

Ford and the Model T

Charles E. Sorenson



OVERVIEW

By 1929, sales of automobiles in the United States had reached nearly 4.5 million. Henry Ford had changed the automobile industry forever when he produced the popular Model T Ford, an inexpensive and durable car. Charles E. Sorenson, who joined Ford in 1904, and became general superintendent, relates in the following excerpts how both the Model T and the revolutionary assembly line method of production were born.

GUIDED READING As you read, consider the following:

- What role did the author play in the creation of the Model T and the assembly line?
 - Does Sorenson seem to understand how important his development of the moving assembly line was?
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Early one morning in the winter of 1906•7, Henry Ford dropped in at the pattern department of the Piquette Avenue plant to see me. "Come with me, Charlie," he said, "I want to show you something."

I followed him to the third floor and its north end, which was not fully occupied for assembly work. He looked about and said, "Charlie, I'd like to have a room finished off right here in this space. Put up a wall with a door in big enough to run a car in and out. Get a good lock for the door, and when you're ready, we'll have Joe Galamb come up in here. We're going to start a completely new job."

The room he had in mind became the maternity ward for Model T.

It took only a few days to block off the little room . . . and to set up a few simple power tools and Joe Galamb's two blackboards. The blackboards were a good idea. They gave a king-sized drawing which, when all initial refinements had been made, could be photographed for two purposes: as a protection against patent suits attempting to prove prior claim to originality and as a substitute for blueprints. A little more than a year later Model T, the product of that cluttered little room, was announced to the world. . . .

The first steel that we were to use on experimental Model T transmission was the carbonizing type. When the gears were cut and finished they were packed into heavy cast boxes and surrounded with a carbon material, then put in furnaces and brought up to heat and held for some time at that temperature. We wanted to find out how deep this carbon should go into the steel. . . .

It was primarily these new types of steel that would determine what Model T would look like. Every day it became more evident that soon Mr. Ford would come up with something revolutionary. . . .

He kept saying to me, "Charlie, we are on the right track here now. We're going to get a car now that we can make in great volume and get the prices way down. . . ."

Actually it took four years and more to develop Model T. Previous models were the guinea pigs, one might say, for experimentation and development of a car which anyone could afford to buy, which anyone could drive anywhere, and which almost anyone could keep in repair. . . .

We worked through the whole year of 1907. . . . By early 1908 we had built several test cars which we tried out on the roads. I did a lot of driving myself. Mr. Ford invariably went with me, and we made trips as far away as Indianapolis and northern Michigan. Most of the roads were terrible, which was one reason why we took them; a car which survived them met the acid test. There is no better comparison of highways then and now than today's elaborate proving grounds which cost the big auto companies millions of dollars to produce synthetic hazards that, back in 1908, we got for free.

By March, 1908, we were ready to announce Model T, but not to produce it. On October 1 of that year the first car was introduced to the public. From Joe Galamb's little room on the third floor had come a revolutionary vehicle. In the next eighteen years, out of Piquette Avenue, Highland Park, River Rouge, and from assembly plants all over the United States came 15,000,000 more.

We have seen how Model T slowly evolved. An equally slow evolution was the final assembly line, the last and most spectacular link in mass production. Both "just grew," like Topsy. But, whereas the car evolved from an idea, mass production evolved from a necessity; and it was long after it appeared that the idea and its principles were reduced to words.

Today, we do not hear so much about "mass production" as we do about "automation." Both evolve from the same principle: machine-produced interchangeable parts and orderly flow of those parts first to subassembly, then to final assembly. The chief difference is that mechanized assembly is more complete in automation; where men once tended machine tools, the job is now done electronically, with men, fewer of them, keeping watch over the electronics. . . .

What was worked out at Ford was the practice of moving the work from one worker to another until it became a complete unit, then arranging the flow of these units at the right time and the right place to a moving final assembly line from which came a finished product. Regardless of earlier uses of some of these principles, the direct line of succession of mass production and its intensification into automation stems directly from what we worked out at Ford Motor Company between 1908 and 1913. . . .

As may be imagined, the job of putting the car together was a simpler one than handling the materials that had to be brought to it. Charlie Lewis, the youngest and most aggressive of our assembly foremen, and I tackled this problem. We gradually worked it out by bringing up only what we termed the fast-moving materials. The main bulky parts, like engines and axles, needed a lot of room. To give them that space, we left the smaller, more compact, light-handling material in a storage building on the northwest corner of the grounds. Then we arranged with the stock department to bring up at regular hours such divisions of material as we had marked out and packaged.

This simplification of handling cleaned things up materially. But at best, I did not like it. *It was then that the idea occurred to me that assembly would be easier, simpler, and faster if we moved the chassis along, beginning at one end of the plant with a frame and adding the axles and the wheels; then moving it past the stockroom, instead of moving the stockroom to the chassis.* I had Lewis arrange the materials on the floor so that what was needed at the start of assembly would be at that end of the building and the other parts would be along the line as we moved the chassis along. We spent every Sunday during July planning this. Then one Sunday morning, after the stock was laid out in this fashion, Lewis and I and a couple of helpers put together the first car, I'm sure, that was ever built on a moving line.

Source: Sorenson, Charles E. *My Forty Years with Ford*. W.W. Norton & Company, 1956.