



# CAR LIFE CLASSIC

## 1932 CADILLAC

### V-12 SPORT PHAETON

BY ERIC NIELSEN

PHOTOS BY ALICE BIXLER

**T**ODAY WE ARE used to seeing the smallest gaps in the market quickly plugged by manufacturers who hope to overlook no sales opportunity. Nothing today, however, has been comparable to Cadillac's addition of a V-12 series to a line which already included two V-8 series and a V-16. This move, made in the midst of the Great Depression, was a surprise to the public and a shock to other American manufacturers who were developing V-12s. As with the V-16, Cadillac scooped them all.

There had been an early history of twelves in America, of course. Names like National, Weidely, Harding, Austin, Enger and Schebler come to mind, and Packard was the most prominent with the Twin-Six from 1915 through 1921. But the only V-12s that were in production in 1930 were overseas types like Daimler and Maybach-Zeppelin.

It was on July 30, 1930 that Lawrence P. Fisher, president of the Cadillac Motor Car Company, told a group of distributors in Detroit that a V-12 was on its way. "The addition of the 12-cylinder line," he said, "is a logical step and might well have preceded the introduction of the Cadillac V-16 which made its debut at the National Automobile Show in New York. The V-12 engine is of the same type and built to exactly the same standards as the V-16—in fact, a duplicate of this engine in pattern and appearance but having 12 instead of 16 cylinders."

Among many other features, the V-12 shared a 45° vee angle with the V-16. (A narrow block with a 28° vee had been considered early in the program, to allow a single cylinder head, but was discarded because manifolding problems were expected.) This angle was right for the 16 but not strictly correct for the 12, which had 45°-75° firing intervals but ran with satisfactory smoothness nevertheless. In cross-section, the V-12 differed from the V-16 mainly in its 0.125-in. larger bore, needed to give the V-12 a larger displacement than the contemporary eight.

The counterbalanced crankshaft, just 0.1875 in. less than a yard long, was carried in four steel-backed main bearings. These were 2.625 in. in diameter and ranged in width from

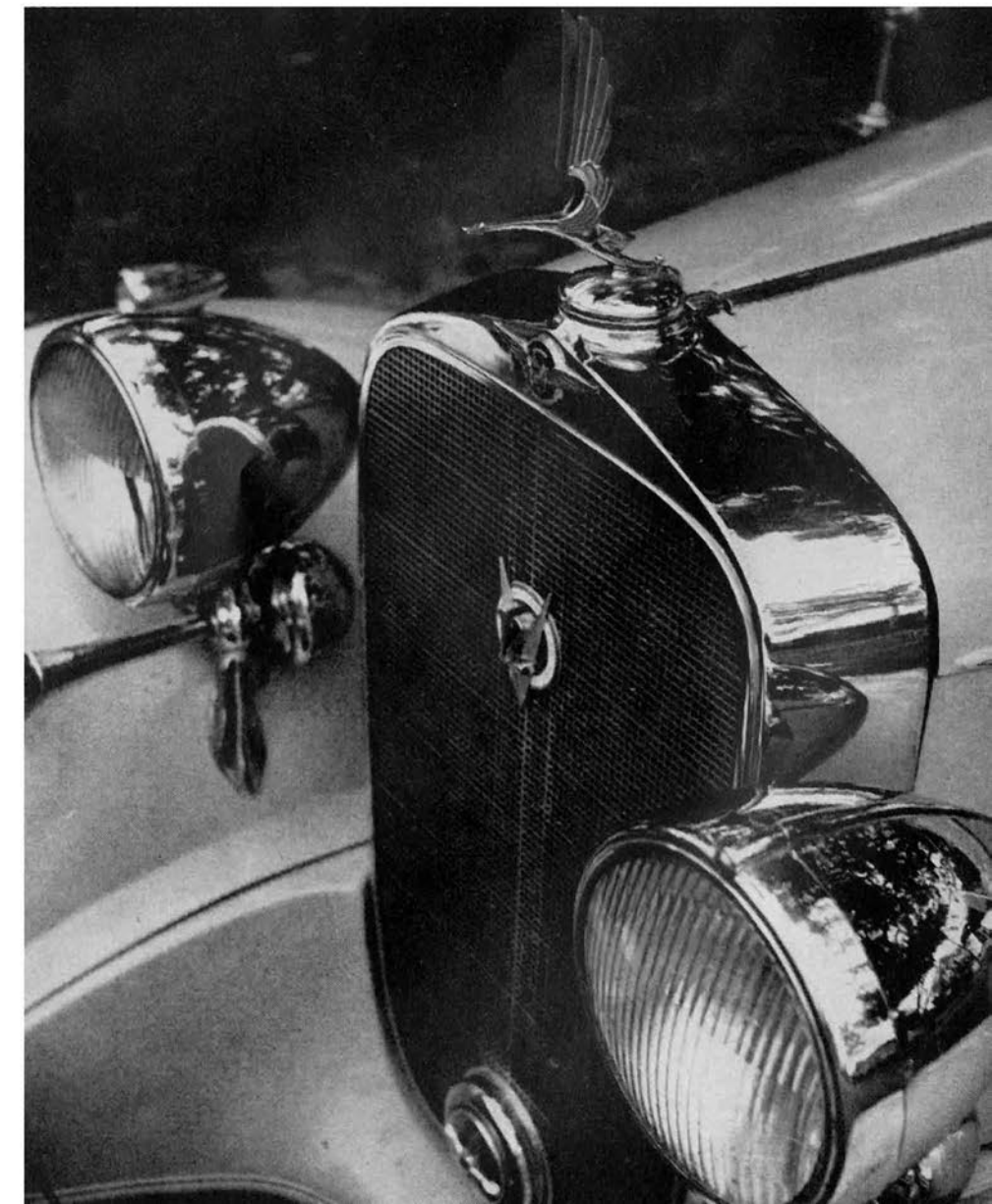
1.375 to 3.5625 in., the widest at the rear. Attached to its cap was the oil pump, driven by a long shaft from the back end of the camshaft. The full-pressure system held 9 qt. and the level in the pressed-steel pump was signaled by a float which moved a left-side indicator from "MT" through "FILL" to "FULL." After 1932, oil to the valve gear was cleansed by a Cuno filter which self-scraped its disc-type elements every time the starter pedal was depressed.

The V-12 and V-16 shared the same rods, which measured 9.25 in. center-to-center and weighed 31.8 oz.—actually shorter and lighter than the

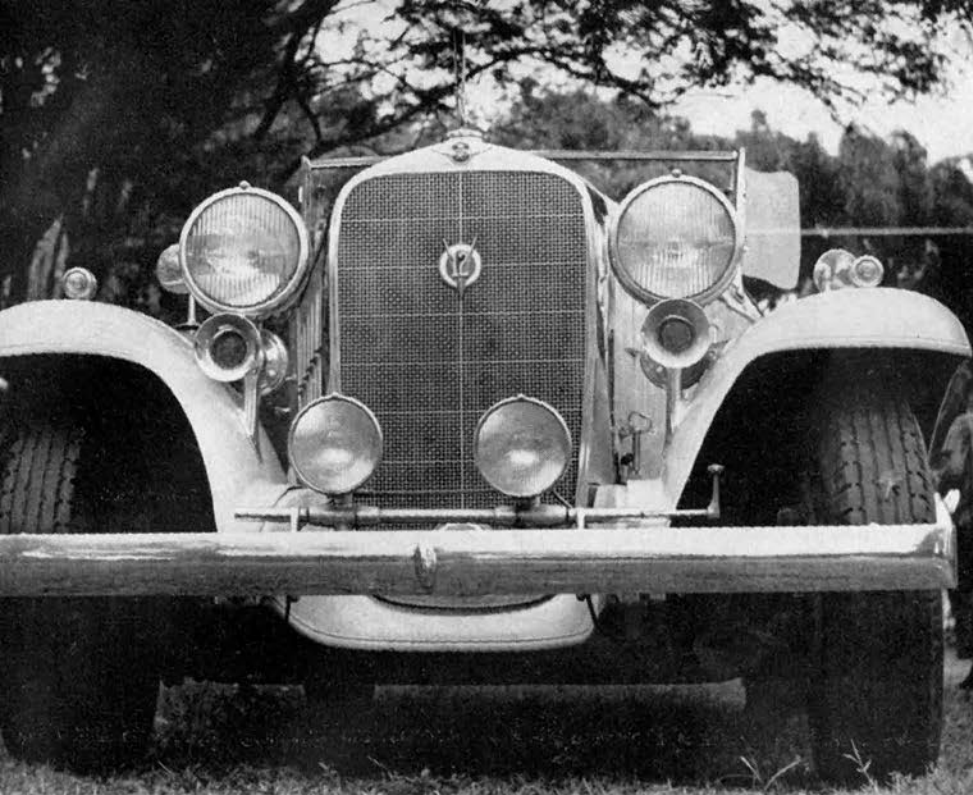
Cadillac V-8 rod. The poured big end bearings measured 2.5 in. in diameter and 1.125 in. in width. At the nose of the crank was a small harmonic damper, also identical with the V-16 assembly.

Pushrod overhead valves, always suspect on a luxury engine because of noise, were tamed for use on the V-16 and V-12 by a hydraulic valve silencer developed by the General Motors Research group. This was an automatic adjuster, which acted by rotating an eccentric sleeve which was placed between the rocker arm bushing and the rocker shaft. The hydraulic dashpot which controlled the action of the eccentric was bolted to the head, between the pushrods, and thus didn't move up and down with the valve gear like today's hydraulic lifters.

Roller followers were used, keyed to slots in the removable guides. The timing was emphatically mild, with intakes opening at top dead center, a mere 5° of overlap, and 0.3437 in. of lift. Twin valve springs were used to







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close intake and exhaust valves of equal size: 1.3125 in.

The drilled camshaft ran in four bearings high in the crankcase, and was driven by a Morse-type 766 Duplex chain 1.5 in. wide. A spring-loaded ratchet-type automatic adjuster was used on the idler sprocket, which allowed the same chain to be used to drive the generator on the right-hand

side of the block. An extension shaft from the rear of the generator turned the water pump, which had twin outlets—one directly to the right-hand cylinder block, the other to the left side by way of a duct cast into the top of the clutch housing. Just above this point was a diaphragm-type vacuum pump, driven from the camshaft, which operated the windshield wipers.

**INSTRUMENTATION** included clock, speedo, amp, temp, oil pressure and vacuum gauges.



**SHEET METAL** between rear fenders was smoother in contour than with earlier models. Big luggage rack was necessity of the era.

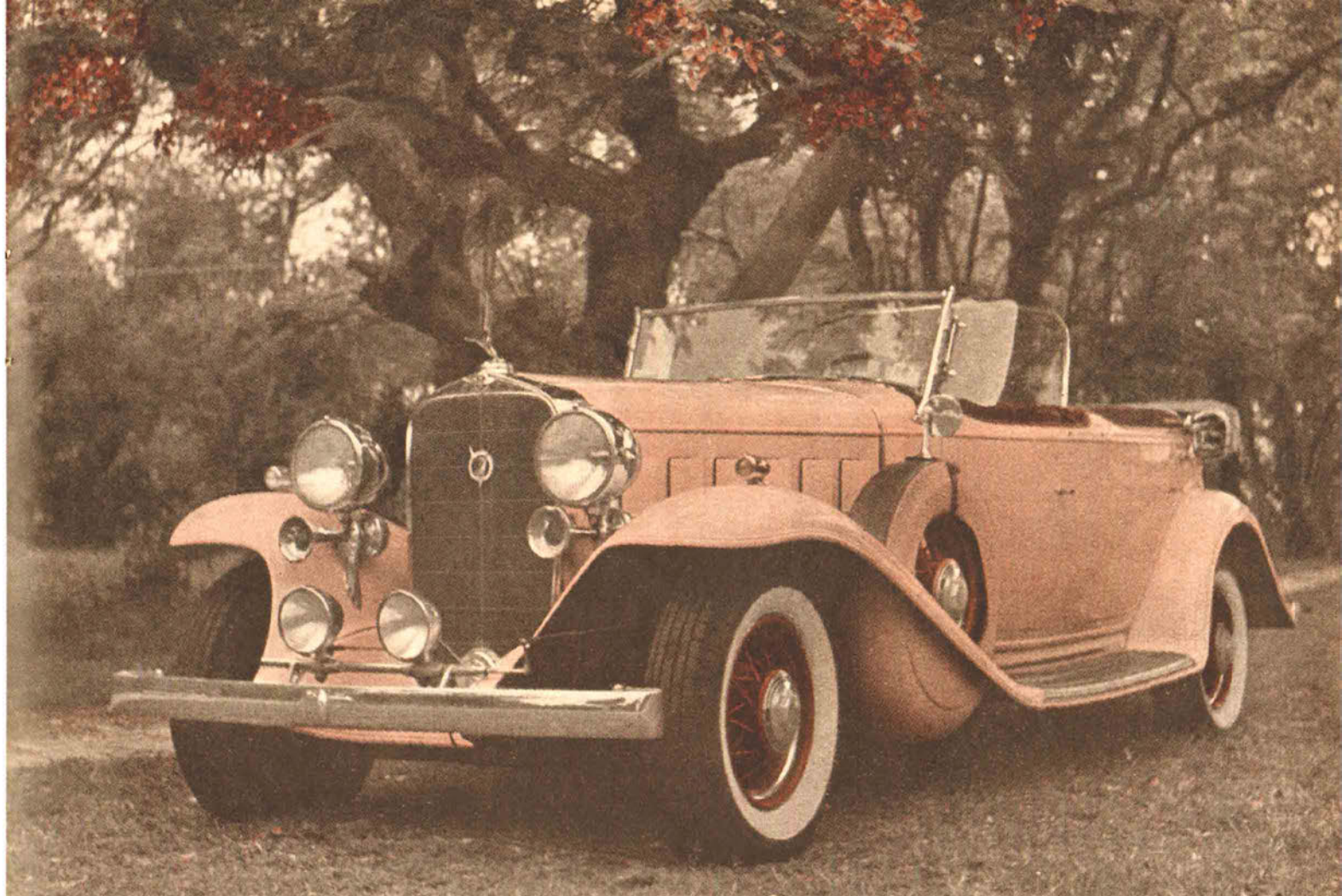


A highlight of the Cadillac V-12 engine was its magnificent aluminum crankcase. This was by far the largest element of the engine, extending halfway up the cylinder bores and reaching down well past the crankshaft centerline. Integral with it was the larger part of the bell housing and the front-end chain case, which was covered by a steel stamping. Very deeply spigoted into the crankcase were the cylinders of the symmetrical cast-iron blocks, with relatively short water jackets at the top. In a beautifully integrated piece of design, these blocks also carried the guides for the roller cam followers.

Oil control in these multi-cylinder engines was said to have been enhanced by the use of nickel/cast-iron pistons, flat-topped and weighing 27 oz. Any blowby during warmup was flushed out of the engine (in this pre-smog era) by air entering through a filter at the left front of the crankcase. This entry was opened below 170° F by a thermostat within the crankcase. A separate downpipe from the front of each cylinder block led the gases away.

A single Delco-Remy distributor incorporated twin breakers and circuits, treating each bank of cylinders like an in-line six. The two coils were embedded in the radiator header tank, to clean up the compartment and keep them at a constant temperature. The 18-mm spark plugs were placed in the center of the vee, concealed by a handsome enameled cover.

With the valves placed parallel to the cylinder centerline, the combustion chamber was essentially a straight-sided bathtub, bordered by a small amount of squish area. The standard compression ratio was 5.35:1 on 1932 models, with a special gasket optional



to lower it to 5.08:1. No doubt the rated output of 135 bhp at 3400 was obtained on the higher ratio and engine speeds of over 4000 rpm were normally available.

The 1932 series 370-B Cadillac V-12, to which this month's *Car Life* Classic conforms, offered a number of design improvements. The rated engine output was unchanged, but the

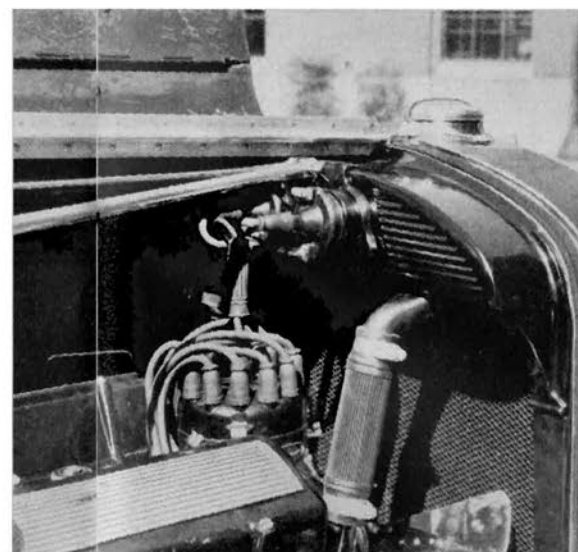
carburetion and fuel system were modernized. As before, the manifolding was along the outside of the blocks, laid out like two 6-cyl. engines. Cadillac's own thermostatically controlled air valve carburetors were set aside in favor of two more up-to-date 1.5-in. Detroit Lubricator updraft units. Fuel from the 30-gal. tank was delivered by a single AC pump, replacing the

former vacuum delivery system. With the vacuum tanks removed, the firewall could be used to carry the twin air cleaner/silencers, connected to the carburetors by chromed flexpipe.

Some internal refinements dealt with oil control, such as the addition of a second oil-control piston ring and redesign of the valve stem oil sealing. Piston pin size was increased from 0.75 to 0.875 in. and the accompanying bushing was changed from cast to rolled bronze. The fan speed was increased and the larger-capacity generator was fitted with a straight-forward cooling system which scooped air in through a screened funnel and exhausted it through a flared downpipe, improving the already extremely handsome appearance of the V-12.

Twin driven discs, 10 in. in diameter, were embraced by three driving plates in the Cadillac clutch. The center driving plate was bolted to the flywheel and joined to the floating plates by four bushed pins. An innovation on 1932 Cadillacs was a power clutch control which, in deference to the fashion of the times, was called "controlled free wheeling." It consisted of a vacuum cylinder which disengaged the clutch when the throttle was closed, and vice versa, with a range of rapidity and finesse between. This allowed clutchless starts and shifts, and

**COILS WERE** mounted in header tank to keep them warmed to a constant temperature



**TIRES WERE** 7:50-17 and wire wheels were standard. Disc-type trim rings were optional.





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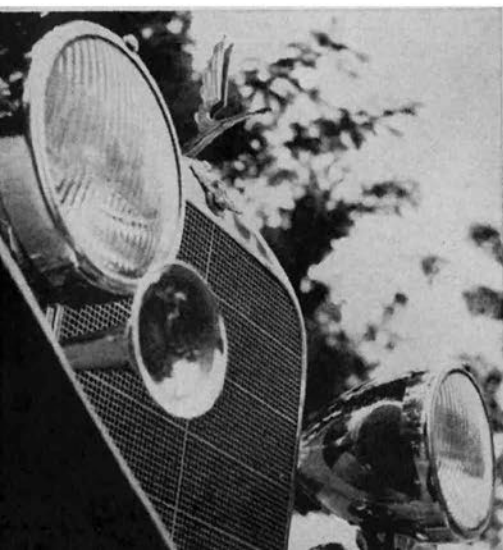
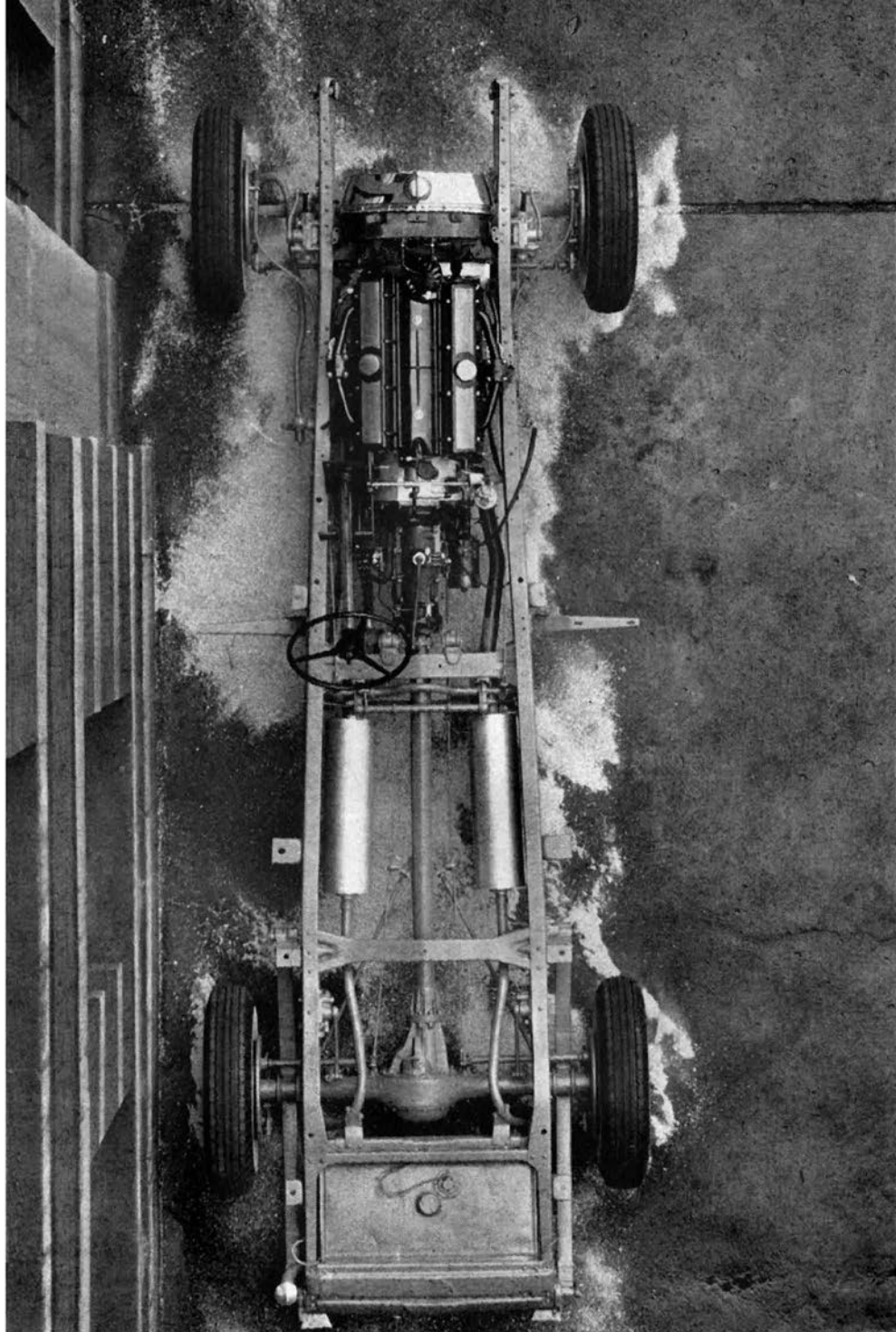
also simulated the effect of a free-wheel.

The transmission design, essentially unchanged since synchromesh had been introduced by Cadillac in 1928, was completely renewed for 1932. Lengthening the case gave more room for constant-mesh helical gear sets for all three forward speeds, supplanting straight-cut gears and sliding-gear selection of first. Ball bearings replaced a number of Hyatt rollers, and the synchromesh was further improved. At the rear of the transmission case were two of the total of six mounts for the engine-gearbox package.

This transmission, with a different cover for correct positioning of the gear lever, was shared with Cadillac V-8s, as was the torque tube drive to the spiral bevel gearing of the three-quarter-floating rear axle. Also shared with the V-8s were the frames, with normal wheelbases of 134 and 140 in., plus an alternative long chassis at 156 in. The design was conventional double-drop type with five crossmembers and a maximum side-rail depth of 9 in.

Suspension front and rear was by semi-elliptic leaf springs, 2.25 in. wide, each fully enclosed in a grease-retaining metal cover. The 39-in. front springs had 9 leaves, while the 58-in. rear springs, slung outboard of the frame, had 9, 10 or 11 leaves depending on the type of body fitted. Double-acting Delco dampers were at all four wheels, with the 1932 refinement of a 5-position ride control which adjusted the spring pressure on the damper control valves through a mechanical linkage.

The Saginaw steering gear was of worm and sector type, with a 17:1



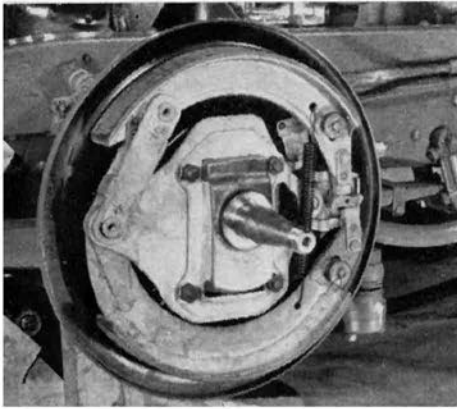
ratio. A drag link outside the frame rail connected it to a beautifully curved steering arm at the left front wheel. At the steering wheel hub were the hand throttle and the headlamp control, which offered five different beam selections for different driving conditions.

Mechanical brakes, operated by pull rods at the rear and cables at the front, were retained on the 1932 Cadillacs. On the V-12 a vacuum booster was a welcome addition. Fifteen-inch drums were cast of molybdenum iron and enclosed conventional mechanisms with S-cam actuators. The leading shoe at each wheel was cast of aluminum,

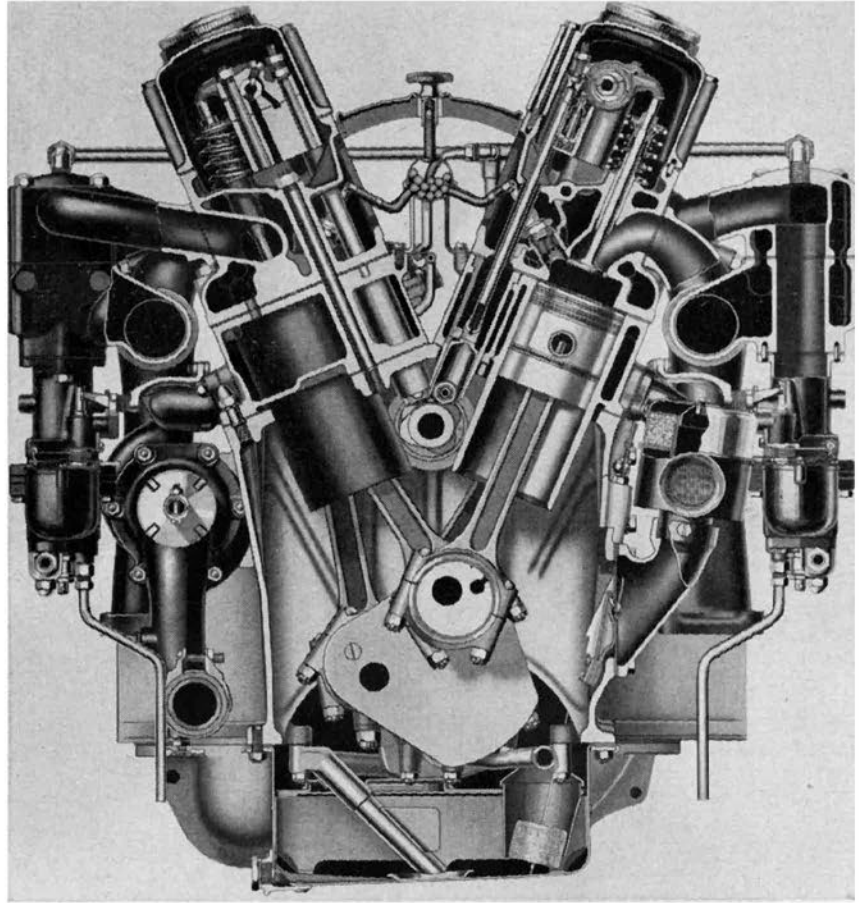
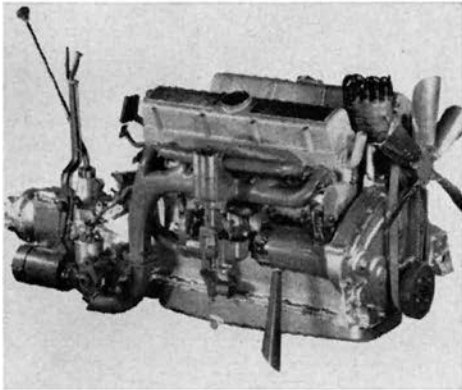
which tended to expand generously when warm to follow any drum expansion, thus minimizing fade. The trailing shoe was fabricated of steel.

Reduction of wheel and tire size from 7.00-19 to 7.50-17 helped cut down the unsprung weight on the 1932 V-12 by 40 lb. at the front axle and 100 lb. at the rear. Both wood and wire wheels were available, the latter being standard. Very handsome trim rings were available to simulate disc wheels, which were not offered until the following year.

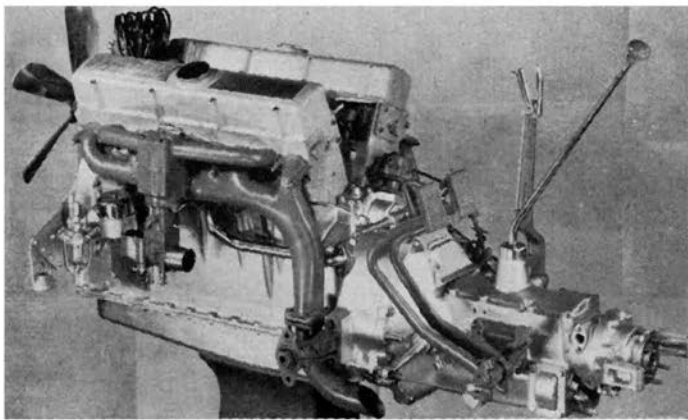
Body styles offered on the Cadillac V-12 were closely related to those for the V-8, even to the hoods which



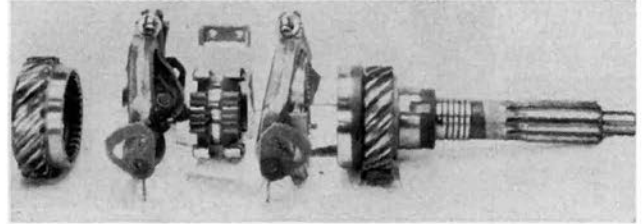
**FRONT BRAKE** had cable-applied shoes. The upper primary shoe has a floating pivot and is made of cast aluminum; the lower, trailing, shoe is made of steel. Rod below cable adjusted dampers.



**CADILLAC V-12** blocks were cast iron, spigoted to huge cast-aluminum crankcase. Crankshaft was a yard long and drove transmission through a multi-plate clutch. Overhead valves, operated by pushrods, had an automatic lash adjustment.



**3-SPEED TRANSMISSION** was improved for 1932 by use of helical gears and a new synchromesh. Shown are clutch shaft and second and third gear synchronizers with dampers and adjusting quadrants.



shared six ventilator doors along each side. This was the last year for the flat Hispano-style radiator, which stood proudly between the headlamp/horn assemblies, unobstructed by any transverse tie bar. In 1932 the rear sheet metal, between the fenders and the fuel tank cover, was more smoothly blended together.

Normally listed for the V-12 were 13 Fisher body styles, ranging in price from \$3495 to \$4195. For equivalent bodies the V-12 ran just \$700 more than the V-8. Also catalogued were seven Fleetwood bodies, up to the Limousine Brougham at \$4945. Those who were both interested and finan-

cially qualified could also consider an additional range of eleven custom bodies from the Fleetwood shops.

The differential of \$700 between V-8 and V-12 does not seem out of line, unless perhaps it is considered that that amount would have bought the most elaborate Chevrolet on the market in 1932—with a little left over for a luggage rack. This indicates the stratospheric price structures of these classic machines, which cost on the order of ten times as much as the Fords, Essexes and Chevys of the period. The fact that many Cadillac V-12s exist today, indicates the money may have been well invested. ■

TECHNICAL SPECIFICATIONS	
1932 Cadillac V-12	
Wheelbase, in. ....	134
Tread, in. ....	59.9/61.0
Overall length, in. ....	207.1
Turning circle, ft. ....	44.0
Weight, lb. ....	5190
Tire size ....	7.50-17
Brake swept area, sq. in. ....	377
Engine type ....	V-12, 45°
Valves ....	ohv
Bore and stroke, in. ....	3.13 x 4.00
Displacement, cu. in. ....	368.0
Compression ratio ....	5.35:1
Maximum bhp ....	135 @ 3400
Maximum torque ....	284 @ 1200
Overall ratio, 3rd ....	4.60
2nd ....	6.76
1st ....	11.05
Reverse ....	11.45
Clutch ....	2 plate, 10 in.
Fuel capacity, gal. ....	30
Coolant capacity, gal. ....	6