

Principles of Wage Payment¹

Advocated by the Manufacturers Research Association

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THIS report is of particular interest in view of changing attitudes towards methods of wage payment. The scientific management movement started with a fairly definite emphasis on piece rates as a method of wage payment. Then followed a reaction against piece work and a substitution of emphasis on various types of premium and bonus systems, and in some instances on hourly rates. It is interesting to note that a serious and unprejudiced study by a committee of a group of Massachusetts manufacturers brings our attention back to the desirable features of the piece work system properly established and administered.—The Editor.

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THE following statement of the Principles of Wage Payment advocated by the Manufacturers' Research Association represents the ultimate result of an effort, on the part of eight of its members, to analyze and compare present day methods of paying wages for the purpose of discovering and segregating those features which are inherent in all effective systems. This study was originally undertaken purely for the benefit which each participating company expected to derive from the undertaking and with no thought of the findings being of intrinsic value

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The study was carried on by the following group: C. F. O'Connor of the Universal Winding Company, A. H. Bainton, Richmond Viall of Brown & Sharpe Manufacturing Company, A. B. Rich of the Dennison Manufacturing Company, W. P. Cahill of The Graton & Knight Manufacturing Company, H. H. Farquhar of the Harvard School of Business Administration, B. A. Hildebrand of the Norton Company, E. T. Clary of the Whitin Machine Works, J. Frank Dorney of the Walworth Company, and R. L. Tweedy, Director of the Manufacturers Research Association.

The report was originally prepared for companies within the Association and later, since it seemed highly desirable that it be placed at the disposal of larger groups of employers, it was issued in pamphlet form by the Bureau of Commercial and Industrial Affairs of the Boston Chamber of Commerce. It is reprinted here by permission of the Manufacturers Research Association and the Bureau of Commercial and Industrial Affairs.

to organizations or individuals outside the collaborators. Only after it had been demonstrated beyond controversy that the essential features of any equitable and effective system of wage payment are few in number and generally obscured by provisions embodying no real merit, was it suggested that a statement such as the following would be of general interest. It is offered for what it is worth without further apology.

The principles of Wage Payment advocated by The Manufacturers' Research Association include three general types of payment.

I. Piece Work—(general term for payment of the individual on the basis of amount of production.)

II. Group Piece Work.

III. Day Work.

I. Piece Work

A. *The M. R. A. Wage Payment Plan would insist on standardized shop methods prior to time-study.*

By "standardized shop methods" is meant "determining the best method of doing work and adhering strictly to that standard until a better one is developed. Specifically it means that materials and the material routine be scientifically studied and systematically governed; that machines be overhauled, with particular reference to the work they are called upon to perform, as regards power, drive, speeds, gear ratios, tools and appliances, and all other factors affecting the amount and accuracy of work put through them; that processes, both hand and machine, be constructively studied and brought to the most efficient stage; that methods of delivery and removal of materials and product, and in general of the administration of all work of the establishment, be similarly scrutinized and standardized, and finally that all such standards be systematically maintained up to the goal set."²

"The analysis of a piece of work into its elements almost always reveals the fact that many of the con-

²From "Incentive or Production Basis of Wage Payment," by H. H. Farquhar.

ditions surrounding and accompanying the work are defective; for instance, that improper tools are used, that the machines used in connection with it need perfecting, that the sanitary conditions are bad, etc. And knowledge so obtained leads frequently to constructive work of a high order, to the standardization of tools and conditions, to the invention of superior methods and machines."³

It is obviously absurd to allow time wasted in unproductive effort or shop conditions which prevent efficient performance to enter into time allowances. A production rate, established on the basis of time-study, is a wage to be paid for the performance of a definite task. For a task to be definite, not only must the amount of resulting product and the required standard of quality be specified, but methods which will produce this quality with the smallest possible co-efficient of error must be devised.

Without preliminary standardization, time-study rests upon a shifting foundation. If improvements in method, equipment and attendant conditions are made after the rate has been set, the rate is thereby immediately invalidated and the work of rate setting must be done over again. This often provides grounds for argument between management and worker. While the limit of possible improvement in methods, equipment and shop conditions will never be reached, and it will be necessary from time to time to change rates resulting therefrom, in so far as possible a time-study should be based upon conditions which approximate the ideal at the time when it is made.

Workers should always be encouraged to suggest improvements and should never be led to feel that no advice from them is wanted. It would be exceedingly short sighted to do anything which would so effectively kill the interest of the worker in his work.

The desirability of standardizing shop conditions prior to time-study should never be used as an argument against making a change in method or equipment thereafter, provided it can be demonstrated that such change does represent a real advance. Standardization works to conserve past achievement without obstructing future progress; and in so doing it avoids making changes which do not represent improvement.

B. *The M. R. A. Wage Payment Plan would insist that production rates be set only on the basis of accurate time-study.*

³From a paper contributed by Taylor to the A. S. M. E.

One of the important factors in any equitable rate is the element of time. A rate set without due regard to this element of time is bound to be unstable. In order to arrive at an accurate rate it is necessary to measure with great exactness the time required for the performance of any given task. Rates which are set not on a basis of time-study but on the basis of past records of performance, foreman's estimates, collective bargaining, or what not, are bound to be approximations at best, and to be influenced by the type of workman that has been used on the task in the past. This might well result in an easy rate, a high rate or an average rate. Such rates, at one time or another, result in inequitable wages of one group of workers as compared with another, or as between individuals. A goodly amount of responsibility for discontent and unsound industrial relations is chargeable to the practice of cutting rates. While time-study has not achieved the happy result of making it forever afterwards unnecessary to change rates based upon it, it has gone a long way toward bringing about a stable condition and furnishes the surest basis of calculations with which we are acquainted.

C. *In order to make it possible to measure and compare the efficiency of operators and departments, the establishment of a definite task becomes at once desirable. For a good, average worker the attainment of this task would represent 100 per cent efficiency.⁴*

If production rates are set on the basis of accurate time-study, it thereby becomes possible to evaluate the performance of individuals and departments. An exact measurement of performance may be obtained by comparing the productions of individual operators with the standard (or 100 per cent referred to above). Comparisons of this kind often serve the double purpose of helping to bring to light manufacturing irregularities previously undetected.

The establishment of definite tasks is a great help in the matter of placing workers properly and at work for which they are best fitted. It often shows that a worker unsuited to one job may be admirably qualified for another position.

D. *The M. R. A. Wage Payment Plan would guarantee a day work rate for operators in all cases where the worker is unable to perform this task, on account of conditions beyond his control. It would*

⁴Note: Care must be exercised to avoid the mistake of averaging averages.