(Continued from page 122)

Element No.	Element Letter	Description
1	A	Place Truck and Orders (Used as an allowance on all the jobs combined)
2	B	Place Boxes
3		(See under A)
4	D	Adjust Machine
5	E	Stamp Boxes
6	F	Place Stamped Boxes
	N	No. of Dozens

Per Dozen Time = B + D + E + F
Per Job Time = N (B + D + E + F) + A

By computations Fig. 3a, 4a, 5a, 6a, we have:

B = .22
D = .14
E = .54
F = .13

Substituting we have:

Per Dozen Time = .22 + .14 + .54 + .13 = 1.03
From Fig. 2, Column 1, A = 2.10
Per Job Time = N (1.03) + 2.10

The use of this method for selecting element times, combining them into operation times and using them for standard production rates, has predicted satisfactorily the operating rates and has thus indicated the value and applicability of this method of selection of element times.

IT is perfectly clear that the cycle is not merely a financial phenomenon, but pervades every aspect of our economic life. The common aspect of the problem which the cycle imposes upon the treasurer, the personnel administrator, and the sales manager, is the element of *uncertainty* concerning the decisions other men are making. It is in each case as a risk-bearer that the manager must reckon with the periodicity of the phenomena with which he deals. (C. O. Hardy, Risk and Risk-Bearing, p. xiii).

COMMUNICATION

April 14, 1923.

TO THE EDITOR:

In studying the progress that has been made in the manufacture of tool steel since Mr. Taylor brought out his paper On the Art of Cutting Metals, I came across an article in *Chemical and Metallurgical Engineering*, May 26, 1920, which records the results of one of the most extensive investigations on the use of high-speed steel that I have ever seen. Mr. Langhammer, the author of the article, makes a statement which perhaps may interest you. This is:

"Regarding the desired chemical composition, the writer feels that the following analysis is probably the most desirable for modern high-speed steel. Alongside is also affixed the analysis of the best high-speed steel tested by Frederick W. Taylor when he wrote his classical monograph 'On the Art of Cutting Metals.' It shows that this master has apparently plumbed the depth of the art, so that the last fifteen years show little progress in new compositions. As a matter of fact, Taylor recommended an ideal composition, slightly different from the one listed as giving him the best results.

	Langhammer Minimum	Langhammer Maximum	Taylor's Best Steel
Carbon	0.62	0.68	0.67
Tungsten	17.00	18.20	18.0
Vanadium	0.85	1.05	0.29
Chromium	3.00	4.50	5.5
Silicon	0.20	0.30	0.04
Phosphorus	0.00	0.04	Low
Sulphur	0.00	0.04	Low
Other impurities	0.00	0.10	....
Manganese	0.00	0.00	0.11

Of course, were a substituting element such as molybdenum, uranium or cobalt used, the composition will be varied accordingly."

I do not know whether you have seen this before. I feel quite sure, however, that you will appreciate the statement that Mr. Taylor's work was so thoroughly done that no one has been able to improve upon it.

Sincerely yours,

ROBERT T. KENT.

REVIEW

Practical Factory Administration. By Matthew Porosky, McGraw-Hill Book Co., Inc., New York, 1923. Pp. ix, 237.

On the whole this is a sound, elementary treatise on the work of the factory manager. The author covers in successive chapters the different types of organization, buildings and equipment, methods of planning the product, the handling of materials, production control, labor management, work of the foreman, wages and incentives, cost department, planning department, and synchronizing sales and production.

There are many good features of the book. For instance, under "Wages and Incentives" the author points out the necessity of careful study in order to determine the best equipment and methods before incentive methods of payment are introduced. He makes the common mistake of assuming that high standardization removes the incentive in the skilled worker to strive for improved methods, but on the other hand, makes the extremely sound observation, which the reviewer has never seen in print before, that "a minimum wage is seriously discussed but how often is minimum production associated with the minimum wage . . . ?" He emphasizes strongly the fact that the system must be designed to fit the operating requirements of the particular business or, in other words, "made to order." He calls attention to the danger of preparing too many rather than too few statistics, and to maintaining statistics after they have outlived their usefulness.

In an interesting chapter on the planning department, the author states that real time study involves the determination of the best possible methods of doing work and involves substantial improvement in methods, "something more than recording elapsed time and the striking of averages." He has, unfortunately, in listing the procedure involved in making time studies, omitted the all-important intensive study of the elements into which any piece of work has been analyzed, with a view to eliminating unnecessary elements and re-combining the remaining ones into standard methods before detailed time studies are taken. The introduction of time study is given as taking place in 1895, whereas Mr. Taylor actually developed these methods some ten or twelve years earlier than this.

In spite of a rather curious emphasis and lack of emphasis in certain portions of the book, the viewpoint is in accordance with best present practice in most respects. It is essentially a *why* book rather than a *how* book, and will be found primarily serviceable for beginning students in factory management.

BULLETIN OF THE

TAYLOR SOCIETY

AN INTERNATIONAL SOCIETY TO PROMOTE THE SCIENCE AND THE ART OF ADMINISTRATION AND OF MANAGEMENT

ORGANIZATION is the formation of an effective machine; management, of an effective executive; administration, of an effective direction. Administration determines the organization; management uses it. Administration defines the goal; management strives towards it. Organization is the machine of management in its achievement of the ends determined by administration.

—Sheldon

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