CLASSIFICATION AND STANDARDIZATION OF WORK AS A BASIS FOR DAY AND INCENTIVE WAGE RATES

By Dwight V. Merrick[1]

In any plan of wage payment, whether it is day wage or some incentive plan, it is essential to classify and standardize the various kinds of work, operations or occupations according to certain modifying factors such as the length of time to attain proficiency, the degree of physical strength necessary, the precision and closeness of attention required, the danger of injury, and so on. These different classifications take the form of an hourly rate valuation.

For a piece work plan, these hourly rate valuations serve as the Piece Work Base Rates, to which an incentive is added in order to determine the rate to be earned when the worker performs at the standard task time. These hourly rate valuations also serve as the basis for figuring the earnings, for plans where the pay is based on an hourly rate plus a bonus or incentive, such as the Halsey premium and the Gantt task and fixed bonus plans.

In making up this standard classification it is usual to start with the day rates for the various kinds of work already in effect, on the assumption that they represent the prevailing rates of the community. This method of arriving at the rates is not truly scientific, because of the lack of precise means for measuring elements of proficiency required, the degree of strength necessary, and other modifying factors. However, a fair test of the accuracy of the ratings is the relative ability to get and to hold a sufficient number of workers in the several kinds of work, and it is probable that such tests show up to a greater advantage where the incentive form of payment is operative. Arriving at a classification in this manner is nothing more than the application of the supply and demand principle, and this analysis and relative rating affords a quick approximation of the normal market relationship worked out through long experience and generally accepted.

In more or less indifferently managed concerns operating almost entirely by piece work or by some other rating plan, where the rates are based on past earnings or set by guess, usually no attempt is made to standardize and classify the *day rates*. Where such conditions prevail the day rates are apt to be too low in comparison to what can be earned on piece work, and often purposely so, in order to make it an inducement for workers to prefer piece work to day work. Quite often where there are such conditions, the possible piece work earnings are more nearly comparable to the prevailing day rates of the community, than to the day rates plus an incentive, when the maximum production is attained. The latter is of course to be preferred.

To standardize the day rates, in such cases it may be advisable to list the piece work earnings for different occupations and compare them with the prevailing day rates of the community, and from this work out a classification.

In the application of a piece work, task and bonus, premium or any other plan, an incentive is offered to induce the worker to expend his best efforts. These incentives may be classified under two heads: financial and non-financial. The first takes the form of increased earning over and above the prevailing wage when greater production is attained. The second, or non-financial, may take the form of a prospect of promotion, an expression of creative instinct, the desire to make, or some other human emotion. This latter type of incentive has not been developed to the same extent as the former in industry.

In the practical application of any of the financial incentive plans for the industrial worker, this should take the form of an additional earning, in excess of the worker's regular pay, and should be commensurate with the effort required for the accomplishment of the set task. In order to secure maximum output, it has been found that fairly definite percentages, depending on the character of the work, should be added to the regular rate of pay.

[1] Consulting Engineer; author of "Time Study as a Basis for Rate Setting."

The late Frederick W. Taylor, in order to determine the amount of percentage to add as an incentive to the various kinds of work, made a series of tests somewhat along the following lines: First, time studies were taken and task times were computed for various kinds of work, from which rates were figured with various percentages of incentives, say from 8 to 20 per cent. These rates were given out to a large number of workers of more or less known qualifications, and the results noted. Where it appeared necessary to raise the percentage to make a greater inducement, it was done. The following recommendations resulted:

> The writer has found, for example, after making many mistakes above and below the proper mark, that to get the maximum output for ordinary shop work requiring neither especial brains, very close application, skill, nor extra hard work, such for instance, as the more ordinary kinds of routine machine shop work, it is necessary to pay about 30 per cent more than the average. For ordinary day labor requiring little brains or special skill, but calling for strength, severe bodily exertion, and fatigue, it is necessary to pay from 50 per cent to 60 per cent above the average. For work requiring especial skill or brains, coupled with close application, but without severe bodily exertion, such as the more difficult and delicate machinist's work, from 70 per cent to 80 per cent beyond the average. And for work requiring skill, brains, close application, strength, and severe bodily exertion, such, for instance, as that involved in operating a well run steam hammer doing miscellaneous work, from 80 per cent. to 100 per cent beyond the average.[1]

The general practice is to use a 25 to 35 per cent incentive; 25 per cent for the ordinary run of work is not sufficient. For convenience and simplicity, I like incentives that are multiples of three, and confine the classes to as few as possible; and I have succeeded in putting a large majority of work into two classes, namely, one-third and two-thirds of the regular wage, as an extra compensation. In some instances it has seemed desirable to increase the one-third incentive somewhat, and in these cases, I have used 50 per cent; again, for some work where the management was not disposed to allow the use of as much as one-third, I have used 25 per cent and in fact as low as 20 per cent.

For general purposes one-third and two-thirds incentives can be made to fill the requirements for nearly all of the work of a plant. The one-third incentive would be applied to the ordinary kinds of routine operations, requiring no particular mental concentration, close application, skill or hard work; then for the various degrees of compensation, regulate by a variation in the hourly base rate. The two-thirds incentive would apply to possibly certain classes of day labor and work entailing skill, mental concentration, close application and bodily exertion or discomfort. Here also the various degrees of compensation would be regulated by a variation in the hourly base rate.

[1] Taylor, "Shop Management," p. 26.

The tabulation shown in Figure 1 illustrates a piece work base rate reference classification.[1]

CLASS	OPERATION	BASE RATE PER HOUR	TASK EARNINGS PER HOUR SHOULD BE
Drilling small parts			
A	Drilling, countersinking, counterboring, gage and sensitive drilling	$0.33	$0.44
B	Drilling clearance holes where working holes are drilled before machining and centering	0.30	0.40
C	Boring and countersinking	0.27	0.36
D	Boys' work	0.21	0.28
Drop forging			
A	Heavy parts (weighing approximately 15 pounds each) where skill is required to hold the part to size.	0.48	0.80
B	Light parts (weighing approximately 8 pounds each) where skill is required to hold parts to size	0.42	0.70
C	Heavy parts (weighing approximately 15 pounds each) where there is no necessity for close sizing	0.39	0.65
D	Light parts (weighing approximately 8 pounds each) where there is no necessity for close sizing	0.36	0.60
Power milling			
A	Split milling, octagon milling, and splining milling, where reliance is placed on the operator's skill to produce good work	0.30	0.40
B	Work where the piece is located by mechanical means, as pins, set-blocks, and the like	0.27	0.36
Hand milling			
A	Work where there are delicate cuts, or cuts requiring gaging	0.30	0.40
B	Clearance cuts only	0.24	0.32
C	Boys' work	0.18	0.24
Press work			
A	Work where the operator sets up his own dies	0.27	0.36
B	Work where the dies are set for the operator	0.24	0.32
Splining			
A	Work where reliance is placed upon the operator's skill to obtain proper gage fits	0.30	0.40
B	Work that is located by mechanical means, such as pins, set blocks, and the like	0.27	0.36

Figure 1

It will be noticed in the preceding tabulation that the inducement on the drilling, milling, splining, and press-work operations is 33⅓ per cent, while on the forging operations, where skill, physical strength and discomfort from heat and gases must be endured, the inducement is set at 66⅔ per cent.

The management exercises the same control of these base rates that it does of day rates. The time study

[1] Merrick, "Time Studies as a Basis for Rate Setting," p. 344.