pretation of words and phrases. The life that can be read into such a document as the Cleveland Agreement is what counts.

Every system of wage remuneration—even the best of them—I suppose is open to abuse. Certainly under most of those in current use we can find outstanding instances of where the services of individuals which appear to be of equal value to the enterprise are differently compensated or where the same compensation is paid for services obviously differing in value. In his discussion of a paper read before the Taylor Society by Mr. William Green in December, 1925, Colonel Sanford E. Thompson gave instances of this kind occurring under a piece rate system in a shoe factory. Out of the practice of any industrial engineer similar examples may be cited almost without limit. The morale of any group—certainly its sense of solidarity—is seriously affected by such conditions. The group as well as the individual thrives on justice. If time study can be made one dependable means of securing a larger measure of justice in the relations between employer and employe it will at the same time have removed a frequent source of friction—generally unrecognized—between the workers themselves.

It is hardly likely that time study will get strong group support except as it is of the very best variety made possible by the state of the art. Note this quotation from the union comment on the Cleveland study:

> Mr. Goodell attempts to evaluate the data by four standards, namely "Excellent," "Good," "Passable," and "Unsatisfactory." In our estimation from the viewpoint of time study data such as must be used if the standards system is to prove fair and satisfactory, there can be only two standards, namely, "Accurate" or "Reliable" (corresponding to Mr. Goodell's "Excellent") and "Inaccurate" or "Unreliable" (corresponding to his three other standards). There can be no grades in between. It is just because so much of the Cleveland time study data is in the "Inaccurate" or "Unreliable" class, to say nothing of the careless way it is frequently used (all as revealed by Mr. Goodell's report) that trouble and suspicion result.

This seems to afford a further argument—if such be needed—for the organization of time study practitioners to the end that some generally applicable standards of practice be set up and made available to the lay public.

We no longer associate with time study that simple undifferentiated variety of exactitude which it was formerly assumed to possess. This observation is not intended to reflect in any way on the present or ultimate possibilities of the art. It is rather as a word of caution to those who in the first flush of enthusiasm as to an exceedingly interesting kind of work may easily fail to reckon with all the variants. It is a field wherein it pays to recall that the moon is not just where it was supposed to be and that even the mathematicians are at a loss to know why—and this after our best minds have been giving plenty of attention to astronomy for several thousand years. Exactitude is a relative term, especially in the early days of any art or science.

In this connection I recall a statement of the late Colonel Keppele Hall—a member of these Societies—to the effect that in a certain plant in Baltimore when there "was trouble on"—some dispute between the men and the management—the output on an operation with which he was specially familiar would drop fifty per cent and he—Colonel Hall—be unable to locate a single untoward act on anyone's part. Without citing either complexes or inhibitions as possibly responsible every industrial engineer has had the experience of setting what were considered fairly stiff standards only to see the workers perform them in a part of the time allowed.

In suggesting that in the past we have viewed time study as too exclusively a mechanism I hope I will not be misunderstood. Our greatest chance of making time study an increasingly useful practice lies in the direction of making our observations more and more in detail and in seeking a greater and greater degree of precision in our conclusions. And yet when all this is said and done we will fail, and deserve to fail, if we view time study exclusively in its mechanistic aspects. In the end it is invariably discovered that devices in themselves do not produce. Effectiveness comes here, as everywhere, as a result of pride and joy in the job. Anything which does not further such ends we must view with suspicion.

If we had practiced time study over a much longer period than has actually been the case, and if further, we had spent as much effort in winning the group to its support as in convincing the individual we would still have to admit that the sum total of the ways in which a worker is capable of being influenced by the most accurate time studies represents only a part—perhaps a relatively small part—of the whole sum of influences which affect his conduct and output. Industry to be effective must be conceived as a process—itself within a Process. And to ascribe to time study anything more than the importance of one agency operating within this stream is to see it out of perspective.

Of course, on any such quest as this we have the future very largely in mind. We might easily decide that as affecting the present time study does not play a role important enough to warrant discussion, and yet see it a mechanism of very great importance in our study of industrial tendencies. Our problem in these Societies of course is to use present methods and present outlook only as a platform from which to build a better and more genuinely effective future. Can time study standardized as now practiced—or as its present practice may be revamped—be made to minister to the collective as well as the individual well-being of those engaged in industry and thus be made to increase industry's contribution to Society? That is the question we are discussing.

Perhaps from the standpoint of the group as contrasted with the individual the starting point in any discussion of time study should be a consideration of the conditions under which it can be held to be desirable. What are the ear-marks of an appropriate setting for the profitable utilization of time study methods? To give one rather bald answer to this inquiry is to say that a stop watch by itself, unrelated by an approved procedure and technique to the rest of the industrial structure and process, has no place. But to put the question in the way of any enduring settlement is the work of the group—not of the individual.

The most conspicuous characteristic of our current American industrial situation lies in the fact that individually and collectively we are increasingly awake and aware. The fact that we are somehow industrially on the move with a destination not yet fully determined more and more fires the industrial imagination. In fact we have become so accustomed to the idea of change that anything which appears static challenges suspicion. As an under current to all this runs the constantly deepening conviction that we have only begun to tap the possibilities of production. The idea gradually grips us that only as the various factors in industry cooperate can we markedly raise the general standard of living. And with the understanding that there shall be a reasonable division of the returns from each recurring raising of the level of productivity the workers are generally evidencing a keener interest in uncovering every possible source of waste—in material, in process, in management, and in individual and group conduct.

In the light of all this it is becoming more and more possible to bring any suggested policy, such as the establishment of production standards through time study, under a dispassionate and even friendly review by the group. But it is also becoming more and more evident that time study can play but a comparatively insignificant role where group morale has not been established. And further, if time study analysis is to be given a recognized place in the evolving industrial regime it will be largely because in its practice every proper consideration is given to its bearing on group morale.

Discussion

John A. Fitch.[12] On reading Mr. Cooke's paper, my first reaction was that here is an extension of the ideals of scientific management in the true spirit of Frederick W. Taylor. To verify that impression I turned to Taylor's "Principles of Scientific Management," and I found this:

> The writer is one of those who believes that more and more will the third party (the whole people), as it becomes acquainted with the true facts, insist that justice shall be done to all three parties. It will demand the highest efficiency from both employers and employes. It will no longer tolerate the type of employer who has his eye on dividends alone, who refuses to do his full share of the work and who merely cracks his whip over the heads of his workmen and attempts to drive them into harder work for low pay. No more will it tolerate tyranny on the part of labor which demands one increase after another at the same time it becomes less instead of more efficient.
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> And the means which the writer firmly believes will be adopted to bring about, first, efficiency both in employer and employe and then an equitable division of the profits of their joint efforts will be scientific management, which has for its sole aim the attainment of justice for all three parties through impartial scientific investigation of all the elements of the problem . . .[13]

Mr. Cooke's paper is a record of the results of the sort of patient inquiry that Mr. Taylor here

[12] New York School of Social Work, New York.
[13] Frederick W. Taylor, "The Principles of Scientific Management," pp. 138-139.