

working floor, it is important to bear the following points in mind:

1. Do not overstate the results to be obtained. Enthusiasm is only valuable insofar as it is justified by the facts; for disillusionment always is costly.

2. Do not know it all. The executives who spend their time on the working floor have usually learned something that cannot be discovered by studies or figures. They like to feel that their knowledge is considered.

3. Never, if it can be helped, put the foreman in the wrong. Usually it can be helped if one tries hard enough. For a staff man to make a foreman feel that his success is at the foreman's expense is to provoke conflict; to make the foreman feel that the staff man's success will contribute to his, is to invite support.

4. Put full confidence in the foreman. Unless a staff man lets the foreman know his plans, his problems, his methods and his aims, he cannot expect in return either confidence or understanding co-operation.

5. Work with the foreman in getting results. If the foreman has had a share in the work throughout, he will have that thorough understanding of it which can only come from having gone through the experience of developing it. Besides, he will have a sense of proprietorship in the work that will carry his co-operation past the inevitable discouragements. Last, but not least, a foreman usually has much of value to contribute to any program of rate study.

Only when the staff men thus work from the start with the men directly in charge of the employes, sharing with them in knowledge, in contriving and in doing, can the fullest co-operation and the best and most enduring results be obtained.

Selection of Workers for Observation

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Introduction

PERHAPS it should be stated at the start that operations usually are, and should be, analyzed and studied in the spirit of fairness to both the worker and the management. Without such an attitude the analyst cannot hope to get satisfactory and lasting results.

A standard of performance is set in this same

spirit and the investigator seeking to obtain data which will yield the most desirable results is required to select the subjects best suited to the particular technique which he is to employ. Consequently the selection of workers for observation is but a means to that end. The time study technique calls for the study of workers whose performance will result in a standard which is attainable by the "average" worker, while the motion study technique calls for the study of workers whose method and performance will contribute most toward the establishment of the best method with the purpose of transferring it to others. Allowance should, of course, always be made for beginners.

Selection of Workers for Time Studies

Investigators employing the stop watch time study technique differ in their practice of selecting workers for observation. Some observe the worker whose performance represents that of the average of the department; others base their standard on the average performance of a group of best workers; a few study the best workers available; while most of them select the "first class men" as subjects for the study. The writer wishes to examine each of these selections in the light of the reasons for which they are made, of the results obtained, and of their value to management.

The Average Man

Much has been said and written concerning the "average man" but very little is known as to just what he is. The remark has very often been made that "there is no such animal." Unfortunately there is no unit of measurement available today upon which we may base an accurate determination of the grades of workers. The multitude of variables which enter into the problem make the establishment of such units difficult. Thus far, the term average can only be used to mean arithmetic average. One cannot speak of average physical and intellectual qualities, unless they can be related to some basic unit. When the average worker is selected, the only thing we can be sure of is that his rate of output represents the arithmetic average of the rate of output of all workers, from the best to the poorest, engaged in the same work. The standards for other qualities desired in the subject are assumed, and vary largely with the judgment and opinion of the analyst and others aiding in the

selection. The results obtained from this procedure cannot satisfactorily serve the purpose for which they are obtained.

Another equally bad practice is to base the standard on the average results from the studies of a number of workers ranging from the slowest to the fastest. These questions then arise: Why is the former worker the slowest and the latter the fastest? What should their performance be? There is little doubt that a standard based on information gotten from the study of poor workers contributes very little, if any, toward raising the performance level of the department as a whole. As Colonel Hathaway puts it, "It has the effect of sanctioning if not encouraging mediocrity." In discussing this practice he further states that "The principal error lies in attempting to base the standard on the production of the average worker. I should consider figures arrived at as a result of three or four studies of work done by ten workers (supposedly including a range from the fastest to the slowest) as not being worth the time and trouble taken to accumulate them. Such studies cannot help but be inaccurate individually and their faults are increased in proportion to their number. This practice is based upon, and is calculated to perpetuate, an all too prevalent error to the effect that there is a wide and permanent difference in skill and productive ability of different workers on the same kind of work; or in other words, that some workers are predestined to be and remain first class, some fair to middling and others poor. Such a doctrine is revolting and I believe unsound socially and economically."

The stability of a standard established by these procedures is questionable for "it is only time study data based on reasonably first class performance that abides."

The "First Class" or "Skilled" Worker

The stop watch time study technique calls for the "first class" or "skilled" worker as the best subject for the study. Here again we are faced with the task of defining, or rather explaining, the meaning of words which have been chosen to represent the productive ability of individuals. Our

¹"A Report on the Production Standards Situation in the Ladies Garment Industry of Cleveland," August, 1925, p. V.

²Ibid, pp. IV-V.

³Morris L. Cooke, "Morale as a Factor in Time Study Technique," *Bulletin of the Taylor Society*, Vol. XII, No. 2, April, 1927.

meager knowledge of the true nature of skill will not permit us to offer an explanation of any scientific value and we can only consider them on a basis of comparison of assumed grades. However, by limiting the study to this class of worker many factors which rendered inaccurate the results from the study of mediocre performance are removed. It is possible then to judge more accurately the usefulness of the data accumulated. The good workers generally use methods of less fatigue and have automaticity in them. Consequently they can work more steadily and with less variation in rate of production—making them more dependable and desirable subjects. Colonel Hathaway was taught by Taylor to understand the term "first class" as, "a steady, intelligent and conscientious worker, skilled in the trade, who produced good work and whose performance might under proper conditions and instruction reasonably be expected to be attained by anyone physically, intellectually and temperamentally suited to the work."⁴ A standard based on first class performance would be unfair to lower class workers, unless allowances for variations in skill were made in order to place it within their reach. There are several ways in which this may be done, but time and space do not permit the discussion of each. However, in consideration of the differences in productive ability, the writer takes this opportunity to emphasize what in his opinion should be the chief purpose of analyzing any productive activity—that of elevating the performance of the poor workers to that of the best. Taylor in summarizing what should be the aim of management in all plants made the following statement in support of his "high wages and low labor cost" argument: "Each workman should be called upon to turn out the maximum work which a first rate man of his class can do and thrive under."⁵ In this, Taylor makes clear that progress in management can and should be made by removing, as far as possible, the differences in productive ability of workers.

The Average of the Best Group of Workers Available

The subjects chosen for time studies under these conditions "must be adapted to a degree representative of the average of the best group of work-

⁴"Cleveland Report," op. cit., pp. VI-VII.

⁵Frederick W. Taylor, "Shop Management," p. 28.