

use whatever in paying premiums for fast work; much less in having time study men and slide rule men, "supernumeraries," as he called them; in the works at all. His orders were obeyed, and the output of the large machine shop in the following month fell to about one-half of what it was before. _____, who was then in command, ordered our system reinstated. He, however, did not tell Schwab that he had done so. On the contrary, he led Schwab to believe that our system had been entirely thrown out. In carrying out this deceit, for several years the use of our slide rules and time study, etc., was carried on in the Bethlehem Works without Schwab's knowledge. The slide rules were operated in a room back of the kitchen, which Schwab never visited, and all of the slide rule, time study men, planners, etc., were carried on the payrolls as mechanics; that is, machinists who were supposed to be working in the shops. And it is only through an accident that this state of affairs was finally brought to Schwab's attention. The office of the large machine shop burnt down some years later, and destroyed all of the slide rules, and many of the time study records. During the year following this fire, the output of the machine shop necessarily fell off to a tremendous extent, because the mechanism for helping the workmen to do a big day's work was lacking. They attempted to guess at what was a proper day's work, as is done in other establishments under the old system of management, with the result that at the end of the year practically all of the head men connected with this department were discharged for incompetence, and a set of men inferior to them were put into their places to run the shop.

"This led to the true facts being brought to Schwab's attention, and from that time forward the slide rules and time study men, and in fact all of the elements of our system of management were practiced openly in the shop." [Volume II, pages 160-161.]

Old-fashioned managers find it hard to realize the importance of any radical departure from the creed handed down to them. In one case, Taylor's recommendation that a higher priced workman be employed to do certain work was rejected because such pay for such work was unprecedented. The result was that the system failed to work until Taylor appealed directly to the company's chief executive. "Would you," he asked, "expect an engine to work with a broken connecting rod?"⁸

Offended Pride

Quite naturally, although unreasonably, when any manager or foreman was asked to mend his ways, as prescribed by scientific management, he considered such request as a personal reflection on himself. It is hard for anyone to admit that he has been doing his work wrong all his life.

Nine-tenths of his [Taylor's] troubles were with men in the management. As he extended his functional principle to

management, it acted on the typical foremen or manager of his day "as the proverbial red rag on the bull." [Volume I, page 292.]

In one instance

The superintendent was distinctly displeased when told that through the adoption of task management the output, with the same number of men and machines, could be more than doubled. He said that he believed that any such statement was mere boasting, absolutely false, and instead of inspiring him with confidence, he was disgusted that anyone should make such an impudent claim. [Principles of Scientific Management, page 98.]

The average man, once in a rut, wants to be left alone. When he is disturbed he finds innumerable grievances.

The men who most resented Taylor's innovations were, naturally, those nearest to him. They could not abide his being their teacher.

He must needs be conscious of his power, and he manifested this consciousness in an insouciance which if you could not know what a modest man he was at bottom, you were likely to find more trying than outright boasting. [Volume II, page 21.]⁹

Often, therefore, he found himself a prophet not without honor save in his own shop.

Even when he [Taylor] in collaboration with Maunsel White made the discovery [of high-speed steel], which was the sensation of the industrial world here and abroad and saved the company a prospective expenditure of at least a million dollars, none of the men high up in that company had sufficient pride in it to offer him a word of congratulation. [Volume II, page 78.]

In March, 1901, Taylor wrote the President of the Bethlehem Company:

"It is a curious psychological fact, and one for which the writer can find no explanation, that of all the parties who have visited the works and are acquainted with what has been done here, the only ones who have failed to congratulate the writer upon the results accomplished are, with one or two exceptions, the leading officers of the company." [Volume II, page 113.]

Offended Special Interests

Scientific management, by disclosing the truth, must needs expose many shortcomings which had previously been concealed. Every bluffer fears to have his negligence or incompetence revealed. Such people, whether managers or workmen, naturally oppose scientific management knowing that they will lose thereby their previous advantage from deception, or even lose their jobs.

Every innovation will expose someone who profited under the old regime. One of the most curious cases was when at Bethlehem, "Speedy" Taylor reduced

⁸Volume II, page 183.

the number of pig iron handlers so far that real estate agents feared he would disturb rental values of tenements!

Organized Labor

The opposition to Taylor thus far described was merely the natural spontaneous opposition of individuals. But we now come to an organized opposition, the most remarkable and regrettable of all.

Organized labor then as now represented the accumulated hostility of several generations of grievances against employers.

Between the two classes a great gulf was fixed. Anything originating with one side was suspect to the other. And the more grievances any labor group felt, the more its hostility to the Taylor System.

Experience others have had in developing scientific management indicates that the difficulty of getting the workmen in any particular establishment to adopt the new methods always is in nice proportion to the lack of consideration that there has been shown them in the past. [Volume I, page 421.]

Labor leaders, in particular, charged as they were with the responsibility of leading in the fight of labor against "Capital," were active in opposing the introduction of the Taylor System.

Probably today millions of labor men think themselves opposed to Taylor's ideas, and scientific management.

This is remarkable because the individual workmen under scientific management soon come to realize that they are beneficiaries under the system. In particular they have higher wages by from 30 per cent to 100 per cent. The result is as already stated, that wherever the Taylor System has been established, strikes are practically unknown.⁹

Yet history teaches that we often crucify our best friends. It will be recalled that Taylor's first efforts were aimed at breaking up soldiering, that the bitterness of that early fight convinced him of the need of a more thorough measurement of a fair day's work and that this study led to the discovery—for discovery seems to be the right name for it—of scientific management.

Antipathy of Unions

So fate decreed that Taylor's life quest to find a way of enlisting labor's enthusiastic cooperation ended by incurring their organized bitter opposition. Labor's reluctance to labor remained because entrenched in their traditions and organization.

⁹See Volume II, page 162, and "Principles of Scientific Management," page 135.

Labor unions originated for the purpose of fighting employers rather than cooperating with them. They had capitalized the idea of soldiering in their mistaken dogma of limitation of output and had fortified that idea by the fallacious economic theory that the more we "make work," the higher wages will be and the less unemployment.

"Speedy" Taylor stood for speeding up industry. Organized labor stood for slowing it down. Taylor regarded the difference as irreconcilable, so long as labor adhered to doctrines contrary to his principles, such as limitation of output and equality of pay for good and bad workmen alike.

The union leaders feared that either the unions must destroy the Taylor System or the Taylor System would destroy the unions.

An interesting instance of the working out of this drama was at Mare Island, California, where Naval Constructor Evans, of his own initiative, introduced the Taylor System in the navy yard with the following results, before misguided labor leaders "got busy":

The lowest direct labor cost of retubing boilers at Mare Island had been \$1,200 per boiler. When this work was "Taylorized," the cost per boiler was reduced to \$400. Six or seven sailmakers were brought to do the work that previously had taken thirty. [Volume II, page 308.]

Three or four years later, after bitter political fighting, backed by labor unions, we read:

Then came to Mare Island from Washington a party of six line officers to tear to shreds about everything Evans had done there during three and a half years to establish an efficient system. Under the regime that followed it was forbidden to keep any labor records. [Volume II, page 312.]

As soon as organized labor had declared war on scientific management, scientific management was under a cloud. Employers who used it tried to conceal the fact for fear of labor troubles and often do so today.

In a letter written by him [Taylor] in July, 1912, to L. P. Alford, of the A. S. M. E. Sub-committee on Economic Administration, he, referring to this highly exceptional railway official, said:

"Mr. _____ used our methods for several years while he was master mechanic of the side lines of the _____ R. R., with headquarters at _____. He did really a wonderful piece of work in getting all of the repairs of the locomotives made on piece work, some twenty different types of locomotives being repaired on the side lines. He showed me, in fact, several books containing some 120,000 different piece-work prices for repairing locomotives.

"He came to see me about his work a number of times, and was most enthusiastic. When, however, the Congressional Committee wanted to get him to testify as to what