Henry Ford

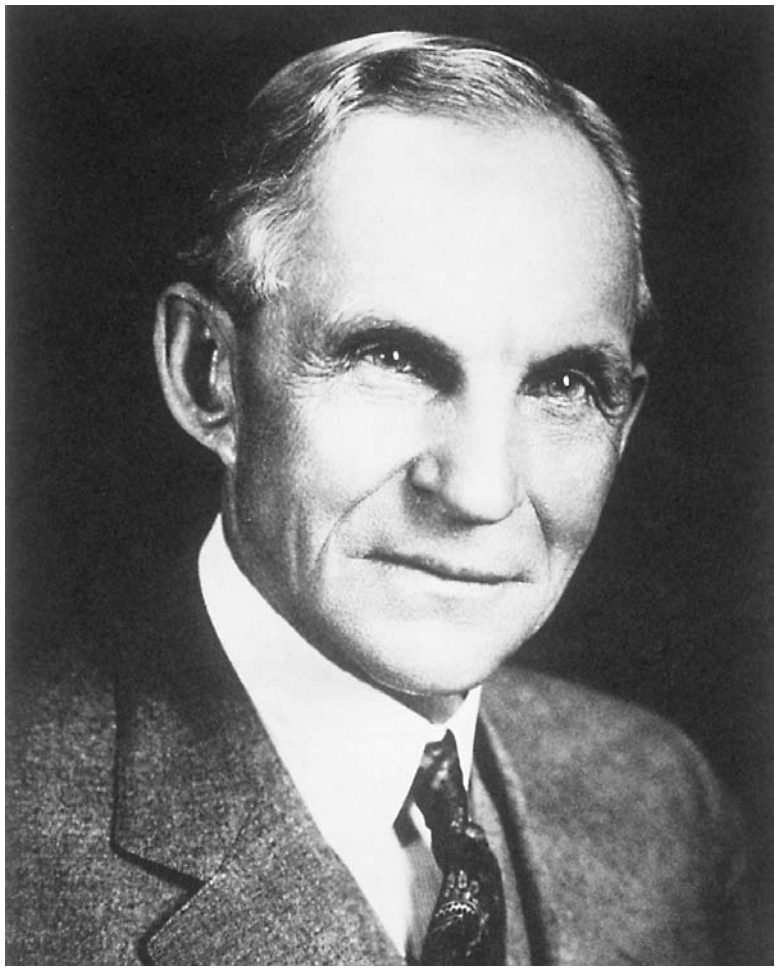
Born July 30, 1863 (Dearborn, Michigan)
Died April 7, 1947 (Dearborn, Michigan)

Industrialist
Automotive executive

American automotive pioneer Henry Ford was one of twentieth-century industry's greatest innovators, and even during his lifetime he was proclaimed as the man who ushered in the modern age. Though he did not invent the gasoline-powered "horseless carriage," as the car was initially called, his inventive ideas about accelerating the manufacturing process made him one of the most important visionaries of the industrial age. Over a twenty-year period, his Ford Motor Company churned out some eleven million Model T cars, the first automobile to be mass-produced. The quick-moving assembly line at Ford's Detroit-area plant, where each worker was responsible for completing a single task, was a model of efficiency and became the standard for the modern factory floor. The concepts Ford first tested there would be widely copied by his competitors and applied to countless other manufacturing processes.

Ford often claimed that his ideas about efficient work habits were the result of his dislike of the farm chores he was forced to do as a child. "My earliest recollection is that, considering the results, there was too much work on the place," he

"Paying good wages is not charity at all—it is the best kind of business."



Henry Ford.

wrote in his memoirs, according to Douglas Brinkley's *Wheels for the World: Henry Ford, His Company, and a Century of Progress*. Ford was born on July 30, 1863, at home on the family farm in Greenfield Township, Michigan. The area later became part of the city of Dearborn, a suburb of Detroit. Henry was the second of eight children in the family, and a third-generation Irish immigrant of Protestant stock. His education was basic and lasted just eight years, from 1871 to 1879. He lost his mother the year he turned thirteen, of complications from childbirth, and the teenager then became eager to escape the backbreaking life of the farm. He learned watch repair, and left the farm in

December 1879, when he was hired as an apprentice, or someone who is bound to work for someone else for a specific term in order to learn a trade, at a Detroit firm, James Flower and Brothers Machine Shop.

The Detroit job paid little, however, and his living expenses in the city were high, so Ford took a second job at a jewelry shop fixing watches in the evening hours. By the following summer, he was working at the Detroit Drydock Company, a thriving local shipbuilder, in its engine shop. When his apprenticeship period was completed in 1882, he found a job with the Westinghouse Engine Company repairing steam traction engines, wheeled engines used to move heavy loads or to provide power at various locations, on farms across southeastern Michigan. He occasionally returned to his father's farm to help out with chores but was still determined to forge his own career. Near the time of his 1888 marriage to Clara Bryant, who came from a nearby farm family, his father gave him a plot of land. The elder Ford strongly advised his son to set up his own farm, and the newlyweds did live on the property for a time. There Ford built a little shed to serve as his own machine shop, where he experimented with different types of engines. He had become increasingly fascinated with the emerging automobile industry.

Two German inventors, Gottlieb Daimler (1834–1900) and Karl Benz (1844–1929), had separately made important discoveries for a gasoline-powered engine and a four-wheeled vehicle in the 1880s. Their efforts launched an automobile-manufacturing industry in Europe, which then migrated to the United States and joined the push to build a self-propelled vehicle already underway there. In 1893 Massachusetts brothers Charles E. Duryea (1861–1938) and J. Frank Duryea (1869–1967) built the first American-made, gasoline-powered automobile and started their own company to manufacture more. Ford, because of later legal difficulties and possibly as an attempt to secure his place in history, would claim that he had also designed and built a self-propelled gasoline vehicle—or, in other versions of the story, a working motor for one—in the period between 1888 and 1892, but such claims have been disproved as early company lore.

Invents the quadricycle

Ford quit farm life forever in mid-1891 when he took a job as a night engineer with the Edison Illuminating Company in Detroit. Within a short time he was promoted to chief engineer, at a salary of $100 a month, but he continued to work on a prototype vehicle inside the small brick workshop behind his two-family Detroit house. He saw the debut outing of Detroit's first car, built by Charles B. King and Oliver E. Barthel in 1896, and that same year achieved his true manufacturing first: a four-cycle, air-cooled engine that operated on two cylinders and had a four-horsepower (h.p.) capacity. He named it the quadricycle, and it made its first run on June 4, 1896.

Ford had gained a reputation as one of the city's new generation of technological innovators, and Detroit's mayor and other business leaders provided the start-up money for his first automobile-manufacturing venture, called the Detroit Automobile Company. The first model was a two-passenger car, which featured an inventive electric-spark ignition and chain-and-sprocket transmission. The Detroit Automobile Company was incorporated on August 5, 1899, the first in the city established solely for the purpose of making gasoline-powered vehicles, but it went under late in 1900 after producing just twenty vehicles. Many of the other early car-manufacturing ventures in Detroit also had rough starts, and few of them survived their first decade in business.

Deeply committed to the possibilities of the internal-combustion engine, Ford was uninterested in making a car that was powered by any other method. The internal-combustion engine burned fuel (gasoline) within the engine rather than in an external furnace, as in a steam engine. Some of the early automobiles were driven by steam power, and for a few years there was a tremendous industry debate over which was better—gasoline or steam. Steam engines could be lit with a match and did not require the driver to manually hand-crank the engine to start it. There was also a small but growing electric car market, which were especially well-suited to women drivers because they were also simple to start. Neither steam nor electric vehicles could attain anything but a rather leisurely speed, and Ford knew that the internal-combustion

The Rise of the Motor City

Detroit's rise to become the center of the automotive industry did not happen entirely by accident. When bicycles became the newest craze in the 1880s, Michigan and neighboring Ohio emerged as manufacturing centers. Detroit also boasted many carriage-making shops, and there were numerous producers of marine engines as well. In short, the city had many small light-industrial shops and a large skilled-labor force who staffed them, both of which easily made the transition to automotive manufacturing. Furthermore, the engine-building process required iron ore, and there were vast mines of it in Michigan's Upper Peninsula, and a highly developed water-transportation system that brought it to Detroit. Finally, Detroit had a good number of wealthy citizens—Midwest tycoons who had made quick fortunes in timber or shipping—who were eager to fund new ventures. All of these factors earned Detroit its reputation as the "Motor City." Although the automobile industry declined in the late twentieth century, the country's top three auto manufacturers, Ford, General Motors, and Chrysler still have their headquarters in Detroit.

engine might be perfected enough to be able to reach a much more advanced horsepower. He was encouraged to further develop the gas-powered engine by world-famous inventor **Thomas Edison** (1847–1931; see entry), whom Ford met on a trip to New York when he was still the chief engineer at the Edison plant. Edison asked Ford about his side project, and Ford sketched it out for him. Edison agreed that a car with an internal-combustion engine was the ideal, for electric-car batteries were far too heavy, and needed to be near a recharging station.

Ford tinkered with engines and aerodynamics, or how air flows around an object, on prototype cars that he raced himself on a track in Grosse Pointe, a posh resort community north of the city. This was a shrewd marketing strategy that attracted influential crowds and boosted his reputation as an innovator. A new group of investors recapitalized the Detroit Automobile Company, but Ford disagreed with their strategies and resigned in March 1902. He found a more like-minded partner in Alexander Y. Malcomson, a successful Detroit coal dealer, and once again was made a principal in a company in which he had invested not a cent of his own money. On June 16, 1903, the Ford Motor Company was formally incorporated.

The Model A is introduced

The Model A was Ford's first vehicle, and it sold for $850. It had a two-cylinder, eight h.p. engine and began selling at a rate of over one hundred each month. The cars were made at a new Ford factory on Piquette Avenue and Beaubien Street, but Ford ran into problems with Malcomson, who wanted to concentrate on top-of-the-line models, like the Model B of 1905, which sold for $2,000. Nearly all the automobile manufacturers in this era focused on producing luxury vehicles. The costs of manufacturing a single car were still quite high and most companies believed that the initial start-up costs could be more easily recovered by selling high-end cars, which had higher profit margins. Ford believed otherwise and bought out Malcomson's share in the company.

Ford's next big project was the Model N, introduced in 1906 with a base price of $700. His plan was to make 10,000 of them in one year, and he teamed with Walter E. Flanders, an expert in the machine-tool industry, to refine the manufacturing process. Flanders's ideas formed the basis of Ford's new arrangement for the factory floor to reach maximum efficiency, and the company thrived. The legendary Ford Model T was introduced on October 1, 1908. It was the reliable, affordable car that permanently shifted the automotive industry focus from the luxury consumer to the mass market. It featured a four-cylinder, twenty h.p. water-cooled engine and an innovative magneto starter, which was a self-contained starter unit that provided power to the spark plugs. It originally sold for $850, but Ford managed to reduce the costs of production and offer three different versions by 1916, the cheapest of which was the Runabout, which sold for $345.

Ford was able to reduce costs because of his company's production methods. The maximum-efficiency concept became a reality with the design of an even larger new Ford plant, this one located on sixty acres in Highland Park, just outside the Detroit city limits. It was a state-of-the-art facility, designed by noted architect Albert Kahn (1869–1942), and was the largest industrial plant in the state when Ford models began rolling off its new assembly line on December 1, 1913. It cut the average assembly time for one vehicle from 728 minutes to an astonishing 93 minutes. The idea was based upon a continuously moving assembly process, helped along

by overhead conveyors; materials were also brought to the worker by gravity, with items coming down chutes. The work came to the worker, not the worker to the work, with everything located at waist level to reduce wasted movement.

The Highland Park factory produced cars at a fast pace that attracted attention from around the world, and its methods were soon widely copied in the production of countless other consumer goods. But Ford's company built no other cars except for the Model T for nearly twenty years. Since black paint dried the fastest, the other colors in which it was first offered were eventually dropped, giving rise to Ford's famous pronouncement, "Any customer can have a car painted any color that he wants so long as it is black," according to Brinkley. The Model T sold well in rural America, at a time when farms still dominated the landscape and agriculture was a mainstay of the economy. It was ideally suited to bad roads because of its sturdy construction, and farmers were enthusiastic about the way it had transformed their lives. Rural areas were no longer isolated because now people could easily travel back and forth between the city and the country.

The $5-a-day wage

Ford and his team of engineers continued to perfect the manufacturing process, but the emphasis on efficiency alienated workers at the plant. The company seemed to view them as if they were part of the factory itself, not human beings. To soothe growing discontent, Ford announced a new $5 a day wage in January 1914; he also reduced the day's work hours at his plant from nine to eight. At the time, the rate in Detroit for unskilled labor was about $1.80 a day; skilled workers earned $2.50 a day. The American business community was outraged and predicted that Ford's headline-grabbing strategy would be the death of his company. Wall Street was also contemptuous, but in other quarters Ford was hailed as the new breed of company president, one who was both progressive-minded and a humanitarian.

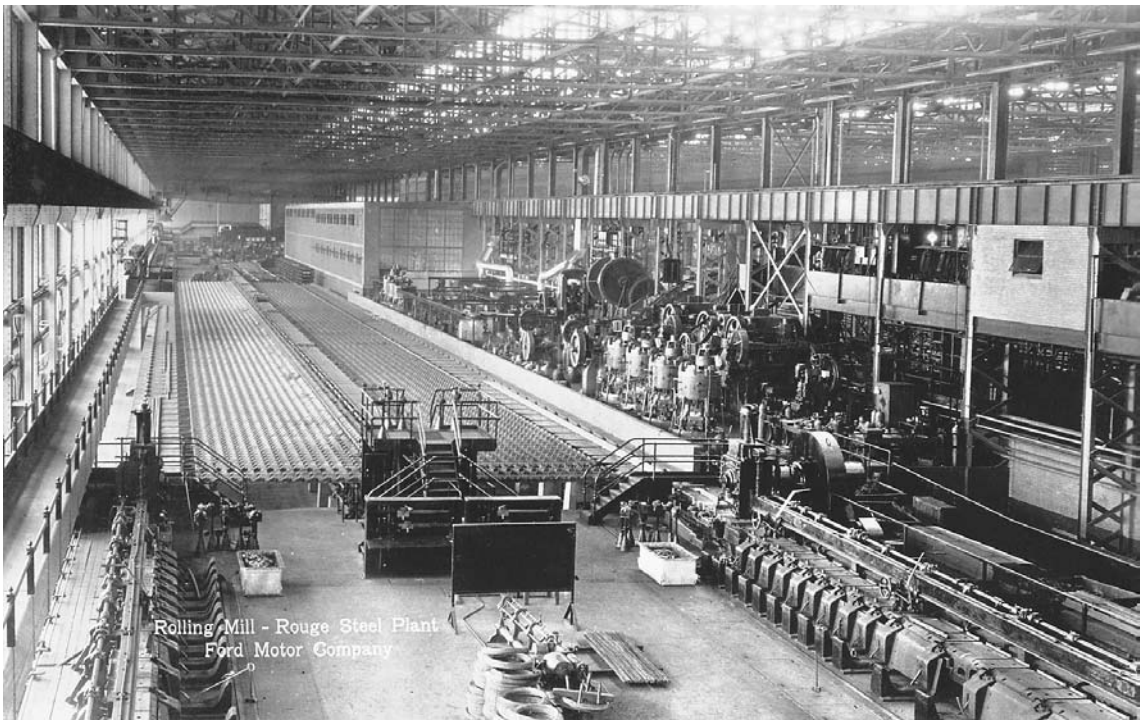
Ford's influence and innovation seemed to peak around this time, however. During World War I (1914–18; a war in which Great Britain, France, the United States and their allies defeated Germany, Austria-Hungary, and their allies) he provided heavy financial support to a foundation that attempted to negotiate an

end to the European conflict on board a "Peace Ship." The press criticized Ford heavily for this. At the office, he had battles with longtime trusted associates and investors, many of whom left. There were nasty legal fights as well; eventually a court ordered his company to pay its minority shareholders millions of dollars. Ford used this 1919–20 crisis as an opportunity to retake control of his company by buying up all outstanding shares and turned the Ford Motor Company into a privately held one. It remained a predominantly family-run business until 1956, when it became a publicly traded company, but Ford's descendants still hold a majority stake.

Ford did not like books and was dismissive of art; he was a poor public speaker, and his business rivals mocked his limited education. In 1919 he was called upon to give testimony in a libel case he had instigated against the *Chicago Tribune,* which had described him as an "anarchist," linking him to radical political groups of the era who believed in the overthrow of organized government, in a 1916 editorial because of his anti-war views. The automotive tycoon was repeatedly asked by defense lawyers during cross-examination to read documents they set before him, but he evaded the challenges. The trial judge supported the newspaper's right to freedom of the press, and that decision was upheld by the Illinois Supreme Court on appeal. Ford also became involved in politics, losing a 1918 bid for one of Michigan's two U.S. Senate seats. He invested some $4 million into a newspaper called the *Dearborn Independent,* which published offensive editorials and promoted the idea of a worldwide "Jewish conspiracy," the claim that European and North American Jews had an unusual amount of influence in the corporate world and the media. The paper had a nine-year run, but Ford was finally forced to close it in 1927 when a Chicago lawyer sued him for defamation of character, or unfairly attacking his reputation.

The Rouge plant

In the end, Ford had one final and grand idea that secured his place in American manufacturing history: the Rouge plant, located on the banks of the Rouge River that ran near his boyhood home in Dearborn. The massive facility opened in stages just after World War I. It was soon the largest industrial complex in the world. Visitors came from every country to



Ford's Rouge plant. *(© Rykoff Collection/Corbis.)*

study its methods and marvel at its efficiency. Raw materials arrived at one end of the plant by ship or train, and a car came out on the other end. The Rouge had everything necessary in the automotive manufacturing process right on site, from blast furnaces to foundries, where metal was cast, to glass-making kilns (high-temperature ovens), all arranged in the most efficient way possible.

Ford and his wife had only one child, a son named Edsel (1893–1943), who took over as company president in 1918. The father, however, remained a commanding presence. The family had a lavish estate, called Fair Lane, also on the banks of the Rouge, but in a more rural spot. In his senior years, Ford seemed to retreat into the past and was keen to preserve a vanishing rural America—the same one he had been so eager to escape in his youth. He established a historical museum and village in Dearborn, called Greenfield Village, that became a model for modern-day historic preservation.

Ford's nostalgic ideas of his earlier years did not seem to keep pace with the times. As one of the leading industrialists of his era, he was strongly opposed to labor unions, and the Ford Motor Company had an internal security department whose union-busting hired hands were among the most notoriously brutal thugs inside an already-violent anti-union movement. They were supervised by Harry H. Bennett (1892–1979), the company's director of personnel and plant security. The company was the last of the major Detroit automakers to sign a contract with the United Automobile Workers union, and Ford allegedly did so only after his wife threatened to leave him. Clara Ford had taken the side of their son, Edsel, who believed that Bennett exerted undue influence over his aging father.

By 1941 Ford suffered the second of two strokes, and his health declined. Edsel died of stomach cancer in May 1943. Bennett used the opportunity to move toward taking over but was quickly ousted by Edsel's son, Henry Ford II (1917–1987), who joined the company in August 1943. The youngest Ford led the company through its impressive postwar boom years, and though it later became a publicly traded one, descendants of the founder still held vital positions in the company leadership ranks a century later.

Ford died on April 7, 1947, of a cerebral hemorrhage at his Fair Lane estate. Years before, a younger man had been discussing educational issues with him and pointed out, "These are different times: this is the modern-age," to support his argument. "Young man," Ford retorted, according to Brinkley, "I invented the modern age."

For More Information

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