1921

HUGO DIEMER

Hugo Diemer (1870-1939) studied engineering at Ohio State University and subsequently worked as a production engineer, consulting engineer, and production manager. He was later a professor of industrial engineering at Pennsylvania State College.

Diemer published many books and articles on management subjects, but of particular interest to us is his book, *Factory Organization and Administration*, published in 1910. In it he discussed many subjects which would be of interest to factory managers today. His chapter entitled "Industrial Engineering", and his opening remarks in that chapter could well serve as advice to today's industrial engineer, as well as to the engineer of 1910.

Industrial Engineering

It is now some twenty years since Mr. Henry R. Towne presented to the American Society of Mechanical Engineers a paper on "Gain Sharing," in which he assumed that everything connected with successful factory management constituted a part of the work of the engineer. From time to time papers have been presented on similar topics before that society and in the Engineering Magazine, which publication was early and alone among engineering publications to realize the inevitable passing of the work of industrial management into the hands of the engineer. In the early discussions of these topics there were engineers who were opposed to the introduction of discussions of this character into engineering societies or publications, holding that these fields should be reserved for strictly technical discussions of problems dealing directly with pure mechanics. Among the early opponents to the introduction of

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Reprinted from the book, Factory Organization and Administration, by Hugo Diemer, Chapter I, pages 1-2, published by McGraw-Hill Book Company, New York, 1910. Used by permission.

these discussions there were some who argued that the questions involved were matter for bookkeepers and accountants and not for engineers. If a mechanical engineer dabbled in works management, his fellow brothers in the profession began to think it necessary to suspect his technical ability as an engineer. On the other hand, a cry arose from bookkeepers, auditors, and statisticians that the problem was not one of engineering at all, but of "system", and that shop men or engineers were incapable of mental attitudes of processes of auditors. How these conditions have given way to a more enlightened view is indicated by the enthusiasm and unanimity with which Mr. Fred Taylor was elected to the presidency of the American Society of Mechanical Engineers. Mr. Taylor stands today as the earliest and foremost advocate of modern business or industrial engineering.

As early as 1889, Mr. Taylor earnestly pleaded that shop statistics and cost data should be more than mere records, and that they in themselves constituted but a small portion of the field of investigation to be covered by the industrial engineer. While he did not so express himself, the gist of his treatment of factory management is this: He considers a manufacturing establishment just as one would an intricate machine. He analyzes each process into its ultimate, simple elements, and compares each of these simplest steps or processes with an ideal or perfect condition. He then makes all due allowances for rational and practical conditions and establishes an attainable commercial standard for every step. The next process is that of attaining continuously this standard, involving both quality and quantity, and the interlocking or assembling of all of these prime elements into a well-arranged, well-built, smooth-running machine. It is quite evident that work of this character involves technical knowledge and ability in science and pure engineering, which do not enter into the field of the accountant. Yet the industrial engineer must have the accountant's keen perception of money values. His work will not be good engineering unless he uses good business judgment. He must be in close enough touch with the financial management to be able to impress upon them the necessity of providing sinking funds to provide for the more perfect installations and organizations which future demands of a more educated and enlightened public will necessitate.

The industrial engineer today must be as competent to give good business advice to his corporation as is the skilled corporation attorney. Upon his sound judgment and good advice depend very frequently the making or losing of large fortunes.