

ments cannot be relied upon. Scientific management in trying to build up labor standards must be ingenious, scientific and persistent: A noteworthy sample of such a procedure is cited in the reference given below.²

All the factors considered above are also strongly affected by the environment of the employe. This environment includes his home and community surroundings, his physiological and emotional status, and the physical conditions in which he must work. It is not within the scope of this chapter to discuss these important features of labor standardization. Unless a favorable condition exists, however, with reference to these factors, attempts to develop the standards here described will amount to little. Wide variability exists in such simple items as eyesight, hearing, muscular power, nervous tension. Disease, improper foods and unsuitable working conditions reduce the effectiveness of the worker. Moreover, unless these various factors are known and accounted for, labor standardization, by tests and otherwise, decreases rapidly in validity. Accurate analysis of the individual's potential capacity and actual skill becomes impossible.

Formulating labor standards is but one phase of the whole process of knowing how well the factory and office, or company, is being run. Labor standards must be integrated with all the other operating standards of the business. We have shown how closely the processes of selection and placement articulate with other operating standards and to what extent they are dependent on the various physical standards. Furthermore, unless the control of all operations runs smoothly no standard can long retain its value.

²Pond, Dr. Millicent, "Selective Placement of Metal Workers," *The Personnel Journal*, Vol. V, 1927, pp. 345, 405, 452.

An Industrial Esperanto¹

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UNDER the title, "The Industrial Tower of Babel," which appeared in the August 1, 1928, number of the *Labour Magazine*, Mr. R. M. Fox reviewed the Congress of the International Association for the Study and Improvement of Human Relations and Conditions in Industry, which took place

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at Cambridge in July. As he rightly observed "the keynote of the Congress was to be found in the declaration that work is a social function, industry is a science." Apparently this point of departure met with his approval. On the other hand, he was critical of those who believed in scientific management. He did not seem to appreciate that Taylor was the first man to insist to the world that industry is a science, that the only hope of the dispassionate study of work as a social function lies with those who would apply the definition, the intellectual methods, and the ethical standards which inspire scientific workers.

Much early mythology still centers round the work of F. W. Taylor. The founder of scientific management, as is the case with nearly all great and original thinkers, was hugely misrepresented in the days when his work first attracted public attention. He was particularly distorted by a large number of unscrupulous people who advertised themselves as "efficiency engineers" in order to exploit the goodwill attaching to his ideas. Since they had no conception of the underlying principles on which those ideas were based, they were guilty of many crimes both against the employers who consulted them, and against the workers in those factories with which they were permitted to experiment.

It is, therefore, not surprising that the trade union world in the United States should have reacted sharply against what it described as "Taylorism." Over several successive years the annual congress of the American Federation of Labor passed the strongest possible resolutions on the subject, which contained such phrases as "the hideous and tyrannical so-called Taylor system." This chain of events was naturally well known to trade union leaders in England. A feeling grew up among the workers that scientific management was something hard and ruthless, and that their sole concern with it was to oppose it with might and main.

The fact is that the question of scientific management has been confused with the various matters at issue between labor and capital. With that great controversy it has, properly considered, nothing directly to do. As a trade union representative from Vienna pointed out at the Cambridge Conference: "Whatever may be the ultimate political organization of industry, there will always be

human problems arising from the employment of persons." Unless we are prepared to scrap the whole of our modern machinery of production, in which case we should have to cut down our population by more than two-thirds, we must contemplate a state of society in which there are those whose function it is to plan and to direct, and those whose function it is to carry out these plans and directions.

The same consideration applies to our political, educational, recreational, and other forms of social organization. As F. W. Taylor himself constantly insisted, scientific management is not a system. It does not consist of a particular series of methods and devices. It is an attitude of mind, a method of approach to all those problems which arise from the employment of persons, whoever happens to be in control, or whatever the purpose in view. It is as applicable to a government department, a church, a football club, or to the international administration of a trade union as it is to the conduct of a factory under the control of a limited liability company.

It differs from the older conceptions of management in this, that it approaches all such problems afresh, with the methods, the standards, and the intellectual technique of the scientist. It endeavors to secure that every decision is arrived at, not as the result of rule of thumb, guesswork, or personal emotion, but by a careful collection, balancing, measurement, and test of all the available facts bearing on the point at issue.

The methods of science are analysis, definition, measurement, and proof. The scientist forms tentative conclusions by means of experiment, and is constantly engaged in adjusting these conclusions in the light of fresh hypotheses or of fresh groups of facts. Where they stand this searching test, they issue in the formation of principles and laws. As will presently be recognized, more particularly by the workers, it was F. W. Taylor who first insisted on this great principle, that the confusion of modern industrial administration can only be solved in the light of principles, evolved by the methods of thought which have inspired the triumphs of modern discovery in the material sciences.

Inevitably, Taylor's work was tentative and incomplete—as the work of Darwin in biology has been rounded out by later workers in the same field. Experimental psychologists of the English

school have rightly called attention to the importance of individual rhythms and the necessity of modifying the conception of the "one best way" in the light of more recent discoveries. Taylor himself would have welcomed such discoveries. He even envisaged developments in experimental psychology which have taken place since his day. "There is one science," he writes, "to which insufficient attention has been given, the science of human motives."

Similarly in the United States, the technique which he applied specially to the problems of machine production, has been carried over into the field of industrial relations. The results in many factories in the increased comfort, welfare, and contentment of the workers have been noted by the Mackenzie Commission, and by many trade union observers.

Those who have made the closest study of his underlying philosophy are the most convinced that the faults of expression and the ignorant and piecemeal attempts to apply his methods which brought his work into temporary disrepute with the American trade unions in no way represented the fine social idealism and underlying vision of the man himself. It is true that in his later years he was critical of the trade unions. He was a human being. And in the confusion of immediate controversy they had covered with obloquy the work and the ideas, to which he had given his life and his fortune.

This is being realized by ever increasing numbers of persons in all branches of the labor movement. For some years past, leaders of the American trade unions have taken note of two important facts. In the first place it is just in those factories where Taylor's principles are most thoroughly understood, that they find the strongest support for the doctrine of high wages. Secondly, it is there, too, that they find the greatest willingness to co-operate in working out experiments in industrial relations.

The past and present presidents of the American Federation of Labor have declared roundly in favor of scientific methods of production and the elimination of waste. At a recent conference a representative of the printers described how his union had established its own consultants in scientific management. When an employer said that he could not pay the union rates, they sent a representative along to advise him on the better management of his plant.