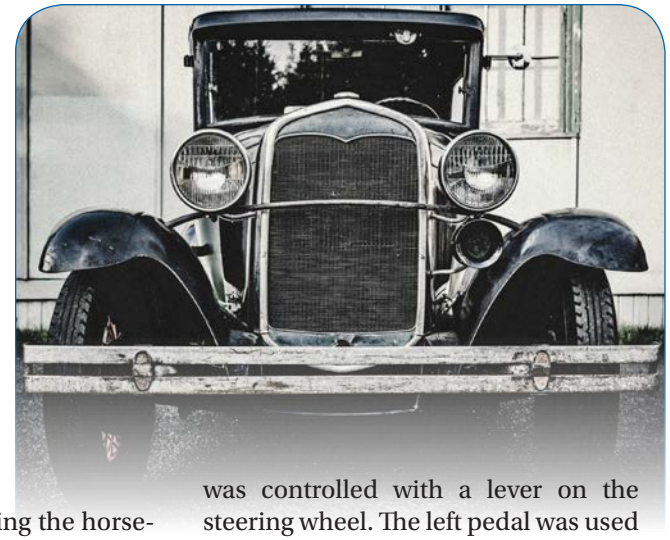
The Model T Ford: One Mean Machine



Some of us are old enough to have had say, great-grandparents, for example, who when the occasion arose would casually refer to cars as "machines." It sounded funny and arcane, and we would snicker under our breath. But of course the laugh was on us; back in the day — 1910s through the 1930s — automobiles were commonly referred to as machines.

And the "machine" that ruled the streets in those days — and claimed what then was only the beginning of the greatest "middle class" demographic in the history of the world — was the Ford Model T — AKA Tin Lizzie, T-Model Ford and Model T. To be clear, however — Ford did not invent the automobile; cars had been around for many years.

What Ford did "invent" was *affordability* — at least in terms of car-buying. His then-state-of-the-art manufacturing processes allowed him to sell his cars to the working man — including his own assembly line workers — for around 300 bucks and still make him a millionaire many times over. At the time, it was a win-win of truly historic proportions on several levels — societal, economic, etc.

"I will build a car for the great multitude," said Ford. "It will be constructed of the best materials, by the best men to be hired, after the simplest designs that modern engineering can devise. But it will be so low in price that no man making a good salary will be unable to own one."

Supporting the fact that the best ideas are often someone else's, credit for the "assembly line" goes not (as it often does) to Ford but to another car guy — Ransom E. Olds — who mass-produced his Oldsmobile Curved Dash in 1901. But the invaluable, priceless refinements and sophisticated system advances during the production run of the Model T are attributed primarily to Ford and his fellow visionaries — who happened to be engineers.

But having one of these machines wasn't much use if the thing didn't work; not-a-problem. The Ford Model T (FMT) was a workhorse of the road, powered by an engine that was designed to be manufactured providing the horsepower. Let's take a closer, under-the-hood look at the heart of the machine that moved America — the Ford Model T engine.

The Ford Model T Engine

The engine was an inline-four — *all four cylinders cast into one engine block*. This would prove to be BIG. The FMT's "monobloc" design was known, but not particularly popular when production started in 1908; but it lent itself to mass production, showing Ford's pioneering appreciation of focus on design for manufacturability. Of equal brilliance, the head was detachable. This not only further streamlined Ford's plant process, but also made his future customers' valve jobs easier and, therefore — cheaper.

By The Numbers

- Bore: 3¾" (95.25 mm)
- Stroke: 4" (101.6 mm) even
- Total displacement: 177 cu in (2,900 cc)
- Valve train: side-valve (flat-head) design
- Crankshaft: Three main bearings

The compression ratio was low by modern standards, but typical for the era, making the engine forgiving of poor fuel quality and minimizing cranking effort at starting.

Model T Transmission

The rear-wheel-drive FMT was designed with a three-speed, planetary gear-oriented transmission. It was controlled with three foot pedals and a lever that was mounted to the road side of the driver's seat. The throttle was controlled with a lever on the steering wheel. The left pedal was used to engage the gear.

- With the floor lever in either the mid position or fully forward, and the pedal pressed and held forward, the car entered **low gear.**
- When held in an intermediate position the car was in **neutral**.
- If the driver took his foot off the left pedal, the FMT entered **high gear** — but only when the lever was fully forward.

Oh, and by the way — no separate clutch pedal. And yet it sure seems like some very fancy footwork was required to drive one of these babies. And some nerves of steel.

When the car was in neutral, the middle pedal was used to engage **reverse gear**, and the right pedal operated the transmission brake.

There were no separate brakes on the wheels.

The floor lever also controlled the parking brake (no separate brakes on the *wheels,* but it had a frigging *parking* brake), which was activated by pulling the lever all the way back. Power was delivered to the differential via the single universal joint attached to a torque tube that drove the rear axle.

Appreciated for its simplicity, reliability, and economy, Ford's Model T engine remained in production for many years; millions of units were produced. As for the engine *design* — it lived on beyond the vehicle itself, with industrial, marine, and military applications extending its production run. And one more thing: the Model T engine is on the Ward's 10 Best Engines of the 20th Century list. (*Wikipedia.org was the primary source of information for this article.*) **PTE**