Wage Structure in Bituminous-Coal Mining, Fall of 1945

Bulletin No. 867
Letter of Transmittal

UNITED STATES DEPARTMENT OF LABOR,
BUREAU OF LABOR STATISTICS,
Washington, D. C., May 20, 1946

THE SECRETARY OF LABOR:

I have the honor to transmit herewith a report on the wage structure in bituminous-coal mining, fall of 1945. This study was prepared by Pamela Brown and Ardemis Kouzian, of the Bureau's Wage Analysis Branch. The field work was done under the direction of the wage analysts in the Bureau's regional offices.

A. F. HINRICH, Acting Commissioner.

HON. L. B. SCHWELLENBACH,
Secretary of Labor.

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(II)
Wage Structure in Bituminous-Coal Mining, Fall of 1945

Summary

Current earnings in bituminous-coal mining as of the fall of 1945 are summarized in this report, which is based upon a survey of wages, hours, and wage practices in the industry, conducted by the Bureau of Labor Statistics. The survey, initiated late in 1945, is one of a recently expanded series of BLS wage studies of leading American industries and the first comprehensive report since 1936 of wages in bituminous-coal mines.

In the underground bituminous-coal mines, which employ more than 300,000 workers, average straight-time hourly earnings in key occupations for the country as a whole ranged from 95 cents for slate pickers (except for a comparatively few workers in one other occupation) to $1.42 for shot firers, paid on an incentive basis. Gross weekly earnings averaged as low as $45.64 for drivers and as high as $80.48 for inside maintenance mechanics. Considerable variation from the national averages occurred in the coal districts tabulated, and there was little consistency from district to district in the occupations for which the lowest average was found. The highest average was most usually shown for cutting-machine operators in underground mines and power-shovel operators in strip mines.

For the 18,000 workers employed in strip mines, the national straight-time averages ranged from 97 cents per hour for groundmen and slate pickers to $1.64 for power-shovel operators. The extremes in gross weekly earnings in strip mines were $43.54 for slate pickers and $98.22 for power-shovel operators.

Occupations selected for use in the study represented key jobs—those numerically important as well as those important from the standpoint of wage determination—which it was believed would be indicative of earnings throughout the industry at various skill levels. These occupations represent two-thirds of the workers in the bituminous-coal industry. Hence, although not all occupations in the mines were included in the survey, the national straight-time earnings per hour of $1.07 shown by the study are believed to approximate the average for all occupations in the underground and strip mines for the bituminous-coal industry as a whole. Considered separately, the average for underground mines was $1.07 and for strip mines $1.19.

1 A forthcoming mimeographed report will contain detailed statistics on earnings, by occupation, district, and type of mine.
Gross weekly earnings averaged $55.64 for the selected occupations—$55.29 for underground and $64.43 for strip mines.

A small number of the occupations studied accounted for the great majority of the estimated number of workers in all of the selected occupations, hand loaders being by far the most important numerically in underground mines, but cutting-machine operators and helpers, motormen, trackmen, brakemen, and timbermen also being of comparative numerical importance.

Hand loaders averaged $1.06 and $1.07 per hour (straight time) when paid on an incentive and a time basis, respectively, and their average gross weekly earnings were about $50.

The average straight-time hourly earnings for cutting-machine operators and helpers varied both by method of pay and according to whether or not they were in the group in which operators and helpers worked interchangeably. However, for each of these classes the average was over $1.10 per hour and as high as $1.38 for operators and helpers working interchangeably, on an incentive basis. Gross weekly earnings averaged $76.04 for the latter group.

Trackmen and timbermen averaged $1.00 an hour, motormen $1.02, and brakemen 99 cents. Average gross weekly earnings for these occupations varied from $50.46 for brakemen to $57.05 for motormen, and amounted to almost $54.00 for trackmen and timbermen.

In strip mines, workers were quite largely concentrated in two occupations—truck and tractor operators and power-shovel operators. The United States average straight-hourly earnings for the former were $1.03 and for the latter $1.64. Average gross weekly earnings for the two occupations amounted to $50.49 and $98.22, respectively. For two other numerically important jobs (slate pickers and groundmen) average straight-time earnings of 97 cents per hour were shown, but the average gross weekly earnings differed; they were $43.54 for slate pickers and $52 for groundmen.

A much larger proportion of the strip than of the underground mines studied reported second- and third-shift operations. However, where such shifts were scheduled, payment of a 4- and 6-cent differential, respectively, was made.

A workday of 9 hours and a workweek of 54 hours constituted the predominant schedule for inside workers in underground mines. For outside workers (on noncontinuous operations) the most commonly scheduled workday was 8½ hours and the usual scheduled workweek 49½ hours in both underground and strip mines studied. Premium overtime was usually paid after 7 hours for the first 5 days and for all work on the sixth and seventh consecutive days.

The great majority of the underground mines studied were operating under union agreement, whereas almost 40 percent of the strip mines were nonunion. Size of mines varied from 20 workers (the minimum size included in the study) to over 500, but the majority had fewer than 250 employees.

In the mines studied there were no provisions for paid sick leave for mine workers, but most of the mines had formal provisions for paid vacation or for payment in lieu of vacation. Insurance or pension plans were comparatively infrequent.
Provisions of National Bituminous Coal Wage Agreement

The National Bituminous Coal Wage Agreement, signed by the United Mine Workers of America and the Coal Operators and Associations on April 11, 1945, established the hours of work and methods of computing pay. Since this agreement affects such a large segment of workers in bituminous-coal mines it is necessary to take such provisions into account in arriving at any picture of earnings in the industry.

The agreement provided for different hours and computation of pay for (a) inside day workers, (b) for inside piece workers, (c) for outside workers on continuous operations, and (d) for outside workers on noncontinuous operations. This classification of workers was used in compiling the data presented in this study.

For outside workers on continuous operations a workday of 8 hours and 35 minutes was provided, time and a half being paid after 8 hours; for outside workers on noncontinuous operations a workday of 8 hours and 15 minutes (including a 15-minute paid lunch period) with time and a half after 7 hours. In addition, each outside worker, whether on continuous or noncontinuous operations, was to receive $1.07 per day "to equalize earnings of outside employees with earnings of the inside employees." The rate of time and a half applied to all time worked on the sixth consecutive day.

For inside day (time) workers a workday of 9 hours (portal to portal) was provided in the agreement, the first 7 hours to be paid at straight-time rates, the eighth hour at time and a half, and the ninth hour at a flat rate of $1.50 ($1.00 at time and a half). On the sixth consecutive day the time-and-a-half rate applied to 8 hours and the flat $1.50 rate to the ninth hour.

The agreement also provided a workday of 9 hours (portal to portal) for inside piece (tonnage) workers, earnings to be figured on a piece-rate basis to which would be added one-ninth of such daily earnings as payment of premium overtime beyond 7 hours and for travel. On the sixth consecutive day, the tonnage workers' piece-rate earnings were computed at a rate of time and a half, and one-ninth of the amount of such earnings was added to make up the total for the day.

In the actual application of the provisions of the National Bituminous Coal Wage Agreement some variation in interpretations was found on both a local and a district level. In collecting and tabulating the material for the Bureau of Labor Statistics study the endeavor was made to present the earnings picture as it actually existed in the fall of 1945, as evidenced by pay-roll records, within the limits set for the different items.

Average Earnings in Fall of 1945

The national average of straight-time hourly earnings for the combined selected occupations in underground and strip mines was $1.07 ($1.07 for the selected occupations in underground and $1.19 in strip mines). In view of the careful selection of the key occupations studied, which were chosen to include jobs at various skill and earnings levels, it is believed that that average is fairly representative of
the average for all mine jobs. The same would be true of the average gross weekly earnings, which amounted to $55.29 for the selected occupations in underground mines and $64.43 in strip mines, or $55.64 in the two types combined.

For all the selected occupations in underground mines United States average straight-time hourly earnings varied from a low of 94 cents an hour for pick miners (paid on a time basis) and 95 cents for slate pickers to $1.42 for shot firers (paid on an incentive basis) and $1.38 for cutting-machine operators and helpers (incentive workers). Except for pick miners these same occupations also accounted for the extremes in the United States average straight-time earnings per start ($7.91 to $12.54 and $12.10, respectively). However, the lowest average gross weekly earnings were reported for pick miners (time) ($45.68) and underground drivers ($45.64) and the highest ($80.48 and $77.67) for inside maintenance mechanics and electricians.

For all districts combined, the jobs of greatest numerical importance in underground mines were hand loaders, cutting-machine operators and helpers, motormen, trackmen, brakemen, and timbermen. Average earnings for these occupations are, therefore, of special interest. In each of these particular occupations the average actual number of hours worked per day was 9 or very close to it. Hand loaders averaged $1.06 and $1.07 per hour (straight time) when paid on an incentive and a time basis, respectively, and their average gross weekly earnings were about $50. The average straight-time hourly earnings for cutting-machine operators and helpers varied both by method of pay and according to whether or not they were in the group in which operators and helpers worked interchangeably. However, for each of these classes the average was over $1.10 per hour and as high as $1.38 for operators and helpers working interchangeably on an incentive basis. Gross weekly earnings averaged $76.04 for the latter group. Trackmen and timbermen averaged $1 an hour, motormen $1.02, and brakemen 99 cents. Average gross weekly earnings for these occupations varied from $50.46 for brakemen to $57.05 for motormen, and was almost $54 for trackmen and timbermen.

In strip mines, truck and tractor operators and power-shovel operators were numerically the most important of the jobs shown. Average straight-time earnings per hour for all districts combined ranged from 97 cents for groundmen and slate pickers to $1.64 for power-shovel operators. The latter two occupations also accounted for the extremes in average straight-time earnings per start of $8.04 and $14.33, respectively, and in average gross weekly earnings of $43.54 for slate pickers, to $98.22 for power-shovel operators.

In individual districts, average earnings varied considerably from the national average. Workers in underground mines were heavily concentrated in Coal Act Production Districts 1, 2, 7, and 8, and Districts 3, 4, 10, and 13 were also relatively important. In four of these important districts the lowest average earnings per hour for any of the selected jobs were between 95 cents and $1 and were less than 90 cents in only one instance—80 cents for 3 jobs in Dist-

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2 The averages were obtained by weighting each average by the number of workers receiving the average.
3 Comparatively few workers were employed as pick miners (paid on an incentive basis); much larger numbers were employed as slate pickers.
4 Coal Act Production Districts should not be confused with United Mine Workers districts. Although in some cases they are the same, in general the Coal Act Production Districts are somewhat broader.
The lowest average in any individual district was shown in District 15 (58 cents for pick miners paid on incentive basis), whereas in District 19 $1.04 was the lowest average reported. The highest straight-time average earnings per hour for an individual job, which amounted to $1.42 on a Nation-wide basis, varied for individual Districts from 97 cents in District 15 to $1.51 in District 8. The occupations for which the lowest average hourly earnings were reported showed little uniformity from district to district. The highest average hourly earnings were usually shown for cutting-machine operators. Average gross weekly earnings varied from a low of about $21 in District 15 and $32 in District 8 to a high of over $92 in District 7.

Wage and Related Practices

“Fringe issues,” covering working conditions and other provisions that affect real income without raising hourly rates of pay, became increasingly important during the war years as a result of wartime stabilization of wage rates.

Rate structure.—All of the strip mines and practically all of the underground mines studied had formalized their rate structure at the time this study was made, by providing a written or other generally recognized rate or scale of rates for each occupational group in the mine. The single rate for an individual occupation in a mine, as distinguished from a range of rates, was the type prevailing in almost all of these mines.

Method of wage payment.—Three of every five of the underground mines studied, but none of the strip mines, paid a significant portion of their mine workers on an incentive basis. However, only 22 percent of the mine workers in underground mines were paid on an incentive basis (usually of the piece-rate type). The proportion varied from district to district, being highest in District 1. The great majority of the hand loaders and pick miners were paid on an incentive basis, and cutting-machine operators and helpers were also frequently paid on this basis.

Scheduled hours of work for first-shift workers.—The following information refers to scheduled rather than actual hours of work. It should be recognized that actual hours may be either shorter or longer than scheduled hours, being influenced on the one hand by such factors as absenteeism, break-downs in equipment, and material shortages, and on the other by emergency needs for increased production. Scheduled hours refer to the usual workweek of full-time first-shift workers in the mine. Scheduled hours are to be distinguished not only from actual hours of work but from basic straight-time hours beyond which premium overtime is paid.

A 9-hour day and 54-hour week were scheduled in over three-fifths of the underground mines studied, in which inside day and piece workers were employed. The next most frequently reported schedules for inside workers were the 8-hour day, 40-hour week and the 9-hour day, 45-hour week; however, these hours for inside day or

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* For purposes of reporting the number of mines with incentive systems, mines with a fourth or more of their mine workers paid on this basis were classified as predominantly incentive. However, in determining the proportion of employees paid on an incentive basis, incentive workers in all mines were included regardless of the predominant method of wage payment in the mine.
piece workers were reported by less than a tenth of the mines. For outside workers engaged on continuous operations three-fifths of the underground mines reported schedules of 8 hours and 35 minutes per day and 51½ hours per week. For workers on noncontinuous operations, a schedule of 8½ hours per day and 49½ hours per week was most frequently reported in both underground and strip mines studied. These most commonly scheduled daily hours conformed to those provided for by the National Bituminous Coal Wage Agreement.

**Shift operations.**—In underground mines throughout the United States, workers employed on the first, second, and third shifts represented 73, 23, and 4 percent of the total, respectively. However, only 58 percent of the mines studied reported a second shift and 27 percent a third (or other) shift.

Variation from this national pattern occurred in individual Coal Act Production Districts. District 4 reported 56 percent of its workers on the first, 28 percent on the second, and 16 percent on the third (or other) shift. District 12 had the highest proportion of its workers on the first shift (93 percent). The proportion of mines scheduling second-shift operations ranged from 84 percent in Coal Act Production District 7, to 6 percent in District 12. Three of the five mines in District 11 reported third-shift operations, whereas none were reported in the five mines in District 20.

The use of shift employment in strip mines varied slightly from that in underground mines. Seventy-eight percent of the workers were reported on the first shift, 16 percent on the second, and 6 percent on the third (or other) shift.

Eighty percent of the strip mines studied reported second-shift operations and 50 percent third (or other) shift operations, as compared to the 58 and 27 percent of underground mines. In each of the Coal Act Production Districts covered, no less than 69 percent of the workers were employed on the first shift; Districts 13 and 19 had as high as 94 percent on this shift, and Districts 3 and 7 had 93 percent.

As many as 23 percent of the mine workers in District 2 were represented on the second shift. Most of the districts, however, had less than 15 percent of the mine employees working on the second shift.

**Shift differentials.**—In both underground and strip mines, additions of 4 cents and 6 cents per hour represented the differential paid for work on the second and third shifts, respectively.

Ninety-six percent of the 287 underground mines operating second shifts and 98 percent of the 133 underground mines operating third shifts reported payment of shift differentials. The small group that did not pay such differentials for second- or third-shift operations consisted primarily of nonunion mines.

Of the 84 strip mines operating second shifts, only two-thirds reported payment of a shift differential, as compared with three-fourths of the 53 mines operating third (or other) shifts. Union mines constituted the majority of those strip mines paying such compensatory differentials for work on late shifts.

**Paid lunch periods.**—A paid lunch period of 15 minutes was the most usual provision in bituminous-coal mines. In a very few of the mines studied a 30-minute paid lunch period was provided. This
lunch period was considered part of working time in computing average hours per start and average straight-time earnings.

Bonuses not directly related to production.—Information was requested as to the payment of nonproduction bonuses (such as profit-sharing, safety, attendance, and Christmas bonuses) which were not directly dependent upon the output of either individuals or groups of workers. It was found that payments such as these were made to the mine workers in only 8 underground and 11 strip mines. With one exception in strip and one in underground, these all took the form of Christmas bonuses. Among the mines which reported the employment of office workers, slightly more liberal practices were in effect; 15 percent of the underground and 26 percent of the strip mines provided bonuses to this group of workers.

Paid-vacation provisions.—Formal provisions for paid vacations to workers in the mines scheduled were reported in nearly 9 out of every 10 underground mines and 7 out of every 10 strip mines. The $75 payment in lieu of vacation (which is the provision specified in the 1945 National Bituminous Coal Wage Agreement) was the type most frequently reported; in 12 Coal Act Production Districts (8 districts representing 117 underground mines and 4 districts representing 22 strip mines) all of the mines scheduled reported this practice.

Formal vacation provisions for office workers were reported by nearly half of the underground mines that employed such workers; 2 weeks’ vacation was the most frequent provision. Among strip mines a higher proportion was found without than with formal vacation provisions for office workers.

Paid sick leave.—There were no formal provisions for paid sick leave for mine workers in any of the mines studied. Such provisions were also lacking for office workers in practically all of the mines.

Insurance or pension plans.—Participation by mine operators in a form of insurance or pension plan (other than social security and workmen’s compensation) was reported in only 10 percent of the underground and 13 percent of the strip mines. Life insurance represented the type of plan most frequently provided and health insurance was the next most frequent type. Plans of this type for office workers were somewhat more frequent; they were reported by 16 percent of the underground and 17 percent of the strip mines in which office workers were employed.

Scope and Method of Survey

This study of earnings in bituminous-coal mines was made by the Bureau of Labor Statistics in the fall of 1945, as part of its general program to provide current wage information for the leading industries in the United States. The latest previous detailed study of wages in this industry was made by the Bureau in 1936. In the 9 intervening years many significant changes have occurred in the wage structure of this industry. New agreements have had a profound effect on earnings, hours of work, and such related practices as shift differentials and vacations. Essentially, since the fall of 1945 there has been little change in the wage situation in bituminous-coal mining and the data presented in this report reflect the wage picture as of the late winter and early spring of 1946.
The study covered both underground (shaft, drift, and slope) and strip bituminous-coal mines but did not cover anthracite mines. Mines operating under agreement with the United Mine Workers of America, with the Progressive Mine Workers of America, and with other unions are included, as well as nonunionized mines. The mines studied were selected to provide balanced geographical distribution of the industry. Only mines employing 20 or more workers were included but within that group mines of various sizes were represented.

Coverage of study. — Data were obtained from a total of 492 underground mines employing over 73,000 workers, and 105 strip mines employing 6,500 workers, or about a fourth of all underground mines and over a third of all strip mines having 20 or more workers. The proportions of workers in mines included in the study were similar to the proportions of mines covered. Based upon this representative survey, estimates were made to represent the entire industry.

Most of the mines studied had fewer than 250 workers, the percent of mines in the different size groups being as follows:

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<thead>
<tr>
<th>Mines with—</th>
<th>Underground</th>
<th>Strip</th>
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<tbody>
<tr>
<td></td>
<td>(percent)</td>
<td>(percent)</td>
</tr>
<tr>
<td>20-50 employees</td>
<td>37</td>
<td>62</td>
</tr>
<tr>
<td>51-250 employees</td>
<td>45</td>
<td>35</td>
</tr>
<tr>
<td>251-500 employees</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>501 and over employees</td>
<td>5</td>
<td>—</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Unionization was much more extensive in underground than in strip mines. In underground mines all but about an eighth of the mines covered were operating under agreements with the United Mine Workers or other unions, whereas in strip mines about two-fifths were nonunion.

In all areas a pay-roll period in the fall of 1945 was selected for the study, and care was taken in each case to choose a representative period. The exact month used differed slightly in the different areas; although a period in September or October was usually chosen, in some mines it was necessary to use an August or November period in order to avoid scheduling an abnormal pay-roll period.

The wage data were compiled by field agents of the Bureau directly from pay-roll and other company records. In order to obtain comparable information as between different mines and districts, uniform job descriptions were prepared and used by the agents in obtaining the information.

Data were obtained for selected occupations rather than for all occupations in the mine. Occupations selected for use in the study represented key jobs—those numerically important as well as those that are important from the standpoint of wage determination—which it was believed would be indicative of earnings throughout the industry at various skill levels. It is estimated that for the entire country the workers in the selected occupations in underground mines represented slightly over 70 percent of all the workers in such mines and that in strip mines the coverage in selected occupations covered was about 55 percent. Because of the inclusion of jobs at the various levels of earnings the results are believed to approximate closely the average for all jobs in the industry.
With the exception of office workers, few women were employed in mines.

A worker employed in more than one occupation during a day was classified in the principal occupation or the one in which he spent the major part of his time. Earnings on days on which he was employed primarily on another job were excluded in computing average earnings per hour and start, but not from gross weekly earnings.

The data were tabulated for each Coal Act Production District as well as for the United States as a whole. The territorial boundaries of these districts were originally specified in the schedule of districts annexed to the Bituminous Coal Act of 1937; this act, which was for the purpose of regulating interstate commerce in bituminous coal, also established the National Bituminous Coal Commission. The Bureau's study included underground mines in all but 5 of the 23 districts and strip mines in all but 9; in these omitted districts there were either no mines employing as many as 20 workers or too few mines to be of significance.

The wage structure of the industry is highly complex. It is affected by the provisions of the National Bituminous Coal Wage Agreement. This complexity necessitates certain arbitrary decisions on the limits to be set forth describing earnings per day or per start and on other bases for describing earnings. It should be clearly understood that the summaries of types of earnings presented in this study do not constitute a judgment by the Bureau as to what should be used as a proper measurement of wages in the industry, but have been chosen rather because they appeared significant and lent themselves to statistical summary.

EXPLANATION OF TERMS

Average gross weekly earnings include both straight-time and overtime earnings and shift differentials for an actual workweek. If the pay-roll period exceeded a week, gross earnings for the entire pay-roll period were reduced to a weekly basis by applying a factor based on the number of working days in the period and the length of the scheduled workweek in the mine. These gross earnings excluded only nonproduction bonuses and costs of explosives, carbide, tool sharpening, etc. The latter costs were excluded whether borne by the worker (either through deductions from earnings or by outside purchase) or borne by the company (through an allowance added to the worker's pay). Workers' payments for food and other purchases at company stores, for company housing, utilities, union dues, hospitalization, and similar items (even when deducted from pay rolls) are included in total pay.

Average straight-time earnings per start (day) cover the actual workday, not merely the seven hours for which straight-time rates are paid. They exclude, for all groups of workers, premium (but not straight-time) payments for overtime and night work, nonproduction bonuses, and cost of explosives, carbide, and tool sharpening. For mines operating under the provisions of the National Bituminous Coal Wage Agreement, these earnings were prorated over the 6 days of the scheduled workweek. For example, during the pay-roll period of Sept. 16-30 in a mine working a scheduled 6-day week, there were 12 working days including 2 premium-pay (sixth consecutive day) days. Since a normal workweek would consist of 6 days including 1 premium day, a factor of 0.500 was used to reduce semimonthly earnings to a weekly basis. 

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For example, during the pay-roll period of Sept. 16-30 in a mine working a scheduled 6-day week, there were 12 working days including 2 premium-pay (sixth consecutive day) days. Since a normal workweek would consist of 6 days including 1 premium day, a factor of 0.500 was used to reduce semimonthly earnings to a weekly basis.
Coal Wage Agreement or similar agreements certain specific items, entering into total earnings, were considered as part of premium overtime payments and excluded in order to arrive at straight-time earnings figures. For outside workers these deductions are the small portion of the $1.07 (added to outside workers’ earnings as equalization) which may be considered the premium part of the addition to the overtime hours. For inside day workers they are 50 cents of the $1.50 ninth-hour pay; for inside piece workers, all of the one-ninth addition to earnings. The agreement is not clear as to how the latter item (additional one-ninth) is divided between premium payment for overtime and travel. In the absence of definite determination on this point, the entire one-ninth was excluded from straight-time earnings.

Average straight-time earnings per hour represent total straight-time earnings per pay period divided by the hours worked during the period. In most mines actual hours for day workers were available from time or pay-roll records. If records of actual hours were not kept by the mine (usually for piece workers) scheduled hours were used.

Average hours per start (day) represent portal-to-portal time, including travel time for inside workers and a 15-minute lunch period. Because of methods used in deriving the averages and also because of the rounding of figures, average hours per start multiplied by straight-time average hourly earnings did not always agree exactly with the average straight-time earnings per start.

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1 If the $1.07 is prorated over 7 hours at straight time and 1 hour and 15 minutes at time and a half (outside workers on noncontinuous operations) it results in a total of $0.906 at straight time for the day.