METHODS OF WAGE PAYMENT

The main task in any discussion about the method of wage payment is to examine the different systems of rewarding labour in a way which would yield the best result to employers. Wage payments are the principal means to motivate the worker so that he puts his best effort in the job. "If there is one thing on which economists, psychologists, and administrators agree, it is on the principle that specifying a task and paying rewards contingent on the accomplishment of that task can generate substantial motivation. While wage payment systems represent only a part of the motivational arsenal available to management, they can be a potent, and also a destructive, administrative weapon." 1

1. Time-Rate and Piece-Rate:

In construction industry one finds both the usual methods of wage payment, viz., time- and piece-rates. In the former method, payment is made irrespective of quantity or quality of work according to rate per hour, day or week etc. The time wage, although it may seem separate from the piece wage, in practice has a piece as well as a time basis, for the workman must perform a certain amount of work, the results of which determine the attitude of the employer towards the
wage-contract. The lower limit of time-rate is set by the minimum output expected from an employee below which it would be unremunerative for the employer to employ him. This limit — called the "limit of discharge" or dismissal point — acts as a "permanent stimulus to workmen to keep a minimum standard of work".

As for their advantages and disadvantages they depend on whom they devolve. What may seem advantageous from the point of view of employees may be disadvantageous to employers. For example, for a less-than-average efficient worker the time-rate system of payment may be an advantage, but this is definitely less encouraging to employers inasmuch as this increases cost and breeds inefficiency. Again, the system requires adequate and close supervision in order to obtain from the workers at least an amount of output above the "limit of discharge". Uncertainty and difficulties in forecasting cost are other demerits of the system. Broadly speaking, therefore, the time-rate system is not very popular in an industry where output is standardised, homogeneous and measurable by units or pieces.

The piece-rate, on the other hand, is determined according to pieces or units of production irrespective of time involved. The system provides sufficient incentives to the workers and is free from the uncertainty in determining the cost of production in advance. Further, where products are sufficiently standardised the system eliminates the
necessity of maintaining close supervision over the workers. The responsibility for economical and effective use of time now falls on workers and not on employers. Lastly, in order to increase their earnings, the workers always try to study the job well and make sincere attempts to eliminate "some of the tedium and monotony of the daily grind".

In a sense, both time- and piece-rates are inter-related. As has been said above, in determining time-rates the employers generally take into account the minimum amount (pieces or units) that should be produced per unit of time by a worker of average efficiency. Similarly, the piece-rates may be fixed on the basis of work done previously on time-rate. In accepting the piece-rate or a changeover to it from the time-rate system a worker is likely to take into consideration the following:

(a) Income-comparison with the probable time-rate: how much he is expected to earn by the piece-rate system per unit of time, say a day or week.

(b) Effort-comparison: that is, whether to earn the same amount he is required to put more effort in the piece-rate than required under time-rate.

(c) The extent to which the completion of the job depends on his individual effort and/or collective effort.

In all these calculations he will be guided by
his conception of a fair wage on a time basis. The employer will also thus, in allowing the piece-rate system, be guided by normal time-rate. He will, in normal circumstances, be reluctant to offer a piece-rate in excess of a measuring day's work based on normal performance standard.

2. Different Methods of Payment in Payment-by-Result System:

The simplest form of payment-by-result system is the piece-rate system. It is essentially an incentive wage system. The term incentive wage connotes "a system of remunerating rank and file workers under which the earnings of a worker (or a group of workers) are directly, promptly and automatically related to his output by a predetermined formula relating his actual performance to a specific standard of performance." But all piece-rated wages do not necessarily promote incentive among the workers. For example, piece-rate payments which vary in the same proportion as the change in output do not act as an incentive wage. From the point of view of workers' earnings the system of payment by result can be broadly classified under four main groups.

(1) Earnings which vary in the same proportion as output:- Two variants of this group are straight piece work system and standard hour system. In the latter the worker is paid for the standard time if he completes the job in standard time or less. For example, if a man completes in 8 hours a job for which the standard time is 10 hours his earnings for the job
will amount to ten times his hourly rate. If, on the other hand, he takes more than the standard time to complete the job, he will, if he is guaranteed his time-rate, be paid at this rate for the time he actually works on the job. But if he is not guaranteed his time-rate he will be paid only for the standard time.

(2) Earnings which do not vary proportionately with output: The chief characteristic of this formula is that the worker shares with his employers the gains or losses resulting from changes in output. There are four variants of the system, viz., the Halsey, the Rowan, Barth Variable Sharing and the Bedaux Systems. All these variants except the Barth guarantee a worker his time-rate even if his output does not reach a specified level. In other words, direct labour costs are same as under straight piece work for rates of output upto the specified level. Further, under all these variants unit labour costs above standard output are lower than under piece work.

(3) By introducing high piece-rates above a standard performance, workers' earnings are made to vary proportionately more than output.

(4) Earnings which differ at different levels of output: Chief variants of the system are Taylor Differential, Merrick Differential Piece-Rate Systems, Gantt Task System and the Empiric or Efficiency System.
One of the chief difficulties that is generally faced in fixing piece-rate under any of the above variants of the payment-by-result system is the standardisation and evaluation of effort, or, in other words, finding out the 'wage-effort parity'. It should be remembered that although changes in wage rates affect workers' efficiency or effort, it is not sufficient to consider only the changes in the workers' effort resulting from changes in their wages. Besides method and rate of wage payment, methods of production, techniques of supervision as well as general dealings of supervisors and/or employers also influence wage-effort parity.

In piece-rate the evaluation of effort is based on rate fixing or on time study. While the former involves a combination of intuitive judgement and practical experience, the latter (time study) is a systematically organised technique which requires special training in addition to experience. "The most striking feature of time study rationale is the contradiction between the claims which the practitioners make of scientific accuracy and their general admission of the extent to which their practice requires intuitive judgements." For effective administration of piece-work, accurate 'time standards' obtained by methods of time study should be established. Although it depends on objective measurement of the exact time required by a given worker for a given piece of work, yet it is "always admitted, though often reluctantly, that there are certain difficulties. The most serious one stems from the fact that
the 'required' time cannot be defined without guesses as to what is in fact a 'normal', 'reasonable', 'fair', 'average' or 'right' degree of effort for any particular task."

With this background information, we will give in the following section a brief account of the wage payment system in Tripura, and then consider a formula of differential piece-rate system for the construction workers.

3(a). Wage Payment System in Tripura:

About one-fifth of the total labourers surveyed were found working on piece-rate, the rest four-fifth on time-rate. The proportion of the piece-rated labourers was found to be a bit high (23 per cent) among the unskilled than among the skilled (about 19 per cent) labourers. Most of the piece-rated unskilled labourers were found to be earth-cutters. Generally a team of such labourers is headed by a 'Sardar' (head-man) or jobber who takes payment and distributes the amount to his labourers. To what extent such a method of distribution is perfect is very difficult to say, for most of such unskilled labourers were found to be ignorant of the formula of measurement, and generally never remained present when such measurement took place. In fact, piece-rate is generally agreed upon between the head-man and the contractor or the sub-contractor. The head-man who undertakes to perform certain pieces or units of work may also be termed as a petty contractor. Sometimes he works himself work as a labourer, sometimes again
Table 8.1
Percentage Distribution of Construction Workers by Skill, Occupation and System of Wage Payment

(a) Base: all workers

<table>
<thead>
<tr>
<th>System of wage payment</th>
<th>Time-rate</th>
<th>Piece-rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled labour</td>
<td>81.25</td>
<td>18.75</td>
<td>100.00 (112)</td>
</tr>
<tr>
<td>Unskilled labour</td>
<td>77.00</td>
<td>23.00</td>
<td>100.00 (200)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>78.52 (245)</strong></td>
<td><strong>21.48 (67)</strong></td>
<td><strong>100.00 (312)</strong></td>
</tr>
</tbody>
</table>

(b) Base: workers of each occupation

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Time-rate</th>
<th>Piece-rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masons, plasterers</td>
<td>80.64</td>
<td>19.35</td>
<td>100.00 (31)</td>
</tr>
<tr>
<td>Carpenters</td>
<td>81.82</td>
<td>18.18</td>
<td>100.00 (33)</td>
</tr>
<tr>
<td>Fitters</td>
<td>65.00</td>
<td>35.00</td>
<td>100.00 (20)</td>
</tr>
<tr>
<td>Khalashis</td>
<td>90.91</td>
<td>9.09</td>
<td>100.00 (11)</td>
</tr>
<tr>
<td>Others, skilled</td>
<td>94.12</td>
<td>5.88</td>
<td>100.00 (17)</td>
</tr>
<tr>
<td>Unskilled, male</td>
<td>76.44</td>
<td>23.56</td>
<td>100.00 (174)</td>
</tr>
<tr>
<td>Unskilled, female</td>
<td>80.77</td>
<td>19.23</td>
<td>100.00 (26)</td>
</tr>
</tbody>
</table>
Table 8.1 (contd.)

(c) Base : wage workers in each system of wage payment

<table>
<thead>
<tr>
<th>Occupation</th>
<th>System of wage payment</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Time-rate</td>
<td>Piece-rate</td>
</tr>
<tr>
<td>Masons, plasterers</td>
<td>10.20</td>
<td>8.95</td>
<td></td>
</tr>
<tr>
<td>Carpenters</td>
<td>11.02</td>
<td>8.95</td>
<td></td>
</tr>
<tr>
<td>Fitters</td>
<td>5.30</td>
<td>10.45</td>
<td></td>
</tr>
<tr>
<td>Khalashis</td>
<td>4.08</td>
<td>1.50</td>
<td></td>
</tr>
<tr>
<td>Others, skilled</td>
<td>6.53</td>
<td>1.50</td>
<td></td>
</tr>
<tr>
<td>Unskilled, male</td>
<td>54.29</td>
<td>61.20</td>
<td></td>
</tr>
<tr>
<td>Unskilled, female</td>
<td>8.58</td>
<td>7.45</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>100.00 (245)</td>
<td>100.00 (67)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Field investigation by the author.

Note: Figures in bracket show the number of labourers surveyed.

he may merely supervise the working of other labourers under him.

Excepting among the fitters, the proportion of piece-rated labourers was not high. The fitters generally work as rod-binders. Amongst them the piece-rated ones receive payment according of the weight of the rod (per cwt) they bend. Sub-contract (or petty contract) system is also found prevalent. Piece-rated workers among the masons and carpenters were found
to be less than 20 per cent.

One of the reasons why piece-rate system does not appear to be popular among the labourers is that the rate is often not applied in the case of actual labourers. A piece-rate or a piece contract is usually fixed between the main contractor and the sub-contractor. Even those labourers who receive payment according to piece rate do not receive according to any differential piece-rate system. Only the straight piece-rate system has been found to be in vogue.

Another reason appears to be that labourers working on a piece-rate system have to face an uncertainty in regard to their remuneration, an uncertainty that is brought about by temporary shortage of any of the required materials and which, therefore, affects their earnings adversely. This risk is at least minimised when labourers choose to work on time-rate system.

3(b). A Suggestion for Differential Piece-rate System with Guaranteed Minimum Daily Wage:

One of the chief characteristics of the different methods of payment-by-result system discussed in the earlier section is the employer's anticipation from each job a standard rate of output per unit of time. Any output in excess of this standard rate is an expression of better performance. A standard rate is, therefore, measured as a ratio of standard time (the hours required to perform a given job or
produce a piece) and the actual hours worked for producing the same. At the standard rate of performance the ratio is equal to unity. Where, however, the ratio is greater than one, it will be a case of better performance, and, conversely, a worse performance is indicated by a ratio of less than one. Standard rate of performance should usually be based upon the performance of one or more workers of average efficiency selected for the purpose.

Now, once we are in a position to determine the standard rate of performance per hour, a system of remunerating workers may be suggested whereby piece-rated workers can be given a piece-rate with guaranteed minimum daily wage. In suggesting the formula one is naturally guided by the peculiar characteristics of the in construction industry.  

Let us suppose that production of 50 pieces per 8 hours of work (or 0.16 hours per piece) is the standard performance, and the piece rate is 10 paise per piece. Given normal conditions an average worker can therefore earn at least Rs 5/- a day or 62.5 paise per hour. Let us further suppose that two workers A and B are working according to piece rate. The former produces 100 pieces and the latter only 40 pieces in the same 8 working hours. The earnings of A would, therefore, be equal to 100 x 10 paise or Rs 10/-. B's earnings would be 40 x 10 paise or Rs 4/- per day which is less than the daily minimum which is Rs 5/- a day. The hourly rate of standard performance comes to 62.5 paise per hour. In this sense
B's earnings should be Rs 5/- (or, 8 x 62.5 paise = Rs 5/-).
In other words, while piece-rate formula is adopted for A, B is given according to time rate.

It may be argued that the scheme would tend to encourage inefficiency since, whether or not his output is at the standard performance rate, the worker would continue to receive wage at the time (or daily) rate. But this tendency can be counteracted by insisting on a minimum quota of work which must be produced in order to entitle him to receive a wage at the time-rate. In our example above, 40 pieces may be taken as quota. Below 40 pieces or above 50 pieces payment may be made at the piece rate. To give sufficient incentive production above 50 pieces may be progressively rated. In this way the scheme will put a check on inefficiency providing at the same time an incentive wage for promoting efficiency.

4. System of Payment by Result in Other Countries and its Effects

In the Scandinavian countries, viz., Norway, Denmark and Sweden, piece work is regulated by national piece work rates and collective agreements between workers and management. The price-lists or the piece-work rates are elastic enough, very much detailed and cover a few thousand piece-rates. Flexibility in the rate of fixation is ensured by provision for prompt revision, and by taking into account of changes in construction methods and materials as in Norway and Denmark. In Norway basic hourly wage rate is guaranteed even in respect
of piece-rated workers if the work is stopped for reasons beyond their control. However, in both these countries the hourly cost of living allowance accounts for so large a proportion of total earnings that there is, in effect, 'a combined system of payment by results and time work.'

Table 8.2 below (p. 194) shows the proportion of hours worked on piece rate to total hours worked by different trades or occupations in the construction industry in the Scandinavian countries. It will be seen that of these three countries the payment-by-result system is much in use in Norway and Sweden while in Denmark, although the proportion is less than in these two countries, "piece work is more common in the construction industry than in the average of all Danish industries." Like the Scandinavian countries, the piece-rates in the Netherlands also are mutually agreed upon by the labour and management while the broad directives come from the Government through the Board of Government Conciliators.

In the Netherlands the piece-rates are based on "standard time", and they seem to go in favour of workers, for it has been laid down that in case the standard is exceeded the workers must be paid according to hourly rates, while any time saved is also paid accordingly to standard time. For instance, if the standard time is 0.72 hours and the work has been completed in 0.54 hours, the worker is paid for a full 0.72 hours and thus earns a 'surplus' of 33\(\frac{1}{3}\) per cent while
if he takes 0.80 hours he will be paid at hourly rates.

Table 8.2

Number of Hours on Piece-work as a Percentage of Total Hours Worked in Various Building Trades in Scandinavian Countries

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Denmark (1951)</th>
<th>Norway (1949)</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Copenhagen</td>
<td>Rest of the</td>
<td>Whole</td>
</tr>
<tr>
<td></td>
<td></td>
<td>country</td>
<td>Norway</td>
</tr>
<tr>
<td>Bricklayers</td>
<td>77</td>
<td>62</td>
<td>97</td>
</tr>
<tr>
<td>Carpenters</td>
<td>72</td>
<td>45</td>
<td>93</td>
</tr>
<tr>
<td>Plumbers</td>
<td>56</td>
<td>51</td>
<td>53</td>
</tr>
<tr>
<td>Painters</td>
<td>79</td>
<td>70</td>
<td>87</td>
</tr>
<tr>
<td>Electricians</td>
<td>32</td>
<td>21</td>
<td>82</td>
</tr>
<tr>
<td>Bricklayers' labourers</td>
<td>63</td>
<td>44</td>
<td>n.a.</td>
</tr>
<tr>
<td>Iron &amp; Concrete workers</td>
<td>69</td>
<td>29</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Note: ++ The break-up is not available. For skilled workers (bricklayers, plasterers, carpenters and joiners) 75-85 per cent of hours worked are paid at piece-rates. For other workers the percentage is less.


Unlike as in the Scandinavian countries and the Netherlands the payment-by-result system is applied on a regional basis and restricted scale in the U.K. and Federal
Republic of Germany. In F.R. of Germany only about 4 per cent of construction workers are covered by the payment-by-results scheme, which is confined mainly to the big cities like Berlin, Hamburg and Munich. Elsewhere, the system is in vogue in certain special types of work. In both the countries (the U.K. and F.R. of Germany) the continuation of the system depends largely on the employers who negotiate the rates locally.

The Effects of the System: There are difficulties in measuring precisely the effects of the payment-by-result system in any industry. Construction industry is no exception. Notwithstanding the difficulties it has been said that the system has been quite successful in achieving its objects, viz., the reducing of cost and the raising of efficiency. In the Netherlands the output as a percentage of standard output increased by about 20 per cent after the system has been introduced. In the U.K. the main effects after the introduction of the system in 1941 were as follows:

1. Substantial increase in output was achieved by speeding-up of production.

2. Labour costs were reduced substantially. It had been estimated that for £5 spent on bonus there was a gross saving of about £7 in labour costs or a net saving of about £2.

3. There was no evidence that quality of work suffered when adequate supervisory staff was provided.

Similarly, in the Scandinavian countries the system has generally resulted in greater output and higher earnings for the workers. In all these countries, although comparisons are
difficult to make between the piece-rated and time-rated work because of the preponderance of the former, the general opinion in the industry is that "payment-by-results does lead to greater output, and that workers' earnings are higher than they would be if systems of payment-by-results were not in use."\textsuperscript{16}

5. Conclusions:

An examination of the payment-by-result system, as we have made above, has conclusively proved that there are inherent advantages in the system. Whatever be the size of the 'carrot' and howsoever dry it might be, it is better to hold a carrot before the donkey than none at all. Judged by the results of the system in other countries it cannot be said that this would increase the overall cost of the project. When labour cost in building accounts for about a third of the total, and in road construction, in many cases, more than this, any scheme that would provide incentive to labour towards greater output should definitely be welcome to the employers.

It should be emphasised, even at the risk of repetition, that the fundamental objective of piece-rate system is to increase incentives and productivity of labour, and that fulfilment of the same will depend, to a great extent, on particular working condition of the labourers which differs from country to country. Any generalisation may, therefore,
suffer from many pitfalls. In evolving a formula for
determination of piece-rates one is likely to be confronted
with certain difficulties.

However, fixing the 'standard time' for a piece or
unit of job should be made in such a manner that it is possible
for a worker of average efficiency to reach the target. A
'standard task' should similarly be fixed. It should be
closely scrutinised whether the extra effort needed to exceed
the norm is suitably rewarded. Great difficulties will no
doubt be faced in evaluating the 'standard time' and 'standard
task'. Both objective and subjective considerations are
involved in their evaluation. As Baldamus has put it, "The
right rate is not merely a matter of accuracy in the sense
of stop-watch measurements during the process of timing. Much
more important is what goes behind the scene: the tentative
evaluation of the right effort... It is quite evident that
this tentative approach to effort values implies a normative
orientation. And if this is so it is only logical that the
wage rate, too, is perceived in similar terms of moral
attitudes." A 'normative orientation', and a spirit of
co-operation and reasonableness between the parties should
bring a 'wage-effort parity' the concept of which, in our
opinion, need not be limited to piece-work alone. It has
general validity quite independent of the method of payment.

The field study in Tripura suggests that certain
difficulties may have to be faced in the determination of
individual remuneration where the effort of a team, and not of a particular individual, is important. Team work is most common in construction industry and a team incentive scheme should be properly evaluated from time to time depending on varying conditions of operations. According to the opinion of some experts of the system the team should be kept as small as is compatible with efficient performance. No doubt, a group bonus scheme will provide sufficient incentive for efficient performance.¹⁸

The field study also suggests that in order to make the piece-rate effective and popular, the existing straight piece-rate system should be replaced by a differential one which would provide sufficient incentives for increased efficiency.

In construction industry where collective bargaining is yet to take its roots, it should be the responsibility of the State to see that appropriate share of increased productivity is passed on to the workers. It is in this context that the feasibility and desirability of a minimum guaranteed time-rate wage should be considered.
NOTES AND REFERENCES


2. Gilchrist, R.N., "Wages and Profit Sharing" (Calcutta University, 1924), p. 2.

3. Ibid.


7. But compared to time-rate even this will induce the worker to earn more in a given time by speeding-up his effort. --See Dobb, M., "Wages" (London, 1956), pp. 54-55.

8. I.L.O., "Payment By Results (Geneva, 1951), Chapter I.


10. Ibid.

11. Watkins, Dodd etc., op. cit., pp. 544-45. Above, only the feasibility and desirability of the scheme for the construction industry is emphasised.

12. A meeting of experts on System of Payment by Results in the construction industry was held under the auspices of the I.L.O. in Geneva in 1953. A fuller account of the conclusions of the experts and a relatively detailed account of how the System works in different countries have been discussed in International Labour Review, Vol. LXIX, No. 5, May 1954.

13. For example, in Denmark in internal plastering alone 147 prices have been agreed to in respect of 93 different operations. Ibid., p. 11.


17. Baldamus, W., op. cit.