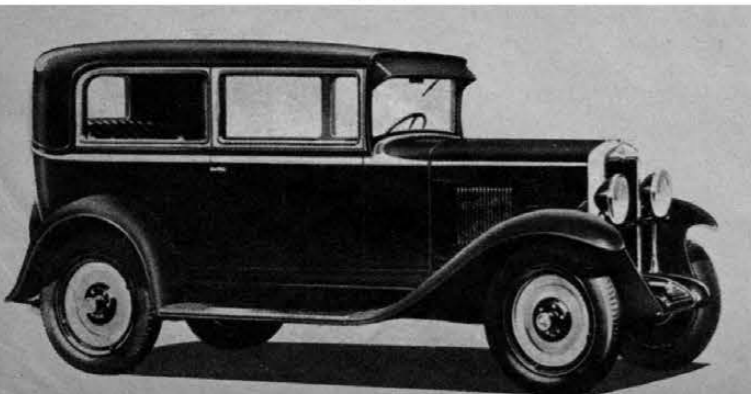
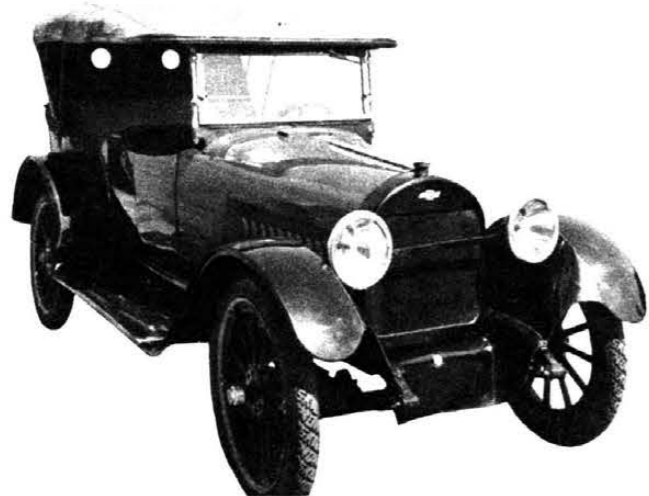


FROM CAST-IRON WONDER TO COMPETITION

WINNER

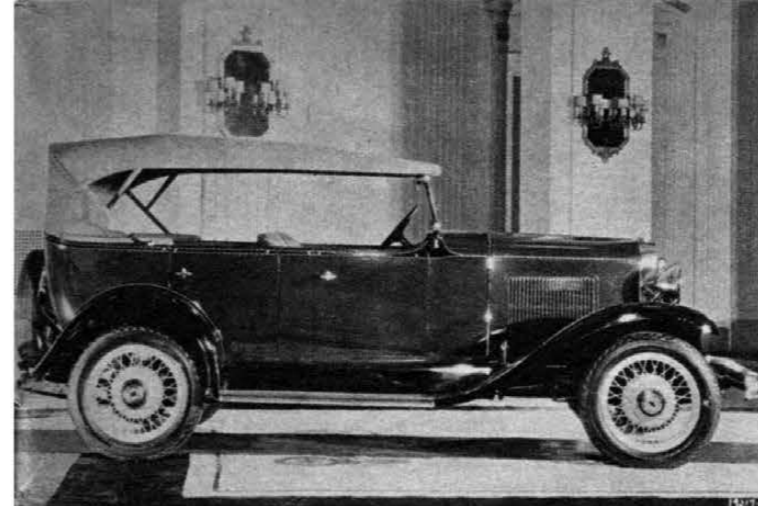


ON a warm spring morning, June 6, 1941, in Detroit, Michigan, a man whose name was emblazoned on more than seventeen million automobiles died in almost complete obscurity. And, if not in poverty, at least in extremely modest circumstances considering the wealth of his name-sake company.

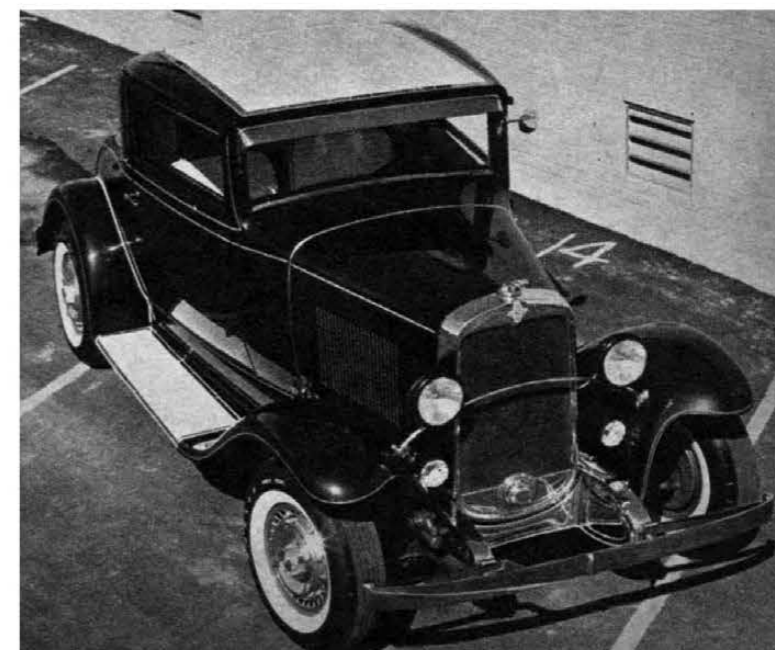
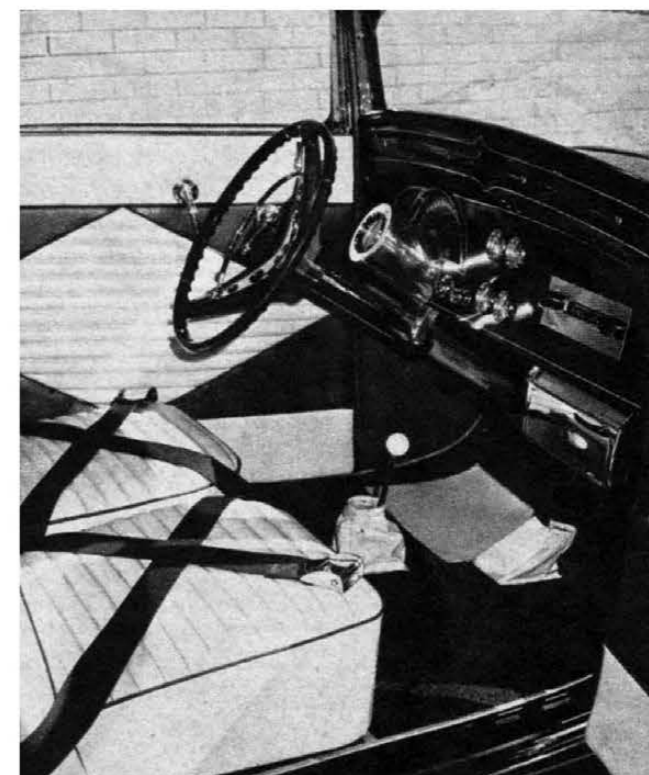
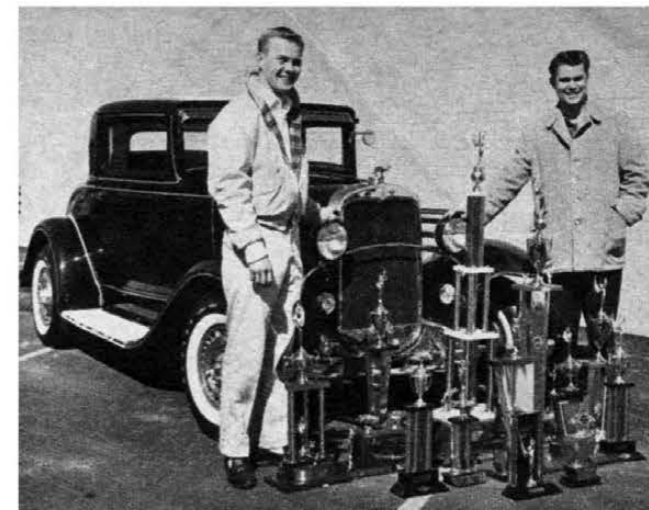
Louis Chevrolet, inventor, automobile designer, speed equipment manufacturer, volatile race driver who boasted that the great Barney Oldfield "only beat me once . . . when my car broke down" and a not-too-untypical product of the roaring twenties in the car business, was mourned by personal friends, paid brief passing tribute by Detroit newspapers, and laid to rest in Indianapolis not too far from the famed brickyard, scene of two of his greatest personal triumphs. The few non-industry people who noticed the short news item concerning his death reacted mostly in surprise that the brilliant self-taught Swiss immigrant had not been connected with the Chevrolet automobile since 1915 and that he actually shared little of the company's vast growth and profit.

Born on Christmas day in 1878, Louis and his brother, Gaston, were bicycling enthusiasts from boyhood and naturally talented in mechanical things. His first invention, in the small French-speaking village in Switzerland where he was born and where wine grapes were a major crop, was a wine-barrel pump, designed to lift the clear wine out of its aging cask and leave the undesirable dregs undisturbed. Later on, he began building bicycles, patterned after his own fast racing model. Fascinated by the sight of one of the early automobiles, he moved to France and went to work for a manufacturer of the then primitive machines, coming to the United States as a representative for the concern in 1900.

TOP: Louis Chevrolet at the wheel of the first Chevy, 1911.
CENTER: Win bets on this one. The first Chevrolet V8, 1917.
Engine had overhead valves, pressure lubrication, self starter.
BOTTOM: First of the Cast Iron Wonders, 1929 Chevrolet Six.



Classic 1931 Series AE Phaeton is sought-after collector's item.



Today, Louis Chevrolet would be called by the epithet we all share—"hot rodder." He liked speed and could coax more power out of an engine than most of his contemporaries, so it was natural for him to turn to racing. His career from 1905 to 1920 was distinguished by his hard but heady driving. And, although he participated in nearly all of the big races of the period, his ability as a car builder and engine designer turned him more and more to the drawing board and away from the speedways.

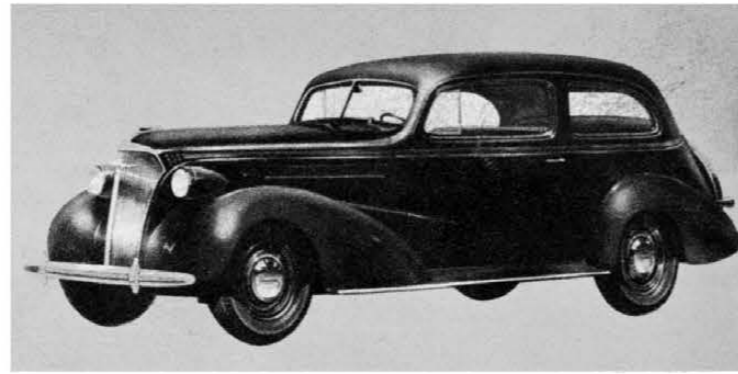
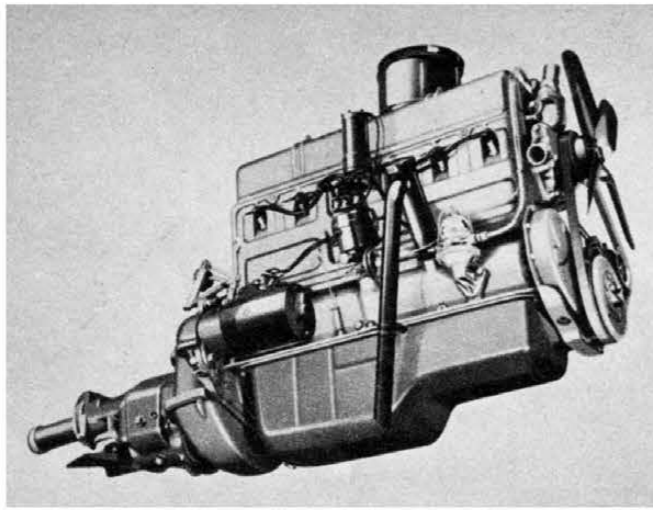
In 1911, William C. Durant, a wheeling-and-dealing corporation executive who played with giant automobile manufacturing concerns the way the average man plays penny-ante poker, brought Chevrolet into a firm he was organizing to build a medium-priced car. Chevrolet's name, well publicized through his racing activities, was attached to the company and he supervised design and construction of the automobile.

The first Chevy was a six-cylinder model. It was discontinued shortly and the name "Chevrolet" was transferred to another car, originally called the Little, powered by a flat-head four which had the flywheel in front, and built by the Republic Motor Car Co., which Durant had bought. It, in turn, was superseded by a car with an overhead valve four of conventional design supplied by the Mason Motor Company.

Durant, busy with putting together an industrial empire, and Chevrolet, interested more in building cars than corporations, came to a parting of the ways in 1915. The financier was in a continuous squabble with bankers, stockholders and directors of his General Motors organization at this time and the lure of prize money and excitement surrounding the racing scene seemed far more attractive to Chevrolet than the uncertainties of big industry.

By the time the 1916 Indianapolis race entrants were ready to face the starting flag, two Chevrolets were in the qualifying field: Louis and nephew Arthur, behind the wheels of two Chevrolet-built Frontenac race cars. Louis challenged the leader and eventual winner, Dario Resta, very hard but dropped out with a burned rod. As THE

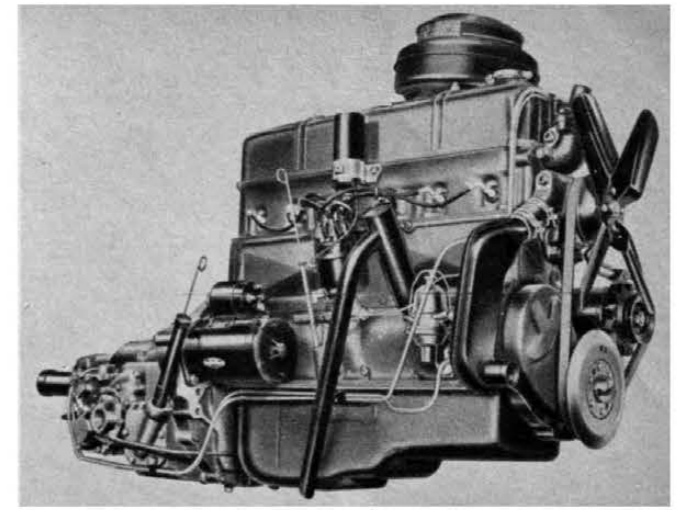
Beautifully restored and improved 1931 3-window Chevy coupe has won roomful of trophies for owner Richard Bourgerie. Innocent looking hood conceals 270 hp Corvette engine. Interior has been re-upholstered in Naugahyde, and the instrument panel bears Corvette dials.



The original Six was improved each year through minor alterations. Increases in the bore and stroke brought it up to 216 cubic inches in 1937, but block was two inches shorter, and utilized four main bearings. Rodders began to experiment with '37 model, above, quite successfully because of its added beef.



1941 Chevrolet was tremendous pre-war "street" favorite of hot rodders because of its clean lines and an improved engine, rated at 90 bhp. Speed equipment became available for this engine, but the later 235 "Powerglide" engine received bulk of hop up treatment and attention from serious hot rodders.



AUTOMOBILE JOURNAL reported, "Between the 75 and 100-mile marks various drivers tried to wrest the lead from Resta by exceedingly clever driving and great bursts of speed. One of these was Louis Chevrolet in a Frontenac, who brought prolonged cheers from the spectators, partly because of his exhibition and partly because his car is an American-made product. . . ."

This was an era when European-built cars were sweeping our events and when any challenge to their supremacy was devoutly to be hoped for. The Frontenac, in spite of its French-sounding name, was strictly home-grown, the product of Louis' able engineering.

The following year, Louis and Gaston were back with new cars and Louis shared the lead with Ralph de Palma for the first half of the 500 mile event but was forced into the pits with a broken steering knuckle. After changing the broken pieces, he charged back into the fray and was duelling with de Palma again for sixth spot in a battle which brought the crowd to its feet time after time toward the end of the race.

When racing resumed after World War I, the Chevrolet brothers were on hand once again. And, to Louis went the honor of having built the first American race car to win the 500-mile classic since 1912.

In 1920, Gaston Chevrolet brought his Monroe in to take the checkered flag at Indy ahead of a fast, fancy field which included Louis Chevrolet and Joe Thomas in Monroes and four Frontenacs. The Monroe and the Frontenac had identical engines of Chevrolet design: Four-cylinder, double overhead cam with unique "air cooled" valve springs visible between the head and cam covers. Of the seven cars, none was forced out by engine trouble and the victory was of double importance because the Frontenac-Monroe engine displaced only 183 cubic inches compared with the 300 cubic inches of more traditional cars.

The following year, a Frontenac graced the winner's circle as Tommy Milton picked up the first prize money. Third and ninth spots also went to Chevrolet-built cars.

During the rest of the season, at race courses all over the country, the little Frontenacs duelled with Duesenbergs for top honors and were clearly outstanding racing automobiles.

But Louis, like many others, had discovered that building racing cars for limited sale is making money the hard way. He decided to seek a wider market and went into the speed equipment business . . . building overhead valve heads for the popular Model T . . . the famed "Fronty Ford" known to every hot rodder of the previous generation. Racing these hybrids at Indy proved that they were stout hearted and very fast for stock-block engines. On the dirt track, County Fair circuit, they became almost legendary.

Chevrolet sold a lot of Frontenac equipment, including a double overhead cam, 16 valve model which had marvelous qualities, but the decline of the Model T and general business conditions finally closed the firm's doors. Louis designed and built a good, light-weight air-cooled aircraft engine in the late '20s but his lack of promotional ability seemed to handicap the budding enterprise and nothing came of the project aside from a few test engines.

In the meantime, of course, the Chevrolet Company, as part of General Motors was experiencing a tremendous success.

From the time of the 490 model in 1916 (so called because it sold for \$490) to 1929, Chevrolet was distinguished by its four cylinder overhead valve engine. A willing plugger, and even capable of being modified into something a little more potent, it did not attract the enthusiasm of speed fanciers. They devoted their time to the Model T and, later, the Model A, for which abundant equipment was available. The Chevy Four of the '20s could be fitted with an Olds three-port head and a couple of carburetors but that was about all. The most conspicuous success with a four-banger was had by a couple of Southern California rodders, who set several records at the dry lakes. One, named Stu Hilborn, was responsible for the carburetion on the engine and his idea was something like dispensing with the carburetor entirely and squirting fuel directly into the head ports. (The reader may be familiar with the universally-used Hilborn injector which has become an integral part of the racing and hot rod scene.)

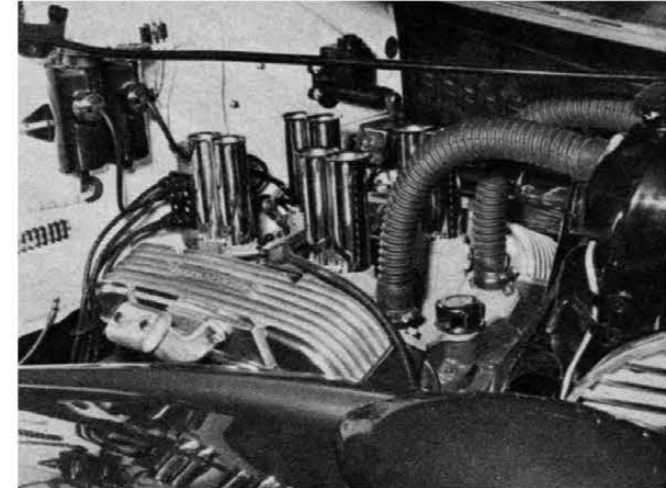
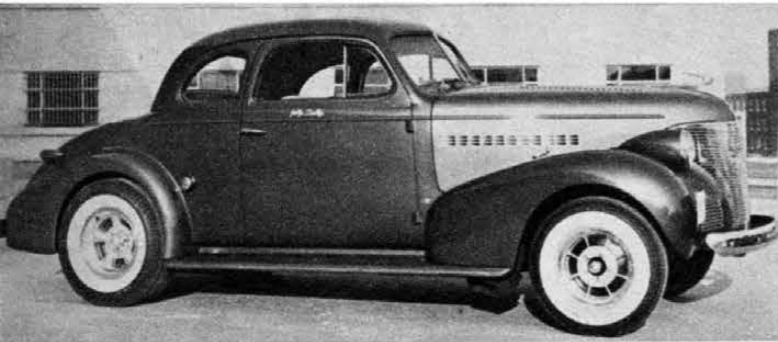
The venerable Four was succeeded by a new Six in the 1929 Chevrolet, which made its appearance on the last Saturday of December, 1928. The engine displaced 194 cubic inches, from a 3 1/8-inch bore and 3 3/4-inch stroke. Overhead valves were employed, but the fact that both the intake and exhaust were the same size (in fact had the same part number), gave some indication that it was not destined to be a hot performer. The three main bearings for six cylinders also mitigated against much in the way of hopping up. But

the most significant feature of the Six was the material from which the head, block and pistons were made . . . and the source of its nickname . . . "The Cast Iron Wonder."

The "wonder" portion of the handle was at first a gibe but later became a mark of admiration. The Six, in slightly altered forms, survived the Depression, a World War and into the age of jet aircraft and atom bombs. It was the staple of the Chevrolet line until 1955, although the cast iron defamiation was partly overcome when a completely new Six with aluminum pistons was introduced in 1953.

During this quarter of a century of service, Chevy's bread and butter engine went into an average of a million cars a year. Introduced as "A Six at the price of a Four," the Cast Iron Wonder withstood the impact of Ford's 221-cubic-inch V8, with its swift acceleration and exciting performance which was introduced in 1932, as far as much of the public was concerned, because of its reliability and economy. By 1953, however, with Ford coming on the market with an ohv V8 of 130 bhp, the days of the Six were numbered. Even those who had not emphasized speed and acceleration in their decision to buy were being influenced by horsepower ratings and it was definitely time for a change.

The 25-year period saw a number of modest changes in the engine . . . which also had another nickname bestowed by mechanics: "The Stovebolt" (derived from the fact that many of its components were secured by 1/4 x 20 slot head



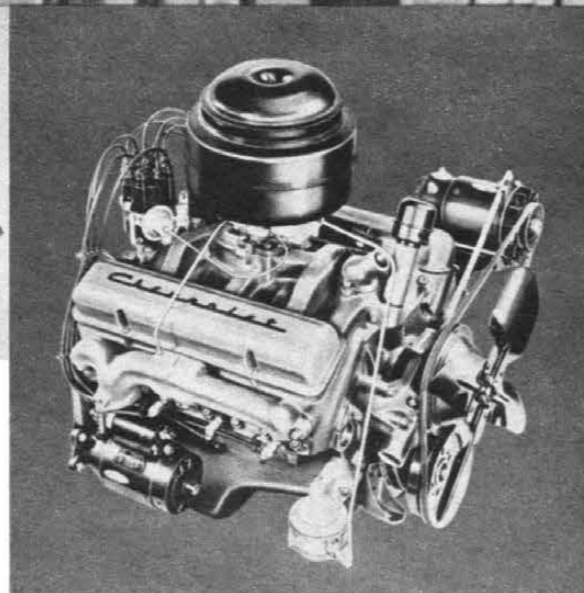
Super Stovebolt! 1931 five-window coupe, belonging to Bob Bernardon, Silver Hill, Md., has won more than 200 races, held 1960 NHRA C/G record for e.t. with 13.17 sec. Top speed is consistently around 107 mph. 302 cubic inch Chevy V8 powers stock-bodied car.



Chevy and GMC parts were interchangeable, lessening engine building cost. Bonneville streamliner is typical example.



Appearance of 1955 Chevrolet with new 265 V8 engine was signal for enthusiasts to jump on Chevy bandwagon. Popularity of car and engine is still phenomenal. Engine has been hailed as brilliant American automotive engineering development.



D/G 1955 Chevy is example of off-the-street use to which veteran sedan has been put. Chevy won D/G class at the National Drags.

bolts, resembling common hardware and appliance items). The variations were principally in bore, stroke, compression ratio and carburetion.

The first change occurred in the 1933 model when the "Master" series of cars employed a 206-cubic-inch powerplant with the same bore but with stroke upped to four inches. The "Standard" was de-stroked to 3½ inches, for a 182-cubic-inch displacement. After two years, however, the little engine was dropped and both the more expensive and the economy models had the same engine.

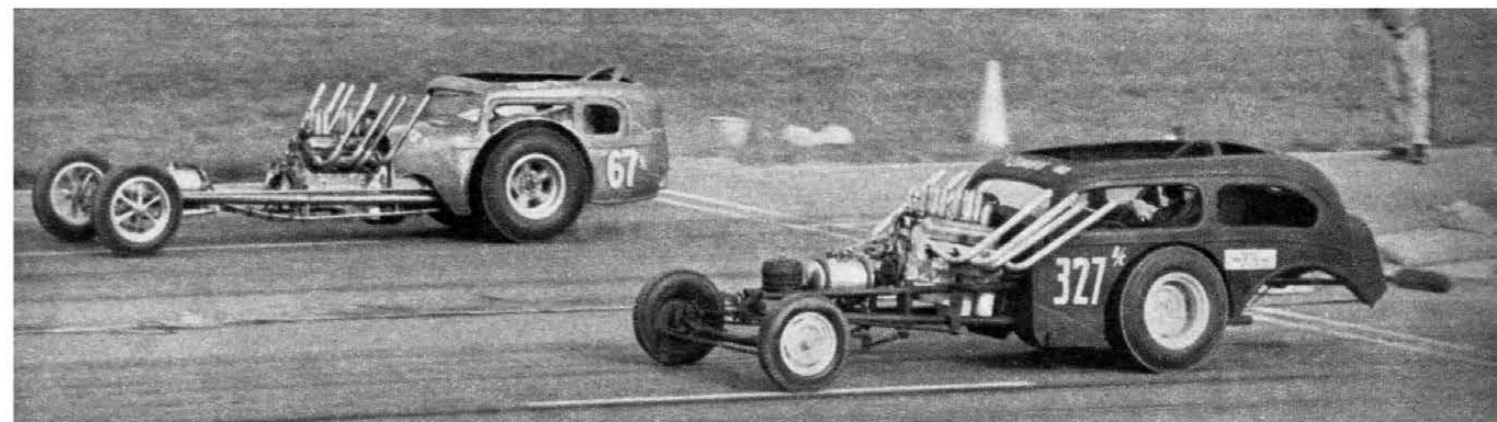
In 1937 a new cast iron Six was introduced. It had four main bearings instead of three, but was shorter in overall length by about two inches. Pistons, still cast iron, were domed and of the slipper skirt type. Bore was upped to 3½

inches in this block and a reversion to the 3¾-inch stroke was made. This resulted in a 216-cubic-inch displacement and the car itself was not too bad a performer, being actually several pounds lighter than any Chevrolet since the 1933 model.

For the first time, it seemed, hot rodders sensed that something could be done with the Stovebolt, but for dollars expended, the V8 being punched out at Ford's River Rouge facility was still the choice. The Chevy's heavy pistons and rods, plus restricted head ports were quite an obstacle, although the rugged bottom end with its 2.31-inch rod bearings and 2.68- to 2.78-inch mains was impressive. The engine was not too heavy, considering the era, at 575 pounds, but before World War II few ever saw any use other than in the



B Modified Sports category, 1962 NHRA Nationals starred Chevy engines. J & J Muffler Corvette ran supercharger, hit 124 mph.



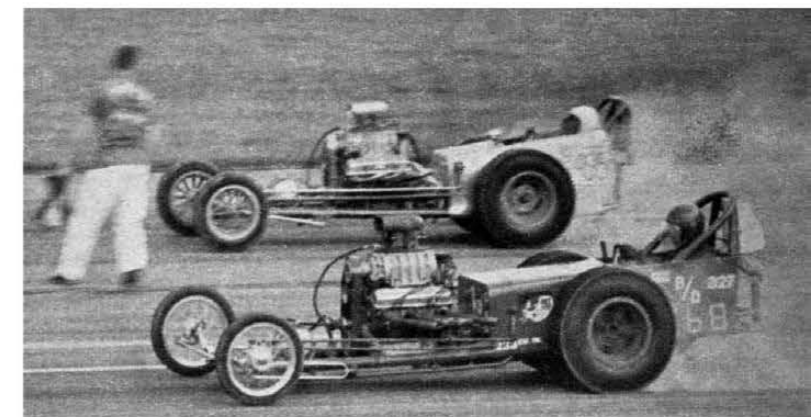
B Competition Coupe of George Weiler (left) picked up National win over stiff opposition. Both cars used Chevrolet engines.

chassis they were fitted to at the factory. Outside of sparse instances of individual re-working, the 216-cubic-incher was pretty well let alone until after the war, when a Southern California speed enthusiast named Wayne Horning decided that Ford was asking for a challenger.

Wayne sized up the Cast Iron Wonder's deficiencies as a high performance mill, weighed them against the advantages of its size and configuration and reasoned that all it needed was some hop up equipment of the type that could be had for a Ford V8 in nearly any store in Los Angeles: High compression head with adequate porting, aluminum pistons, improved carburetion and a cam with more radical timing.

Up to this point, there had not been sufficient demand for equipment to make tooling up for it profitable, but the advent of the Wayne conversions brought a lot of rodders around to the Cast Iron way of life.

Interchangeability of parts between the Chevy and GMC truck engines of 228-, 248- and 270-cubic-inch displacement, which were more rugged or of greater capacity (such as oil and fuel pumps), was advantageous in shaping plans to increase output. In the end, after a couple of years of experimentation, on blown Chevy (or GMC block) based competition engines were delivering up to 267 bhp on methanol and nearly 200 bhp on pump gas. They were used successfully in track roadsters, sprint cars, dragsters and straight-away record machines. One Wayne Chevy powered an Indianapolis entrant, THE MOTOR TREND SPECIAL, in 1951, which had the highest lap speed of any of the semi-stock engined cars at the Speedway that year. And, Juan Manuel Fangio, later three-time World Champion driver, cleaned up in South American races where he got his start, in Wayne Chevy-motivated road race automobiles.



B Dragster of Starkey-Jent has de-stroked (233 cubic inch) Chevrolet mill, won class trophy. Many cars Chevrolet-engined.

The big factor was the Wayne six-port head which got around the problems encountered when trying to improve the breathing on the stock siamesed-port head which had extremely thin port walls. The rest was a matter of aluminum pistons, multiple carburetors (usually three Stromberg 97 or Zenith 28 models) or Hilborn injectors, and an efficient exhaust system. Any post-1937 engine could be used, but the 1941 and later was favored if the stock head was to be re-worked. After the 235-cubic-inch (3¾ inch by 3½ inch) "Powerglide" engine appeared in 1950, it was adopted since an easy .125 inch overbore would give 252 cubic inches with stock stroke. For displacements above this it was most economical to begin with the 270-cubic-inch GMC block which was the same in all respects.

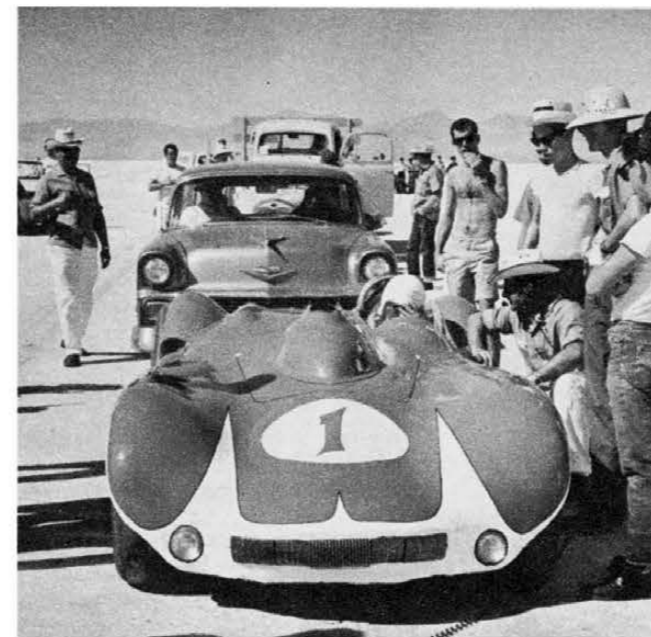
Powerglide, Chevrolet's automatic transmission (and the

first in the "low priced" field) called for more torque in the low range than the 216 was equipped to deliver in stock form, so the larger displacement truck engine was moved over. The Powerglide 235 differed from the truck engine in that it had bigger intake valves, hydraulic lifters and different cam timing. It was used until 1952 when the last completely "Cast Iron" engines were built. The 1953 model retained the same internal dimensions but was revised considerably, including the adoption of aluminum pistons.

With the advent of the 265 V8, the Six became a back number as far as speed enthusiasts were concerned. But it had served its purpose well, not only in powering some 25 million automobiles, but in lending a significant amount of emphasis to the development of the V8. It is an accepted fact that competition modifications are filtered back to manufacturers of the original equipment. Today, of course, the word "filtered" is inappropriate, "telegraphed" is more like it, but in 1948 to 1952 the process was a little slower, if as inevitable. When "Chevrolet" engines began to make a name for themselves in racing and when it became apparent that a younger generation of car buyers could be weaned away from other manufacturers' products with high performance, the decision to build a truly performance-engineered V8 powerplant was not hard to make.

It is pleasant to think that Louis Chevrolet, hot rodder and enthusiast, would heartily approve of the fact that the cars bearing his name, after so many years of being known as conservative pluggers, would eventually be in the forefront of speed. ■

Corvette, America's only wholly domestic sports car, has carved an enviable reputation for itself in all kinds of competition. Here, one shows its stuff at the difficult Pikes Peak Annual Hillclimb. In Stock Car category, Chevy is equally at home on pavement, dirt or road course. Louis Unser nears the top of the Pike's Peak run. Chevy is favorite powerplant for builders of custom sports cars.



Many classes of Bonneville straightaway speed record seekers have used the Chevrolet V8 to gather in new laurels.



ABOVE: Reventlow Scarab (car No. 12) was the first highly successful American-made sports racer, used hot-rodded Chevy.

Super Stock Eliminator trophy at 1962 NHRA Nationals was presented to driver Hayden Proffitt, engine builder Bill Thomas. Car was a Chevrolet 409 Impala.

1963 CORVETTE OPTIONS

Option No.	Price
M21	4-Speed (with opt. V8) includes Tachometer \$236.75
G81	Axle, Positraction Rear 43.05
G91	Axle, rear: 3.08 ratio 2.20
J65	Brakes, Special Metallic Facing 43.05
L75	Engine: 300 HP Corvette V8 53.80
L76	340 HP Corvette V8 107.60
L84	360 HP Corvette V8 430.40
Z06	Special Performance Package 1156.70
M20	Transmission—4-Speed 188.30
P48	Wheels, Cast Aluminum 322.80

1963 PASSENGER CAR HI-PERFORMANCE OPTIONS

Option No.	Price
G80	Axle, 3.08 Ratio Positraction Rear \$ 43.05
T60	Battery, Heavy Duty 7.55
J65	Brakes, Special Metallic Facings 37.50
M01	Clutch, Heavy Duty 5.40
L30	Engine V8: 250 HP Turbo-Fire 327 83.95
L74	300 HP Turbo-Fire 327 137.75
L33	340 HP Turbo-Fire 409 242.10
L31	400 HP Turbo-Fire 409 320.65
L31/L80	425 HP Turbo-Fire 409 376.65
K02	Fan, Radiator: Temperature Controlled 16.15
B70	Instrument Panel, Padded 18.30
V01	Radiator, Heavy Duty 10.80
F60	Springs, Heavy Duty, front 1.10
G50	Springs, Heavy Duty, rear 2.70
Z03	Super Sport Equipment 161.40
U16	Tachometer 48.45
M10	Transmission, Overdrive 107.60
M35	Powerglide (with 6 cyl. engine) 188.30
M35	Powerglide (with 8 cyl. engine) 199.10
M20	4-Speed (with 250 HP) 188.30



Present contender for top honors in the Unlimited category is Jim Hall's Chaparral, (No. 66) built around Chevy engine.

