

toward higher wages quite so strongly when wages are a minor element of cost as they will when wages are a major element of cost. When a boy is using a speed lathe to make small screws and threading them with a die held in his hand, his wages, however small, are apt to be more than all other elements of cost in producing those screws. When the same screws are made much better in automatics, one man running say four of them, his wages, though high, are much less than the other costs of production and will not in the nature of things be so closely contested as they might be otherwise.

A word about mass production. The general public has been led, I suppose, to believe that Henry Ford invented it. As a matter of fact it was invented long before he was born and as an employer and manufacturer he has enough to his credit without that. In "The Jungle," written twenty-two years ago, Upton Sinclair describes highly developed mass production as he found it in the packing houses of Chicago at that time. But it was anything but scientific management, and the two things are not at all synonymous, though they may or may not be used together, depending upon circumstances.

Mass production could not be used, for instance, in railroad shop work but scientific management can be, and in fact can be used in very nearly every form and variety of manufacturing. Mass production would naturally be used in the manufacture of pins, for instance, and was so used in the early days of their production when the work was done almost, if not entirely, by hand, and moreover was minutely divided and specialized; but it could not be applied to the building of battleships, while scientific management can be applied to either, and ought to be.

It would seem as though those who are engaged in the production of machinery should be the last

to obstruct its use in their own field. Their own living depends upon the use of labor saving machinery by other people and if those other people were to refuse to use it the machinist would disappear and so would civilization as we know it.

So long as man retains the power to reason and to think, improved methods of doing things will be devised. It is not the thinkers who prevent the workers from getting their share of the joint product of labor and capital; it is those who render no useful service whatever, either in mental or physical effort, and these are approximately ten per cent of the population who take every year thirteen billions of dollars in tribute collected from producers for the privilege of living upon and using land and natural resources which no man has created and the values of which arise solely out of the fact that man cannot live without them.

I am greatly encouraged by such things as are now being done, in the shops of the Baltimore and Ohio Railroad especially where the company and the men have united to eliminate waste and to promote their mutual interests. According to all reports that have come to my notice the agreement and the plan are working to the substantial satisfaction of both sides.

It is claimed and believed by some that the strike spirit, the riot spirit, bolshevism and what-not are infectious or contagious. Perhaps they are; but I believe on the other hand that right and fair dealing are also contagious and I venture to hope that they will prove in the long run to be more contagious than the opposite things. I can scarcely believe that the Baltimore and Ohio example will not be followed by other railroads and that a time is not coming when our wasteful, destructive and senseless contentions and bludgeon method of settling, or rather trying to settle, industrial matters will have disappeared and reasonableness will have been enthroned in their places.

## Annual Meeting of the Taylor Society

December 8-10, 1927

Plans are already under way for what promises to be the most profitable meeting the Society has ever held.

## Financial Incentives<sup>1</sup>

### An Inseparable Part of the Task of Management

By ELLIOTT DUNLAP SMITH

Dennison Manufacturing Company and Harvard University

INDUCEMENT of effort is by no means exclusively a problem of financial incentives. Man has other mainsprings of action than the desire for pay. The problem of financial incentives is but a single and inseparable aspect of a larger problem and must never be considered as set apart from the general problem of management.

Moreover, financial incentives are not confined to variations in the manner of wage payment. Any measure which increases the effectiveness of pay as a stimulus to productive effort is a financial incentive. Yet, as all such measures must be related to some form of payment, it seems best to classify the subject on the basis of the principal wage forms.

#### Time Payments

The primary distinction between forms of wages lies between paying for the amount of time worked and paying for the amount of work done. This is equally a distinction between remote and immediate incentives. To pay for the amount of work done is to provide an immediate incentive, to do as much work as possible. To pay by the month, week, day or hour is to provide no immediate financial incentive whatsoever. For, if the worker is paid in this way, how hard he works today does not determine how much he will be paid for today's work. Still, how hard he works today, and this week and this year, does affect what job he will hold in the future and how much he will be paid for that job. Time payment is an effective financial incentive in the long run.

With increasing prevalence when time rates are used all employees doing the same job are paid the same amount regardless of individual merit. One reason such flat payment is growing is because of the increase of interlocking crews where each worker

must keep pace with the others in a carefully timed sequence of operation. In such lock-steps the worker must produce neither more nor less than the standard amount. There is alike no chance to lag and none to spurt. The only incentive to effort desired is an incentive to keep in line—and this is provided by the flat rate backed by the power of discharge. Another reason for the increase in the flat time rate is collective bargaining. A flat rate is eminently suited to collective bargaining, for so long as any variation in payment is provided, there is no way of insuring where between the maximum and minimum the average level of payment will fall. Moreover, once a minimum rate is set by a bargain, even though it may not have been contracted for as a flat rate, since no variation downward is permissible, few variations upward are made. Whatever the reason for its use, a flat rate is an incentive to mediocrity—an incentive to attain mediocrity, but, because of the deep-seated human yearning for a "fair deal," also an incentive not to exceed it, which with the pressure of group conformity has considerable potency.

Because of the leveling effect of the flat time rate, where individual effort and attainment is desirable and where bargaining conditions do not interfere, graduated time rates are extensively used. Often this graduation has been accomplished by combining flat rates for each job with lines of promotion from job to job. Under such a system, while the bargaining advantages of flat rates are retained, there is a substantial financial inducement to do better than the average on the present job in order to be promoted to the higher pay and prestige of the next. A more effective form of financial incentive is brought about when there is also graduated pay for the individual job and the amount the workman receives depends upon production, quality, waste or other merits that it is desired to stimulate.

<sup>1</sup>Paper presented before a meeting of the New York Metropolitan Section of the Taylor Society, in New York, April 14, 1927.