

fact it is in just such efforts that unexpected, big, new things are brought to light, and the entire membership of the Society will back the committee in its work and will cooperate in securing and analyzing data, and in passing judgments on alternative proposals.

**B**ECAUSE so many discussions of the problem of industrial relations are merely expressions of what the participants think ought to be done, it was a relief to hear from Dr. Jacobstein and Dr. Leiserson explanations of what is being done in one place and of some of the intangible temperamental elements involved. The Rochester plan, which is a special phase of a larger joint plan of employers and employees to work out together mutual problems, is of the greatest significance. It may or it may not survive, and if it does survive it may develop important modifications; but at the present moment it looks like one of the most promising experiments in the whole field of industrial relations. The leadership of the Amalgamated Clothing Workers of America, the leadership of the associated employers and a score of engineers and other individuals concerned, are to be congratulated upon the vision and the practical sound sense manifested in the experiment. Dr. Hopkins' address is the inspirational argument of a man with wide and successful experience in industry, particularly in the field of industrial relations, and with that vision of social evolution possessed by educators; an argument which may be summarized in the statement that for the concept of the "working man" we must substitute the concept of the "man working," with instincts to be given opportunity for expression, intellect to be given the opportunity for development, and self respect to be given the opportunity for satisfaction. "One day going through the halls of the building where I was at work, I met one of the girls who was leading the strike, and I turned to her and said: 'What is it, anyway, you people are after?' She looked at me, and tipping back her head in a laugh, said: 'We are after just what we are getting,—the chance to sit down and talk over the business with you guys.'"

#### A. WAGE SYSTEM

**W**HILE many different wage plans have been suggested by students of the science of management, such as Mr. Taylor's differential piece rate

plan, Mr. Gantt's task and bonus, etc., we have never seen in print a description of the precise plan in use at the Dennison Manufacturing Co. It may be of suggestive value to other plants.

We have really two plans, each suited to work of a particular nature; but they have some details in common. All our rates are based on time studies, with allowances for fatigue, etc., and on carefully analyzed details of operation. All are the result of careful studies which have regarded with concern the various types of operators, the tools or appliances, the working conditions, the materials in use, and so on. The studies have all been made in consultation with employees.

All our rates have, furthermore, this idea in common: they are made up of two elements,—hour rates and reward for specific production. To our minds it seems a nearer approximation of justice in the setting of wages to have the reward for specific production only a part of the total wage. There are certain intangible personal qualities which can be rewarded in an hourly wage but which cannot be justly compensated for on a production basis. Take versatility, for instance: the specific value of operators with ability to perform two or more kinds of work may be difficult to determine. Some extra reward in the weekly wage is surely only fair recognition of the extra value of such operators.

In our particular business there happens to be a considerable variety of work, so that it is unusual for operators to be engaged for any long period on precisely the same work or in any case on the same product. Variations in materials, in details of operation, and so on, are of course covered in the production payment. The delays and the extra effort required to change from one class of work to another are better covered, to our minds, in the hourly wage.

We have made our wage plans consist of part hourly and part "piece," that is, partly dependent on production. The hourly wage we have called "base rates" and the proportion of base rate to total wage is about 66⅓ per cent for medium skilled operators. In highly skilled operators it is, of course, much less, being perhaps as low as 45 per cent in some cases. The production wage is calculated to be about one-third of total wage, and is more than half the wage of the highly skilled.

The production wage is made up in two different forms. One is in the form of a piece rate for all

production over a stated minimum. A "standard production" is calculated which must be attainable by approximately 75 to 80 per cent of all operators with three months apprenticeship and instruction. The "minimum production" is determined as 60 per cent of the "standard". All production above the minimum is paid for at so much per piece.

The other plan is to use the "standard time" itself, paying an hour rate for the standard time equal to approximately one-third of the total average wage.

1. The "base rate" is paid for actual time taken whether greater or less than "standard time."

2. The "standard time rate" is paid for "standard time" if the actual time is equal to or greater than "standard."

3. All time "saved," i. e., the difference between standard time and the actual time taken is paid for at the "base" rate plus the "standard time rate."

This approximates a regular piece rate plan. For instance, in case the "base rate" equals 20 cents per hour and the "standard time rate" 10 cents per hour:

| Production | Standard Time | Actual Time                                  | Total Wages | Rate Per Hr. | Rate Per Pc. |
|------------|---------------|--|-------------|--------------|--------------|
| 15 pcs.    | 15 hrs.       | 15 hrs.                                      | 4.50        | .30          | \$.30        |
| 15 pcs.    | 15 hrs.       | 7½ hrs.                                      | 4.50        | .60          | .30          |
|            |               | 7½ hrs. actual time @ .20 for "base"         |             |              | 1.50         |
|            |               | 15 hrs. "standard" time @ .10 for "standard" |             |              | 1.50         |
|            |               | 7½ hrs. "time saved" @ .20 for "base"        |             |              | 1.50         |
|            |               |  |             |              | \$4.50       |

Thus, 15 pieces produced in either standard or less than standard time will equal to operator 30 cents per piece.

If more than standard time is required, the "standard time" only is paid plus the full actual time or the "base rate":

| Production | Standard Time | Actual Time                   | Total Wages | Rate Per Hr. | Rate Per Pc. |
|------------|---------------|-------------------------------|-------------|--------------|--------------|
| 15         | 15 hrs.       | 20 hrs.                       | 5.50        | .275         | .366         |
|            |               | 20 hrs. (at "base" rate)      |             | @ .20        | \$4.00       |
|            |               | "standard" time—15 hrs. @ .10 |             |              | 1.50         |

This gives 36.6 cents per piece, but only 27½ cents

per hour, in contrast with 30 cents per hour for "standard time," or 60 cents per hour where double production was attained as in the example above. There is a very important point in such a use of time as determining the basis of wages. The "standard time" should be attainable by the big majority of operators of reasonable experience. When this is the case the "standard time" is not of itself the goal but the *bo-gey*. Operators are particularly interested in the extent by which they can "beat" the "standard time."

The rates can, of course, be set so that the earnings of the less skilled operators will approximate the "going" wages of the locality, and the more skilled will earn their proportionately higher wages by the shorter actual time taken for a given amount of work.

The "standard time rate" may be set to yield about one-third of the total wage, as suggested, and should be the same for all operators. The "base rates" may vary from the starting wage to anywhere from 33 1/3 to 50 per cent more than the starting wage; each operator earning his or her own "base rate" by personal worth as expressed by work, by experience, by attendance, by quality of performance, and other factors.

The piece rate plan is more adapted to the continuous or nearly continuous process although the "standard time" plan could equally well be used. The "standard time" plan is especially to be recommended where the work is constantly changing and many small jobs are done, or where the work varies constantly in its elements as in a variety of "special" orders.

It is under either of these plans necessary that continuous records of individual attainment be kept so that base rates may be determined in accordance with individual worth. Records of quality, of workmanship, of attendance, and of variety of work performed, should be kept up to date at all times.

A. B. RICH<sup>1</sup>

<sup>1</sup>Dennison Manufacturing Co., Framingham, Mass.