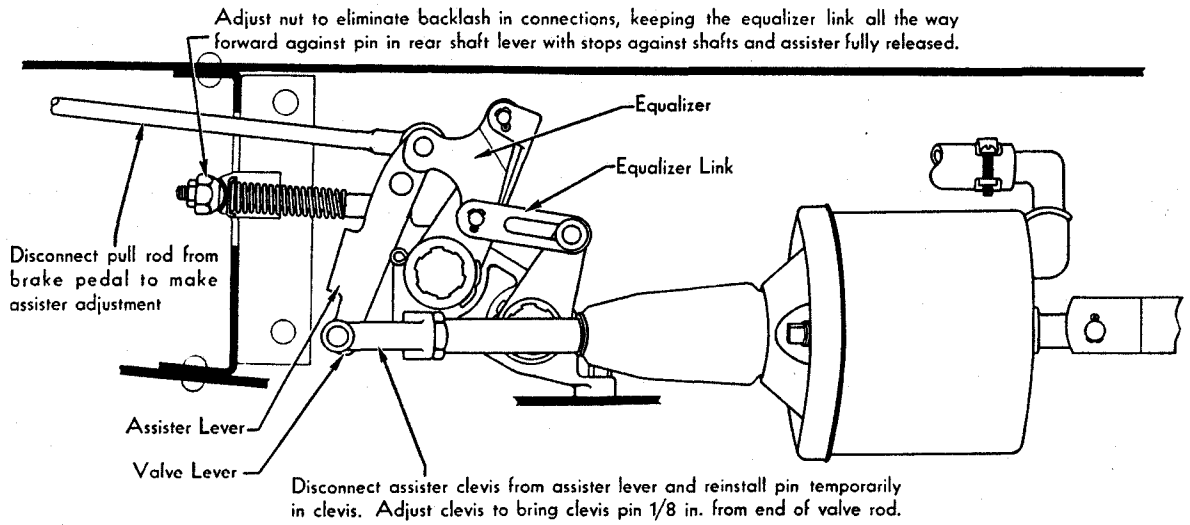

Fig. 17. The Series 10 and 20 brake system differs from that on the 355-D Fleetwood, the 370-D and the 452-D cars principally in the arrangement and adjustment of the assister connections

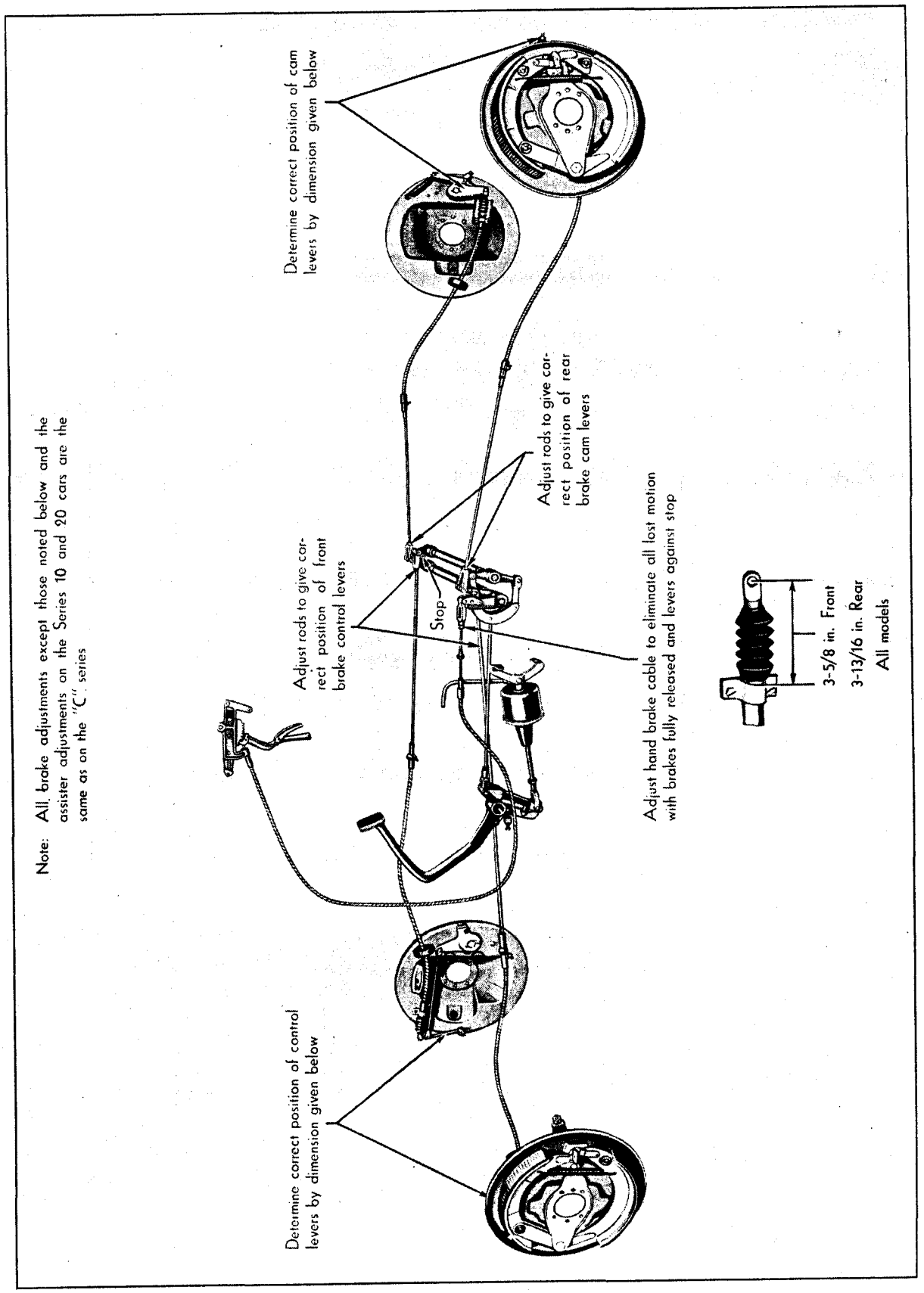

Fig. 18. Connections and adjustments of the 355-D Fleetwood, the 370-D and the 452-D brakes. The Series 10 and 20 brakes are the same except the assister connections

adjustments for the Series 10 and 20 cars being illustrated in Fig. 17. Service operations on the rear brake controls are similar to those on the front control common to the "C" series cars.

Improved Alemite fittings are provided for lubrication of the front and rear brake cables. Lubrication of the cam bearings is done in the same manner as on the "C" series by removing the cams and packing the bearings with chassis grease.

The brake and clutch pedal assembly is new. It is no longer mounted on the transmission but on the side member of the frame. On the Series 10 and 20 cars, the pedal assembly is carried in a bracket attached to the inside of the frame side member while on the longer wheelbase models it straddles the side member with the brake pedal on the inside and the clutch pedal outside. See Figs. 20 and 21.

Clutch

The new clutch used on the 355-D and 370-D cars is shown in Fig. 19 and is essentially the same as the two plate clutch formerly used, but it has been refined to give smoother operation and longer life. The design of the 452-D clutch, however, is the same as used on the "C" series except the spring mounting.

The spring mounting on all clutches is new. The rear driving plate is no longer drilled to receive the individual spring supports. Instead, four new type supports, each carrying three springs, are used. Each of these new supports is riveted to the rear driving plate at two points and in addition is provided with two extensions or legs to provide a four point contact with the driving plate. This construction gives a better distribution of pressure over the driving plate resulting in a more nearly uniform engagement of the clutch over the entire surface of the facings and a better retainment of the springs at high engine speeds.

Due to these new spring supports, together with improvement in the clutch metal, the double lever release mechanism is no longer used in the clutches for the 8 and 12-cylinder engines. Consequently, the clutches are provided with single type release levers. See Fig. 19. The double lever release mechanism, however, is retained in the 452-D clutch due to the necessity of some means of compensation for springiness in the levers and pressure plates in the larger size clutch.

The driven discs for the 370-D clutch have curved spokes the same as in the "C" series and the same precautions should be taken to install the discs with the spokes leading out from the hub in a clockwise direction when viewed from the flywheel side of the clutch. All other clutches use discs with straight spokes.

These improvements in design and metal have also resulted in a better heat balance between the center and outside driving plates, in all clutches. As a result, there is less change in operation between a hot clutch and a cold one. Chattering is also greatly reduced when the clutch is hot.

When servicing the new clutches, it is important that the driven discs be matched. This is necessary to give even contact of both discs for smooth engagement during the initial wear on the facings or the break-in period. The two discs and facing assemblies should be matched so that there is not

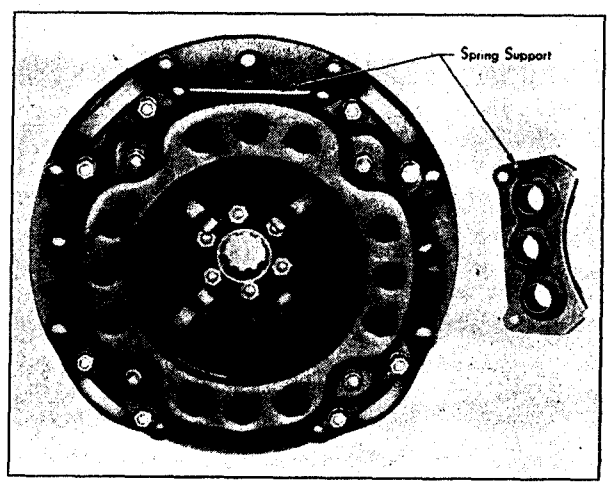

Fig. 19. View of 355-D and 370-D clutch showing the new spring supports

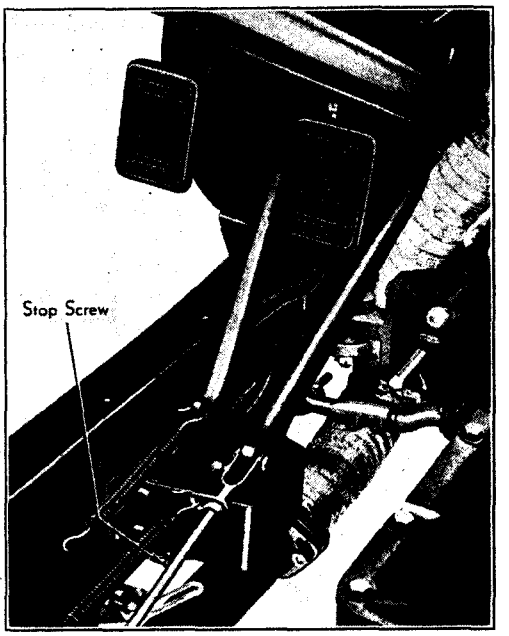

Fig. 20. The Series 10 and 20 pedal assembly showing the clutch pedal stop screw

much more than .005 in. difference in thickness between the two disc assemblies. The total clearance between the clutch facings and the center driving plate should be held to about .030 in.

The outside diameter of the 355-D clutch facing is 9½ in. while that of the 370-D facing is 10 in. and the 452-D facing is 11 in. The 355-D facings have an inside diameter of 6½ in. and the 370-D facings an inside diameter of 5⅞ in. The 452-D facing inside diameter of 6½ in. is the same as on the "C" cars.

The pedal assembly is also new. It is now mounted on the side member on the frame instead of in the transmission as formerly. On the Series 10 and 20 cars, both the clutch and brake pedals are mounted on a bracket inside of the frame side member as shown in Fig. 20, while on all other cars the clutch pedal is mounted outside of the frame side member as shown in Fig. 21. The new locations of the clutch pedal stop screws are clearly shown in these views.

Service operations on the clutch are the same as on the "C" series cars. The clutch release rod and pedal stop adjustments also remain unchanged.

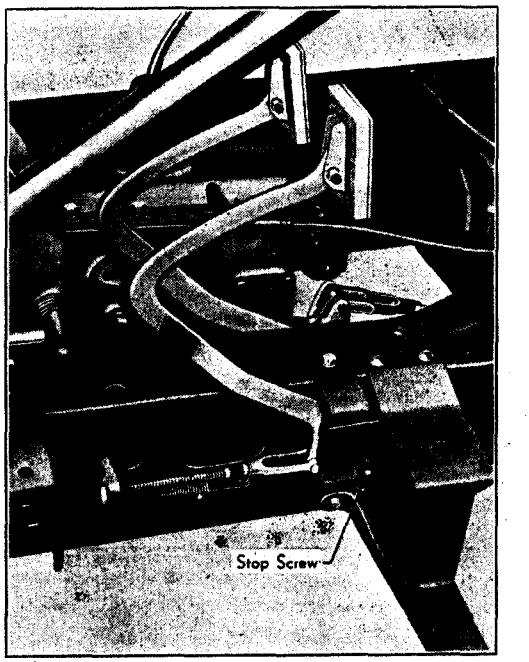

Fig. 21. Pedal arrangement on the 355-D Fleetwood, the 370-D and the 452-D cars, showing the clutch pedal stop screw

Cooling System

The cooling system is essentially the same as on the corresponding "C" Series cars; however, several minor changes have been made.

The new fan is of the five blade asymmetrical type, designed to operate without objectionable noise. In other words the blades are not evenly spaced but staggered around the fan hub as shown in Fig. 22. The fans in all the new cars run in ball bearings (See Fig. 23) and are mounted in practically the same manner as on the 370-C and 452-C engines.

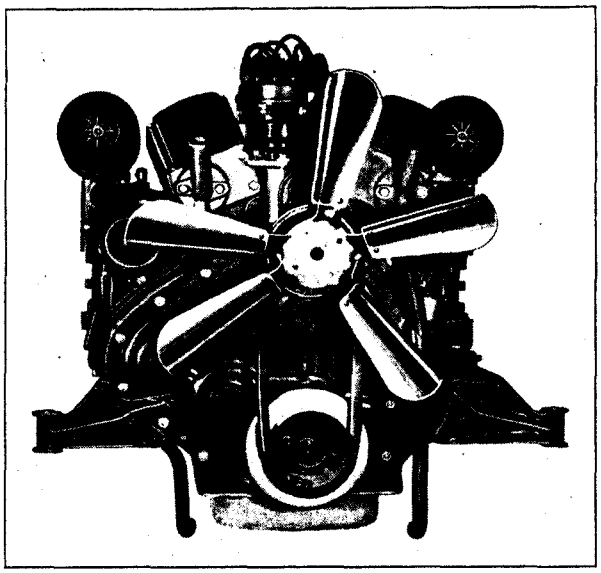

Fig. 22. The fan is of the five blade type with the blades unevenly spaced around the hub

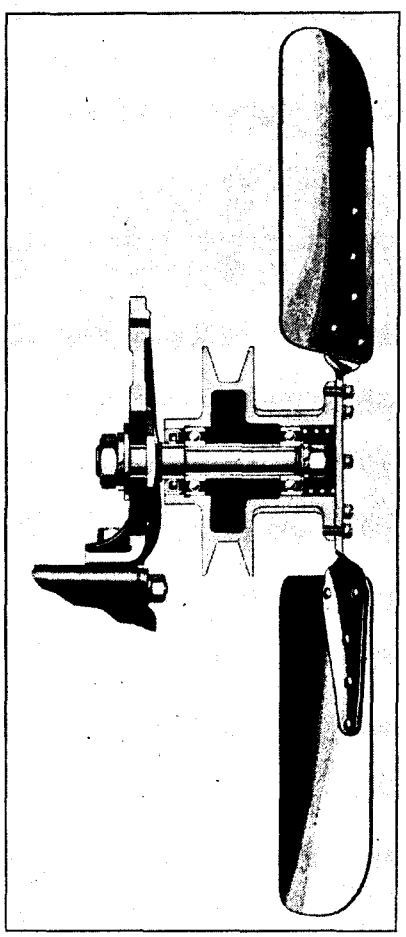

Fig. 23. Sectional view of the fan assembly

No provision is made for lubricating the fan. The fan bearings are packed with lubricant at the factory, which is intended to last for the life of the car. Adjustment of the fan belt is accomplished in the usual manner, simply by raising or lowering the fan to the correct position.

The radiator core, while of the same fin construction as in the "C" series, differs in that the capacity of the upper tank has been greatly reduced. This has been made possible by the increased core area at the bottom due to elimination of provision for cranking the engine by hand.

The radiator shutters and automatic control have been redesigned for the new type radiators. They are, however, similar in construction and operate the same as those on the "C" series cars. The same shutter assembly and thermostat control is used on all models. The radiator casing and grill have been redesigned to conform with the new body lines.

The radiator tie rods are similar to those used in the "C" series except that the new rods are screwed into anchor plates riveted to the dash instead of being held in place by nuts on each side of the dash as formerly. In order to get the proper alignment

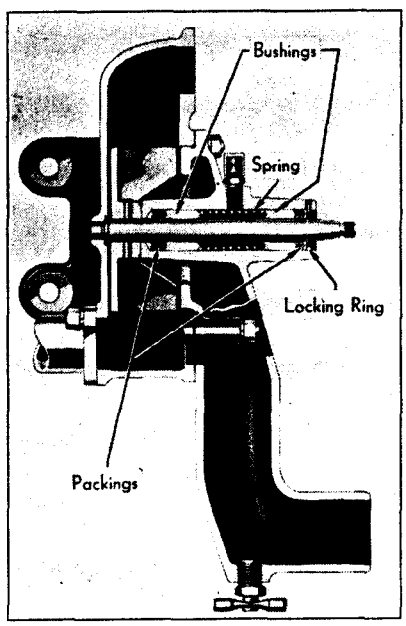

Fig. 24. Sectional view of the 370-D and 452-D water pump

of the radiator it is necessary to screw the tie rods in or out of the anchor plate and then fasten the front end of the rod to the radiator core.

The water pump for the 370-D and 452-D engines is new. It is of the self-adjusting type, and is provided with two "oilite" bushings amply protected by packings to prevent water leakage and to retain the lubricant. See Fig. 24.

The water pump is lubricated through a grease gun fitting.

Electrical System

The electrical system is of the same general arrangement on all the new cars except the ignition circuits. The ignition systems are necessarily different because of the difference in the number of cylinders in the eight, twelve and sixteen cylinder engines. The lighting is the same on all models.

Storage Battery

The storage batteries are the same as used on the corresponding "C" models. The battery mounting, however, is new. See Fig. 25.

The battery on the Series 10 and 20 cars is carried under the front seat in a hanger supported in the X-member of the frame. The battery on all other wheelbase cars is carried under the right front fender in approximately the same location as in the "C" cars. These batteries can be reached from under the hood for adding water.

The storage battery on the Series 10 and 20 cars may be removed from underneath the seat. On the longer wheelbase cars with the battery carried under the right front fender the battery is removed as follows: Remove battery box retaining screws at the top of the frame and then lift the battery and carrier assembly slightly to unlock the carrier from the frame.

Generator

The generator is of the shunt wound current control type. It has no third brush and no adjustment is provided except by the lamp load through a current regulator. In other words, the charging rate is automatically increased when the lights are switched on. See Figs. 26 and 27.

The general construction of the new generator is similar to that of the series "C" generator, the chief external difference being in the current regulator or control. The generator has a ventilating feature for reducing the operating temperature. The conventional cut-out relay, the current regulator, the field fuse and the thermostatic circuit breaker for the head lamps are mounted together in a control box on top of the generator as shown in Fig. 28.

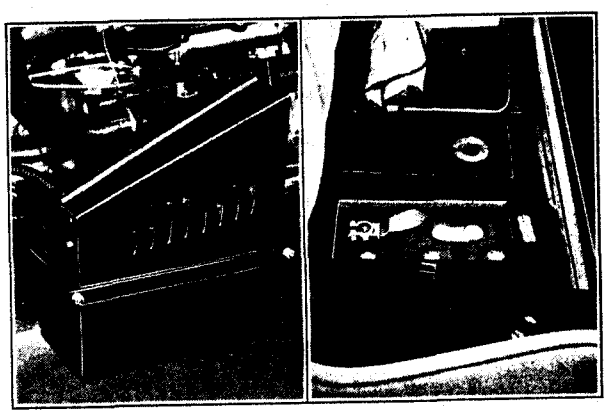

Fig. 25. The battery is located in a compartment under the right front fender on 355-D Fleetwood, 370-D and 452-D cars. On the Series 10 and 20 cars the battery is located under the front seat

The mounting and drive are the same as on the corresponding "C" cars. No service is necessary on the generator except the replacement of parts.

Current Regulator

The current regulator consists in part of two coils that go to make up an electro-magnet. When the cores of these coils are sufficiently energized, the armature is pulled downward against spring tension, opening the contacts and the shunt field current is diverted through a resistance to the ground. This resistance greatly decreases the field current, and the output current flowing through

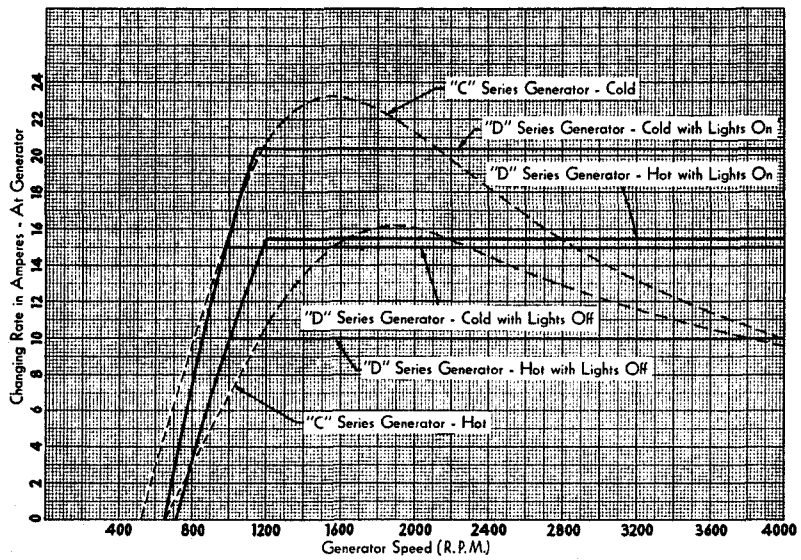

Fig. 26. Typical performance curves of "D" and "C" Series generators. These curves indicate the current output at the generator. The ratio of generator to engine speed is 1.35 to 1 on the 355-D and 1.40 to 1 on the 370-D and 452-D cars

the magnet coils will likewise be decreased to such a point that the spring tension overcomes the magnetic pull on the armature, and closes the contacts. This operation is repeated many times per second, so that the regulator will operate for a reasonably constant current, which will depend upon the spring tension applied to the armature.

From the circuit diagram Fig. 29 it is obvious that the current flowing to the battery also flows through both magnet coils, each of which has 21.5 turns. This regulator is adjusted for 10 amperes with the lights off, and the spring tension is therefore adjusted to equal the magnetic pull of 430 ampere turns. If an 11 ampere light load is now turned on, it will be noted that this current flows through one coil only, and therefore creates 236.5 ampere turns.

Since it requires 430 ampere turns to operate the regulator, the difference between these two, or 193.5 ampere turns, must be furnished by the current flowing to the battery. Since this current flows through 43 turns, we have 193.5 divided by 43, which equals 4.5 amperes to battery. This gives 11 amperes lights, plus 4.5 amperes to battery, or a total generator output of 15.5 amperes. This represents an increase of 5.5 amperes by turning on the lights, or an increase of one-half the light load. Since the lighting current flows through one coil only, it will only have half as much effect per ampere as battery current in operating the regulator. The total number of ampere turns to actuate the regulator remains constant, so that the generator output is increased by half the lighting load.

In contrast to voltage regulators and relays, a current regulator inherently regulates for the same current, either hot or cold. For pleasure cars it seems advisable to increase the cold output to take care of those cars which are being driven only a

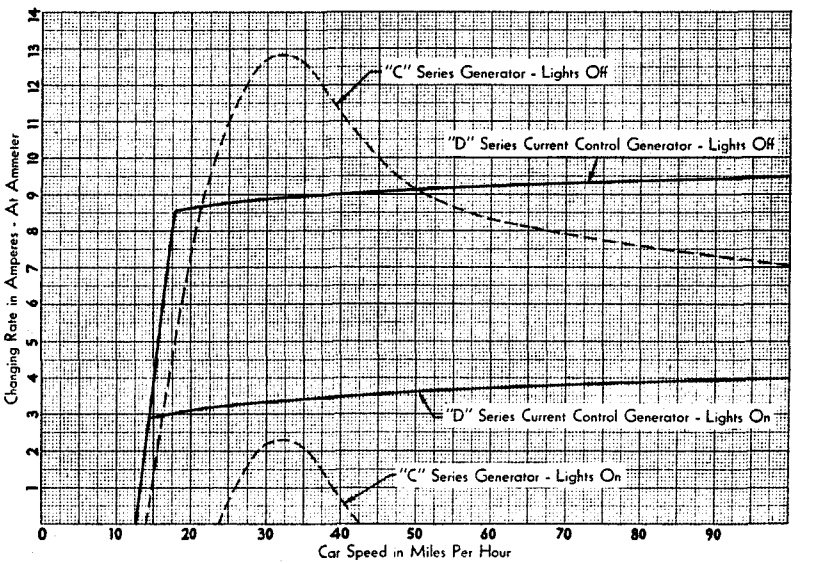

Fig. 27. These performance curves are shown to exemplify the difference in characteristics of the "D" and "C" series generators as indicated by the car ammeter

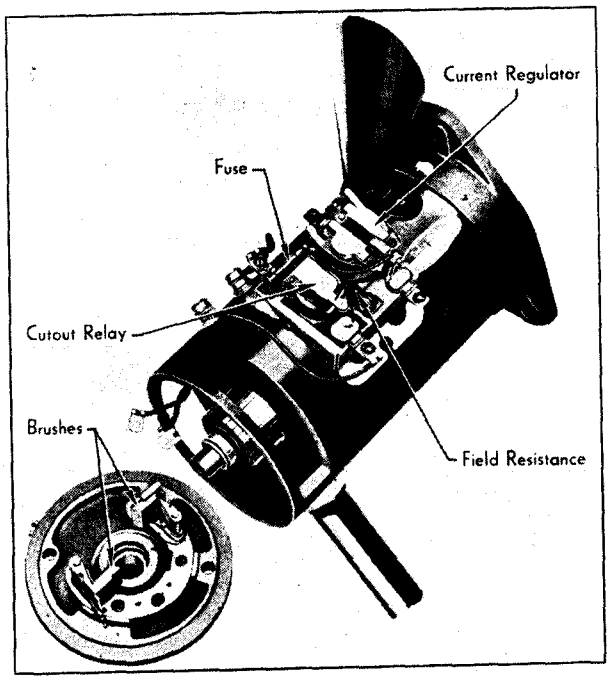

Fig. 28. A new feature of the generator is the control box

few minutes per day, and allow to decrease when hot to prevent overheating the generator and overcharging the battery on cars more continuously in service.

This is provided for in the current regulator by a bimetal armature hinge, which when heated furnishes a force opposing spring tension, and causes the regulator to operate at a lower current when hot. The amount of this difference depends on the relation between the force furnished by this hinge and the spring tension. The spring is used to balance the armature pull at 10 amperes without lights, and this spring tension will therefore vary inversely with the square of the air gap between armature and pole cores.

Temperature compensation will also vary in this manner, and may be decreased by decreasing this gap, or increased by increasing the gap. If the gap is too small, the vibration frequency of the regulator will be low, while if it is too great, the force will be too small to properly operate the armature. A gap of .063 to .070 in. has been found best.

The thermostat is essentially a bimetal blade in series with the lighting circuit, completing the circuit through two silver contacts held closed at ordinary temperatures by inherent spring pressure in the bimetal. The current flowing through the contact blade generates heat, and the design and adjustment is such that when 20 amperes flows with an ambient temperature of 210°F, this heat will be sufficient to cause such a deflection in the contact blade that the points will open. No current will then flow, the blade will rapidly cool, and the contacts again close. The current will therefore be limited, should a short occur in the lighting line. The opening temperature of the thermostat adjusted as above is 375 to 385°F.

The cutout relay is of standard construction and operation. The adjustment of the cutout relay and the regulator is made as follows:

1. *Cutout Relay.* With the armature down, adjust the air gap at the core to .012 to .017 in., and the contact opening with the armature up to .015 to .025 in. Then adjust the spring tension so that the relay closes at 6.75 to 7.25 volts.

2. *Current Regulator.* Adjust the stop which hits the fiber bumper, with the bumper barely touching the stop, to give an air gap between the center of the core and the armature of .063 to .070 in. Then adjust the stop governing the upward travel of armature, so that with armature in the up position there is .005 to .008 in. clearance between the fiber bumper and the stop. The stop governing the down position of the armature should be adjusted so that the point opening when armature is down is .015 to .025 in.

The unit should then be connected to a generator and battery and an 11 ampere light load turned on. The armature spring should next be adjusted so

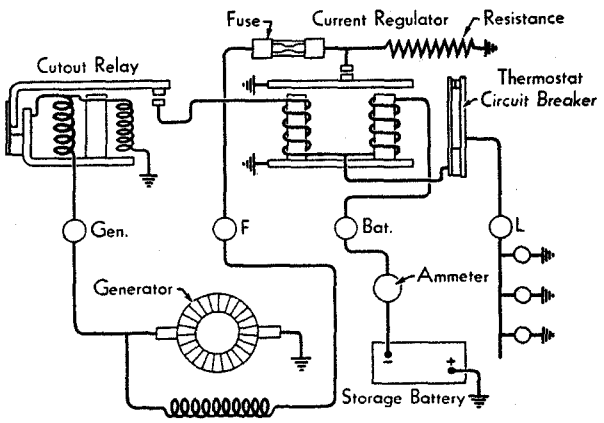

Fig. 29. Diagram of the generator circuit

that the generator output at approximately 3000 r. p. m. is 14.5 to 15.5 amperes with a hot generator or 19 to 21 amperes with a cold one. With the lights off this will give from 9.5 to 10.5 amperes (hot generator) and 14 to 16 amperes (cold generator). The cover should be in place when the voltage and current readings are taken.

Horns

Two matched air-toned horns with long projectors are used on all models. They are mounted on the front side of the dash under the hood. The horn power plant, however, is of practically the same construction and is adjusted in the same manner as on the "C" series cars. The horns are operated through a relay the same as on the "C" series to eliminate the passing of a heavy current through the horn button and minimize the voltage drop in the wiring. The relay is mounted on the horn bracket.

Ignition

The ignition systems are the same as used on the later "C" series cars. The distributor advance mechanism, however, incorporates new advance characteristics to compensate for the higher engine compression ratio used in the new models.

The method of timing the engine is the same as on the corresponding "C" cars. The distributor contact point gap and the spring tension of the contact arms are as follows:

Model	*Gap Between Contacts*	*Spring Tension on Arm*
355-D	.012-.018 in.	19-23 ozs.
370-D	.018-.024 in.	17-21 ozs.
452-D	.014-.018 in.	17-21 ozs.

When the distributor drive shaft and gear are removed and reinstalled, particular care must be exercised to get the driven gear meshed with the camshaft gear in the proper position, otherwise it will not be possible to time the engine correctly. To install a distributor drive shaft, first turn the crankshaft to the firing center (not dead center) for No. 1 cylinder. Then mesh the distributor driven gear with the driving gear on the camshaft so that the slot in the upper end of the distributor shaft is offset towards the rear of the engine. In other words, the narrow part of the shaft at the side of the slot should be at the rear on all 8 and 12 cylinder

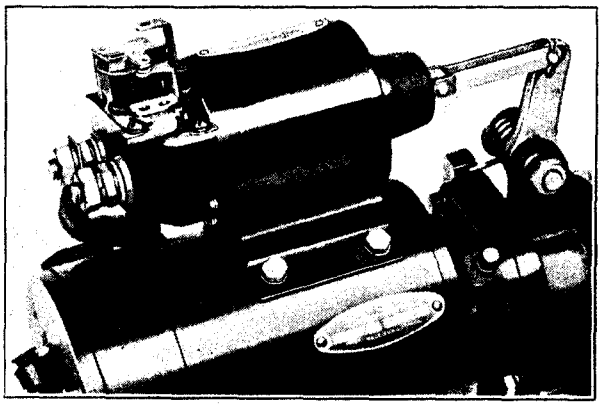

Fig. 30. A new feature of the starting motor is the solenoid control

engines. When installing the distributor drive mechanism on the 8 cylinder engine, care should also be exercised to line up the oil pump shaft so that the driving shaft will drop into position without damaging the oil pump by pushing the pump shaft down through the pump cover. The fuel pump should also be removed before removing the distributor drive mechanism to eliminate interference between the fuel pump drive shaft and the distributor drive shaft.

The ignition coils are new. They are of the same construction but are not interchangeable between the 8 and the 12 and 16 cylinder cars because of different type mountings. The 370-D and 452-D coils are, however, fully interchangeable.

These new coils are similar in appearance to the 530-L service coils formerly used but are of a new design employing heavier windings.

The spark plugs are of the G-7 type and the gap should be adjusted the same as on the "C" series cars.

The flywheel has the usual IG/A mark to indicate the proper timing for full advance. These marks are located 4° ahead of the dead center mark in all engines.

No provision is made for cranking the new engines by hand. To time the ignition on the new cars it is necessary to jack up a rear wheel and turn the engine by the wheel with the transmission in high gear.

Starting Motor

The starting motors and gear engaging mechanism are of the same construction as those used on

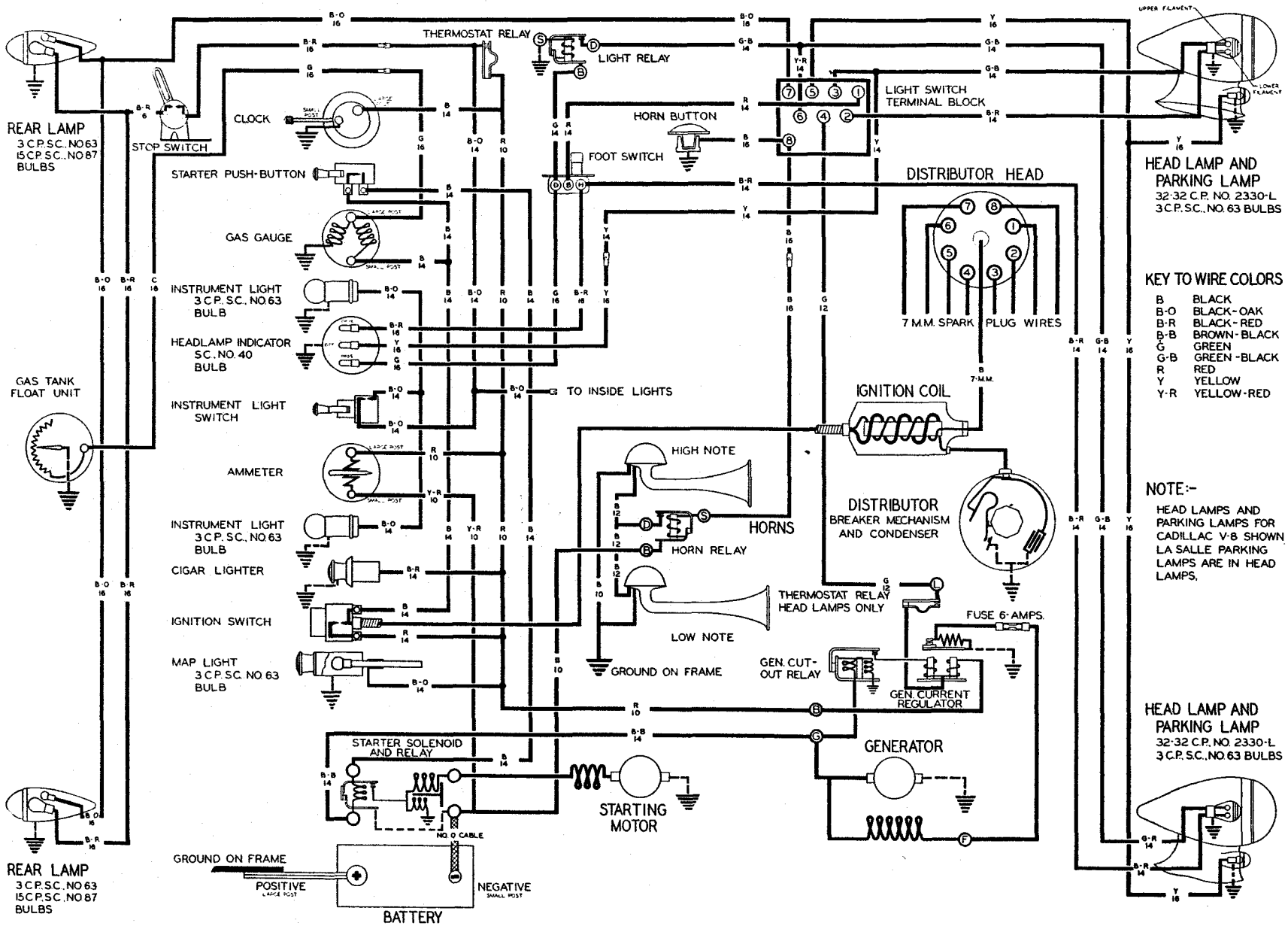

Fig. 31. Cadillac 355-D wiring Diagram

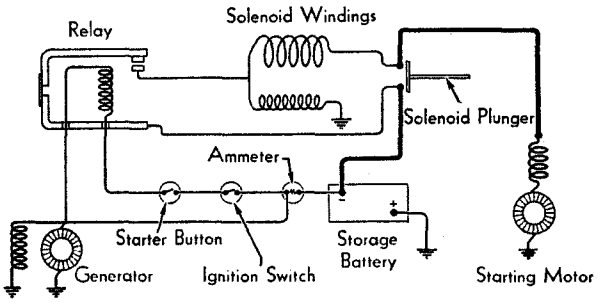

Fig. 32. Diagram of the starting motor circuit

the "C" series cars. The control for the starting motor, however, is entirely new and consists of a solenoid mounted on top of the starting motor, a relay and a starter button on the instrument panel. To start the engine in the new cars, it is only necessary for the driver to turn on the ignition switch and then press in on the hand starter button.

The solenoid operates the starter engaging mechanism and is controlled by a relay both of which are shown in Fig. 30. The relay in turn is controlled by the starter push button on the instrument panel and serves the same purpose in the solenoid and starter button circuit as does the horn relay in the horn circuit; that is, instead of a heavy wire being used between the starter button and the solenoid, heavy wires are used only between the relay and the solenoid. A smaller wire is used between the relay and the starter button. This will eliminate the passing of a heavy current through the starter button and making a voltage drop in the wiring.

The relay is essentially an electromagnet, consisting of a winding and core, a base and an armature. The winding is connected in series with the starter button, the ignition switch and the generator as shown in Figs. 31, 32 and 34. When the core is sufficiently energized, the armature is pulled down closing the solenoid circuit, thus operating the solenoid plunger. The smaller solenoid winding is the holding coil to keep the plunger in the engaged position.

The starter relay is connected in the electrical system in such a way that when the generator is charging, the relay is inoperative. This means that when the engine is running, the starter gear cannot accidentally be engaged. Also when the engine starts running, the solenoid circuit is automatically opened which allows the starting gear to disengage from the flywheel. The relay circuit is controlled by the ignition switch in such a manner that the solenoid is inoperative unless the ignition switch is in the "on" position.

The solenoid serves two purposes. It operates the starter switch and the gear shifting mechanism in the starting motor. When sufficient current is passed through the solenoid winding, the plunger is moved frontward engaging the starter pinion with the flywheel ring gear and also closing the starting motor circuit through the contacts shown in Fig. 33.

There is one adjustment on the starting motor assembly and that is on the solenoid plunger to secure the proper mesh of the starting pinion with the flywheel ring gear. To make this adjustment, the starter should be removed from the engine. Then remove the pin in the upper end of the shifting yoke and push the solenoid plunger all the way in the solenoid after which move the pinion all the way back to what would be the engaged or cranking position if the starter were mounted in the engine, taking out all backlash in the shifter mechanism. Next move the pinion 1/8 in. frontwards away from the end of the housing and adjust the stud in the solenoid plunger by turning it to the right or left as required until the pin may just be inserted at the forward end of the slot.

All other service on the solenoid unit can be obtained from United Motors Service. Distributors

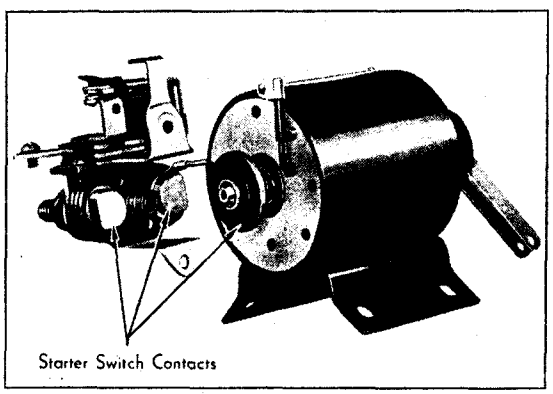

Fig. 33. The starting motor switch forms a part of the solenoid unit

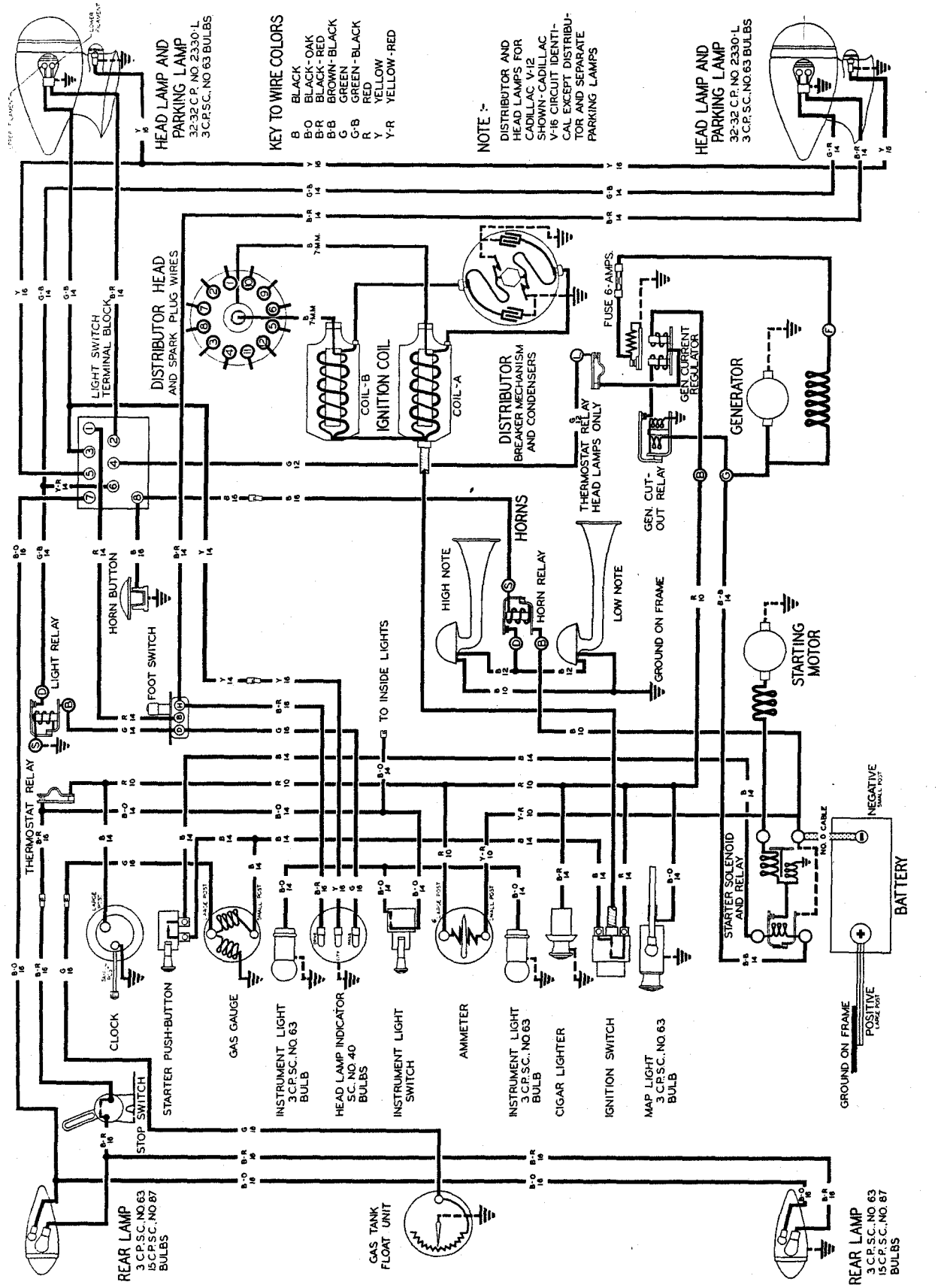

Fig. 34. Cadillac 370-D wiring diagram. The 452-D wiring is the same except for the number of spark plug wires

and Dealers are advised to keep a solenoid unit on hand for exchange to render prompt service.

Wiring

The general arrangement of the chassis and instrument panel wiring is similar to that on the series "C" cars, the wires being grouped in a braided, varnished harness. The wires wherever possible are also carried in protected parts of the frame. Wiring diagrams of the 355-D and 370-D cars are shown in Figs. 31 and 34 respectively. The 452-D wiring arrangement is identical with that of the 370-D except the difference in the number of distributor to spark plug wires.

A new feature of the electrical system is the arrangement of the various relays, circuit breakers and the generator current regulator. All of these devices except the starter, horn and lighting relays and the circuit breaker for the instrument and body lighting circuits are mounted in a control box on top of the generator.

The starter relay is, of course, mounted on the starter solenoid unit and the horn relay mounted on the horn bracket. The circuit control box featured on the previous model cars has been discontinued.

The thermostatic circuit breaker for the instrument and body lighting circuits is mounted back of the instrument panel. The lighting switch relay is mounted on the frame near the steering gear on 355-D cars and on the left front engine support on 370-D and 452-D cars. The lighting switch relay operates in conjunction with the foot lighting switch for controlling the various light beams.

Engine

The new engines are essentially the same as the "C" series. However, several changes have been made that will be of particular interest to service men.

The compression ratios have been increased on all engines, as shown in the following chart:

H. C. (Optional)	H. H. C. (Standard)
355-C—5.7 to 1	5.37 to 1
355-D—5.75 to 1	6.25 to 1
370-C—5.4 to 1	5.6 to 1
370-D—5.65 to 1	6.0 to 1
452-C—5.4 to 1	5.7 to 1
452-D—5.57 to 1	6.0 to 1

This increase in compression ratio necessitates a change in the ignition timing on 355-D engines and the flywheel marks have been changed accordingly. That is, the IG/A marking on the 355-D engines is 4° or approximately ½ inch ahead of the center marks instead of 9° 12′ or 1⅛ inches.

The compression ratio on the 370-D and 452-D engines can be altered the same as in the "C" series by changing the cylinder head gaskets.

New markings are used on the various cylinder heads for identifying the compression ratio. Instead of using the H. C. and H. H. C. markings the ratio is stamped on the head. This stamping is located just above the front spark plug on the 355-D heads and at the end of the cylinder head on the 370-D and 452-D engines in the same position as on the former series.

Cap screws are now used on 355-D engines to retain the cylinder heads in place. Studs, however, are retained in the 370-D and 452-D engines for holding the cylinder heads in position.

Another important change in all "D" series engines is in the use of Lynite pistons with the wearing surfaces of these pistons anodized by an electrolyte process. This process greatly increases the life of the piston as it removes the aluminum oxide and closes the pores of the metal, being practically equivalent to a hardening process.

The pistons also differ from former pistons in that they are finished slightly out of round about .0065 inch on each side as illustrated in Fig. 35. The initial contour of the pistons is such that when the engine is heated to normal running temperature, the pistons conform to the shape of the bore. This piston design is very effective in giving better engine performance due to the better fit of the piston at running temperature.

The pistons are also slotted on one side in the form of a "T." See Fig. 35. The purpose of the

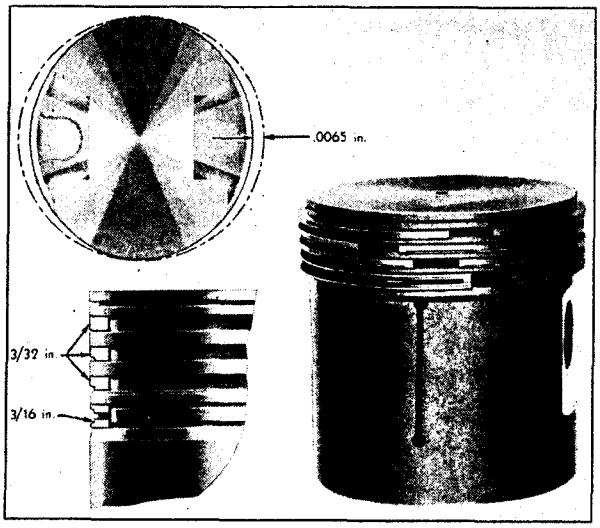

Fig. 35. Piston details

slot is to compensate for expansion of the piston. Four rings, one plain and two notched compression rings and one oil ring are used on each piston as shown in Fig. 35.

Several other changes have been made internally in the engines to give them better performance and longer life; dual valve springs are used on the 355-D; oil bleed holes are provided on the 370-D and 452-D connecting rods; bronze bushings have been added to the valve lifter rollers on all models; two springs are now employed on the 370-D and 452-D dashpots. The cylinder bores in all engines are also honed to a smoother finish for the use of the Lynite pistons.

A slight change has been made in the engine supports on all models to provide a softer mounting. The front and intermediate supports are adjusted in practically the same manner as in the "C" cars. Adjustment of the support at the rear end of the transmission is made by using shims between the upper and lower halves of the rubber retainer. Care must be exercised in adjusting the transmission support not to get it too tight.

A new harmonic balancer is used in the 12 and 16 cylinder engines. This balancer employs rubber as the dampening medium.

The oil filter has been discontinued on the 8 cylinder engines.

The vacuum pump has been redesigned for greater efficiency and longer life.

No major change has been made on many of the parts, such as the camshaft, the front end drive, and the connecting rods on the 355-D, which are of the same design and fully interchangeable with the corresponding "C" series parts. The 355-D cylinder blocks with the double valve springs may be used on "C" series engines either in pairs or individually.

Service operations on the new engines remain practically the same as on the "C" series, with the exception of the pistons and the piston pins. The new pistons should be installed with the slot in the skirt on the right side of the engine as viewed from the driver's seat.

In fitting the new pistons in the cylinders, micrometers must be used to check both the piston and the cylinder bore. Feeler gauges are not suitable for this purpose because of the T-slot and the elliptical shape of the piston. The piston measurement should be taken just above the T-slot midway between the piston pin holes.

The piston clearances are very small and should be measured at certain temperatures. At room temperature or 70° F. the 355-D pistons should have a clearance of .0023 in., the 370-D pistons a clearance of .0020 in. and the 452-D pistons a clearance of .0018 in.

The method of installing the piston pins also differs from that formerly recommended for cast iron pistons. With the new Lynite pistons, the piston pins should be a hand push fit in the side opposite the locking screw at room temperature or 70°F. The piston pin should also be a hand push fit in the locking screw side of the piston, but with the piston heated to a temperature of 200 to 210°F.

Exhaust System

The general arrangement of the new exhaust system is similar to that of the "C" series cars. However, a new type muffler is used which assures minimum back pressure and maximum engine power especially at high speeds.

The new mufflers are mounted on the outside of

the frame, as shown in Fig. 36, on the 355-D Fleetwood, the 370-D and the 452-D cars, to remove the exhaust heat from the body. On the Series 10 and 20 cars, the muffler is mounted inside of the frame as on previous models.

Rubber cushions, similar to those used on the "C" cars, are used on the muffler support brackets to prevent exhaust noises being transmitted to the body.

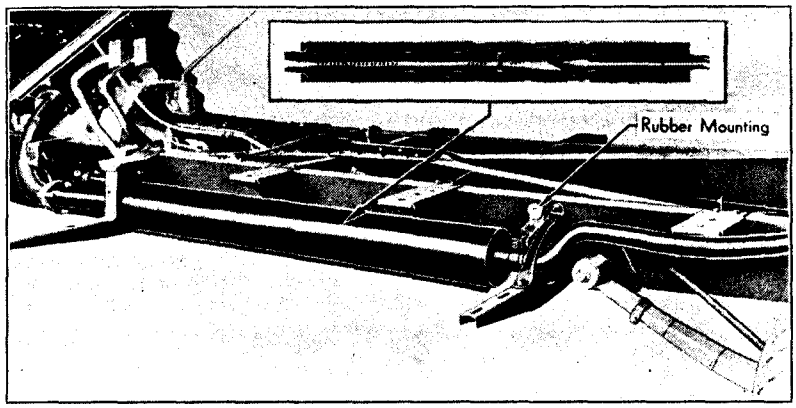

Fig. 36. The new mufflers are mounted outside of the frame except on the Series 10 and 20 cars

Frame

The series "D" frames are entirely new; they are designed to give a low car appearance and embody some new and important features. They are of similar construction on all models, differing principally in dimensions. See Fig. 37.

The front end construction has made it possible to design an extremely rigid frame. The most important units of this frame are the massive front cross member (Fig. 38) and the new X-member (Fig. 39) which is a complete frame in itself. This new frame construction forms a rigid foundation for the body, which minimizes vibration and eliminates twisting or weaving at the front end.

The front cross member is heavily reinforced to provide adequate support for the front wheel suspension system. It also carries part of the steering connections.

The X-cross member extends from the kick-up at the rear to the front cross member and is so constructed as to form a tunnel through which the propeller shaft passes. Beginning at a point near the intermediate engine supports, the front arms of the X-cross member are extended all the way forward parallel to the side members of the frame and are riveted to these side members to form a box section.

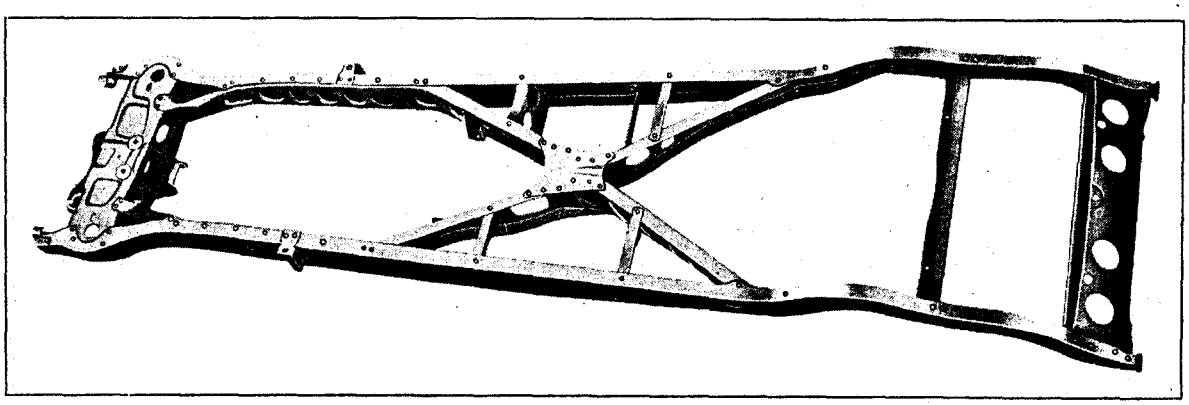

Fig. 37. The new frames are extremely rigid

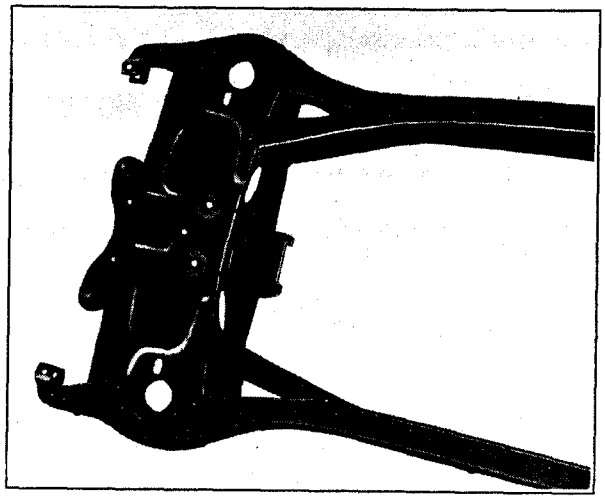

Fig. 38. The front cross member is massive to provide adequate support for the front wheel suspension system

The running board brackets are of an improved type of heavy channel section. The front brackets also serve to support the front end of the exhaust mufflers on the 355-D Fleetwood, the 370-D and the 452-D cars.

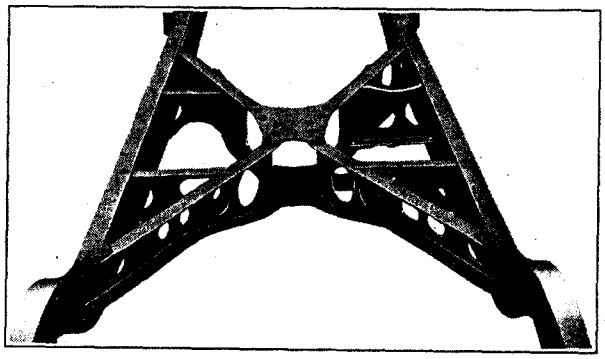

Fig. 39. Rear view of the new frame X-member

Gasoline System

The gasoline system is practically the same on the new models as on the corresponding "C" series, with the exception of the carburetor on the 355-D engines. The intake silencers and air cleaners, while of the same principle as those on "C" series cars have been redesigned to secure fresh cool air through a passage in the radiator casing as shown in Fig. 40. The efficiency of the engine has been greatly improved by using cold air in this manner as better carburetion is secured. All service work on the new intake silencers should be done in the same manner as in previous models.

The new 355-D carburetor is of the expanding air valve type the same as those used on the 12 and 16 cylinder engines and its construction is identical with them. Although the 355-D carburetor is somewhat larger than those used on the 370-D and 452-D models, many of the parts are fully interchangeable.

Like the 370-D and 452-D carburetors, the one used on the 355-D has only one adjustment, the metering pin, which is raised or lowered by screwing it into or out of the fuel orifice. The metering pin is properly adjusted when the carburetor leaves the factory, but if for any reason it should require readjusting, be sure the motor is well warmed up, and then adjust the metering pin carefully at idle speed.

Turning the pin to the right moves the pin upward into the orifice and makes the mixture leaner; turning it to the left increases the orifice and makes the mixture richer.

The idle speed of the engine should be set by means of the throttle adjusting screw to a speed of approximately 320 R. P. M.

When the metering pin is correctly adjusted at idle speed the carburetor is set for maximum engine performance and no other adjustments are required.

The carburetors on all cars can be correctly adjusted on the bench before installing them on the engine. The proper mixture can be obtained by turning the adjusting screw in the bottom of the carburetors all the way in and then backing it out 2¾ turns on 355-D carburetors and 4 complete turns on 370-D and 452-D carburetors.

The idling adjustment can be made by turning the throttle stop screw until a .006 in. feeler gauge

on 355-D and a .004 in feeler gauge on 370-D and 452-D engines will just go between the throttle butterfly valve and the carburetor body with the valve in the closed position. The kicker adjustment is made by setting the choke lever in the open position and turning the kicker screw until a .017 in. feeler gauge on 355-D and a .013 in. feeler gauge on 370-D and 452-D engines will just go between the throttle butterfly valve and the carburetor body with the throttle in the closed position.

All other service work on the new carburetors, such as their removal and disassembly and the replacement of parts is the same as on the "C" series 12 and 16 cylinder engines.

Automatic Choke

All cars are equipped with a semiautomatic choke (Fig. 41), which permits a more efficient choking of the carburetor during the warming up period than is possible by the manual choke control. When the engine is cold before starting, the semiautomatic choke is automatically in the choke position.

The manual choke on the instrument panel should be used as necessary when starting a cold engine but should be pushed in immediately after the engine starts. The purpose of the semiautomatic choke is to keep the engine from stalling and to prevent popping back into the carburetor before the engine has reached the proper operating temperature. As the engine warms up, the thermostat starts to open the choke so that when the engine has reached its correct operating temperature, the semiautomatic choke is in the full open position.

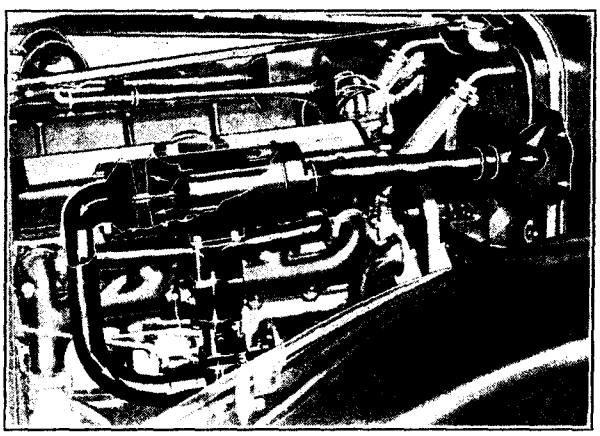

Fig. 40. Cool fresh air for the carburetor is secured through a passage in the radiator casing

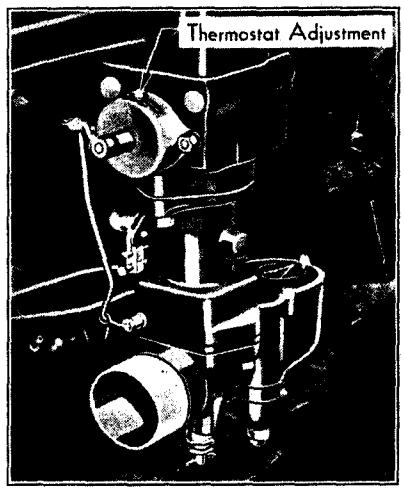

Fig. 41. The purpose of the semiautomatic choke is to keep the engine from stalling and to prevent popping back into the carburetor during the warming up period

Gasoline Tank Filler

The gas tank filler on the Series 10 and 20 cars is located in the left hand side at the rear of the body. The Fleetwood cars have the filler located on the top of the left rear fender. This filler has a double curve where it goes down from the center of the fender through the side of the wheel housing, then through the rear floor down into the tank. The filler is protected from stones and gravel thrown up by the wheel by a specially constructed stone guard which is fastened to the fender and the side of the wheel housing.

On the Fleetwood cars, the inside of the filler neck is protected by a cover which is bolted to the rear floor and inside of the wheel housing. A rubber ring is also used in the wheel housing to keep out dirt.

Lighting System

The new Guide Multibeam three-beam headlamps are used on all series "D" cars. See Fig. 42. These lamps are of the tear-drop design and are carried on streamline supports on the front fenders on 355-D and 370-D cars and on the radiator shell on 452-D cars.

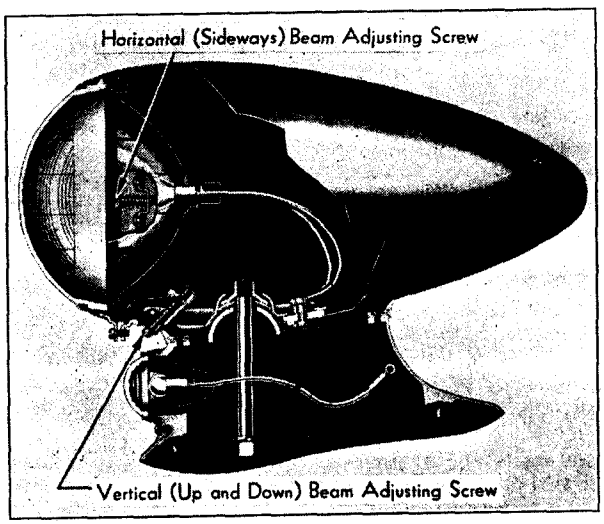

Fig. 42. Sectional view of the new Multibeam headlamp

The Multibeam lighting system is controlled by the conventional switch lever at the hub of the steering wheel. In addition, the country driving and passing beams are further controlled by a foot switch in the toe-board at the left of the clutch pedal. The various headlight beams are readily determined by a beam indicator on the instrument panel.

The parking lamps are integral with the headlamp supports on 370-D and 452-D cars. On the 16 cylinder cars, the parking lamps are built into the crown of the front fenders.

The tail lamps are also new. See Fig. 43. They are streamline in design to match the appearance of the body and fenders. Two reflex buttons are cleverly arranged in the lamp base instead of in the center of the lens as on previous models. The lens is also extended for appearance and to make the tail light and stop light visible from the side of the car. The tail lamp does not include a back-up light.

The circuit breaker for the lighting system is located in the control box on top of the generator.

The Multibeam lighting equipment consists primarily of a special right and left lens, operating in conjunction with special reflectors and pre-focused bulbs. This lighting system is legal in all states.

The Multibeam lenses are plainly marked "right" and "left" and are not interchangeable. They are divided into five horizontal sections of vertical flutes as shown in Fig. 44 to spread the light horizontally to the best advantage. The right lens distributes most of its light to the left of the road while the left lens distributes the major portion of its light to the right side.

The reflectors each have five distinct sections as shown in Fig. 44. Each of these sections is scientifically designed to contribute its share to an optically correct vertical distribution of light. The name "Multibeam" is plainly marked on the reflector and no other reflector can be used with the Multibeam lens. The reflectors are adjustable for aiming the light beams up and down without disturbing or loosening the lamp mounting.

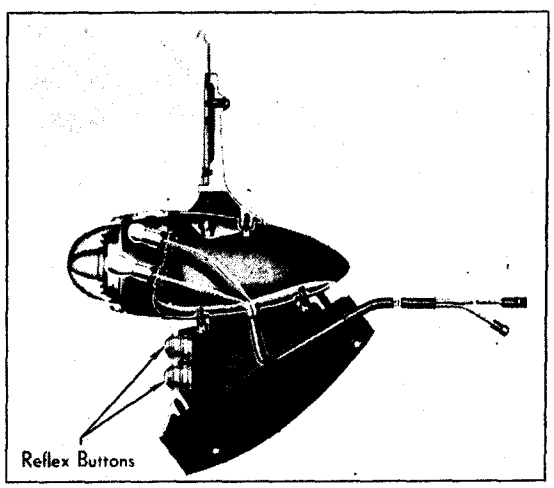

Fig. 43. Sectional view of the tail lamp showing the new reflex buttons

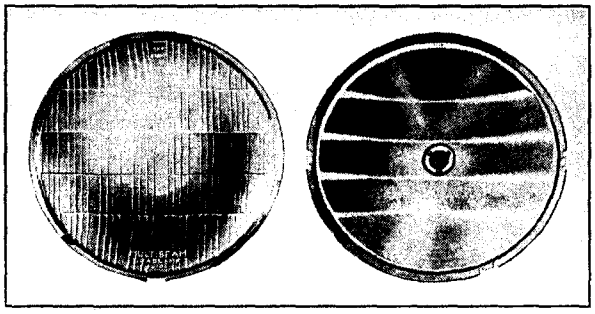

Fig. 44. Multibeam lens and reflector

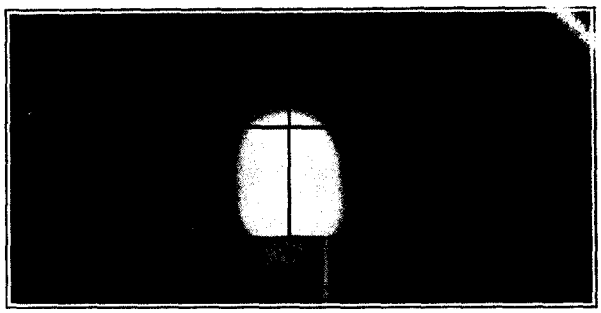

Fig. 46. Upper beam of left headlamp without lens

Three separate and distinct beams of light are obtainable from Multibeam headlamps:

1. An efficient and symmetrical upper or driving beam for the open road.

2. An asymmetrical passing beam, which eliminates the element of danger in passing. This beam is obtained by depressing the left side of the driving beam.

3. A symmetrical lower beam for city driving.

The upper or driving beam is produced by the lower filament of both lamps. The asymmetrical passing beam is produced by the lower filament of the left hand lamp, and the upper filament of the right hand lamp. The symmetrical lower beam is produced by the upper filaments of both lamps.

The Multibeam headlamp bulbs (Fig. 45), are of the prefocus 32-32 candlepower type Mazda No. 2330-L. They are held in the reflector by three small pins projecting through the flat at the apex of the reflector and engaging the button hole slots in the bulb collar. The pressure of the heads of these pins actuated by springs behind the reflector, holds the bulb firmly in the reflector. The three pins in the reflector are unequally spaced, making it impossible to assemble the bulbs in an incorrect position. The base of the bulb is marked "top" to assist in aligning the slots in the bulb collar with the retaining pins.

The Multibeam bulbs are installed in the reflector in a similar manner to the conventional bayonet type bulbs. That is, they are pushed on the pins and turned or rotated slightly clockwise to lock them in position.

It is important that all three pin heads project through the bulb collar slots and that the collar rests flat against the bulb seat before the bulb is turned to lock it in position. When removing the bulb it should be tipped or rocked slightly before it is turned counterclockwise.

Headlamp Adjustment

The new prefocused Multibeam headlamps are equipped with a tilting reflector mechanism that permits aiming the beams up or down by an outside adjusting screw at the bottom of the lamp. See Fig. 42. The beams may also be aimed to the right or left by means of the side adjusting screws under the cork gasket. The beams can therefore

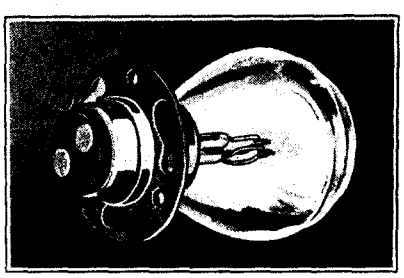

Fig. 45. A special prefocused bulb is used in the Multibeam lighting system

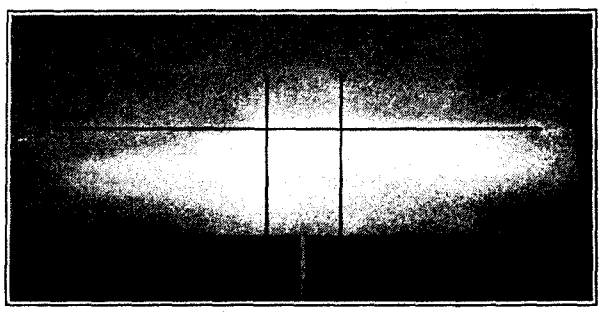

Fig. 47. Upper beam of left headlamp correctly aimed

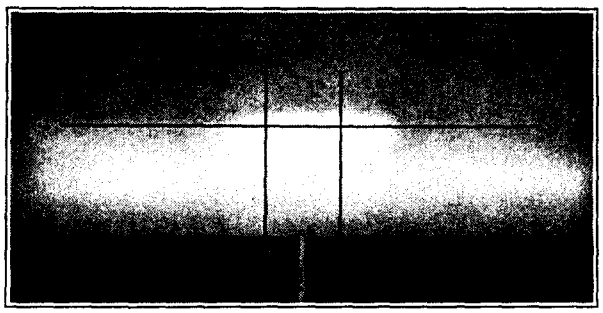

Fig. 48. Upper beam of right headlamp correctly aimed

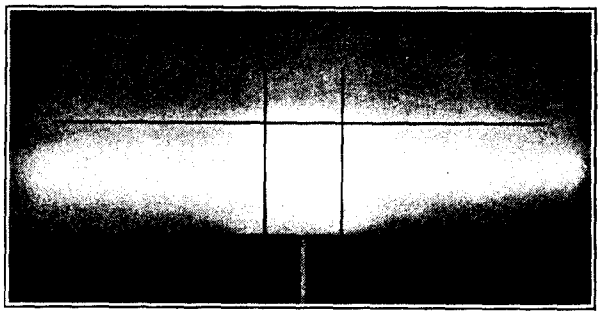

Fig. 50. Passing headlamp beam

be adjusted by means of the adjusting screws making it unnecessary to loosen the lamp on its mounting and disturbing the aim in all directions.

The headlamps are designed for prefocused bulbs so no focusing adjustment can be made. On this account only prefocused bulbs, Mazda No. 2330-L, can be used in these lamps.

To aim the headlamps the car should be placed on a level surface with the headlamps aimed toward and 25 feet from a garage door or other reasonably light colored vertical surface. Then draw a horizontal line on this surface at the level of the headlamp centers. If your state requires a loading allowance, draw this horizontal line the required distance below the level of the lamp centers. Sight through the center of the back window over the radiator cap to determine the center point of the horizontal line and draw vertical lines through points at the right and left of this center point directly ahead of the center of each headlamp.

The lighting switches should be turned to the "Driving" position, which means that the lower filaments will be lighted in both lamps. The headlamp doors must be removed and one of the headlamps covered. The beam from the uncovered lamp should then be centered sideways if necessary on the vertical line directly ahead of it. Aiming to the right can be accomplished by loosening the screw in the right side of the lamp body, or to the left by loosening the left screw. The beams should be adjusted as shown in Figs. 46 to 51 inclusive.

When replacing the headlamp doors, reinstall the cork gaskets with care and be sure to place the door with the "left" lens on the left lamp and the "right" lens on the right lamp. Then check again the driving beams from the two lamps, one at a time.

The driving beam from the left headlamp should have the upper edge of the hot spot at the horizontal line and the left edge at the vertical line directly ahead of the lamp as shown in Fig. 47. The driving beam from the right headlamp should likewise have the upper edge of the hot spot at the horizontal line, but with the maximum intensity centered on the vertical line directly ahead of the lamp and the right cut-off of the hot spot about a foot to the right of this line as shown in Fig. 48.

No further aiming is required for the lower or passing beam.



Fig. 49. Upper or driving beam from both headlamps

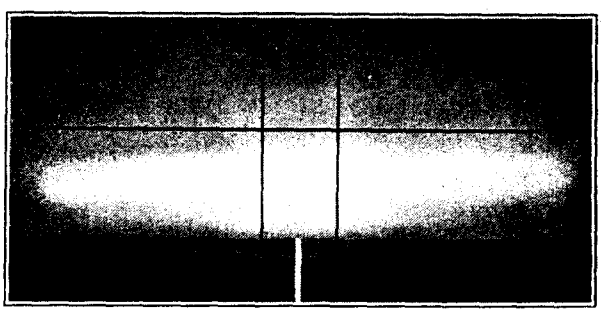

Fig. 51. Lower headlamp beam

Lubrication

Lubrication of the series "D" cars is similar to that of the corresponding "C" models with the exception of a few points. There are, however, several additional points for lubrication on the front wheel suspension system and the body stabilizer links. Lubrication of these parts should be made with chassis lubricant every 1000 miles.

Several lubrication points have also been eliminated on the rear springs. No lubrication is necessary at the front shackles and the upper shackle bolt at the rear end of these springs.

The same kind of lubricant should be used and the same mileage intervals should be observed in lubricating the new cars as for the "C" series.

Improved Alemite fittings are provided at the various points requiring pressure lubrication.

Springs and Shock Absorbers

The front spring and shock absorber equipment on the "D" series cars is entirely new.

Springs

The front springs are of the helical or coil type and are mounted between the frame and the lower suspension arms as shown in Figs. 1, 2 and 6.

The front springs have nothing to do except to spring the car. As a result they can be made as soft acting as desired; a contribution to riding comfort that cannot be obtained with the conventional type front springs. Neither does their springing action vary. This type spring also has the advantage of eliminating road vibration as any movement imparted to the bottom of the spring caused by slight inequalities in the road is absorbed and dies in the bottom coils of the spring and is not transferred to the frame. Large rubber bumpers are installed inside of the coil springs to cushion extreme movement and to assure proper riding comfort.

The riding quality of any car depends primarily upon two factors—the flexibility of the front and rear springs and the distribution of the masses of the car.

The front springs of conventional automobiles are made between two and three times stiffer than the rear springs. This greater stiffness is necessary because the front springs hold the front axle in place for steering stability. Thus, since the front springs are stiffer than the rear springs, the frequency or speed of the oscillations set up at the rear end of the conventional car are different from those at the front. It is this fight between the two ends of the car and not the action of the front or of the rear springs alone that contributes to an undesirable ride. The reduction in front spring stiffness also allows the front wheels to move up and down considerably without affecting the level of the frame and body.

The ride obtained by the new Cadillac cars has two revolutionary characteristics: the passengers are lifted much more gently when striking a heavier bump and the car is no longer pitched but moves slowly up and down on an even keel.

With the new type helical front springs, shackles have been eliminated at the front end and no lubrication is required.

The removal and installation of this type of spring are entirely different from that of the conventional elliptic springs. To remove one of these coil springs, it is necessary first to block up the frame just back of the front wheels as explained under "Front Wheel Suspension." Then the front wheel assembly is jacked up from the floor and the wheel removed. The threaded bolt is next removed from the upper end of the steering yoke,

which connects the shock absorber arm to this yoke. The wheel spindle and supporting yoke are then swung downward and the jack lowered sufficiently to release the spring. Installation of the spring may be accomplished by reversing the order of these operations.

The rear springs are of the conventional elliptic type, but have been redesigned to afford greater riding comfort. They are somewhat longer than the "C" series springs. Spring covers are used but no fittings are provided for lubricating the springs externally.

A feature of the rear springs is the rubber and asbestos composition strip between the eye or No. 1 leaf and the No. 2 leaf and the graphite bronze plates at the ends of the remaining leaves. The purpose of the composition strip is to dampen down the spring action by decreasing the liveliness of the spring and to serve as an antisqueak. The bronze plates in the ends of the other leaves are for the purpose of providing constant lubrication to prevent squeaks.

An important improvement has been made in the spring shackles. The front shackle of the rear springs is of the rubber bushing type, using but a single bolt necessitated by the use of the Hotchkiss type of drive. See Fig. 52. The rear shackles have rubber bushings at the upper bolt and a threaded metal bushing at the lower bolt as shown in Fig. 53.

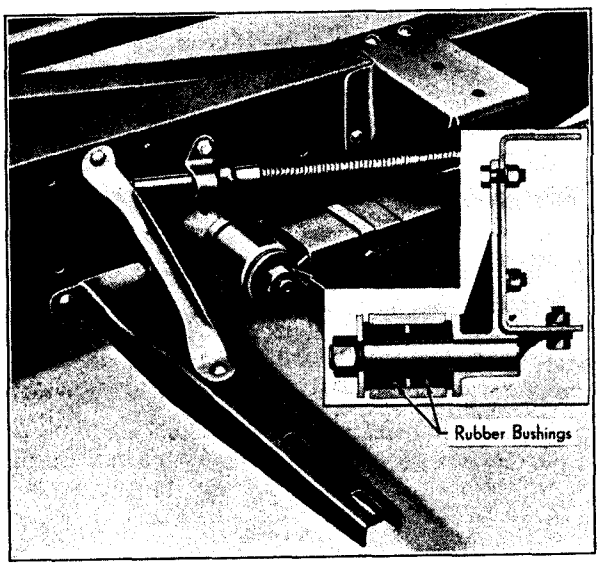

Fig. 52. The front shackle of the rear springs is of the rubber bushing type

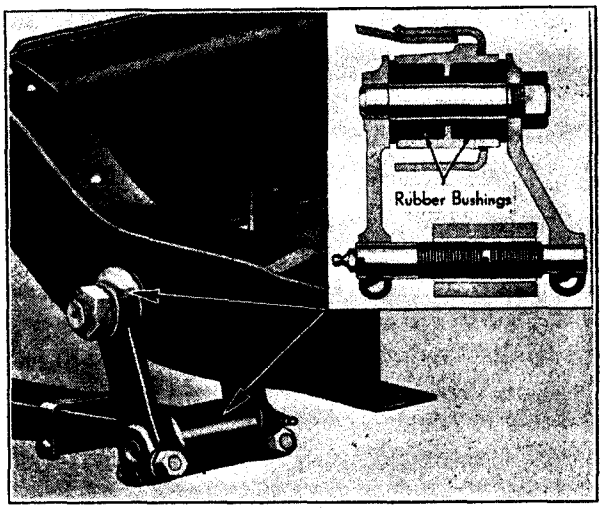

Fig. 53. The rear shackles of the rear springs have rubber bushings at the upper bolt and a threaded metal bushing at the lower bolt

The removal of the rear springs differs somewhat from that in the "C" series cars in that it is necessary to remove the front shackle bracket in order to remove the spring eye from the shackle bolt. This bracket is bolted to the frame and is accessible from underneath the car. It is also necessary to remove this bracket for replacement of the rubber bushings at the front end of the spring.

Jack Pads

To eliminate difficulty in changing tires, jack pads are conveniently placed at both the front and rear ends of the chassis. The front jack pad (Fig. 2) is part of and forged on the lower suspension arm. The rear jack pad is provided on the rear spring clip back of the axle housing.

Shock Absorbers

The shock absorbers are new. The front shock absorbers (Fig. 54) are of the newly improved double acting type and are actually built onto the frame as a structural part of the car. All shock absorbers are of the manual controlled type. The rear shock absorbers, have an additional inertia control feature as shown in Fig. 55, which automatically controls the rebound of the car at the rear.

The inertia valve also automatically compensates for changes in temperature due to the slower or retarded action of the weight in cold weather.

When the car is travelling over smooth roads, where there is very little movement to the frame and body, the inertia valve weight does not move and the shock absorbers function in the regular way.

When the car is travelling over rough roads the frame of the car moves down and the inertia valve weight also moves down but as the frame moves up on the rebound, the inertia weight, which is supported on a coil spring does not move up as fast as the spring, due to its inertia. This action closes the inertia slide valve which makes the rebound check valve inoperative and the compressed oil in the cylinder under this condition must pass through the main control valve.

The action of the shock absorbers, however, is regulated by a hook-up controlled through a lever mounted on the steering column the same as in the "C" series cars. Shock absorbers are alike on all "D" cars and are fully interchangeable with the exception of the valves which necessarily differ on the different models.

The upper suspension arms are a part of the front shock absorber assembly and are not supplied separately from the shock absorbers.

Adding fluid to the shock absorbers is the same as on the "C" series cars. Checking the fluid level in the shock absorbers is called for on the Lubrication Schedule every 6000 miles. Use only Delco Shock absorber fluid in the shock absorbers.

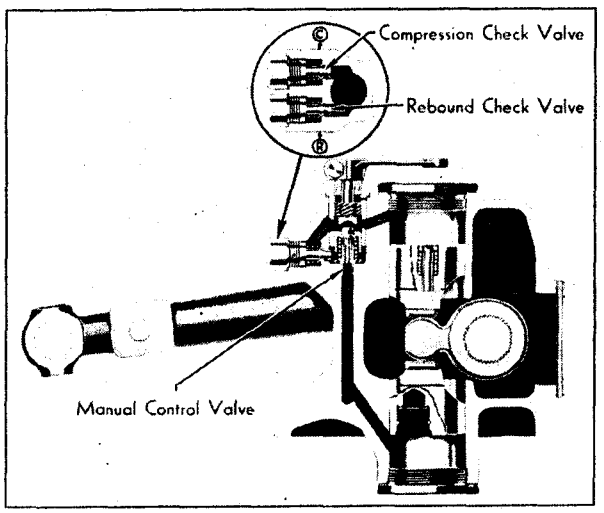

Fig. 54. Sectional view of the front shock absorber

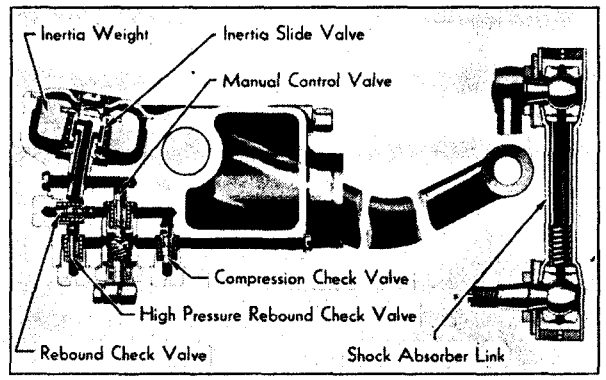

Fig. 55. Sectional view of the rear shock absorber

Body Stabilizer

Another feature which contributes to improved roadability is a new stabilizer bar at the rear of the car as shown in Fig. 56. This unit consists of a steel shaft which extends across the frame just back of the rear axle and is connected to the rear axle by levers and links. The purpose of this device is to oppose any tendency of the body to roll. When one side of the car tends to rise faster than the other, as happens when rounding corners, a twisting action takes place in the spring steel stabilizer bar which reacts to hold the body on an even keel.

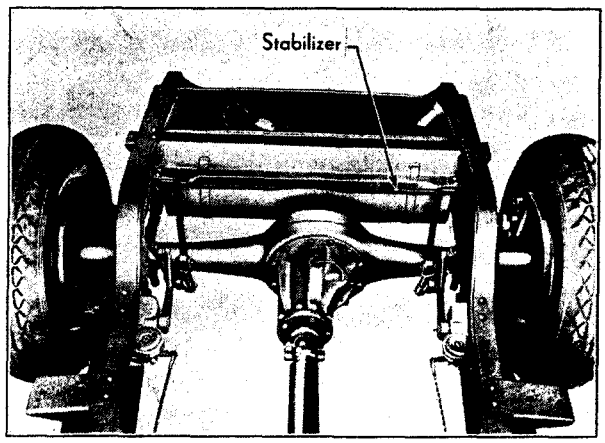

Fig. 56. The stabilizer opposes any tendency of the body to roll

Steering System

The Steering system in the "D" series cars is new. It comprises a new type steering gear, new steering connections and an intermediate steering arm between the steering connection rod and the steering tie rods. The arrangement of the steering system is clearly illustrated in Fig. 3.

Steering Gear

Two types of steering gears are used. Both steering gears, however, are of the worm and double roller type. The steering gear shown in Fig. 57 is used on the Series 10 and 20 cars and is mounted inside of the frame side member in the conventional manner. The other steering gear illustrated in Fig. 58 is used on the larger Cadillac cars. It is mounted outside of the frame and is inverted with the sector at the top. The construction of the two steering gears is practically the same with the exception of the provisions for making the adjustments.

The worm in both steering gears is of the conventional hour-glass type. It does not engage directly with the sector but operates the sector through a double tooth roller. This roller is carried on two rows of ball bearings with the bearing cones clamped in the forked end of the sector by the roller bolt. These bearings take both the radial and thrust loads. The roller shaft is carried on needle roller bearings.

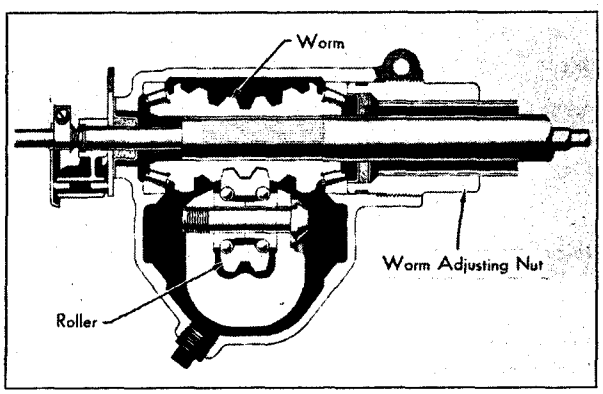

Fig. 57. Sectional view of Series 10 and 20 steering gear

The worm is mounted between two tapered roller bearings and in the smaller steering gear is adjustable for end play by means of the worm adjusting nut (Fig. 57) at the top of the housing as on previous model cars using Tool No. J-633. Backlash between the worm and roller is adjusted by shifting the housing cover by means of an eccentric the same as in the "C" series cars. Tools No. J-634 and J-637 should be used for making this adjustment.

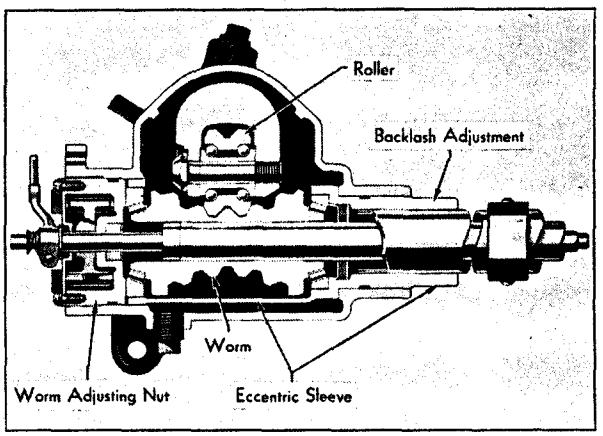

Fig. 58. Sectional view of inverted type steering gear used on the 355-D Fleetwood, the 370-D and the 452-D cars

The adjustment for end-play of the worm in the larger steering gear, Fig. 58 is located at the bottom. To make this adjustment it is necessary to loosen the lower clamp and turn the plug, using Tool No. J-632, until the proper tightness of the bearings is secured. Backlash between the worm and roller is adjusted by turning the worm sleeve at the top with Tool No. J-633. This sleeve adjustment is similar to the worm bearing adjustment on the smaller steering gear.

A conventional adjusting screw is provided in the side of the housing on both steering gears for regulating the end play in the sector shaft. See Fig. 59.

The adjustment of the wheel position with respect to the steering gear differs from that on

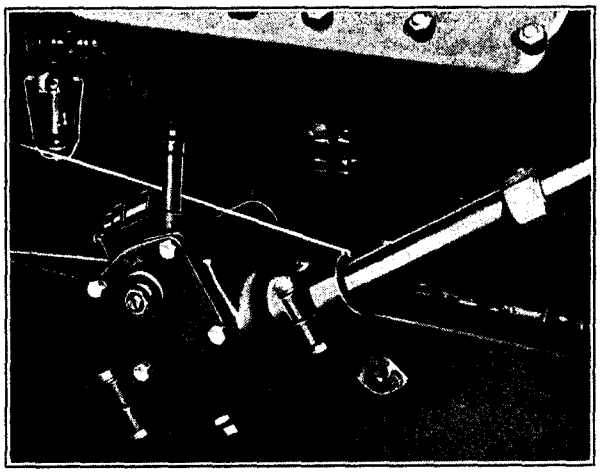

Fig. 59. The inverted type steering gear is mounted on the outside of the frame

previous models in that no spacers are used in the steering connecting rod ends. To adjust this wheel position on the new cars it is necessary to disconnect the steering connecting rods from the Pitman arm and then turn the steering connecting rod in or out of the front end attached to the intermediate steering arm as the case may require.

The rear end of the steering connecting rod also differs from previous construction in that coil springs are used on both sides of the Pitman arm pivot. The proper adjustment of these springs is made by screwing the plug all the way in and then backing it out three turns using Tool No. J-630.

Lubrication of the steering gear should be made every 3000 miles, using regular steering gear lubricant. The capacity of both steering gears is 1 pint or 1 pound.

Steering Connections

The steering connections differ from previous constructions in that an intermediate steering arm is used between the steering connecting rod and the tie rods. Two steering tie rods are also employed, one rod connecting the intermediate arm to each steering knuckle in the wheel assembly as shown in Fig. 60. This arrangement gives center point steering control and directly benefits the steering in that the tie rods move independently of each other in accordance with the individual movement of each front wheel, thereby maintaining the proper relationship between these parts. The intermediate arm is simply a right angle arm carried on tapered roller bearings in the front cross member of the frame. See Fig. 5.

New type joints or ends are also used on the steering tie rods and at the front end of the steering connecting rod. These ends, while of the ball and socket type, differ from previous construction, in the retainment of the ball in the socket. Adjustment of all joints in the steering system is accomplished by screwing the plug in or out as in former constructions using Tool No. J-630. See instructions given in section on Front Wheel Suspension.

Adjustments

The adjustment of the new steering gears is essentially the same as that of the steering gears previously used. However, the following specifications should be adhered to in making these adjustments.

1. The worm should be adjusted for 1 to 1½ lbs. pull measured at the steering wheel.

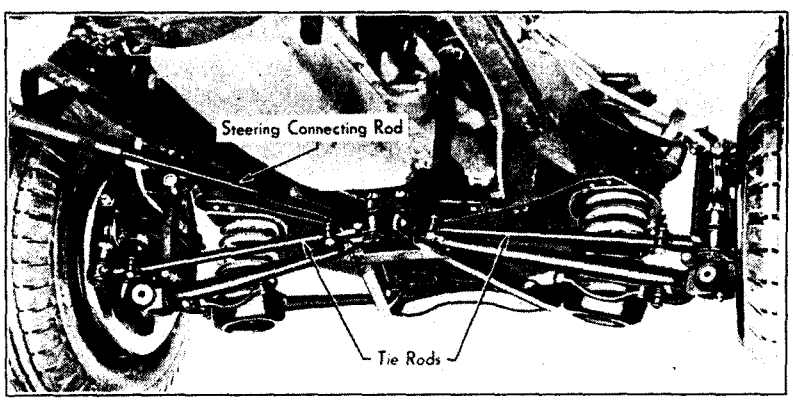

Fig. 60. Two tie rods are used to connect the intermediate steering arm to the steering knuckle arms

2. The combined adjustment of the worm and sector should be made to necessitate a pull of 2 to 2½ lbs. on the steering wheel to move it through the high or tight spot on the gears.

3. Backlash between the worm and roller should be approximately the same when the steering wheel is turned within one turn from either extreme position.

When adjusting the steering connecting rod to the proper length, the tie rod end of the intermediate steering arm must be located in the center line of the car and the front wheels must have the proper toe-in and be in a straight ahead position. This is important to insure proper relation of the front wheels, the intermediate steering arm and steering gear.

Transmission

The transmission remains unchanged in the "D" series cars, except for the propeller shaft connection at the rear end, and the mounting of the gear shift lever on the 370-D and 452-D cars. See Fig. 61.

With the new propeller shaft arrangement the universal joint is no longer mounted at the rear end of the transmission main shaft, but rather at the rear end of the front propeller shaft. The front propeller shaft is connected to the transmission main shaft through a splined coupling and is carried in a housing bolted to the rear of the transmission. This housing also acts as a support for the transmission, being carried in a rubber mounting.

The transmission cover in the 370-D and 452-D cars differs slightly from the 355-D and previous transmissions in that the gear shift lever is mounted at the front end on top of the clutch housing.

The transmission breather has been moved to a new position. It is now located at the rear of the transmission on the rear bearing retainer housing.

The service operations and the interchangeability of parts on the new cars are the same as on the "C" series except the removal of the transmission from the car.

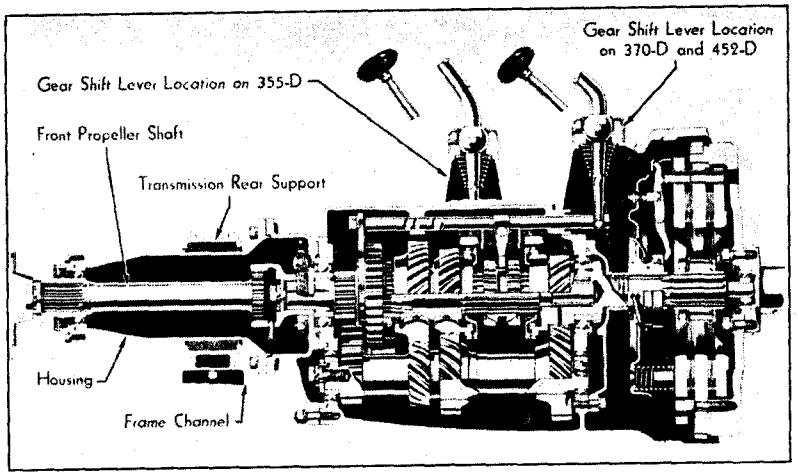

Fig. 61. Sectional view of transmission showing the front propeller shaft and housing

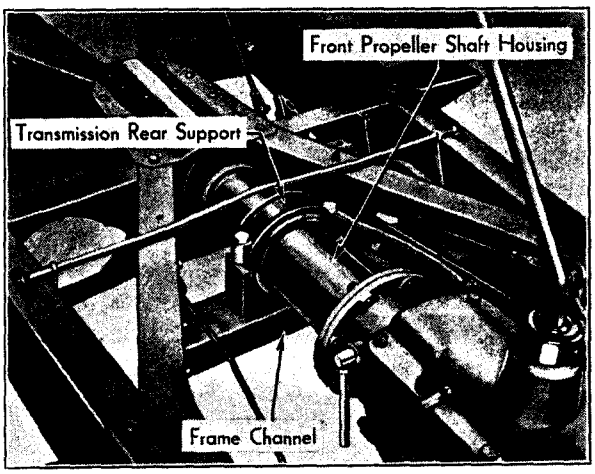

Fig. 62. The frame channel carrying the transmission support must be removed before the transmission can be dismounted

To remove the "D" series transmission, it is not necessary to disturb the rear axle as the two parts of the propeller shaft can be separated by disconnecting the front universal joint. The transmission support, together with the channel or cross member bolted to the frame, which carries this support must also be removed before the transmission can be dismounted. See Fig. 62. The remaining operations for removal and disassembly of the transmission are the same as for the "C" series cars. Likewise all adjustments of the yokes and bearings are made in the same manner as formerly.

Lubrication of the transmission is the same as on the "C" series cars.

Wheels, Rims and Tires

The wheels, rims and tires remain the same as on the corresponding "C" models and the same service operations apply to both series.

Wire wheels are standard on the 355-D and the 370-D cars with detachable discs as special equipment. Wire wheels are standard on the 452-D cars.

Spare wheels and tires are carried on Series 10 and 20 cars in fenderwells or on a visible carrier at the rear of the car, which is designed to conform with the new body lines. On the Fleetwood cars the tires are carried in fenderwells or concealed in the rear deck. When fenderwells are used the rear deck space can be used for luggage.

IMPORTANT

Beginning with the "D" series cars, fine thread pitches on all threaded parts up to 1/2 in. size have been discontinued and a standard pitch adopted. This is in keeping with the standardization of Cadillac parts.

The parts largely affected by this change are studs which formerly had two thread pitches—a standard thread pitch on one end and finer thread pitch on the other end. Another example is where a single thread size has previously been supplied in two or more pitches, all of which have now been eliminated except the newly adopted standard pitch.

This change in thread pitch applies only to parts for "D" series cars except in instances where such parts are supplied for use on previous models. In such cases the necessary new standard threaded parts will be furnished to make the installations.

Service men are cautioned hereafter to watch all threaded parts in order to avoid the damaging of threads by mismatching. Use only the threaded parts as supplied by the factory Parts Division when "D" series parts are installed on earlier model cars.

New Tools

Few additional tools are necessary for servicing the new cars. No special fittings or modification of previous tools are required.

Front Wheel Suspension

Wrench for retaining nut on steering knuckle support yoke.....Tool No. J-602
Arbor press plate with spindles for removing and installing intermediate steering arm shaft.....Tool No. J-606
(3 parts—J-606-1, J-606-2, J-606-3)
Hand screw press for removing inner tie rod end pivots.....Tool No. J-624
Offset wrench for adjusting tie rod and steering connecting rod ends.....Tool No. J-630
Caster gauge.....Tool No. J-631

Steering Gear

Wrench for worm adjusting nut on 355-D Fleetwood, 370-D and 452-D.....Tool No. J-632
Wrench for worm adjusting nut on Series 10 and 20 and eccentric adjustment on 355-D Fleetwood, 370-D and 452-D.....Tool No. J-633
Wrench for eccentric lock nut on Series 10 and 20.....Tool No. J-634
Wrench for eccentric on Series 10 and 20.....Tool No. J-637

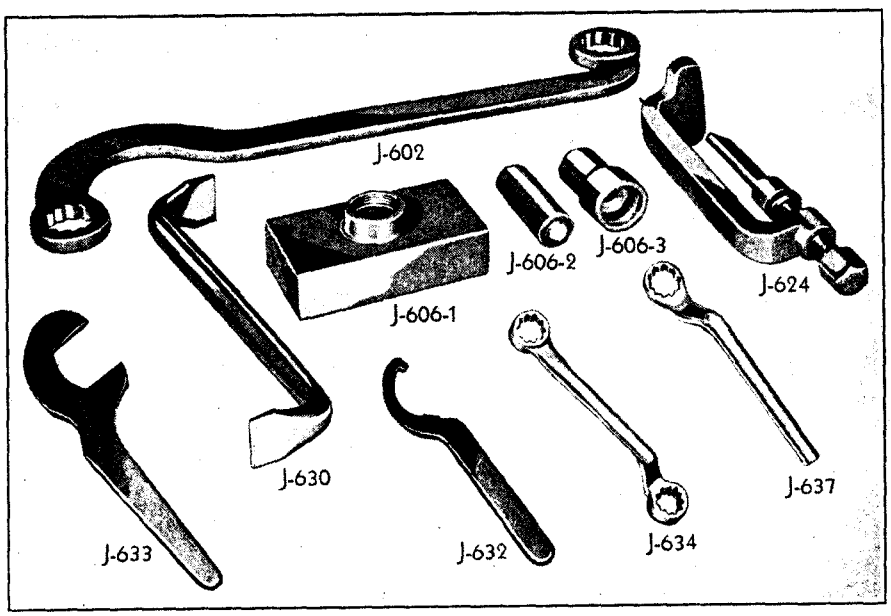

Fig. 63. New tools

V-16 Cadillac, Series 60

(BODY BY FLEETWOOD)

Style		List Excise Tax to be Added	Delivered
Body Styles with Straight Windshield			
6233-S	5-Passenger Town Sedan	$7000.00	
6230-S	5-Passenger Sedan	6950.00	
6230-FL	5-Pass. Imperial Cabriolet	7350.00	
6275-S	7-Passenger Sedan	7100.00	
6275	7-Passenger Limousine	7300.00	
6275-FL	7-Pass. Imperial Cabriolet	7500.00	
Body Styles with Modified "V" Windshield			
5876	Coupe, with inside auxiliary seats	$7750.00	
5835	Convertible Coupe, with inside auxiliary seats	7900.00	
5880	Convertible Sedan, with Imperial partition	8150.00	
5833-S	Special 5-Pass. Town Sedan	7650.00	
5830-S	Special 5-Passenger Sedan	7600.00	
5830-FL	Special 5-Passenger Imperial Cabriolet	8000.00	
5875-S	Special 7-Passenger Sedan	7750.00	
5875	Special 7-Pass. Limousine	7950.00	
5875-FL	Special 7-Passenger Imperial Cabriolet	8150.00	
5812	5-Pass. Town Cabriolet	9150.00	
5825	7-Pass. Town Cabriolet	9250.00	
5891	7-Passenger Limousine Brougham	9150.00	

5 Wire Wheels, disc covered, standard equipment.
7.50-17 Black sidewall tires standard equipment.

List Price of Cadillac V-16, series 60, includes either 5 wheel equipment with spare tire or 6 wheels, fender wells and two extra tires. Also Goddess ornament in gold or silver finish and Cadillac Master Radio.

ACCESSORIES

Price List

(Prices include complete installation and Federal Excise Tax)

Cadillac Metal Tire Covers for LaSalle with fender wells	Pair	$ 35.00
For Cadillac V-8, V-12 or V-16 with fender wells	Pair	40.00
For Cadillac V-8, Series 10 and 20 rear mounting	Each	20.00
Cadillac Metal Cover Mirrors	Pair	20.00
Cadillac Auxiliary Mirror		8.00
Cadillac License Frames	Pair	7.00
Cadillac Moto-Pack		5.85
Cadillac Motor Car Radio—Master		89.50
Cadillac Motor Car Radio—Standard		59.50
Cadillac Steam Heater (Front Compartment)		44.50
Cadillac Trunks and Cases—		
Standard trunk only		85.00
Equipped with 3 standard cases		122.00
Equipped with 4 standard cases		134.00
Equipped with 3 standard long cases		130.00
Equipped with genuine cowhide cases		195.00
Equipped with aerotype linen cases		175.00
Cadillac Fleetwood Trunk and Cases—		
Fleetwood trunk only		95.00
Equipped with 3 standard cases		132.00
Equipped with 4 standard cases		144.00
Equipped with 3 standard long cases		140.00
Equipped with genuine cowhide cases		205.00
Equipped with aerotype linen cases		185.00
Cadillac Lorraine Driving Light		24.50
Cadillac Fleetwood Robe		45.00
Cadillac Double Alpaca Robe		20.00
Cadillac Alpaca and Plush Robe		20.00
LaSalle Steel Tire Chains		8.00
Cadillac Steel Tire Chains—V-8		9.00
Cadillac Steel Tire Chains—V-12, V-16		13.50

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(Prices include installation but Excise Tax to be added)

LaSalle Torpedo ornament	20.00
Cadillac Goddess ornament	20.00
Cadillac Wheel Discs	
Set of 5	25.00
Set of 6	30.00
Flexible Spoke Steering Wheel	15.00
Cadillac Fleetwood Trunk Rack	35.00
Cadillac Fleetwood Trunk Rack Platform	15.00

1934 PRICE LIST

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8 LaSalle Series 50
V-8 Cadillac Series 10-20-30
V-12 Cadillac Series 40
V-16 Cadillac Series 60

Revised April 4, 1934

All prices f. o. b. Detroit
Subject to change without notice

EXCISE TAX TO BE ADDED

CADILLAC MOTOR CAR COMPANY
Detroit, Michigan, U.S.A.