

Ley Hill Solutions

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Quality Guru Series 8. Frederick W Taylor



Born in 1856 to a wealthy Quaker family in Germantown, Philadelphia, Pennsylvania, Frederick Winslow Taylor was an American inventor and engineer and one of the very first management consultants. In the twentieth century his system of industrial management spread throughout the industrialised world and he became known as the father of scientific management. Whilst his work pre-dated the concepts of Total Quality and focus on the customer that flourished in the mid to late twentieth century, nevertheless his methods were probably the very first attempts at systematic process measurement and improvement and in this sense were a forerunner of quality management principles.

Frederick W Taylor had to give up law school at an early age due to his rapidly deteriorating eyesight, and so he went into industry in 1878 as a machine shop worker at Midvale Steel Company, Philadelphia. Here he worked his way up to chief engineer and obtained a degree in mechanical engineering by correspondence course.

In 1881, while still chief engineer at Midvale Steel, he introduced a scientific approach to "time and motion study", which he later extended and refined at the Bethlehem Steel Company, when, in 1899, he was asked to apply his scientific management ideas there. During these studies, Taylor and his associates used stop-watches to time the labourers as they performed various tasks, counted the number of shovel-loads they each moved, and the load per shovel. Thus he was able to determine an optimum shovel size and length and optimum shovel load. Also, Taylor suggested that different types of shovels be used for different types of materials. Such careful observations, aimed at recognizing wasted effort and minimizing time used, increased the efficiency of actions of factory workers. In addition, methods for better scheduling and assignment of workers to shoveling jobs were recommended and training was done with the laborers on efficient shoveling techniques. As a result of all of these changes, the cost per ton for handling materials dropped significantly. Actual cash savings to Bethlehem Steel were over \$70,000, a huge sum in those days.

From 1890 until 1893, between his work at Midvale and Bethlehem steel companies, Taylor worked as a general manager and consulting engineer to management for the Manufacturing Investment Company of Philadelphia, who operated large paper mills in Maine and Wisconsin. He spent time as a plant manager in Maine. In 1893, Taylor opened an independent consulting practice in Philadelphia. His business card read "Systematizing Shop Management and Manufacturing Costs a Specialty".

In 1906 he was awarded an honorary Doctor of Science by the University of Pennsylvania and before his death in 1915 had become a professor at The Tuck School of Business at Dartmouth College, New Hampshire. In 1911 he published "The Principles of Scientific Management", which he launched at a conference at The Tuck School.

There are four key principles, which are

1. Replace rule-of-thumb work methods with methods based on a scientific study of the tasks.
2. Scientifically select, train, and develop each employee rather than passively leaving them to train themselves.
3. Provide detailed instruction and supervision of each worker in the performance of that worker's discrete task
4. Divide work nearly equally between managers and workers, so that the managers apply scientific management principles to planning the work and the workers actually perform the task.

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