

culated. The report made by this committee reads as follows:

"Labor turnover for any period consists of the number of separations from service during that period. Separations include all quits, discharges and layoffs for any reason whatsoever.

"The percentage of labor turnover for any period considered is the ratio of the total number of separations during the period to the average number of employees on the force report during that period. The force report gives the number of men actually working each day as shown by attendance records.

"To compute the percentage of labor turnover for any period, find the total separations for the period considered and divide by the average of the number actually working each day throughout the period."

In brief, this committee advocated the use of attendance force rather than payroll in the calculation of turnover percentages. This seems to have been the main principle advocated in this report, but it is somewhat ambiguous and misleading in some of the statements. For illustration, labor turnover for any period does not necessarily "consist of the number of separations from service during that period." In the current and recent history of shipyard plant construction we find many illustrations of the falsity of this statement: When a shipyard nears completion many of the men engaged for its construction must be laid off from day to day, and these separations do not all represent labor turnover, according to the best and most usual definitions of that term. On a decreasing payroll only the number hired can truly represent replacements or turnover.

The statement that "to compute the percentage of labor turnover for any period, find the total separations for the period considered and divide by the average of the number actually working each day throughout the period" is to me ambiguous. Probably all that is meant is that the average daily attendance is recommended as the divisor. If so, it does not mean that only those are to be included in the denominator of the fraction who have worked or been in attendance "each day throughout the period." It is conceivable that the turnover in a given year would be represented by infinity in an establishment where no employee could show a record of 100 per cent. attendance. The point in this committee report, however, which challenges discussion is the recommendation that the working force, as shown by attendance records, be made the basis upon which labor turnover is calculated rather than payroll force.

Anyone who has had wide experience in studying comparative labor turnover figures in such an extensive industry as shipbuilding will at once question the validity of this new method apparently advocated by at least some of the employment managers at the National Conference in Rochester, last May (1918). One of the principal objections to it is that attendance is a more fluctuating factor than payroll. On an extremely hot day, 1,000 or more men out of a force of 5,000 might lay off for the one reason "too hot to work." This is not an isolated instance; there are plenty such illustrations in the daily attendance reports of the 160 or more shipyards which it was my privilege to review for a period of eleven months this past year. Heat, cold, blizzard, rain and snow are meteorological conditions which cause wide fluctuations in daily attendance in shipyard and other outdoor employments. Again, an epidemic period such as that we have been experiencing in the shipyards since September, causes most violent fluctuations, daily, weekly and monthly, in the attendance records—much wider variations, quite naturally, than are reflected in the payrolls. In the first week of October, 1918, it was reported that approximately 6,000 out of 19,000 employees of three large shipbuilding plants at Gloucester, N. J., were ill with influenza. Obviously, the resulting temporary low attendance had little or no real relation to labor turnover. Why, then, should this attendance factor be used in calculating turnover percentage?

Another objection to the attendance records as a basis for the calculation of labor turnover percentages is that very frequently the separations or quits when recorded are of employees who may not have been in attendance for a day, two days or longer. Theoretically, the payroll is, therefore, a better denominator for the labor-turnover fraction as it always contains the whole labor force, while the attendance force at any given time may range from 100 per cent. of the payroll down to 50 per cent. or even less in severe weather, during an epidemic, obstructed traffic, etc. These latter phenomena, while affecting attendance seriously, may not and often do not affect the payroll or the separations so far as these enter into the labor-force records.

One of the best statements that I have seen advocating payroll in preference to attendance as representing average force for labor turnover calculations is that by Mr. E. Goldberger, efficiency engineer, Packard Motor Car Company, published in the November, 1918, issue of *Industrial Management*. The statement follows:

"The total number of men that have been hired and been paid off, *i. e.*, actually replaced, represents a complete turnover, and if there be an excess of men hired over paid off, they actually are to be accounted to increase in force, while if there be an excess of men paid off, they represent a decrease in force.

"There are more reasons in favor of counting the men on our books rather than those really attending, as some men leave without notice, passing through a transitory stage of not attending and still being on the books, so that, when they leave and are counted in the turnover, they do not represent the turnover of the force working, but of that on our books.

"It is much easier to count the men on the books than those attending, as the first information can be made available quickly in the employment office, while the last one has to be made available by many clerks in different departments or by the time office.

"It is very likely that high wages, where they are unwarranted, will force us to face the problem of absentees, and to study a standard coefficient of attendance. This is, in my opinion, a good enough reason to keep the same denominator for all three coefficients—labor turnover, labor fluctuation and labor attendance."

The following quotation¹ also is in conformity with my own point of view, as regards the method of calculating the labor turnover:

What most persons mean by labor turnover is labor replacement. The term labor turnover arose in connection with discussions of the cost of hiring and firing workers. It was recognized that men drifted in and drifted out of industries. Competent men often did not stay, and incompetent men had to be fired after expensive trial. Effective labor service finds the right man for the right job and then gets him to stick. If he does not stick then someone else has to be hired to take his place, or if a mistake in judgment is made and an unfit person employed, then that person has to be fired and another worker found for his job. This is labor turnover but a better and more accurate phrase is to think of it as necessary labor replacement.

The National Employment Managers' conference by deciding that the number of employees actually working each day rather than the number appearing upon the payroll should be the proper base for computing labor turnover introduced another factor into personnel fluctuation. This factor, which may be termed *labor variation*, is something different from either plant change or labor replacement.

The number of the working force actually working on any one day is dependent upon sickness and accident, upon explainable absences, and upon habitual loafing usually after pay day. Increasingly, employment offices are keeping records of these daily absences, seeking for the causes of these constant leaks and endeavoring to stop them.

¹From "Standardizing Labor Turnover" by Harry W. Kimball, *Industrial Management*, December, 1918.

But such absences do not mean usually that a man is fired or even that some one is hired to take his place. This labor variation is not labor turnover as the term is ordinarily used. Yet if the daily working force rather than the payroll sheets are used as the base for figuring labor turnover then this element of temporary absences affects to some degree the percentages.

A report then of personnel fluctuation for any period of time should show in percentages the plant change, the labor replacement and the labor variation. These are three distinct elements in the personnel fluctuation. They are due to different causes, require different remedies and should never be confused.

One other subdivision may be desirable. Persons whose places must be refilled leave for avoidable and unavoidable reasons. Among the unavoidable reasons are marriage, death, ill health, retirement, family leaving city, and military service. It is worth while to divide the leavings under labor replacement into avoidable and unavoidable, making separate percentages. The decrease of the avoidable leavings from week to week, and from year to year, is the true measure of the efficiency of the labor service.

While a record should be kept of all transfers from one department to another within the plant, these transfers should not enter into the calculation of any personnel fluctuation as they do not increase or decrease the working force.

The simplest way of calculating these three elements of personnel fluctuations is by the week, and the simplest base to use is the number on the payroll.

Daily attendance records are extremely important and hours-of-work records, also very important for several purposes, should be available to the manager of a plant or establishment, but I seriously doubt their utility in the calculation of labor turnover. Payroll measured against daily attendance gives a reasonable notion of the percentage and total amount of absenteeism. Such ratios could be computed weekly, monthly, quarterly and yearly. In other words, daily attendance should preferably be considered as a coefficient of payroll. Among shipbuilders, for the country as a whole, approximately 85 per cent. of the average payroll was in daily attendance. There were wide variations, however, from this figure when individual yards, different sections of the country and the different seasons of the year were considered.

For a proper measurement of daily attendance good payroll records must be freshly available and, if available, there would appear to be no good reason why labor turnover should not be measured against payroll rather than against attendance—a more widely fluctuating, and at least as regards *labor flow* a more artificial factor than payroll. Perhaps one objection to the use of payroll records is that they sometimes are not cleared frequently enough. This is not a valid objection in labor turnover calculations, for the net gain or loss in the payroll is readily obtained when the