creasing bonus whose maximum is 10 per cent. of the Gantt bonus, is paid. For a saving of 10 per cent. or more for instance, an elapsed time represented by AK, the man would receive a daily wage represented by FE, plus a bonus represented by the line MR. For a time less than AF, but greater than AK as AS he would receive a daily wage of FE plus a bonus represented by the line TV or the distance between the daily wage line and the line joining points M and D.

[Editor's Note: Professor Mixter's original paper comprised about 12,000 words and 8 diagrams. In order to publish it in the space available in the Bulletin, it has been necessary to abridge it as above. Those desiring to examine the entire paper, will find it on file at the office of the Secretary.]

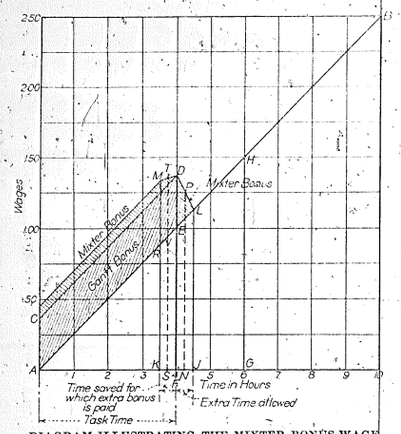

DIAGRAM ILLUSTRATING THE MIXTER BONUS-WAGE RATE, 25 CENTS PER HOUR

PROF. ROBINSON: The objection that Prof. Mixter's method interferes with fixing costs seems rather fallacious. Even if the worker is always paid the same rate per piece, if he does more at one time than at another the overhead changes, so that the real cost is subject to change anyhow.

The whole theory of Prof. Mixter's plan is based on human nature. It is based on the fact that people are not alike. It is impossible to get together a set of workers who will all do the same job in the same time.

Even the same worker will vary in his speed from day to day and from season to season throughout the year. It is one of the established principles of Scientific Management that every man shall earn his bonus, that is of course after a reasonable time spent in learning how to do the job. If there are twenty men working all on the same sort of work and they have all become fairly skilled and are all expected to earn their bonus, then it follows that the task must be set so that the slowest man of the twenty can earn the bonus. It seems certainly obvious that some of the workers would be able to do considerable more work than the slowest man.

J. C. REGAN: Having in mind that an allowance over the time shown by the time study is made for the whole job, it seems to me unnecessary to take into account so keenly any variations that are in the worker or in the conditions that exist. If we are all looking for something to fix our piece price, we must have it within a reasonable limit, and therefore, you should be able to guarantee it, for a year or two years or three years.

It would be a fatal mistake in any business to penalize the better workmen by decreasing the bonus, as has been suggested, as the time consumed on a job is diminished considerably below the task time. Why not establish an acceptable labor cost standard and maintain that? Why say anything about the speedy workers? Why not let them get all they can? If the time study is at all near right, you should make money.

H. V. R. SCHEEL: We have one kind of winding machine, having 36 winding spindles on a side. The yarn run by operatives on these machines is of varying size, count or weight. The theoretical number of spindles on the various counts which an operator can run at standard efficiency has been determined, varying perhaps, from 14 spindles to 40 spindles, but the exactly correct number of spindles an operator can run cannot be assigned to each operator, so all of the yarns are roughly grouped into two classes: (1) Those which can be run on 18 spindles, and (2) those on 36 spindles.

Again, sometimes yarn is run from full spools and sometimes from partially full spools, the task being stiffer when small pieces are handled. Accordingly it sometimes happens that one of two operators on a side is running a count of yarn which normally takes 14 spindles, leaving 4 extra spindles available for her neighbor, who perhaps is running a count of yarn (and may be from full spools) which will permit her using these four spindles and doing a good day's work turning off perhaps 16 or 18 hours' work in 10 hours, with the result that the amount of earnings runs up as Prof. Mixter outlines. I think Prof. Mixter's modification would be fair and without the objection which the present system has.

MR. REGAN: If the condition was constantly varying and you knew it had to vary, that would be all right. But with the general run of the time studies made, in the metal trades, the only constant to consider is the constant of hardness in the material, and also variations encountered in assembling, due to machining.

The condition you speak of is one which is met in that field to which you refer; however, is it true of studies, generally?

There is no doubt that we will always find conditions that have to be cared for as we meet them, but suppose we had a case which involved 150,000 to 200,000 rates or piece prices, would it be practical to consider a re-adjustment or re-arrangement every day, as under the Mixter plan, especially when each job may not last more than 6 or 8 hours, and the rate may be as low as 20 cent per 100 dozen?

MR. KENDALL: I should like to ask how Prof. Mixter's scheme will differ from the point of view of the workman, from the differential piece rate? That seems to me to be arriving at the differential piece rate through the means of the Task and Bonus, instead of arriving at it through the usual method of the old-fashioned piece-rate corrected with a stop watch, and then made into a differential. It seems to me Prof. Mixter is arriving at the same thing, only he starts from the Task and Bonus, whereas the differential piece-rate started at the piece-rate, possibly corrected by the stop-watch.

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INDIVIDUALITY IN INDUSTRY*

By Robert B. Wolf

The author has endeavored to point out in the paper a practical method of applying to industrial life the fundamental principle that individuality is a necessary complement of all creative activity.

He begins by first showing some of the defects of the present industrial organizations (especially the larger corporations), pointing out briefly the forces which combine to produce these conditions.

There are some few constructive suggestions in the first part of the paper, inserted, however, merely to emphasize the weakness of the present system.

The second part of the paper is entirely constructive in nature and is an attempt to define what is meant by individuality. In order to do this, the author uses as his illustration the highest known development of individuality on this planet, namely, the human body, and makes an analysis of the various elements which enter into relationship with each other to produce the unity from which the personality emerges.

Quite naturally a description of the human nervous system must be given in order to show the controlling mechanism through which the individual directs his activities. This is done

1st. By showing analytically that every movement of the physical body is controlled through the nervous system.

2d. Continuing the analysis by describing the three great divisions of the nervous system, and

3d. By a synthetic argument which indicates the wonderful grouping of the nerves into one great system in which each part performs its own peculiar function (illustrating the highest type of specialization) but with constant relationship to the good of the whole.

After pointing out that human progress has been made possible only through the development of the nervous system, with its consequent unifying and memorizing powers, the author indicates the necessity of establishing a similar system in industrial organizations. He points out that the reason for this conclusion is obvious, when it is recognized that any organization must make progress as a unit and unless this unity can be established and perfected progress in the development of the particular art it represents will be extremely slow.

In other words, the organization as a whole must develop into a conscious individuality, capable of specializing the generic laws which it is using in order to turn out the finished product,

It is not enough for each individual in the plant to act in this conscious manner, for unless these individual activities are all guided in one resultant direction, which is toward the perfection of the plant output, there can be no great improvement in the methods used and there is little hope of increasing the efficiency of operation.

Finally the author points out how the only real method of developing plant unity is in paying the greatest amount of attention to the development of the personality of the individuals making up the organization; stimulating them to creative efforts, by allowing freedom of choice and action and an opportunity to express, in the direction best suited to their natural fitness, what they most enjoy doing.

This naturally simplifies an educational system built upon the broadest lines and calling for a high grade of intelligent leadership throughout. This being provided, there will be no trouble in securing respectful attention from those receiving instruction.

It is the unification of all these forces, however, to give individuality to the organization, that is the main theme of the author's paper and he points out a practical method by which the principles outlined can be applied,—a method, in fact, which is already in operation in the largest industrial concern of its kind in the country.

*Abstract of a paper to be presented at the meeting of the society to be held at Boston, May 21, 1915.