

# 10 Automotive Manufacturing Milestones

The automobile has changed a lot since first appearing in the late 19th century - from appearance to speed and advanced capabilities - it's constantly evolving. Here are the biggest milestones that came as a result.

## FORD'S MODEL T

1908

On October 1, 1908, Henry Ford debuted the first production Model T Ford at the company's Piquette Avenue plant in Detroit. From 1908 to 1927 Ford built some 15 million Model T cars making it the longest production run of any automobile model in history until the Volkswagen Beetle surpassed it in 1972.



## AUTOMOBILE ASSEMBLY LINE

1913

The ability to make cars faster was another milestone, thanks to the first moving assembly line by Ford Motor Company in 1913. The assembly line enabled Ford to crank out thousands of cars in one year. Plus, the efficiency of the mass production assembly line made cars affordable for more people.

## ELECTRIC STARTER

1911

A cumbersome hand crank start-up process was improved upon with the electric starter, developed by Charles Kettering and Henry M. Leland in 1911. This electric starter was made small enough to fit under the hood of a car; quite an engineering feat. The starters were first installed by Cadillac in production models in 1912.



## AUTOMATIC TRANSMISSION

1939

In 1939, General Motors debuted "Hydra-Matic" - an automatic transmission using hydraulic fluid, which allowed vehicle gears to shift automatically during vehicle operation. This upgrade meant drivers could forego manual gear shifting. This introduction has remained one of the most important innovations in the history of the automobile.

## NEW MATERIALS

1914

Around 1914, car bodies were made of steel versus wood. Automotive manufacturer, Dodge, introduced their first vehicle to the market on November 14, 1914, which featured what was then a real novelty - an all steel body. Today, steel is used for making most car bodies.



## ELECTRONIC FUEL INJECTION

1966

1966 was the year of the electronic fuel injection system. This milestone meant better fuel delivery to the car engine and improved engine efficiency and eliminated the need to pump your accelerator or pull a choke knob to get fuel to the engine. The 1967 Volkswagen 1600 was the first car to sport the new technology from Bosch.

## AIR CONDITIONING

1940

According to Automobile Magazine, in-car air conditioners came on the scene around 1940. The Packard was the first car to have it, and by 1969 more than half the cars manufactured included A/C units. Today, more than 99% of all new cars are air-conditioned.



## AIRBAGS

1991

The installation of airbags in cars became a manufacturing mandate for passenger cars due to a 1991 law. While major automotive manufacturers added air bags in the 1970s, the technology was improved and widely accepted in the late 1990s.

## SEAT BELTS

1968

Safety became a major focus in automobile manufacturing in 1968. Government standards required car manufacturers to equip front seats with shoulder and lap seat belts and back seats with lap belts. The shoulder and lap belts became standard in front and rear seats over time.



## SMART TECHNOLOGY AND SMART CARS

2000s

Perhaps one of the biggest milestones in automobile manufacturing is the use of state-of-the-art technology to yield intelligent cars. Mechatronics, a hybrid of multiple engineering disciplines, enables the production of quality cars integrated with smart technology, such as automatic braking systems, collision sensors, and self-driving capabilities.