

Drive shed

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Front-wheel drive is now the most popular layout in passenger cars, but it wasn't until the 1980s that the American industry made the transition in a big way, although there had been significant pioneering work in both Europe and America.

The English Alvis and French Tracta of France introduced production front-wheel drive cars in the late '20s. In 1931 Audi of Germany's truly advanced Front model with a transverse engine and front drive predicted most of our present layouts.

The car that did much to popularize front drive was the French Citroen Traction Avant, which came out in 1934 and lasted right through to 1955. The BMC Mini, launched in 1959, also made a significant contribution.

In America, the Christie Front Drive Motor Co. had front-drive racers as early as 1904, and production models by 1905. Ruxton and Gardner also tried fwd but soon gave up.

Harry Miller's front-drive racers dominated Indianapolis in the 1920s. But by far the best known American front drive car was the Cord with its 1929-'31 L-29, and 1936-37 810/812 models.

Although continued in Europe, front drive languished in North America until it was revived in 1966 by GM's innovative Oldsmobile division in the Toronado, followed a year later by Cadillac's Eldorado.

General Motors had some imaginative engineering in the 1960s, including Chevrolet's rear-engined Corvair, the Pontiac Tempest's "hanging rope" driveshaft, and passenger car turbocharging in the Olds F-85 Jetfire V-8 and Corvair Monza Spyder.

But the item with the greatest long-term impact would be front-wheel drive. GM had considered front drive right after the Second World War when it was looking into produc-

ing a smaller car, which didn't materialize.

Then in the late 1950s the idea was revived and promoted by John Beltz, a bright young engineer who would later become Oldsmobile's general manager.

Oldsmobile already had a proud reputation for innovation, including the fully automatic hydraulic "Hydra-Matic" transmission in 1940, and, along with Cadillac, the overhead valve, short-stroke V-8 engine in 1949.

Oldsmobile wanted a specialty car competitor for the successful Riviera from its sister division Buick, and the very popular Ford Thunderbird. Beltz, wanting something with a little engineering pizzazz, convinced the corporation to let Oldsmobile build a front-drive car.

The 1966 front-wheel drive Toronado was the result, and it was a sensation. With a wheelbase of 3,023 mm (119 in.), an overall length of 5,359 mm (211 in.), and a weight of 2,041 kg (4500 lb), it was so big that some sceptics predicted that fwd wouldn't be successful on such a large vehicle.

A big car needs big power, and Olds fitted a 7 litre (425 cu in.) overhead valve, 385 horsepower V-8. It was mounted in the normal longitudinal position with the torque converter in its usual location at the rear of the engine.

The three-speed Hydra-Matic, however, was turned around 180 degrees and mounted on the left side of the engine. Drive was transmitted from the converter to the transmission via a 51 mm (2.0 in.) wide chain.

To accommodate the half-shafts Oldsmobile used longitudinal front torsion bars rather than coil springs. Rear suspension was a beam axle with a single-leaf spring at each end.

But what most impressed Toronado buyers was the flat floor. Eliminating the transmission hump and driveshaft tunnel had produced a true six-passenger car.

The styling was almost as dramatic as the engineering. The Toro had a long nose, and the front end appeared even longer because

Oldsmobile Toronado

By BILL VANCE

the fenders stretched out ahead of the hood, no doubt to emphasize the front-wheel drive feature.

Hidden headlamps, pioneered by the 1936 fwd 810 Cord, were also fitted. Substantial front and rear fender flares gave the Toro a muscular look, and the short, sloped fast-back ended in an abrupt vertical chop, following the precept laid down by German aerodynamicist Wunibald Kamm.

The Toronado was well received by the motoring press. Motor Trend made it their Car of the Year, and Car Life magazine gave it their Engineering Excellence award.

Almost 41,000 '66 Toronados were sold, the best sales year of the first generation Toro, which lasted until 1970. Cadillac cloned the Toro for 1967 with its front-wheel drive Eldorado, and those corporate twins remained GM's front-drivers until the 1980 X-cars (Chevrolet Citation, et al.) arrived.

The Toronado was a bold move. It provided GM with a reservoir of invaluable engineering experience, and the confidence that helped it make the almost universal transformation to front-drive in the 1980s.

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