

The Assembly Line



Ford Motor Plant, 1913

In the late nineteenth and early twentieth century, the United States rapidly industrialized. As this happened, factory owners and managers looked for ways to make their workers more productive and their companies more competitive.

Frederick Winslow Taylor was a pioneer in increasing workers' productivity. Taylor is known as the father of "scientific management" because he believed that work could be managed by using scientific methods. He used a stopwatch to carefully measure each worker's movements in completing a task. He then planned methods for decreasing the movements required to complete the tasks, thereby increasing worker output. At the Bethlehem Steel Company in the 1880s, Taylor was able to reduce the number of men responsible for shoveling ore from 600 to 140. He cut the company's costs in half and paid the remaining workers a higher wage.

Taylor's principles were ultimately used to create assembly lines, in which workers were positioned along a mechanized line. The product was placed on the line, and each worker completed a single, specialized task over and over again. Because the product came to the workers, their work required very little movement. This is called the *specialization of labor*.

The man who made the assembly line famous was Henry Ford. In 1909 Ford said, "I am going to democratize the automobile. When I'm through everybody will be able to afford one, and about everyone will have one." Ford was a true visionary. By 1915 Ford's automobiles were rapidly replacing the family horse and buggy. Ford became one of the richest men in the world. The cost of automobiles plummeted from around \$2,000 to less than \$500. The assembly line increased efficiency but also minimized variety and originality. Automobiles before this point bore the mark of expert craftsmen, and each was somewhat unique. Ford's Model Ts, on the other hand, were built exactly alike, and all were black.

The use of the assembly line dramatically affected factory workers. Workers at Ford's plants were paid \$5 a day, considerably more than the average worker in other similar semi-skilled jobs. Still, the workers performed the same tasks repeatedly, which was very tiresome. In jobs that were later to be performed by machines, workers toiled monotonously hour after hour, their every movement controlled by the demands of the line. Moreover, workers' lives outside the factory were sometimes controlled as well. Ford hired men to visit workers in their homes to stop heavy drinking or other undesirable social activities that might limit workers' productivity. Other factory owners provided worker housing right next to the factory—in lieu of paying wages—so they could keep an eye on the workers and also lower costs. Furthermore, instead of being paid in money, some workers were paid in "scrip," coupons that could only be used in a company-owned store. Since the factory owner controlled the prices of all the goods in the store, he benefited doubly. Thus, as the United States became industrialized, workers discovered they had less and less power over their lives.

Assembly Line Organization

Worker 1—head

Worker 2—hair

Worker 3—eyes

Worker 4—eyebrows

Worker 5—nose

Worker 6—mouth

Worker 7—ears

Worker 8—neck

Worker 9—shirt

Worker 10—arms

Worker 11—hands

Worker 12—slacks

Worker 13—shoes

Worker 14—pockets on shirt

Worker 15—pattern on shirt

Worker 16—belt

Worker 17—pattern on slacks

Worker 18—wristwatch